Official Transcript of Proceedings

NUCLEAR REGULATORY COMMISSION

Title: Advisory Committee on Reactor Safeguards
520th Meeting

Docket Number: (not applicable)

Location: Rockville, Maryland

Date: Friday, March 4, 2005

Work Order No.: NRC-265 Pages 1-88

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

UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

+ + + + +

ADVISORY COMMITTEE ON REACTOR SAFEGUARDS (ACRS)

520th MEETING

+ + + + +

FRIDAY, MARCH 4, 2005

+ + + + +

ROCKVILLE, MARYLAND

+ + + + +

The Committee met at the Nuclear Regulatory Commission, Two White Flint North, Room T-2B3, 11545 Rockville Pike, at 8:30 a.m., Graham B. Wallis, Chairman, presiding.

MEMBERS PRESENT:

GRAHAM B. WALLIS	Chairman
WILLIAM J. SHACK	Vice Chairman
GEORGE E. APOSTOLAKIS	Member
MARIO V. BONACA	Member
RICHARD S. DENNING	Member
F. PETER FORD	Member
THOMAS S. KRESS	Member
DANA A. POWERS	Member
VICTOR H. RANSOM	Member
JOHN D. SIEBER	Member-At-Large

ACRS/ACNW STAFF PRESENT:

JOHN T. LARKINS	Executive Director, ACRS/ACNW
SAM DURAISWAMY	Technical Assistant
MEDHAT EL-ZEFTAWY	
MICHAEL SNODDERLY	

NRC STAFF PRESENT:

KENNETH CHANG	NRR/RLEP
KURT COZENS	
JERRY DOZIER	NRR/DRIP/RLEPB
BARRY ELLIOT	NRR/DE/EMCB
AMY HULL	NRR/RLEP
P.T. KUO	Program Director, RLEP
CHANG-YANG LI	NRR/SPLB
MARK LINTZ	

AGENDA ITEMS PAGE

P R O C E E D I N G S

(8:25 a.m.)

CHAIRMAN WALLIS: This meeting will now come to order. This is the second day of the 520th meeting of the Advisory Committee on Reactor Safeguards.

During today's meeting, the Committee will consider the following: proposed revisions to generic license renewal guidance documents and scoping review process for BOP systems, preparation for meeting with the NRC Commissioners, future ACRS activities, report of the Planning and Procedures Subcommittee, reconciliation of ACRS comments and recommendations, and the preparation of ACRS reports.

This meeting is being conducted in accordance with the provisions of the Federal Advisory Committee Act.

Mr. Sam Duraiswamy is the Designated Federal Official for the initial portion of the meeting.

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

A transcript of a portion of the meeting is being kept and it is requested that the speakers

use one of the microphones and identify themselves and speak with sufficient clarity and volume so that they can be readily heard.

We will proceed with the first item on the agenda which is the proposed revisions to generic licence renewal guidance documents. And I will pass over the authority of the meeting to the cognizant member on this subject, Mario Bonaca.

MEMBER BONACA: Thank you.

During the past two, three years, in our review of license renewal applications, we have repeatedly encouraged the staff to update the supporting documents like GALL and SRP.

And I think the time was right, in part, of particular interest to the Committee was the development was the ISGs that have been used now for many of the plants and have established some baselines where if there is a clear indication of what the licensee should do, that information clearly belongs in the guidance documents.

Also of interest to us has been the fact that on certain programs, particularly buried piping, buried concrete, fire protection, all licensees seem to take exceptions to the requirements of the rule. And so the NRC consistently accepts the exceptions.

That means that maybe the SRP shouldn't be or the GALL shouldn't be so prescriptive. And we heard that, in fact, some of the changes would be incorporated.

So today we have Mr. Kuo and the staff to tell us about these changes, which are much broader than the one I described.

But at some point, it would be worthwhile for the Committee to hear about specifically the one I mentioned because they are part of exceptions of licensees for three LRAs that we are currently reviewing. So buried piping, buried concrete, and fire protection systems.

So with that, I'll turn to Mr. Kuo.

DR. KUO: Thank you, Dr. Bonaca. My name is P.T. Kuo. I'm the Program Director for the License Renewal Environmental Impacts Program.

The purpose of today's briefing is to brief the members on the recent revision on the generic guidance documents that was originally issued in July 2001.

Over the past four years, we have reviewed many license renewal applications and we have gained considerable experience from these past reviews. As Dr. Bonaca mentioned, that the industry revision that we have attempted to incorporate some of the lessons

learned, included the ICs, whether it's finalized or it's still in draft form. And we have also included many of the past precedent that we have applied in the past reviews.

So today the staff will have four presentations for you. And we hope that we get your feedback, the input. We have published this set of revised documents on January 31st. These documents are all on the Website and for public comment. The comment period will end on March 31st.

And we had a public workshop on Wednesday this week. The industry, NEI, has already submitted their set of comments verbally during the workshop. And they promised that they will submit their written comments also.

We also have received a report from David Lochbaum, who is a member of the Union of Concerned Scientists. He sent us a report and we have reviewed that report. And we believe we also have considered his report in the development of this revised version of the guidance documents.

The four presentations will be given by our staff. First Jerry Dozier. He is leading this effort and he is going to give the Committee a brief overview of the whole project.

And then followed by Kurt Cozens. He's going to brief the Committee on the revision of the standard review plan for license renewal.

And then Dr. Amy Hull, who will be briefing the Committee on the GALL Report itself. And I want to say a few words about Amy. She is on loan to NRC from Argonne National Lab and she has been a member of this team for more than a year now. And she has contributed significantly to the effort. We appreciate her effort here.

Then we have Mark Lintz who is going to present his revised Reg Guide 1.88.

Basically what they are going to do is to provide the Committee with a summary of the changes of these documents from the original version.

So with that, I think I'm just going to turn over the meeting to Jerry first. And then followed by the rest. Unless there are any other questions. Are there questions I could answer?

CHAIRMAN WALLACE: Do you have a handout for us?

DR. KUO: You should have.

CHAIRMAN WALLACE: Okay. Thank you. So it's buried, okay, somewhere.

PARTICIPANT: Here it is.

CHAIRMAN WALLACE: Okay. Oh, it's a tiny thing. Go ahead.

(Laughter.)

DR. KUO: I might mention also that before we finalize this set of guidance documents, which we intend to finalize it say on September 30, 2005, before we issue the final version of this set of documentation, we will come to the Committee again to give you the overview of what is final -- the finalized version of this documentation.

Jerry?

MR. DOZIER: Good morning. My name is Jerry Dozier.

And the challenge this morning is to -- actually when the documents was delivered to the ACRS, I delivered it in a wheel cart. And I think it was four or five boxes. That represented -- if you take the entire collection, it's about 1,800 pages including the basis document.

We'll also have a public comment NUREG that will even come after that, so I suspect we'll be about at the 2,100 page mark before the end of the effort.

MEMBER POWERS: You haven't even approached what we had for early site permits.

(Laughter.)

MEMBER POWERS: We're not stunned.

(Laughter.)

MR. DOZIER: With that amount of information, the challenge here is to give a good background, schedule, scope, and an overview of all these documents in about a 45-minute period, allowing time for questions and answers. So I'll quickly begin.

As you know, the documents that we updated were NUREG-1800, 1801. We saw a new numbering on the Draft Guide 1140. That's actually our old Reg Guide 1.188 that when it goes out for public comment, we use this Draft Guide 1140 designation. And, of course, that will be Rev. 1 when it's completed.

Not mentioned here is we also had available on our Website a contractor NUREG draft of the basis document, which we have submitted to the ACRS and it's available for all the members of the public and all of the reviewers.

For this effort, there's no one effort you can point to. It was certainly integrated participation of a lot of people that were involved. It was multi-office within NRC, including the Office of Research. DRIP, DIPM, DSSA, and DE were all

involved.

Basically in a lot of these meetings, we had representatives from these groups as well as contractor groups in there as panelists -- as in information panel -- to basically provide direction-setting and also review products and make sure that the concerns were aired and considered.

Much of the members were those that were involved in original GALL development, audits, reviews. And so we had a good cross section of people to help us come to the decision that we have.

We also had contractors involved. The prime contractor was Parallax. We had -- before the effort began, we had Argonne National Lab who looked at seven applications to identify the lessons learned that we could -- for consideration. We also had a contractor, ISL, who looked at one application and offered lessons learned for consideration of the update.

So we had a lot of comments to consider. And we considered all of those. We prioritized them. And implemented those that we felt appropriate for this update.

Also, we had active involvement with NEI. We had frequent public meetings with them. They also

-- we had a preliminary draft of the documents out September 30th. So we say a 60-day comment period but in actuality, major portions of the document have been out since September 30th. So we've extended that out, you know, so that they could -- we could have very much a visible process. We've had public groups involvement, Union of Concerned Scientists, as Dr. Kuo mentioned, earlier.

CHAIRMAN WALLACE: When you have these public meetings, are they all in the Washington area?

MR. DOZIER: Yes, all of the meetings for the license renewal update are at headquarters. If we -- of course, the license renewal, the specific applications, we had the on-sites.

CHAIRMAN WALLACE: So some member of the public who is interested on the West Coast has to travel to Washington?

MR. DOZIER: We typically have a bridge line and the availability of the bridge line for those who want to participate.

CHAIRMAN WALLACE: So they can participate without physically coming to the meeting?

MR. DOZIER: Yes, sir.

CHAIRMAN WALLACE: Do they that? Do people do that?

MR. DOZIER: There has been some. I mean in a typical meeting, there will only be probably two or three. And a lot of times, they're contractors.

MEMBER POWERS: If I may, Dr. Wallace, every one of our meetings are public. We publish meeting notice and sometimes in Federal Register notice. If there is any request to us that they want to be a participant of the meeting, yes, we will make arrangements. We don't go out to solicit participation.

MEMBER FORD: Could I ask something, a little bit about the dynamics in the discussions. We, in this group, have often brought up questions. Aging management is in a continuous state of flux as new information becomes available.

And licensees, especially, from the conversations I've had with them, generally resist changes to, for instance, GALL because they say that the research is not mature enough or it doesn't relate to safety-significant aspects.

How much did you have to back off on your suggested changes because of licensee or other parties use of such an argument? It's too immature to put into such a guidance document. You understand the question?

MR. DOZIER: I think I do. And actually in this -- of course, as you said, there are some issues out there that may be a challenge. But realize that in this particular effort, what we were trying to do was learn from what we have already done.

If you look in our basis document, we're taking those elements that we have accepted in the past and basically placed them in these documents. And a lot of times, we've accepted them many times. So that we don't have to go through that same thing.

New issues, we still have the Interim Staff Guidance Program in place. And for those types of issues, they are still open.

MEMBER FORD: Let me give you a specific example.

MR. DOZIER: Sure.

MEMBER FORD: For instance, the Fatigue Code, ASME III Fatigue Code, which is in a continual state of flux. And there's at least three models or algorithms out there in Japan, from ANL, from ASME itself, which can give remarkably different values of the CUF values.

How do you, as you've done this new document, how have you taken into account that state of flux in the technical community?

MR. CHANG: This is Ken Chang. Let me address a little bit on that.

DR. KUO: By the way, Ken Chang is the Acting Second Chief for the Section B in the License Renewal Environmental Impacts Program.

MR. CHANG: In that fatigue area, the other teams have been suggesting that the applicant should look into the plant-specific problem area instead of generic NUREG/CR-6260 location.

And since the new fall report put that kind of requirement in there, we already have feedback from the applicants. And we already have communication during the workshop. So I can anticipate those kinds of communication is upcoming. And the open discussion is always for the improvement.

DR. KUO: Dr. Ford, this effort here, the revision, is basically to incorporate the lessons learned and that includes the past precedents that the positions that the staff has taken during the past reviews. And also incorporates some of the ISGs that we have already published and the Committee has reviewed. And also some still in draft that the Committee may not have seen it.

But we have prepared the draft and instead of publishing the SNIC, this is the perfect timing

that includes in this version of the document so that this version will be reviewed by the Committee later on before we finally publish it in September. And also it will be subject to CRGR's review.

Basically this final version, when we publish it on September 30th, will subject the whole treatment of management review.

MEMBER BONACA: Just a comment. As we go forth, you know, and I participated in part of the workshop on Wednesday, I noticed that the changes are two categories. One is really organizational changes of the documents. And we're interested but I think we are more interested in the substantial, substantive, technical changes that have taken place in the license renewal.

So, you know, my suggestion would be that you give emphasis on those rather than just the organizational portion, which is interesting because we want to know how to use them, but not as interesting as the technical changes made.

DR. KUO: And talking about the workshop last Wednesday, I failed to mention, and I was reminded by Dr. Sam Lee, that a group of county legislators surrounding the Indian Point plant actually attended the workshop, although very late.

Dr. Bonaca, you may not have seen them --

MEMBER BONACA: No, I wasn't here.

DR. KUO: -- but they came in at 4:00 p.m. And we were there waiting for them and they all came in. So partly this is an answer to Dr. Wallis's question is the public interested in this. They are. And they actually came all the way, drive for five and a half hours.

MEMBER BONACA: Okay. I mean that would be my encouragement to spend more time on the technical changes you made. And probably less on the organizational report. Just a comment as you go through your presentation.

CHAIRMAN WALLACE: I thought it was more than a comment. It was a piece of advice.

(Laughter.)

MEMBER BONACA: Well, I mean, there is some substantive thing that we use in our review. So there is an interest in the CRS, in understanding where there have been those changes, you know, because we use them in our review.

MR. CHANG: Throughout this presentation, if any technical areas that the ACS members like to hear but it is not covered, please raise. We will try to accommodate that as much as we can.

MEMBER FORD: Okay.

VICE CHAIRMAN SHACK: Just a point of clarification. How much of the ISGs have now -- you know, have all the ISGs been informally incorporated into GALL? Or are there still GALL and ISGs?

MR. DOZIER: There -- about -- there was probably about maybe a half of the ISGs that were addressed in GALL. But the current ISG Program continues.

MEMBER BONACA: Why would you have only about half of them? Not all of them? Is it just the timing or --

MR. DOZIER: Mark?

MR. LINTZ: Jerry? If I may. Mark Lintz. I deal with the ISGs. Jerry is correct. About half have been incorporated into the GALL document as you see it now. Others remain simply because they have not been resolved. Either staff is working through the issues and some of them are -- one of them is fatigue, as already mentioned, and there are other issues that do not lend themselves to quick and easy resolution between staff and industry.

So the ones that do remain are bigger issues. There's one that we're working -- we're coordinating with VIP on. There's another that we're

coordinating with the issue on CASS. We already mentioned fatigue. So some of these issues just will take more time.

MEMBER BONACA: So that is still being contested by the industry?

MR. LINTZ: Correct.

MEMBER BONACA: So although you do have guidance on what you expect, so the current licensees will meet those requirements, they are still being contested and evaluated.

MR. LINTZ: In addition, I would like to add sometimes there is no unity of opinion within staff, which, of course, delays any progress.

MR. DOZIER: With this slide, I do want to emphasize that we will have a public comment NUREG considering all of these comments from the workshop and from the public comment period that will specifically address all of those comments.

Schedule, I'll just roughly go through this. We put the documents the 31st. We had the draft basis document available on the 7th. We had the public workshop. And now we're in the public comment period.

We do continue -- on April 21st, we do continue to plan to have public meetings throughout

the remainder of this project. We'll provide the approved documents about the August time frame to be a month in advance. So the next ACRS meeting in September with the plan to publish these as final on September 30th.

VICE CHAIRMAN SHACK: You had a public comment NUREG before but I'm not sure that I can think of other licensing actions where we published public comment NUREGs. I mean it seems to me a good idea but is there a particular reason why it's done here?

MR. DOZIER: We want to make sure --

VICE CHAIRMAN SHACK: Or is it a just a decision that you make internally?

DR. KUO: Yes, this we consider our set of very importance guidance document. It's weighed like SRP because GALL really is the technical basis document for SRP. And we do publish for comments, say the standard review plan for the operating reactors, 0800. And for that we do publish for public comments.

MR. DOZIER: Okay. And we also keep our members of the public and everyone informed on one license renewal guidance update page. And that's what it looked like. Actually in that, you'll see all the meetings, meeting summaries, downloads of the information, et cetera.

With that, we'll get more into the meat of it with Kurt Cozens on the SRP.

MR. COZENS: Let's see, Jerry skipped a couple -- can you hear me on this?

Jerry skipped a couple of slides in the interest of satisfying your request. And I'll try to go through this fairly quickly because the standard review plan is largely an administrative document that talks about how to perform the reviews.

It was written initially based upon having a few reviews completed. And subsequently, there's been a lot of lessons learned and also some structural changes within the NRC that dictated some additional process changes be added to it.

The changes that have been implemented fit into basically three categories. The first one is to reflect any technical changes that had been incorporated into the GALL document itself that needed to be transferred over to the SRP, namely the further evaluation criteria, again, it's in GALL but it's also here. Also the table, the roll-up table summaries are the activities -- because of changes in the GALLs, the corresponding changes needed to be made.

The second significant area of change was the acknowledgment of the structural changes within

RLAP, the creation of RLAP B, which is a section that actually performs audits and reviews, that's part of the license renewal group.

Lastly, we had to address insights gained for the performance of the LAR reviews that have been performed to date. And so it's just a matter of processing explanation that maybe we wanted some additional clarification.

And I'm going to speak about these a little bit more.

Next slide. We have revised Section 30. Before, it was literally just a title. We've added some significant text here to highlight the division of reviews between those which are performed within RLAP B and those which are performed by others. This would be the safety review portions, not the scoping and screening.

We've also provided some background on what does it mean to perform these reviews. It wasn't really explicitly clear when you read the 2001 edition. And we chose to add some additional editorial text just to position the reader to understand what is happening in this document.

Then lastly we've, in this section, added clarification of some activities and commitments that

have been made in an October 26th letter to Dr. Bonaca concerning the need to assure that operating experience is considered for extended power uprates. And that was a paragraph that was added to denote that criteria and commitment that we had made back in October.

Next slide please. Section 3.1 through 3.6 of the SRP effectively do three things. They identify the areas of review, they identify the acceptance criteria, and they identify the review procedure. These have been enhanced over what was in the 2001 edition.

I will note that 3.1 through 3.6, which address the reactor coolant system, the Engineered Safety Features, the aux. system, the steam power conversion systems, and electrical systems all have the same nominal structures. And the changes to each sections were essentially the same type of changes.

Also we clarified how to perform aging management program reviews and how to perform AMR, aging management reviews, and what it means to perform the FSAR analysis that we perform as part of this. Those were changed to align with the audit process as we actually perform it because we've defined it a lot better now than we had before.

We discuss the exceptions and enhancements to the GALL Report that being that GALL is a voluntary document, it does discuss what staff has defined as one acceptable way of satisfying the tendency of our Part 54 rule but we have noted since the beginning of use of GALL that licensees do, indeed, take exceptions to some of the criteria that is in the GALL Report and also may need to perform enhancements to existing programs.

And that had been one of the confusions that had existed on some reviews where the licensee would be using the terminology of enhancements in a very broad perspective to mean everything they did beyond what they're doing today. But it may not be necessarily an enhancement or an action that was necessary to bring an existing program up to what GALL, the GALL criteria were.

So we wanted to make a distinction that if they had an existing program and they were taking some action before the period of extent of operation, they would now make that existing program consistent. We wanted to give that definition so we could focus on those activities to assure that we're consistent with GALL.

And lastly, we noted that in the document,

when they have taken exceptions, that those must be evaluated and documented in the SER and the basis for those exceptions documented. So now we've formalized that as a commitment. Although we had done that, it was never part of this RP before.

A large portion of these Sections 3.1 through 3.6 are the further evaluation criteria when GALL has identified a further evaluation that is necessary. Some action beyond that which actually is explicitly defined in the GALL Report, the application needs to define how do they perform that.

The standard review plan contains the criteria that have been defined for that. Now through our reviews in the updating of the GALL Report, some of those had changed. And those needed to be reflected here. And that update has been done.

As I mentioned earlier, there is a series of roll-up tables in the GALL Report. Those were revised to, again, reflect the changes in the GALL.

MEMBER BONACA: Just a question. On the previous slide, you talk about the -- it discusses the exceptions process.

MR. COZENS: Yes.

MEMBER BONACA: Okay. And I have to look at it to understand better what the guidance is there

but, you know, I noted that in some cases, for example in, you know, an issue we have raised a number of times, which is inaccessible concrete, there is guidance there.

If you have non-aggressive soil, the tendency is the one of allowing no inspection, essentially, during the period of extended operation unless one happens to dig somewhere and then there is some indication that they would look at it.

When you look at the plans with aggressive soil, then the guidance is that there should be periodic inspections.

But then the licensees always take the position that they will do, you know, opportunistic inspections and they happen anyway. But there is no requirement for them to do it on a periodic basis. And, in fact, if they end up not ever excavating for any reason over a 20-year period, they would never do an inspection either.

I mean so what does it mean in that case to have a requirement for a period inspection if there is no, you know, there is no substance to that?

MR. COZENS: In response to your question, I can give you part of the answer and part of it a parallel example. I'm not certain I know the explicit

answer here so I may let somebody else address that.

But GALL being a document that is equivalent basically to a Reg Guide demonstrates one acceptable way. A licensee does have permission to propose an alternate method. Those are, indeed, required to be evaluated and justified.

Now coming back to your specific activity on concrete, let me provide a parallel answer and maybe somebody else can answer the comment on concrete. In the buried piping and tank amp, we had some words in there that did permit an opportunistic inspection.

At a recent ACRS, this was discussed and a proposal was made that we assure that they perform an inspection of these buried pipings and tanks at least once every ten years.

MEMBER BONACA: That's right.

MR. COZENS: That has been added to the updated GALL and I'm not quite certain I recollect -- bear in mind it's this thick -- what happened with the buried concrete.

MEMBER BONACA: But nothing is --

MR. DOZIER: With the -- I know for the inaccessible and accessible areas of concrete, we did incorporate IS, Interim Staff Guidance 3. And we

clarified the accessible and inaccessible regions of the concrete a little better we felt.

DR. HULL: And this is Amy Hull speaking. To be more specific --

PARTICIPANT: Amy, you have to speak into the microphone.

DR. HULL: Okay.

DR. KUO: Your name please?

DR. HULL: Amy Hull, this is Amy Hull speaking.

The way that we've handled it for Chapter 2, for example, we defined what an aggressive environment is and we establish whether there is an aggressive environment. For inaccessible areas, we have written for the AMP and the AMR line items examination of representative samples of below-grade concrete and, as you point out, when excavated for any reason --

MEMBER BONACA: Yes.

DR. HULL: -- is to be performed if the below-grade environment is aggressive, defined as pH less than 5.5, chlorides greater than 500 ppm, or sulfates greater than 1,500 ppm. Now what we do, we specify that there will be periodic monitoring of the below-grade water chemistry, including consideration

of potential seasonal variations as an approach to demonstrate that this below-grade environment is aggressive or non-aggressive.

So you have the monitoring of the water to determine that the pH --

MEMBER BONACA: Yes.

DR. HULL: -- and chemical content. And then if it is aggressive, you have to go in. That's my understanding of what we have written.

MEMBER BONACA: Okay.

MR. CHANG: Dr. Bonaca, let me supplement this area. Since the draft GALL -- I mean the Rev. 1 GALL was published January 31st and we have some requirement there for the opportunistic excavation and also focused inspection, people look into that and the other teams has already created communication to those pilot plants and other plants. We're persuading them to say hey, why don't you include those kind of requirements in there?

If somewhere you have excavating in the last ten years -- in the first ten years into the extended period of operation or just prior to that, they you do not need to have a focused inspection. If not, we'll ask you to commit to do that.

And where to do it is those high-risk,

high-stress areas. And as an alternative, one applicant says we'll do this but we don't know whether we do enough. So we would do an engineering evaluation of what we have done to assure you that the coating and wrapping is safely protected and those components will serve the intended functions.

We have talked to at least three previously-reviewed plants. They all agreed to put those kind of statements in there. So the positive impact, you can see it already.

MEMBER BONACA: Okay.

MR. COZENS: Okay. The last slide I -- go ahead and push the button a couple of times because we get to use automated features. We've made some minor structural changes to the tables that are contained in the SRP to make them a little user-friendly.

Quite frankly, it was very difficult to find a particular line that you might have been talking about with anybody. And so we added something very simple, a number. So you can talk about line 32 if you wish to.

Probably more important, the GALL Report used to be able to be referenced going from the GALL Report to the SRP. It was very difficult to go from the SRP into the GALL Report. Another column has been

added to these tables that has some related links that permit you to now go from the SRP into the GALL so it's a better linkage. And we believe that will make it more user-friendly and easier to actually perform the reviews.

And that, indeed, concludes my prepared remarks. Are there any questions?

(No response.)

MR. COZENS: Thank you.

DR. HULL: Good morning. I'd like to point out that although my name is on this slide, I'm trying to represent the work of dozens of people at NRC, at Argonne, at Parallax.

P.T., thank you for your kind introduction. I want to point out I'm appreciative to my managers at Argonne and at NRC to have the opportunity to be here, to have this appointment in your group.

It's been exactly ten months today. I don't know if it is good or bad that you think I've been here for over a year.

DR. KUO: I'm sorry. I thought it was already a year.

DR. HULL: No.

(Laughter.)

DR. HULL: Okay. Let me go on.

All right. I'm going to try to get into some of the nitty-gritty of what's going on.

As you've noticed, we've made modifications, additions, and deletions to the AMPs. We've written three new AMPs that are currently included. There are others that will be coming online soon through the ISG process.

We've included E.4, the AMP for bus ducts, E.5, AMP for fuse holders, and E.6, electrical cable connections not subjects to 10 CFR 50.49, environmental qualifications requirements.

Two of the AMPs have been deleted. These are M.11 for nickel alloy nozzles and penetrations and M.16 for PWR vessel internals. I'll talk about them a little bit later.

One of the things that we have been trying to do is to make GALL, the AMR line items, less prescriptive as you mentioned. And so we're trying to standardize them without compromising safety.

Another thing that we're doing is trying to ensure that each line item in GALL '01 is traceable to the update so nothing has been lost. And --

MEMBER FORD: Amy, could I interrupt please?

DR. HULL: Yes, go ahead any time.

MEMBER FORD: How do you quantify, standardize without compromising safety? How is that quantified?

DR. HULL: Yes, it's a rather nebulous term isn't it?

What we've tried to do is keep the same amount of content or improve content from what we had before but to have it more consistent between chapters, between the different mechanical systems. There was some variation before between engineered safety features of steam power conversion systems or the RCS or the aux. systems where you might not necessarily expect them.

So we are looking at it in such a way now that it will be more clear, more general, less prescriptive to the licensee so that, you know, they can take what they need from GALL. We have the foundation of the 30 SERs that have been written in response to the licenses that have been done. And we've gone in and looked at them and compared the precedents and seen which, you know, are rigorously defendable and tried to incorporate them.

I don't know if that answers your question. This statement is pretty nebulous, I agree.

MEMBER FORD: I'm trying to understand. I can understand why you want to standardize. But without compromising safety, do you mean you are not -- I'm pretty sure you're not talking about if it fails and what's the impact on CDF, for instance. That's not --

DR. KUO: Dr. Ford, I think the more precise statement should be without changing the intent of the original GALL Report.

DR. HULL: Yes.

DR. KUO: See we had a program there in Revision 0. Now we are making changes. And we want to make sure the changes doesn't impact on the intent of the original report.

MEMBER FORD: And the intent of the original report was not to compromise the GTCs presumably.

DR. HULL: Yes.

MEMBER FORD: Not changes in CDF. Is that right? I'm just trying to understand that statement.

MEMBER BONACA: Well, regarding the prescriptiveness, you know, I notice that on the fire protection, for example, we noted that there were instructions in GALL that, you know, you will test your doors every two months.

MEMBER FORD: Right.

MEMBER BONACA: And you will do tests of the nozzles every year or six months or whatever, okay? And every licensee too exception with it because they felt that the program they had was adequate and maybe they were testing them every 12 months. And there was a history of success, you know, with their testing frequency.

So what they've done, they have really eliminated all of this viability. They essentially said they should have a periodic program of testing. And then give some guidance on the range.

Okay, so --

MEMBER FORD: And leave it up to the licensee to meet the argument that they are not compromising engineering judgment of safety?

MEMBER BONACA: And on the basis of experience. Again, 20 years of experience or thereabouts --

MEMBER FORD: Right, okay.

MEMBER BONACA: -- where you are testing a door, you know, at that frequency and you find that you have not problem, I mean why should you now test it ten times more? I mean it just -- you know, so that's --

MEMBER FORD: Okay.

MEMBER BONACA: -- what I thought was an advantage because there would be so many less RAIs --

MEMBER FORD: Yes.

MEMBER BONACA: -- and also so many less exception. Every time there is an exception, they have to review it and they have to disposition it. So now I'm not sure that all of these changes are that way. But I think from what I've seen, that's --

MEMBER FORD: Okay.

DR. HULL: Al?

MR. BAIONE: My name is Al Baione. And I work with Parallax and I've worked with this team in the development of the update.

When you look at what Amy is trying to convey in this item, the aging management review line item changes, the overall process was an attempt to not make technical changes without specific intent. And here there was non-standard repetition of the same technical content throughout different chapters. And the basic language to identify the line item was standardized so that it could be more consistently applied when appropriate.

The key thing is that every line item in old GALL can be traced into new GALL. When technical

changes were made in converting old to new, there is a technical basis document that we'll talk about which incorporates explicit justification for that change.

And the compromising safety I think was an attempt to say we made standardization but didn't change technical content unless explicitly identified.

MEMBER BONACA: Yes, and by the way, the technical basis document is very useful. I think it was quite clear and the organization or the document also is very helpful.

DR. HULL: We tried to make it reflect Volume Two of GALL.

MEMBER BONACA: Yes.

DR. HULL: It's very deep. You have to get into the tables. It's not very well explained in text form but all the information is there within the tables.

MEMBER BONACA: And it is clearer than it used to be.

DR. HULL: Thank you.

All right. Our primary focus has been on approved precedents interim staff guidance as discussed earlier and lessons learned from the review of many SERs. Argonne and also ISL were involved with reviewing a number -- rigorously reviewing a number of

the SERs on the basis of license renewal.

And we have lessons learned quoted in the basis document, for example, that include ANL-1, Dresden Quad Cities, Ft. Calhoun, Ginna, North Anna Surry, Robinson St. Lucie, VC Summers, as well as others. Our revision is based on hundreds of comments prior to the 131.05 draft of GALL. These are captured electronically in various databases that we have.

I mentioned that we have done some work looking at 10 CFR 54.4(a)(2), systems, directories, and components. And I'll talk about that a little bit later as will Mark Lintz in his presentation.

In another slide, I will talk about what we refer to sometimes as the null set, the common miscellaneous material environment combinations that would not be anticipated in the context of the AMR line item specifications to cause problems with degradation. And so consequently there is no AMP or no further evaluation listed for them.

In GALL 2001, we had sections for carbon steel components in Chapters 5, Engineered Safety Features, in Chapter 7 for Aux. Systems, Chapter 8 for Steam and Power Conversion Systems. These sections have been replaced by sections now addressing the external surfaces of components and miscellaneous

bolting.

As you know, there have been revisions in all sections of NUREG-1801, mechanical, structural, electrical. We had an empty Chapter 9 in 2001. That has now been used to define some of what we call the MEAP, the MEAP, Materials Environment Aging Effects Programs Parameters.

And we've also made some revisions to the Time Limited Aging Analysis and the Aging Management Programs.

The configuration, much of it looks the same. Some looks different. In the first column, we have identifiers that are a little bit different than previously. So the first one, the VD2-13 is the 13th item in Chapter 5 for Engineered Safety Features in Section D2 for the BWR emergency core cooling system.

Underneath that, the E29, I find it's more useful because it refers to the 29th unique AMR line item in the Engineered Safety Features section. And when all of these are listed as we have in our GALL master, which is on the Web also, there about 646 distinctive AMR line items, significantly decreased from 2001.

Since some of them are repeated in different chapters, if you boil it down, it comes to

less than 500 we think because of the repetition.

Okay, when present as in the two last AMR line items here, EP-36 and EP-27, the second letter P identifies that there is a new MEAP combination based on the precedent. This is technical justification from the ISG analysis of comments received during the past four years or staff judgment.

The second column where it says link is important because that will either go back to the original GALL 2001 or it will go back to the basis document, for example, for EP-27 or EP-36.

And that's all that's really important to talk about here. I won't give you a tutorial about the other columns.

Okay, so I pointed out the link. And that we have new GALL AMR line items added with the nomenclature of the P for precedent following the designator for the given system.

One of the things that we have done is we have looked at the materials and the way we've handled materials. In 2001, it was more specified. And we tried to group together metals and materials as appropriate. Here we've created a new line item to address the selective leaching of copper alloy that occurs with over 15 percent zinc.

And as can be seen in the excerpt from the basis document at the bottom of this page, this new line item is used in all four of the mechanical systems chapters, in the aux., AP, EP, engineered safety features, RP, reactor coolant systems, and SP, steam and power conversion systems.

Another thing that we have done, and I'll talk about it a little bit more, rather than spelling out the detailed piping subsystems or piping elements, we've been less prescriptive and we have defined them as being piping, piping components, and piping elements. As has been pointed out in GALL 2001 and GALL 2005, GALL is not meant to be a scoping and screening document.

And I'm going to go on. I don't think I need to go into detail about the justification about copper and its alloys as metals resistant to -- with less than 15 percent, the resistence to stress corrosion, cracking, selective leaching, and pitting. And when it's over 15 percent, it's the opposite.

VICE CHAIRMAN SHACK: Just -- before you leave that Amy --

DR. HULL: Yes?

VICE CHAIRMAN SHACK: -- this really means that I'm going to see this identical line in EP-27,

RP-12, SP-29?

DR. HULL: Yes.

VICE CHAIRMAN SHACK: And it will always be linked back to this entry for the same justification for it? So there's a standardized treatment in all these systems --

DR. HULL: Yes.

VICE CHAIRMAN SHACK: -- for this particular problem?

DR. HULL: Yes.

VICE CHAIRMAN SHACK: Okay.

DR. HULL: And the basis document is a little bit farther behind in its evolution compared -- because it's a brand new document, it's about 400 pages. And so some of the precedents and the technical basis and the technical justifications that you see in the basis document will be made more rigorous by its release at the end of September.

This is particularly true where we define the changes to the AMPs. And I'll talk about that more later. I give an illustration of what I consider is a fairly good technical justification for an AMP change. Some of the others, we're not quite there yet.

Okay. The 10 CFR 54.4(a)(2) criteria,

okay. For the purposes of this presentation today, we corrected a slight typo we had in the excerpt from Chapter 7. In Chapter 7, Part K, we actually say non-safety-related category A2 systems. It's really system structures and components. And that's something that will be changed during the public comment period.

But to go on, this section in the aux. system and these changes are under consideration. As mentioned earlier, Mark Lintz will talk more about the Draft Guide 1140 and the NRC exceptions to the proposed alternative to the scoping of non-safety-related piping and supports as specified in parts of Sections 4 and 5 in Appendix F of NEI 95-10 Industry Guide on the revised 54.4(a)(2) scoping criteria and non-safety effecting safety.

But in this slide, what I'm showing you are two different examples on the way that we provide reference to Category A2. One of the aux. system where we seven different AMR line items in this section at this point.

And there is an approved precedent that exists for adding this on the basis of the evaluation we have done of one or more of the SERs reviewing the LRAs from licensees. In this case, we're using a

Plant-Specific Aging Management Program, evaluating that to provide reasonable assurance the component's intended functions will be maintained within the CLB for the period of extended operation.

The second is taken from the basis document description of Chapter 4 where we talk about steam dryers. And I'll talk more about that in the next slide.

Okay, this, you know, is a truism. Operating conditions effect the integrity of the system structures and components. So consequently, if you're going to have plants that are subjected to extended power uprates, you're going to change the operating conditions. And you might anticipate a possibility of a change in the kinetics of degradation of some of the materials.

In this particular situation, we've created a new line item for steam dryers that in the reactor coolant environment that are subjected to flow-induced vibration and might have an aging effect of cracking. For what we're doing here, we've used -- we have written in a Plant-Specific Aging Management Program is to be evaluated.

Okay. Any questions on this?

(No response.)

DR. HULL: I'll go on then.

Another thing that we have done is we have had many working groups analyzing the way that bolting has been used in different chapters, different systems in GALL 2001, both closure bolting, external bolting, bolting in Chapter 4, just analysis of bolting in general.

Here we're addressing in Chapter 8 the steam and power conversion system the external surfaces of components and miscellaneous bolting. For Chapter 8, for Chapter 5, for Chapter 7, we have created this additional section to the main chapter. We've not done this for Chapter 4. It remains intrinsic to the chapter the reactor coolant systems, the bolting.

Now the thing to point out here is that this section includes the AMPs for the degradation for external surfaces of all steel structures and components, including the closure bolting in the SPC, steam and power conversion system in both PWRs and BWRs.

And for the steel components in PWRs, this section addresses only boric acid corrosion of external surfaces as the result of the dripping borated water leaking from adjacent PWR components.

Here is an example of where an item in GALL 2001, which is an excerpt from the bottom table in the section for the PWR Containment Spray System in the Engineered Safety Features has been revised to split out the different types of materials so it results in the GALL 2005 in two different line items, one for steel, another one for stainless steel, because the behavior is different in the context of this situation.

The other thing you can see that we've done here is for the structure and our components, we've made it less prescriptive. And we, you know, more talk about heat exchanger components or heat exchanger shell-side components including tubes.

And what this allows us to do is to use E-17 and E-19 repeatedly in the Engineered Safety Features chapter. So E-17 and E-19 are used many times instead of A6-C being used one time in GALL 2001.

Okay. And the other thing to point out is the environment is handled differently now. Instead of spelling out chemically-treated borated water, dah, dah, dah, dah, dah, we refer to closed cycle cooling water. And we define closed cycle cooling water in Chapter 9 of GALL Volume Two as being treated water

subject to the Closed Cycle Cooling Water Chemistry Program.

And then we list different examples of how it was alternatively treated in, you know, GALL Volume One, trying to have more consistency from section to section, from chapter to chapter. And if anybody has any questions about what exactly is meant by that, we've defined it in Chapter 9. And we've gone into more detail in the basis document.

One thing that is new here is what we have called common miscellaneous material environment combinations, sometimes referred to as the null set. And we've tried to define conditions in which we think the material environment combinations will be benign. So we've specified these.

Now this particular section includes the AMPs for miscellaneous material environment combinations which may be found to be engineered, ESP system structures and components.

And for these material environment combinations, we feel there are no aging effects which are expected to degrade the ability of a structure or component from performing its intended function for the extended period of operation and, therefore, no resulting AMPs for these structures and components are

required. So there's no aging effect, no AMP, no further evaluation.

Some of the terminology is nebulous. Gas, for example, That's defined in Chapter 9. But what we have here is we define that as internal gas environments from air, both at atmospheric pressure and ventilation systems and compressed air used as a working fluid, e.g., instrument air, or nitrogen, carbon dioxide, freon, and halon.

This category assumes absence of corrosive species such as chlorine. And that's specified in Chapter 9 and the basis document.

With air, indoor, uncontrolled, that's defined for external surfaces of the piping, piping components, and piping elements as in EP-10, the first line. That's indoor air and systems with temperatures higher than the dew point. Condensation can occur but only rarely. Equipment surfaces are normally dry.

Lubricating oil is spelled out. There is no water pooling. And we feel that piping, piping components, and piping elements, whether copper, stainless steel, or steel, when exposed to lubricating oil that does not have water pooling, will not be subject to aging degradation because we do not believe there are relevant again mechanisms.

And so that's that. And again, it's very general, the structure or component defined as piping, piping components, and piping elements.

GALL 2005 created a new section, Chapter 9, for the materials environments aging effects and selective components as relevant to different Aging Management Programs, the MEAP. So we've standardized terms used for the MEA parameters to make the ARM line items more generic and less prescriptive.

And as mentioned earlier, we're retraining traceability to GALL '01 because a lot of people are familiar with what is in GALL, where it is in GALL. And they're going to want to know where it is in the GALL '05. And we're keeping that linked.

And we're trying to increase the universality, the applicability of the guidance without compromising re-licensing, rigor, or safety.

So I'll give an example of some of the tables and the chapters. We defined more clearly some of the electrical terminology that was obscure to us and that we had many discussions about bus duct.

And piping, piping components, and piping elements I mentioned earlier that is is a catch-all category. And this category includes various features that are within the scope of license renewal. And so

we say examples include piping, fittings, tubing, flow elements, indicators, demineralizer nozzles, orifices, flex hoses, pump casing and bowl safe ends, sight glasses, spray heads, strainers, thermowells, and valve body and bonnet.

Okay. And as I pointed out earlier, the GALL Report does not address scoping of structures and components for license renewal. Scoping is plant specific and the results depend upon the plant design and current licensing basis.

The inclusion of a certain structure or component in the GALL Report does not mean that this particular structure or component is within the scope of licence renewal for all plants. Conversely, the omission of a certain structure or component in the GALL Report does not mean that this particular structure or component is not within the scope of license renewal for any of the plants.

That probably sounds like motherhood. But sometimes we get asked questions why isn't X in there? Why isn't Y in there? So this type of wording was in GALL 2001. It's in 2005. It's in the basis document as well.

Okay. A complete listing of all of the structures, the system structures and components terms

are in the basis document appendices and I'll mention that more a little bit later.

So now the basis document. This is a team effort with input from Argonne people in Chicago, outside of Chicago, Parallax, and NRC. And it provides technical justification for both the revised and new AMR line items.

You know since I was very actively involved with that, I have to say it's still under development. It is a brand new document. And it contains 394 pages clarifying and explaining the relationship between GALL '01, GALL '05, and the SRPLR.

We tried to keep a similar format as that of GALL Volume Two document and it has a great wealth of information.

The listing, location, and frequency of the parameters, MEAP parameters used in the AMR tables as well as definitions of the selective terminology with the corresponding term used in GALL '01 is found in Appendix A.

A section exists for structures and their components in Appendix A-1, for materials in Appendix A-2, for environments in Appendix A-3, for aging effects and aging mechanics in Appendix A-4.

Something that I personally find very useful is Appendix A-5, which has the listing, location, and frequency of the AMP usage in the AMR tables.

Appendix A-6 is a summary of the different combinations of the MEAP combinations and it cross references the SRP -- Standard Review Plan for License Renewal identify number as well as the location of the AMR table and the item ID.

Appendix B provides 114 pages of system-specific audit tools cross referencing the SRP for License Renewal section and ID, the reactor type, and AMR table parameters.

All right. We have made revisions to both the TLAAs as well as the AMPs. Now the way that we have it, although we cite 6260, which is the report done by Ware, Morton, and Nitzel, at Idaho, referencing the work of Muscara, Chopra, and Shack at Argonne on interim fatigue design proof for carbon alloy in austenitic stainless steel in LWR environments, actually the revision to the TLA goes a little bit -- it goes beyond 6260, which gives some examples.

So as I mentioned earlier, some of the write up for the TLAAs and the AMPs will be

strengthened and expanded. This is one.

The program description and monitoring and trending revision shows that the scope of the critical components goes beyond those listed in NUREG/CR-6260.

Okay. There were no changes made to the TLA for concrete containment tend and pre-stress. There was a minor change made to the TLA for EQ of electrical components.

This is an example of a description of a change in the basis document for an AMP revision that is the level and kind of detail we plan to have for each revised AMP in this section.

As was mentioned before, there is a question about what ISGs have been incorporated. E-4 was based on ISG-17. The AMP M-35, which will be finished I guess next week -- you said the ISG would be written and finished next week -- the ISG-12, one-time inspection of small bore piping. will feed into the AMP M-35.

Mark Lintz is NRC's coordinator for the ISG process as it relates to license renewal and the update guidance documents. He can provide more information.

VICE CHAIRMAN SHACK: Is there a specific link to the ISG? I can't see one here?

DR. HULL: Would that be useful if we had that link? Probably it would be useful to have in the basis document also.

VICE CHAIRMAN SHACK: I think it would be because, again, many people -- or many of the LRAs, you know, include references --

DR. HULL: Okay.

VICE CHAIRMAN SHACK: -- to the --

DR. HULL: It will be there.

VICE CHAIRMAN SHACK: -- ISGs.

DR. HULL: Okay. As mentioned, nickel alloys and penetrations, M-11, has been deleted. And that has been replaced in the AMR line items by reference to M-1, ASME Section 11, In-Service Inspection, Subsections IW-B, IW-C, and IW-D for Class One Components as well as Chapter 11, M-2, Water Chemistry for PWR Primary Water in EPRI TR-105714.

And for Alloy 600, we specified that commitment should be provided in the FSAR supplement to implement applicable orders staff-accepted industry guidelines. And we're working to clarify the wording to the substitute to M-11 if it's found that it needs to be more clear.

M-16, for the PWR Vessel Internals has been deleted but the placeholder remains. And here

also we have a commitment -- a replacement in the AMR line items, a commitment to apply industry programs to be developed in the future for proper management of the reactor internals.

VICE CHAIRMAN SHACK: Wait. You said that one real fast here.

DR. HULL: All right.

VICE CHAIRMAN SHACK: And I think that was a biggie. This is the PWR internals, the IASCC sort of thing --

DR. HULL: Yes.

VICE CHAIRMAN SHACK: -- which everybody is committing to some program to be developed in the future?

DR. HULL: Barry Elliot and I want to talk about this.

MR. ELLIOT: Barry at the Division of Engineering Staff.

VICE CHAIRMAN SHACK: Yes.

MR. ELLIOT: We originally had a program, PWR Internals Program, which specified things you could do for a program. And what we -- as the reviews continued, we found that nobody wanted to really do the program now. They wanted to rely on the MRP Program. And develop from that their own program.

So in lieu of asking every licensee to develop their own program, we just said that everybody should develop a program from the MRP. But that it had to be submitted to us, to the staff for review and approval, two years before entering the license renewal period.

This would give us time to review whatever program came out of the MRP on a plant-specific basis.

VICE CHAIRMAN SHACK: Okay. Do you actually have some notion when you're going to have some sort of generic? I assume what you'll do some sort of generic program based on the MRP. And then the plants will show that it is applicable to them. Do you have any idea when that's going to happen?

MR. ELLIOT: I don't have an idea right now. But --

VICE CHAIRMAN SHACK: Two years before license renewal?

MR. ELLIOT: Well, no. I will say this. This is also a power uprate question, too. And so in their case, they have committed -- some plants have committed to do it for the power uprate within the next five years. So that means they would have to have some kind of MRP topical done within four years or three years.

So that's -- I'm not privy to what goes on inside the, you know, the --

VICE CHAIRMAN SHACK: But that's when you're expecting some sort of --

MR. ELLIOT: That's when I'm expecting things. We haven't gotten that from license renewal. I've gotten that from the power uprate.

MEMBER BONACA: I had a question. There is some change, you know, some recent changes which have been incorporated now in this update. For example, the requirement that the re-piping, if it doesn't get an inspection for opportunistic reasons in the first ten years of the license, then it has to be inspected, you know, in some susceptible location.

How applicable is this requirement that is now in GALL to plants we are reviewing right now. For example Farley?

MR. COZENS: If I might address that. We have spoken to those applicants that have an active review going on right now.

MEMBER BONACA: Yes.

MR. COZENS: And it's my understanding that all of them have agreed to perform that activity at least once every ten year.

MEMBER BONACA: Okay.

MR. COZENS: If it hasn't happened opportunistically, go dig one up.

MEMBER BONACA: And now will it be applicable also to plants we have already approved before and they haven't gone yet into license renewal but we do have a means of --

DR. KUO: Well, we -- that goes to actually a legal question that we discussed on Wednesday in this workshop. This particular provision in the rule is 54, 10 CFR Part 54(37)(b). That provision basically says that the licensee with the renewed license is responsible for doing the annual update.

And in this annual update, if they have identified any new components, systems, and structures that needed to be in the license renewal, then they need to bring those components in the annual update for the FSAR supplement. That's their responsibility.

MEMBER BONACA: So there is a way also to include those.

DR. KUO: Yes.

MEMBER BONACA: Thank you.

MR. CHANG: Since Dr. Bonaca asked about, you know, Farley, let me say a little bit about Farley. In a related issue like some reduction of

pressure toughness in the CASS piping, the audit teams goes there and find out that the applicant was not committing to something recommended by the GALL, we ask them to justify your recommendation and what you intended to do, how is that in line with the GALL?

Although we don't know what the final resolution is, we made them change their program to commit to something, an MRP or something that will be developed in the future. They agreed to do that.

And for the audit team for where we are today, we don't know the resolution. So that's the best we can do, make them commit to something recommended by the MRP and they will implement that.

DR. HULL: And I'd like to expand just a little bit further because one of your questions at the beginning was to discuss buried piping.

MEMBER BONACA: Yes.

DR. HULL: One of the things that have been changed in the AMP was the way that we had written about the detection of aging effects. And we've re-looked at that and we are including, again putting back in the line that inspections are to be performed in areas with the highest likelihood of corrosion problems and areas with a history of corrosion problems. We're also putting back in the

periodic inspections of susceptible locations.

And you asked about the opportunistic situation. What we say at the end is it is anticipated that one or more opportunistic inspections will occur within a ten-year period. And then we say implicitly, however within ten years of entering the period of extended operation, the licensee is to perform at least one inspection, which may be an opportunistic inspection.

So if there is not one that is opportunistic, they still have to do it.

Okay, I'm going to summarize my presentation now. As I've talked about, the changes to the GALL Report and the Standard Review Plan for License Renewal fall into general categories.

And, you know, perhaps this is too much on format or administrative and not so much on technical rigor but this is how I wrote the presentation. You can ask questions subsequently because we have everything we need in the computers.

We standardized and made less descriptive the MEAP, the Materials Environment Aging Effects Program parameters. We have looked at and incorporated the NRC-approved positions that were previously approved through other mechanisms in other

documents such as the ISG, Interim Standard Guidance process, such as lessons learned from the review of the many license renewal applications and the writing of many Safety Evaluation Reports, through the rigor analyses that have been done by contractors such as Argonne, and these are called lessons learned.

Another thing that has been done, and Jerry was in charge of this, he had been in Operating Experience Group, is working with Argonne and others to look at both domestic and international operating experience quite rigorously. And he also worked with Research on this.

Another thing that we've tried to do are the technical clarifications and corrections and administrative changes, catching any spelling errors and typo mistakes in GALL 2001 and just made it better, typical editorial corrections.

And as Kurt pointed out, we've made clarifications to the audit and review process, which also is reflected in Volume One of the GALL documents.

We've been working on this project now since the middle of last May and there have been many positive notes to this sometimes rather grueling work. There has been active interdepartmental involvement and decision making.

Because of the teamwork here between the NRC and contractors, we were able to place a preliminary product on the Web by the end of September, the pre-NRC concurrence revision of the SRP, the basis document, GALL Volumes One and Two on the Web by the end of December. So September, December. And also all the license renewal guidance documents on the Web by the end of January for the public comment period.

People are reading and commenting and improving on what we put out there. It is truly an iterative process built upon a lot of good teamwork. I feel honored and privileged to be able to be a part of it.

Thank you.

MEMBER BONACA: Thank you.

While I must say that it, you know, it's grueling work but it certainly is an extremely valuable document for the plants. I mean I understand there are hundreds of reports that have been collapsed into this document.

DR. HULL: Yes.

MEMBER BONACA: And there is an organized source of information accessible to all the operators about environments, materials, et cetera, that, you

know, is useful irrespective of license renewal. So that's a -- I am impressed by the work that you did.

MR. CHANG: I'd like to take this opportunity to compliment the contractor that Amy came from, Argonne National Lab. In the last couple of the ASME Code Committee, the Fatigue Strength Group, which handled environmental impact on fatigue, they are trying to develop fatigue curves to cover for the environmental effects.

But they have a phrase there at the opening. They say this is for future plants, for new plants, for the plants in design. As for the license renewal part, they have developed FEM factors. And those FEM factors are working and successfully applied to license renewal process. We are not trying to rock the boat.

That's -- I'm sitting there listening to the Chairman saying. I feel very honored to be part of that organization. And I want to thank Argonne for doing that.

MEMBER FORD: But if I could just ask a question? This FEM values that are used are being proposed for, in fact, an environment on the ASME III Code. As I said earlier on, there's at least three approaches, the ASME approach being extremely

conservative, i.e., short, number of cycles to initiation, which makes it almost impossible to operate some components during license renewal space.

The way I heard you talk, you say you don't want to rock the boat. What do you mean by that?

MR. CHANG: No, excuse me, I do not mean I will rock the boat. The ASME Fatigue Strength Group that says that says these curves, we are arguing, debating, massaging --

MEMBER FORD: Yes.

MR. CHANG: -- it's going to apply to the new plants. For license renewal process, the FEM factors are continued to be used. And Argonne even did a reasoned comparison of the three organizations who did work in the FEM. That's Argonne National Lab, PBRC, and Japanese. I think Bill, you are one of the authors named on there.

And they show, that's three organizations come up with almost identical equations except in one case, the curve shifted by a constant. But that doesn't mean anything.

PARTICIPANT: The bottom line of what Ken is saying is that in license renewal, we are not going to change our position.

MR. CHANG: They recognize our position. And they agree with our position. The reason they agree with our position of less super conservative as compared to the ASME is we have solid data to back it up.

MEMBER FORD: Can I change the subject a wee bit since maybe this is the last time I can bring this one up?

You were talking about the synergisms between -- and I'm looking at you, Amy, but I don't mean -- this is not a question to you -- about the synergisms between license renewal and power uprate. But there are other changes taking place.

And I'm thinking specifically in this concern of mine of the sump blockage problem where it has been proposed that you will remove CalSil from piping. And maybe some people will do that, you know, without direction from the NRC.

However if they do that, and that CalSil is over a stainless steel piping, a welded stainless steel piping exposed to the environment, it's quite possible that you can get condensation at lower temperatures. And you could get cracking.

Now CalSil happens to inhibit that cracking. If you remove the CalSil because of trying

to mitigate the sump blockage system, you may reintroduce the cracking, the transthermal cracking of the stainless steel.

Where in the decision space that we're discussing in here between licensing renewal, power uprate, sump blockage mitigation --

DR. KUO: Dr. Ford?

MEMBER FORD: -- does that fit? Yes?

DR. KUO: The decision space would be relying on the original engineering in terms of operating reactor operation. This is an operating issue and --

MEMBER FORD: So what happens if a plant comes to you -- and I don't mean to interrupt, I apologize.

DR. KUO: Sure.

MEMBER FORD: If a plant comes to you for a license renewal uprate and they proudly say, "And we have removed CalSil from our piping," will that action be automatically open for discussion by your group?

DR. KUO: We would discuss the issue. But we might not at the point have a resolution. So we will rely on the resolution, generic resolution, for that issue from the operating reactor operation space. Just like every emerging issue.

MEMBER FORD: Yes.

DR. KUO: Basically what we were going to do is to ask the license renewal applicant to make a commitment.

MEMBER FORD: Yes, I guess I'm just being a wee bit impatient here because there's a Reg Guide 1.32, which addresses this whole situation. And I'm just concerned that by pushing it off to another organization, that's Division of Engineering's responsibility, that somehow or another, this slips between the cracks. That's why I bring it up. Well, between -- yes, between proverbial cracks.

DR. KUO: Dr. Ford, it's not that we're pushing this thing to another organization. There is an organization of structure here that these are issues that belong to the operating reactor space. And we are just too small an organization by the license renewal itself, we don't have that resources, that expertise to resolve this kind of issue.

So we will have to rely on their resources, their expertise to resolve that issue.

MEMBER FORD: No, I understand that resource problem. It's just you do know about the issue and you will ask the Department of Engineering or the Division of Engineering. Okay.

DR. HULL: Okay. Do you want me to do this for you?

MR. LINTZ: Yes, please.

DR. HULL: Okay.

MR. LINTZ: I'm Mark Lintz and I will discuss an overview of Draft Guide 1140.

Draft Guide 1140 is the standard format and content for applications to renew nuclear power plant operating licenses. As noted, the corresponding Reg Guide is 1.188. This draft guide endorses, with exceptions, Industry License Renewal Document NEI 95-10, Revision 5.

NEI 95-10 is the industry guidelines for implementing the requirements of 10 CFR Part 54, the License Renewal Rule. It is the primary product of the Nuclear Energy Institute. Staff has provided numerous comments to NEI over the past several years on this document.

The purpose of these guidelines is to provide industry with a uniform and efficient process to obtain a renewed operating license.

It provides guidelines for identifying the systems, structures, and components within the scope of 10 CFR Part 54 and their functions that are subject to aging management review. And to assure the

maintenance of aging effects.

Changes to NEI 95-10, the current revision. There have been many minor changes and updates, the typical typos and so on but these are the primary changes that have been made.

The first one is a standardized format. And I heard already from Dr. Bonaca that this is really not very interesting. But it's one of those that greatly aids us down at the worker bee level. It reduces the complexity of the overall document, provides greater organization, and it helps the review process.

Scoping process, it adds such requirements for the applicant to provide drawings, identify functions, and list components that are within the scope.

TLAAs, it adds numerous plant-specific TLAAs.

Among the changes to NEI 95-10 were two to which staff took exception.

VICE CHAIRMAN SHACK: Now this is the change from Revision 4 to 5?

MR. LINTZ: Correct.

The first exception is an NEI-proposed alternative to the scoping of non-safety-related

piping and supports. And I should add that this is that small subset that is in direct connection to safety-related piping.

And before I can really explain the exception, let me go back one step and explain what is within the scope.

DR. HULL: You want me to go back?

MR. LINTZ: No, no, no, no. You stay there.

(Laughter.)

MR. LINTZ: The items that are subject to the License Renewal Rule are primarily safety-related systems, structures, and components. Non-safety-related systems, structures, and components are included to the extent that they are connected to or, in particular, have an effect on the safety-related portion.

All plants have long been required to identify and have seismic anchors or equivalent anchors that will extend into this non-safety-related portion. Traditionally, that has been the end of these scope to be addressed. NEI 95-10 makes provision for these seismic anchors and the equivalent anchors.

And it also makes provision for an

alternative in the event that either one of these two cannot be readily identified. And the reason this is so is that the original piping analysis may have been done 20, 30, 40 years ago. And at that point, they did it, they met the requirement, and put it in a safe place. But that exact location was not identified on any drawing or any other document.

So while the original requirement was met, there's no quick and easy way for the utility to go back and say this is where this particular seismic or equivalent anchor is. And thus to provide a quick identification of the extent of the scope for license renewal purposes.

The particular exception that we found is that there is an additional alternative to those provided in NEI 95-10. It extends the boundary not to an identified support but to connections. A flexible connection, a base-mounted component, even a safety-related component, or into the ground just to name a few examples.

There's no technical basis for any of these identified within the document. And they're using plant-specific information that will certainly change from one plant to another.

This alternative adds inappropriate

criteria. The staff doubted the applicability to these identified connections.

And what it does is it complicates the application as opposed to providing a quick and easy way of identifying the scope. The staff thought that it would require a complete technical justification, perhaps even a detailed piping stress analysis that would justify that location. And, of course, that would add a commensurate burden to the staff in performing its review. So that is one exception.

A second exception is a proposed exposure duration criteria. This involves allowing short-term exposure --

CHAIRMAN WALLACE: Excuse me.

MR. LINTZ: Excuse me.

CHAIRMAN WALLACE: Throughout this discussion and throughout the tables that have been presented, criteria is used as the singular and criteria is the plural form of criterion?

MR. LINTZ: That is how I'm using yes.

CHAIRMAN WALLACE: Amy said she was going to fix up the --

DR. HULL: Yes.

CHAIRMAN WALLACE: -- that sort of a thing? I'm sorry. But since this occurred again, I

had to bring it to your attention. I was going to leave it but --

DR. HULL: Thanks.

MR. LINTZ: In my case, this is criteria.

CHAIRMAN WALLACE: It's many, it's plural?

MR. LINTZ: Correct.

CHAIRMAN WALLACE: Okay. Because in the tables Amy had, it's used -- it's singular.

MR. LINTZ: We will find that problem.

What this exposure duration does is it allows short-term exposure to spray or leakage to determine a need for aging management. And there are many other factors involved, the amount or type of spray.

But the first thing the staff noticed was that this was not in accordance with the regulation, which requires that the effects of aging on the intended functions will be adequately managed. This is basically being used as a screening criteria.

And further it allows failure of another component as a precursor for aging management. So this is a second exception that the staff took to this document.

NEI has been informed of these two exceptions and they are addressing them during the

current public comment period.

Thank you.

DR. KUO: And, Dr. Wallis, this concludes our presentation on the guidance document part. And let's see, based on what I heard, we will have two take home actions. One is whether we can link the description to ISG or not in GALL. The second one is just you mentioned, Dr. Wallis, that criteria was --

CHAIRMAN WALLACE: That's so minor that --

DR. KUO: Well, we will look into that. So if you have any comments to these four presenters or general comments that we can answer, we'll be glad to.

CHAIRMAN WALLACE: Mario, it's still your meeting.

MEMBER BONACA: Yes, I know. There is a second presentation.

CHAIRMAN WALLACE: Oh, there's another presentation?

MEMBER BONACA: Yes, we have about ten minutes left. So we'll have to stay within that time. Why don't we proceed with that.

Thank you for the presentation. It was informative.

Okay, let's proceed.

MR. LI: Good morning. My name is Chang Li from Plant Systems Branch, DSSA of NRR.

In September, the staff briefed ACRS on the sampling approach for the scoping review. The ACRS made some good comments and suggestions.

There was a suggestion from the Committee that the sampling approach need to be tested to see how it worked. There was another comment that in the context of the sampling approach, the staff need to address the issue of review completeness.

In addressing those comments, we tested the sampling approach on two previously-reviewed LRAs. From this testing, we learned some lessons and refined the sampling screening criteria.

Also in addressing the concern of review completeness, we improved the sampling approach to become a two-tier review process.

Subsequently, we had a follow-up discussion with Dr. Bonaca in November to introduce the two-tier review process. He suggested that we'd better give another briefing to the Committee to update this process. I'm going to explain the two-tier scoping review process.

The purpose of this presentation is to explain the process to be used for the scoping review

of the BOP Systems, Balance of Plant Systems, and show the benefits of this process which are focus the review of BOP systems on more important systems and provide efficient and effective scoping review.

This slide -- the new review process is an optional two-tier review process. By using two-tier process, all the system will be reviewed, however extensive efforts will be focused on more important systems.

Tier-1 includes screening and the reviewing of license renewal application and FSAR documents and to possibly identify systems for further inspections. I'm going to explain the Tier-1 screening in the next two slides in more detail.

Tier-2 is a regular detailed review that we have done in the past and we'll keep doing it in the future for most of the systems. By being more detailed, we'll look into boundary drawings and other licensing basis documents in addition to the LRA and FSAR.

VICE CHAIRMAN SHACK: Now is Tier-2 basically the guidance you have in the review plan now?

MR. LI: That's correct.

VICE CHAIRMAN SHACK: Okay. And so what

you're introducing now is this Tier-1, this first screening step?

MR. LI: That's right.

VICE CHAIRMAN SHACK: Now why is it optional? I mean can't --

MR. LI: Oh.

VICE CHAIRMAN SHACK: -- you guys direct the staff.

MR. LI: The option, which if the application comes with only a very few, we align the system in such a way that only few systems -- we are ranging -- the BOP systems ranging from sometimes we have 40 systems that we can do this process economically.

When it's -- in another case, we have application comes with BOP system like 14 BOP systems, it's not worth the efforts of this two-tier review process. We just do a regular review.

VICE CHAIRMAN SHACK: But doesn't the one with 14 trigger some sort of alarm that they've left something out?

MR. LI: It's not. They are aligning systems.

VICE CHAIRMAN SHACK: Oh, it's the way they're packaging things?

MR. LI: Right.

By using the Tier-1 screening criteria outlined in the next two slides, our review, we'll focus on more important systems for Tier-2 review. And the remaining system may be selected for a less extensive Tier-1 review.

After we finish both Tier-1 and Tier-2 review and the methodology review, we will take a look to see if any of the findings that may have generic implication on those Tier-1 systems that we may warrant for a reconsideration to bring those systems for a detailed review.

Okay, the next two slides explain Tier-1 screening criteria. The screening criteria includes safety-important or risk-important or risk-significant systems and also from operating experience and previous license review experience that identified omissions.

MEMBER DENNING: Excuse me. On the safety -- important safety significance, is there some formal way that you are identifying what those systems are? And are they plant-specific? Or which --

MR. LI: Right, we developed a guidance for -- we're in the process of trying to develop what we consider as being highly safety significant. And

giving some examples. But as time goes on and experience picked up, we may be able to develop more solid guidance there.

CHAIRMAN WALLACE: Well, risk is a PRA thing.

MEMBER DENNING: Yes, that's what I was wondering. Are you using PRAs to make those judgements. I mean obviously some of those things are obvious. Like the ones you have up there are --

MR. LI: Right.

MEMBER DENNING: -- certainly obvious.

MR. LI: Right.

MEMBER DENNING: But are you going to PRAs to make those judgements? Or --

MR. LI: No, we don't go into the detailed PRAs. It's based on the experience of those systems are important. So it's clearly safety and control.

MEMBER DENNING: It's hard for me to understand how you say based upon the experience those systems are safety significant because I think that PRAs are the closest thing we have to an objective way to determine safety significance. And I'm not sure how you use experience then to say these are safety significant.

I mean I could see experience saying these

are problem systems but I think --

DR. KUO: If I may?

MEMBER DENNING: Yes.

DR. KUO: If I may, every plant has a current licensing basis. And the current licensing basis, at the beginning of the plant license, they all have this classification, safety-related and non-safety-related systems, based on a regulatory guide. I believe that this is a long time ago. I believe it is 1.26, regulatory classification of systems, structures, and components.

MEMBER BONACA: So a better definition would be to limit yourself to safety important maybe? Because risk significant gives the impression that you would use risk tools to risk tools to identify those and you don't.

DR. KUO: Yes, I understand. Maybe --

MEMBER BONACA: Now clearly on the generic basis, we know from generic -- from PRAs, I mean also what are the significant systems, aux. feed and EDG, I mean all of them, we can identify those. But it's also true that there are others which may not be generically risk significant without a PRA so --

DR. KUO: I understand.

MEMBER DENNING: That's right.

MEMBER BONACA: All right.

MR. LI: Those examples, of course, you bring out is very obvious like aux. feed water systems, EDGs and its support systems, essential cooling water systems.

And in terms of systems susceptible to common cost value of redundant trends, we have examples such as drain systems providing flood protection, makeup water to CCW systems without independent trends, and for operating experience that we bring up examples like raw water system and main steam in the feedwater systems.

Those previous LRA review experience are for missions we identified, spent fuel cooling systems, makeup water source to safety systems, those we have identified omissions in the previous review process.

In the September ACRS presentation for the sampling approach, the Committee suggested the staff testing the sampling approach to see how it worked. We did it on two previously-reviewed applications, H.P. Robinson and Dresden Quad Cities.

We learned lessons through this testing. And through this testing, we improved the Tier-1 screening criteria and to add Tier-1 review process to

those systems that were deemed to be not so important.

So we're not just make the decision and put it out. Those we screened out will have to review the application, LRA and FSAR description. It still goes through a review process. And we will show some examples later on for another plant.

For Robinson's the deepwater examples here, for deepwater pump and associated piping in the primary demineralized waters systems used for the long-term source of water to the AFW system following a dam failure.

Another case for Dresden Quad Cities, a number of values in the demineralized water systems are used for an alternate supply of makeup water to the isolation condenser, those components in the demineralized water system were initially omitted by the applicants and were identified in an SER during the previous detailed reviews by using the improved Tier-1 screening criteria. And we should be able to pick up those systems for detailed review.

VICE CHAIRMAN SHACK: It's not clear. What happens if you apply the Tier-1 screening criteria to Robinson?

MR. LI: The criteria, if I -- we used this, for example, this makeup water source to safety

systems. And that will pick up this demineralized water system.

VICE CHAIRMAN SHACK: So it would have worked on both Robinson and Dresden?

MR. LI: Right. So if you just looked at the function of the demineralizer system, there's not safety function. It's a non-safety-related system. Initially, you probably can drop it into Tier-1.

However, if it goes through this screening criteria we'll think carefully about FSAR. Even without going into the drawing, we still would pick up this system for Tier-2 review.

VICE CHAIRMAN SHACK: Okay.

MR. LI: And we applied this Tier-1 screening criteria to Brunswick, which results in 15 of the 39 BOP systems would receive a Tier-1 review. The remaining 47 of 62 mechanical systems, all electrical systems and the structures would continue to receive a Tier-2 review.

VICE CHAIRMAN SHACK: Okay. So the first bullet means I screen 15 of the systems out?

MR. LI: Yes. And this Tier-2 is not just throw it out. We still do the review. And it goes through this review, we reviewed the license renewal application. We reviewed the FSAR description, focus

on its identified functions -- intended function whether they are properly identified as intended function, and we looked at complement lists in the LRA about the complements that is subject to AMR.

And with that, we identified one RAI and also we identified three systems for inspection because we feel those three systems it would be better to go through the inspection rather than go in here doing a drawing review.

MEMBER BONACA: At the beginning, I thought that the process, however, would focus resources on Tier-1 and then some of the others BOP would not be reviewed. But you're telling me that all BOP is now getting reviewed?

MR. LI: All will get reviewed.

MEMBER BONACA: But they will get a lesser review?

MR. LI: That's right.

MEMBER BONACA: All right.

MR. LI: So these 15 systems out of 39 --

MEMBER BONACA: Yes.

MR. LI: -- will get less level of detailed review. But we'll have to make that determination -- go through that determination, through that screening criteria.

And a complete scoping review, which contains a review of methodology, a scoping results reviews, and inspection. In the review of scoping results, it includes the plant never scoping at the systems and the structure level. And all mechanical systems, electrical systems, structures at the complement level.

The mechanical systems include reactor systems, engineering safety feature systems, auxiliary systems, and steam and power systems. I put the little stars there which the BOP systems include all the steam and power conversion system and most of the auxiliary systems.

By using this new process, we intend to maintain the completeness as described in these slides. Even if we put a star there, we're not really going to throw out any system without reviewing it.

The bottom line is that our reviews focus on most important systems and only a small portion of the BOP systems will receive less than full review. It will conserve the limited staff resource and reduce the burden of RAIs for low-safety-significant systems.

This concludes my presentation.

MEMBER BONACA: It looks like an effective process however I think that, you know, if there was

available risk information on the site, that would be valuable to do some screening to see if that would suggest anything else. I mean any other system that should be really paid more attention to.

MR. LI: That's correct.

MEMBER DENNING: Perhaps I could make a comment on that, Mario? And that is I think that, you know, there certainly are people in the PRA branch that could take a quick look at the systems that you have identified from a more traditional approach. And see if there are some of those systems that they would -- because they've done these prioritizations.

And balance of plant, I think, is just the area where there could be surprises in terms of systems that one would not normally think of being that important but in risk based, turn out to be.

Now I realize that you're only screening out a few. And all of them are getting some level of review. So, you know, how far one has to go into the risk base -- but I do think that -- I'm a little surprised that in this day and age where there is so much emphasis on looking at risk, and in this case, I don't think it is a big deal to have some guidance -- just a look by these people from the PRA Group, to oversee which of the balance of plant systems did you

really highlight and which ones didn't you highlight --

MEMBER BONACA: Yes, that's a good --

MEMBER DENNING: -- with risk perspective.

MEMBER BONACA: -- suggestion. We'll take a look at it.

MEMBER BONACA: I think it's an interesting approach you're taking and I think that with that comment that I support, really, because, I mean, you have leeway for the review that you choose to do, to choose any means that you see appropriate. I mean it's not that it is an imposition on the licensee.

So with that, I think, however, that this is a good approach that you're taking.

MR. LI: Thank you.

MEMBER BONACA: Okay. Any other comments from the public?

(No response.)

MEMBER BONACA: From the staff?

(No response.)

MEMBER BONACA: From the Members?

(No response.)

MEMBER BONACA: If not, I want to thank you for the presentation. It was good information for

us. And I'll turn it over to you, Mr. Chairman.

CHAIRMAN WALLACE: Thank you. Thank you, Mario.

MR. LI: Thank you for the Committee attention.

CHAIRMAN WALLACE: This March meeting is turning out to be a good performer in terms of keeping on time.

MEMBER POWERS: Because of the active effort by the Chairman to terrorize each one of the Members.

CHAIRMAN WALLACE: We have been a couple of minutes ahead or a couple minutes behind, I think, in every case. This is only due to the gentle hand of the Chair.

(Laughter.)

CHAIRMAN WALLACE: We will take a break for 15 minutes until quarter to eleven. And I think at this time, we can dispense with the transcript. And thank you very much.

(Whereupon, the above-entitled meeting was concluded at 10:24 a.m.)