Official Transcript of Proceedings

NUCLEAR REGULATORY COMMISSION

Title: 616th Meeting of the Advisory Committee on Reactor Safeguards (ACRS)

Docket Number: (n/a)

Location: Rockville, Maryland

Date: July 10, 2014

Work Order No.: NRC-899 Pages 1-194

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UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

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616TH MEETING

ADVISORY COMMITTEE ON REACTOR SAFEGUARDS

(ACRS)

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THURSDAY

JULY 10, 2014

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ROCKVILLE, MARYLAND

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The Advisory Committee met at the Nuclear Regulatory Commission, Two White Flint North, Room T2B1, 11545 Rockville Pike, at 8:30 a.m., John W. Stetkar, Chairman, presiding.

COMMITTEE MEMBERS:

JOHN W. STETKAR, Chairman

HAROLD B. RAY, Vice Chairman

DENNIS C. BLEY, Member-at-Large

RONALD BALLINGER, Member

SANJOY BANERJEE, Member

CHARLES H. BROWN, JR., Member

MICHAEL L. CORRADINI, Member

DANA A. POWERS, Member

JOY REMPE, Member

PETER RICCARDELLA, Member

MICHAEL T. RYAN, Member

STEPHEN P. SCHULTZ, Member

GORDON R. SKILLMAN, Member

DESIGNATED FEDERAL OFFICIALS:

KENT HOWARD

JOHN LAI

MIKE SNODDERLY

P R O C E E D I N G S

8:31 a.m.

CHAIRMAN STETKAR: The meeting will now come to order. This is the second day of the 616th meeting of the Advisory Committee on Reactor Safeguards.

During today's meeting the Committee will consider the following; revisions to Chapter 19 and Section 17.4 of the Standard Review Plan; Lessons Learned from the San Onofre steam generator tube degradation event; NRC Staff activities regarding consolidation of rulemakings associated with Near Term Task Force Recommendations 4, 7, 8, 9.1, 9.2, and 9.3; and preparation of ACRS reports.

This meeting is being conducted in accordance with the provisions of the Federal Advisory Committee Act. Mr. John Lai is the Designated Federal Official for the initial portion of the meeting.

Portions of the session on Revisions to Chapter 19 and Section 17.4 of the Standard Review Plan may be closed in order to discuss and protect unclassified safeguards information.

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

There will be a phone bridge line. To preclude interruption of the meeting the phone will be placed in a listen-in mode during the presentations and Committee discussion. And I would ask everyone in the room to check your cell phones and so forth to make sure they're off.

A transcript of portions of the meeting is being kept and it is requested that the speakers use one of the microphones, identify themselves, and speak with sufficient clarity and volume so that they can be readily heard.

The first topic on our agenda is revisions to the Standard Review Plan, and I'll lead that section. A couple of brief introductory remarks.

First of all, this section of the meeting was noticed as being possibly closed. I believe that the Staff's presentation is all open material. Is that correct? The reason we noticed it's possibly closed, we could get into areas on aircraft crash analysis and loss of large areas of the plant. I don't think we're going to do that, but if we should delve into that, I'll ask the Staff just to let me know and we can close the meeting if we sway too far away.

A point of introduction. The ACRS doesn't typically review or have interactions with the Staff

on the Standard Review Plan itself. We do review routinely Regulatory Guides, and we review Interim Staff Guidance on a case-by-case basis. We don't typically get involved with the Standard Review Plan itself.

We thought at least at the Subcommittee level, we had a meeting of the Subcommittee, PRA Subcommittee on March 20th on this topic, and we saw that Chapter 19, which deals with risk assessment work, and there's, as you'll see, a peripherally related section of Chapter 17.

There had been several updates to these sections, some new sections written, several updates to the sections that had consolidated Interim Staff Guidance that has been sort of percolating over the last few years, and we thought that it would be beneficial to the Subcommittee, and perhaps the Full Committee, to get a snapshot of where the Standard Review Plan is now in a holistic sense rather than looking at individual ISGs, or individual regulatory guides, so that's the genesis of this briefing. And with that, I will turn it over to the Staff. I don't know, Lynn, if you want to say anything.

MS. MROWCA: Sure, I do. Good morning. My name is Lynn Mrowca, and I'm the PRA and Severe

Accidents Branch Chief in the Office of New Reactors. And I did want to make a note, since the Subcommittee meeting about the Standard Review Plan Section 19.0. As you know, we have made progress towards issuance of these various sections, and in SRP 19.0 we were actually ready to issue it, but we decided to hold. There were three important things we thought needed to be included in the next revision that is issued, so we decided that we would reissue it with a very focused scope for public comments. So, I just wanted to let the ACRS Members know what those three areas know and why we decided to do it for each one.

The first one has to do with multi-module risk. In SRP 19.0 we talk about addressing multi-module risk, if necessary, but we didn't go into any detail. Since then, we have had multiple internal meetings and public meetings to discuss what we were interested in when it came to addressing multi-module risk and the small module reactor applications.

So, we have –- we just had a public meeting June 26th. We provided the criteria to the public and we need to have that out for public comment in some form. We decided it would be more efficient since it will reside in 19.0, ultimately, that we would include it in this reissuance instead of

creating a new document like another Interim Staff Guidance document.

CHAIRMAN STETKAR: Okay. That's what I was going to ask. That’s the –-

MS. MROWCA: So, we thought since this was so close we would do that. So, it's limited scope to those two criteria.

The second item is that we've had some issues with Staff expectations when it came to submittals for low-power shutdown, and the scope of what we expect to see for low-power shutdown risk. And due to a recent submittal from a large lightwater reactor applicant that was not accepted by the Staff, we decided it was important enough to include that scope associated with Level 2 low-power shutdown risk in this 19.0 reissuance.

CHAIRMAN STETKAR: Specifically Level 2, or just –-

MS. MROWCA: Specifically Level 2, but we're trying to keep it to a very limited scope for these public comments, so we added a small part for that.

And then third item has to do with some information that was carried over from DC/COL-ISG-3 on PRA, and at that time we included regulations, and we

summarized Statement of Consideration. And two of the items actually have to do with the Design Certification Rule, design changes or modifications associated with the rule language. So, since this SRP 19.0 is really concerning DC and COL applicants, that's not really appropriate, so –- and besides that, that criteria is changing a little bit, so we just decided to remove it.

So, those are the three changes. Like I said, limited scope. We should be ready for the issuance. It's in concurrence now, so within the next month or so, and if the ACRS would like us to come back and talk about those changes in more detail, we can do that.

CHAIRMAN STETKAR: Yes, we'll discuss that. We may be interested in hearing about this.

MS. MROWCA: Okay.

CHAIRMAN STETKAR: Thank you. All right, Jonathan.

MR. DeGANGE: I'm Jonathan DeGange, and I've been leading the Staff's effort to update the Standard Review Plan, not just Chapters 17 and 19, but the entire chapters 1-19 overall. I'm the Project Manager in the Office of New Reactors in the Policy and Rulemaking Branch in the Division of Advanced

Reactors and Rulemaking.

Over the past three years we've revised a number of SRP sections in addition to the ones we're discussing today. For revised and new guidance, each SRP section is first issued, as Lynn mentioned, as a draft for public comments, and then it's issued as final guidance after clearance with the Office of Management and Budget.

The Staff has and will continue to practice to notify the ACRS revised and new SRP guidance upon issuing the guidance as draft for public comment. For some of the sections, the ACRS has requested a briefing, and this is one of the reasons why we're here today.

So, we plan to Section 17.4, and the Chapter 19. Section 17.4 will be presented by Suzanne Schroer on design of the Reliability Assurance Program. 19.0, which discusses PRA and severe accidents for new reactors will be presented by Mark Caruso. 19.1, which provides guidance to the Staff on reviewing applicant's PRAs for risk-informed license amendment requests will be presented by Hanh Phan. Odunayo Ayegbusi will be presenting on Section 19.2. 19.3, which is new guidance, a new section on regulatory treatment for non-safety systems will be

presented by Mark Caruso. 19.4, which discusses loss of large areas of the plant will be presented by Bob Vettori, and Bob will also be presenting on the last section, 19.5 on the aircraft impact assessment.

MEMBER CORRADINI: So, just to clarify what Lynn prefaced this on. So, we're going to hear about the three things she mentioned, or we're not going to hear about the three?

MR. DeGANGE: You are not going to hear about the three things.

MEMBER CORRADINI: That's what I –- I just want to make sure.

MR. DeGANGE: Yes, sir. So, with that, I think we can –-

CHAIRMAN STETKAR: Jonathan, also, just for clarification for the Members, as each section is teed up –- we've asked the Staff to focus a little on three of these sections in a little more detail just because of the results of the Subcommittee discussions. The Staff is going to cover all of them, but as you key up each section let the Committee know what it's current status is because these are anywhere from in the state of flux that Lynn described for 19.0 to sections that have already been issued for use. So, just so the Committee knows where each of the sections is in the

state of issuance.

MR. DeGANGE: Thanks.

CHAIRMAN STETKAR: Appreciate that.

MR. DeGANGE: Okay. Well, the first section we'll do is 17.4 on RAP. That section has been issued as final guidance, and go ahead and let Suzanne begin.

MS. SCHROER: Good morning. As Jonathan said, my name is Suzanne Schroer, and I'll be talking about 17.4, the Reliability Assurance Program. It was actually just issued a few weeks ago final, and this is Revision 1 to SRP 17.4. Next slide, please.

So, 17.4 was updated to wholly incorporate DC/COL-ISG-018, and that was issued almost five years ago, so we didn't change any –- we didn't do any additional guidance or clarification. We didn't change the RAP Program, it was just more additional guidance for the applicants. And we also clarified the review procedures. Next slide.

So, the sections of the SRP that were wholly replaced by the information that was in DC/COL-ISG-018 were the review responsibility, the areas of review, acceptance criteria, evaluation findings, and references. Next slide.

MEMBER POWERS: You didn't change anything in Interim Staff Guidance because you didn't have

enough data to suggest it needed to be changed, or you had enough data to suggest that it was completely adequate?

MS. SCHROER: So, we stayed –- basically, we stayed with it in the current condition guidance, the current condition policy. We used -- DC/COL-ISG-018 was created from Lessons Learned receiving applications, so we wanted to kind of help licensees or applicants avoid pitfalls that they had already fallen into, so it wasn't –- but we weren't changing the Reliability Assurance Program. We were just kind of trying to clarify our expectations and what we expected at application submittal.

MEMBER POWERS: Well, I mean, you told me what you did. Now I'm trying to understand, nothing —-- you've learned nothing between the time the Interim Staff Guidance was generated and now?

MS. SCHROER: Correct.

MEMBER POWERS: Absolutely nothing.

MS. SCHROER: Well, we –- I mean, in that time since 2009 we haven't received any new applications. Right?

MEMBER POWERS: Okay.

MS. SCHROER: So, the Lessons Learned were already incorporated. As I mentioned, we did update

the review procedures to include guidance on audits and inspections, so I guess that was the thing we did learn, is that we didn't really have a process for doing audits for SRP 17.4, so we included that. And then if you go to the next slide, we also –-

MEMBER POWERS: You conclude that nothing has been learned. How did you reach that conclusion?

MS. SCHROER: By receiving submittals that adequately meet the Staff expectations for the Reliability Assurance Program.

MEMBER POWERS: So, you go chat with the guys that review them?

MS. SCHROER: Oh, absolutely. And, actually, this was updated by the people like myself and formerly NRO, now NRR technical staff, Todd Hilsmeier, which is in the audience today. So, we didn't just chat with them, we were them.

MEMBER POWERS: You were them.

MS. SCHROER: That's your profound quote for the day, I guess.

And the other thing we changed was we got a comment from NEI that really they didn't use essential elements in the plan to use the term implementation controls, so in revision or in SECY-95-132 which was the kind of basis for the Reliability

Assurance Program, it had implementation controls. I'm sorry, essential elements, so when we wrote SRP 17.4, we said well, that doesn't really say a lot, let's change it to quality elements. And industry said well, we actually use implementation controls, so it's kind of the basis for the RAP. It is really a wording change, not anything else. And then the next slide.

As I mentioned, these are the additional review procedures, so we ought to leave those there. And this is the heart of the presentation for 17.4 today. So, we really wanted to address the comments that we received in the Subcommittee, so I'll be discussing my answers to these questions as I interpreted them from the discussions in the Subcommittee, as well as reading the transcripts, and discussion with other technical staff.

So, the first question from the Subcommittee was what do applicants do with their DRAP list once they have full scope plant-specific PRA like one that's expected at fuel load? And the second was why is there a focus on dominant failure modes for creating the DRAP list? So, those were the questions from the Subcommittee. Next slide.

So, what do they do once they have their full scope plant-specific PRA? And the answer is they

don't create a new RAP list, but they do use the RAP list that they have created to go into operational programs. And this is actually, if you'll note from SRP 17.6, Maintenance Rule, is that all RAP SSCs are initially categorized per the Maintenance Rule as having high safety significance. So, that is really the main place where RAP SSCs get pulled into operational programs. They also get pulled into programs such as in-service inspection, in-service testing, and the like.

CHAIRMAN STETKAR: Suzanne, this is –- I didn't know this. I guess that's why we asked the question.

MS. SCHROER: Yes.

CHAIRMAN STETKAR: You mean the RAP list —-- I was under the impression that the RAP list was, I think you used the term a living evaluation, that is your understanding of the equipment performance in the plant, and your understanding if the risk of the plant changed, that the RAP list would change appropriately because the RAP list is based on risk-importance. And what I'm hearing you say, and I'm making sure, I want to understand this, is that the RAP list let's say for a Part 52 plant that is cast in stone at the time that the COL is issued is cast in stone for all time? It is

not reevaluated?

MS. SCHROER: So, it's actually the DRAP list, the Design of Reliability Assurance Program list.

CHAIRMAN STETKAR: I understand the DRAP list is an artificial thing that is a snapshot at the time the COL is issued. What our question was, what happens to that as the plant transitions into operation?

MS. SCHROER: Right. And the plants don't have to maintain that RAP list. It's not a –- I don't know what the word –- license condition, or it’s not a thing after they start operation. It moves into the operational programs.

Todd, did you have something to add to that?

MR. HILSMEIER: Yes. My name is Todd Hilsmeier from NRR, used to be NRO, but now a better world.

CHAIRMAN STETKAR: You just moved up the alphabet. I'm not sure it's better.

MR. HILSMEIER: John's right that the RAP list is a live list. After the COL application phase, all this terminology is coming back to my mind. I've been with it for a while. After the COL application

phase, then it goes into the COL licensee phase. They need to still update and maintain the RAP list in accordance with the implementation controls.

Now, when it goes –- and that's during the design and construction phase of the plant. Now, when the licensee goes from the design and construction phase into the operation phase, they integrate the RAP list into the Maintenance Rule Program, Quality Assurance Program, and Test Maintenance Programs. And within the Maintenance Rule Program they're still required to update the RAP list. Under the Maintenance Rule, the Guide I believe is 1.2 –- 1.160, I think it is, they're still required to update that RAP list.

CHAIRMAN STETKAR: Thanks, Todd. That helps a lot. So, as I hear it, it's essential –- we used to talk about DRAP and ORAP, and now people tend to talk about RAP without the Ds and the Os.

MR. HILSMEIER: Right.

CHAIRMAN STETKAR: And this clarifies it a little bit. The thing that's now called a DRAP is cast in stone because it's part of the COL issuance documentation.

MR. HILSMEIER: Right.

CHAIRMAN STETKAR: It then morphs into, essentially, the Maintenance Rule Program.

MR. HILSMEIER: Right.

CHAIRMAN STETKAR: Okay, thanks.

MS. SCHROER: Okay. So, the second question was why is there a focus on dominant failure modes. And as I mentioned earlier, SECY-95-132 is the basis for the RAP, so the SRM for SECY-95-132, this was a question that came up in Staff discussion, said we agree Staff go forward, so the SECY is our basis. And it states that an application for a design certification or combined license must contain a process to determine dominant failure modes, so that's why we have it in the Reliability Assurance Program, because it's Commission policy to have it in the Reliability Assurance Program.

And then the next couple of slides are just where we talk about dominant failure modes in SRP 17.4, so the first bullet you'll note that during the operation these are the plant performance and condition monitoring is implemented. So, prior to that it says the licensee identifies the dominant failure modes, but then during the operation this is kind of how it's used.

And then the second bullet just we've said you should have a process for determining dominant failure modes. And then the next slide.

And then once they go to the operational programs, they should consider dominant failure modes, and the failure modes could be used to facilitate identification of specific Reliability Assurance Activities. So, just to kind of provide an example of what this means in actuality is if per operating experience you identify that failure to run is a dominant failure mode for sump pump, then maybe your testing frequency for failure to run is greater than your testing frequency for failure to start. So, that's kind of how it plays out.

CHAIRMAN STETKAR: We had some discussion about this, and do you really think that Commission policy, if you want to characterize it that way, back in 1995 when people were talking about how this whole process, especially for new reactors, would be put in place. Do you really think that the Commission understands what failure modes are now? Maybe. Let me continue here.

Our experience with the PRAs that have been produced to date for all of the design certifications is that at best there's wide variability in their scope, level of detail, and quality, and at worst they're pretty darned simplistic. And to establish in the licensing basis

for a plant a list that you've now said the DRAP list is part of the licensing basis that identifies dominant failure modes as part of the licensing basis. You mentioned fail to start, fail to run, fail to open, fail to close, when the models themselves are woefully incomplete, seems ludicrous.

I can understand, perhaps, at the Design Reliability Assurance Program stage, at the design certification and COL stage identifying what that snapshot of an incomplete PRA, of an incomplete plant with no operating experience might think is the most important pieces of equipment like that pump, but to then require someone and establish that list as a licensing basis to say I want to establish failure to open of that particular valve as something that's important seems absurd, period. Do you have any comments?

MS. SCHROER: I will have two comments for that. The first is, Commission policy is what we live with. If you would like as a Committee to write a letter to the Commission and request a change to the Commission policy, we would certainly welcome that.

And the second -- I would point out the second bullet here is the application should propose a process for determining dominant failure modes. This

process should incorporate industry experience, analytical models, and applicable requirements such as operating experience, importance analyses, root cause analyses, et cetera. So, really --

CHAIRMAN STETKAR: Let me give you an example, and I won't mention the plant. I will -- many of the new plant designs employ squib valves. When we took a look at the PRA for the design certification for a particular plant they had the failure mode fail to open for a squib valve, which is important because a lot of the squib valves are supposed to open to do things that you're supposed to do. We said gee, we didn't look at -- we don't see where your model puts spurious opening of the squib valve in there. You didn't look at it. Said oh, well, that can't be important. They put it in and it increased core damage frequency measurably.

Now, tell me what the important failure mode of that squib valve is for the DRAP for that particular design, because they hadn't even thought about the failure mode until an ACRS Subcommittee looked at the PRA.

MS. SCHROER: I think that shows the value of the --

CHAIRMAN STETKAR: The squib valve is

important. The squib -- I won't deny that the squib valve is important, but the spurious opening of the squib valve was more important than the fail to open. So, I'll come back to why are we putting in the licensing basis specific failure modes that are derived from an incomplete PRA?

MR. PHAN: If I could say something? May I have input to your comment. My name is Hanh Phan. I am the Senior PRA analysis in NRO. PRA and --

CHAIRMAN STETKAR: That's good. Thanks, Hahn.

MR. PHAN: The RAP list including the SSCs and the failure mode not strictly based on the PRA result, but from the expert panel. And we accept or we acknowledge that the expert panels may not complete the list like the way the ACRS or the Staff want to be, because they are premature before the plant being built. Everything is still on papers, but still we have to rely on the expert panel to complete the list, not strictly using the PRA outlet.

CHAIRMAN STETKAR: And we have to be a little cognizant of the time because we have other sections. I recognize that. That is important, those expert panels are very, very important to fill in the gaps in these incomplete PRAs. However, I'll submit

that expert panels may be able to evaluate the fact that a piece of equipment, a particular pump, or a particular valve which may not have been modeled explicitly in the PRA because it's for shutdown modes, or accident scenarios that weren't included in the PRA model. The expert panel may be able to say that yes, that piece of equipment might be important, and we'd like to include it in the RAP list for the following qualitative reasons based on our experience and judgment.

I maintain that most experts who are not intimately familiar with the PRA, nor intimately familiar with things that could happen have a very, very difficult time at identifying particular failure modes. Fail to start of a pump is pretty obvious, some of these other subtle failure modes are very, very difficult. Fail to close of a check valve, they can fail to close but most people don't think of that because check valves mostly do close. But they might identify that that check valve could be important. So, that gets back to, you know, at this point of the process with an incomplete model and no operating experience is it -- is that all relevant to both force people to identify dominant failure modes, and then put some licensing connotation to that -- to those

specific identified failure modes, because they undoubtedly will change.

MEMBER BLEY: I've got a general question. It's kind of spurred by something Suzanne said, and it might explain some things I've bumped into in very other different areas about Commission policy and Staff's interpretation of it.

Staff generates a SECY, sends it to the Commission suggesting a policy issuance. Sometimes the Commission writes an SRM on that SECY and tells you exactly what to do. Sometimes they're silent. When they're silent, does that imply that they've accepted the policy suggestion in that SECY? Is it interpreted that way?

MS. SCHROER: I've never had a SECY that wasn't responded to.

MEMBER BLEY: I can tell you a number of them that they didn't respond.

MS. SCHROER: I'm sure.

MR. MONNINGER: This is John Monninger from the Staff, Office of Nuclear -- NRO.

(Simultaneous speaking)

MEMBER CORRADINI: Something's in the pipeline. Do you have to have a card that tells you where you are that day?

MR. MONNINGER: I can't keep a job. With that said, I think a lot would depend upon -- one factor would be what type of paper is it? Is it an information paper or if it's a policy paper. If it's a -- well, they're all policy papers, but with that said, is it an information policy paper, or is it a notation vote paper? If it is a notation vote paper and the Staff puts proposals in there, whether the Commission is explicit or not, if they approve in detail that paper, or at the 40,000-foot level, we would interpret that as being a Commission decision and a policy issue, et cetera.

On the other hand, if we send up an information paper, which is also a policy paper, but an information paper to say that the Staff is proceeding in this manner on this topic, et cetera, it doesn't necessarily mean it's Commission policy, but it's the policy that the Staff has taken that they have informed the Commission. If the Commission wants, they could convert that paper into a notation vote paper, et cetera. So, it's much more explicit if it is a notation vote paper, and whether the Commission engages at the 40,000-foot level or in the infinite details. So, I'm not sure whether that helps or not. And I don't know whether the 95-SECY is information

paper or notation vote.

CHAIRMAN STETKAR: I do.

MR. MONNINGER: Okay.

CHAIRMAN STETKAR: It was a notation vote paper, just for the record.

MR. MONNINGER: Okay. So, we would interpret --

CHAIRMAN STETKAR: Yes.

MEMBER BLEY: That's clear there, yes.

MS. MROWCA: This is Lynn Mrowca. I have a question for the Committee. If this is an issue, I assume that we'll get your thoughts on that in a letter to the Commission, or if you have some thoughts today on what you think might be more appropriate in this area, we'd be happy to hear them.

CHAIRMAN STETKAR: Yes, we don't -- you know, you won't get any thoughts orally today because we do speak only through our reports. Right at the moment, we are planning to write a letter on the topic of these sections of the SRP. What that letter says we can't predict right at the moment, so come back at the end of the -- sometime in the afternoon and you can listen to the first draft of the letter.

MR. DeGANGE: Okay, are we ready to move on to 19.0? All right. So, 19.0, the status on that one

I think Lynn gave an overview. The Staff is currently updating the guidance further from where we -- initially she did a draft. And, Mark, do you want to take over?

MR. CARUSO: Yes. Thanks, Jonathan. I'm Mark Caruso, Senior Risk and Reliability Engineer in the Office of New Reactors. And what I wanted to do was, I guess basically two objectives here, to summarize the changes to SRP Chapter 19.0, and then to discuss the key issues that were raised at the Subcommittee meeting that we had on March 20th, 2014. Next slide.

Before I start on this slide, the items in red, and there's -- basically, what I've done is I've -- in the areas where there were key issues raised by the Subcommittee at the Subcommittee meeting, I identified those topic areas in red just for your awareness. And we'll be talking about those in some detail. I may, you know, go over them kind of briefly here in the summary, but I plan to talk about them more when we get to the last slide.

So, SRP 19.0 was updated to incorporate several Interim Staff Guidance documents, the information in those documents. They're listed there. And it was updated to include experience that we had

gained from the new reactor reviews.

ISG-03 basically clarified the Staff's expectations for PRA information to be included in the submittal. And digital I&C ISG-03 was prepared to provide information on sort of the focused specific review of modeling, treatment in PRA of digital I&C systems. New reactor review experience covers areas -- mostly we were trying to identify areas where there were challenges during the review, or multiple RAIs, or difficult issues so that in the future we would have our expectations up front, and we could perhaps not have such a challenging time in that review area. Next slide.

We also -- based on our experience with the new reactor reviews, we identified a number of interfaces that were not previously in the -- were not in the previous revision in the SRP. Important to identify those and -- because we're having those interactions with other organizations, and it was, we felt, important to have that down. And those areas are listed here on this slide.

MEMBER SKILLMAN: Mark, would you go back to 15, please?

MR. CARUSO: Yes.

MEMBER SKILLMAN: Your comment leads me to

believe that the way you were updating is by looking at the tally on your RAIs.

MR. CARUSO: Yes, we could, you know -- it would have been good to do that, but it was a very difficult and time consuming process to like go through, systematically go through the RAIs. We did it more through the experience of the reviewers. We pulled the reviewers into those areas. We reviewed the Safety Evaluation Reports that we had written, and that was the source of this information.

You know, I mean, the open items are identified during the review process when draft SEI is prepared. You know, you're going to pick up the stuff that was, you know, challenging and requiring perhaps a protracted review, so I don't -- I think it would be an interesting exercise, and obviously be a very systematic and formal way to do it. And at the time we don't really have the RAI system set up to do that, so I think, you know, there might have been some practical limitations in terms of technology. And it would have been manpower intensive, too.

MEMBER SKILLMAN: So, what I'm interpreting from what you have said is to look at the RAI systematically would have been a very time consuming and resource-intense burden, so rather than doing that

what you did is you communicated with the reviewers to find out what they thought were the big ticket items. Would it be worthwhile to take another pass through the RAIs to find out if there's some lessons to be learned down there because, clearly, the RAIs express the reviewer's angst for the various co-applicants, or for the DC applicants. And it would seem to me that there is some real meat and potatoes down there, something to be learned.

MR. CARUSO: Well, I agree with you that, you know, if you were to do that mining, you know, I think you would get benefit from it. I'm not in the position to commit to doing that, and I think there's a large question there of, you know, as Mike Johnson likes to say, "Is the juice worth the squeeze?" But I hear what you're saying, and I don't disagree that that exercise might yield some good stuff.

MEMBER SKILLMAN: But what I'm particularly sensitive to is the notion that a reviewer that has taken the time to develop an idea and then challenge may be on the point of discovery. And when the licensee or the applicant fires back and says here's why we did what we did, that can be an ah-hah moment, or gee whiz, you still have a gap. And having worked on a fairly complicated design cert application, there

is value in some of those questions.

I understand the comment that you make about resources, but it seems like there may be a valuable well from which to draw here.

MR. CARUSO: I mean, there's situations where, you know, there were backs and forths, like you say. You know, we capture those in the SER. That's part of the story we have to tell when we write our SER; otherwise -- I mean, that's just the way we're doing things now, is to, you know -- you can't just say, you know, we issued a RAI 5 point whatever, and they responded, and didn't -- we looked at it, it was okay. You had to explain then what was the issue, and why is it okay, and if there was some backup we issued another RAI. That story has to be there, so those kinds of stories are showing up in the SERs, too.

MEMBER SKILLMAN: Thank you.

MR. CARUSO: All right. Let's see. Did I finish --

MR. DeGANGE: Did you finish that previous slide, Mark?

MR. CARUSO: 16, yes, I think we're done with 16. I wasn't going to go through the -- so, this slide shows the topic areas where specific guidance was incorporated in the SRP based on the new reactor

review experience. And we talked about this with the Subcommittee, and as I said before, the two areas in red we had substantial discussion on.

The third and the fifth bullets are those areas that Lynn talked about in the beginning of the meeting that were to add some information, and re-notice the SRP over. Can I have Slide 18?

So, during the Subcommittee meeting there was quite a bit of discussion on several issues, and I think they're all listed here, and if they're not, I'm sure you will let me know. But as Lynn said, you know, we scoured the transcript to make sure that we got the important things.

So, the first one was an issue that Member Stetkar raised, and I thank him very much for helping us do our job. This issue, he noticed -- well, we incorporated the guidance from ISG-20 into the SRP. That guidance that applied to doing seismic margins analysis at the DC and the COL stage. There was also at the end of ISG-20 some information about what COL holders should do, which was to go back and -- after they loaded fuel and that sort of thing, or before they loaded fuel, to verify the margins that they had identified in their licensing documents. And the question of why -- you know, by the time they're a

holder they -- you know, they're required by 50.71(h)(1) to perform a seismic PRA because we have a consensus standard on seismic PRA, so why would they bother to go back and do that?

And in going back and looking at the words that are actually in there, it almost suggests -- it does suggest that you could actually meet 50.71(h)(1) by doing that. So, basically, you know, if you go look at Reg Guide 1.200 it specifically says, you know, we don't endorse the seismic margins part of the standard. And there's a specific part in there that says, "The seismic margins treatment of external hazards is not acceptable for characterizing them inside of the PRA." So, the Staff's position is, you know, when we get to that point, seismic margins is over. You do a seismic PRA.

So, I can't -- I don't know why -- I wasn't able to figure out why there was a disconnect between what it says in Reg Guide 1.200, and what it says in ISG-20. They were, in fact, developed at the same time frame. So, you know, I mean, frankly, something slipped through the crack. So, as I said, thank you very much.

So, when we issue SRP 19.0 final, we will issue an FRN, and in that FRN it will say that we --

as we -- in issuing this SRP, ISG-03 is sunset, and ISG-20 is sunset. And I think we should probably -- we haven't discussed this internally, but I think we should probably explain in the FRN why --

CHAIRMAN STETKAR: At least a statement of -- yes.

MR. CARUSO: You know, why we're, you know -- because 19.0 only deals with DC and COL licensing. It doesn't deal with holder stuff, so it would be important to say we're also -- you know, we're not leaving the holder stuff in there, and here's why.

CHAIRMAN STETKAR: It's both for clarity going forward and not to apply any unnecessary burden on those COL holders to keep, essentially, parallel sets of books, both the PRA and that seismic margin information.

MR. CARUSO: You know, in tracking some of the people that were -- some of the structural people that were involved in this, just one particular person. His comment was, you know -- to me was, basically, that he was under the impression they had a choice. And before Reg Guide 200, there was -- if you go look at the first revision of 1.200, you will find absolutely not one word about seismic margins in there. So, you know, I thought to myself oh, I know

what the answer is, you know. They did -- ISG-20 was done a long time ago, and this is Reg Guide 200 -- and that's not the case. They were in the same time frame, so something --

CHAIRMAN STETKAR: Anyway, I'm glad to hear you're going to address that.

MR. CARUSO: Okay. The next item is the acceptability of Capability Category 1 for standardized verification of COL PRAs. SRP 19.0 says that our expectation, our minimum requirement/expectation, if you will, is that these PRAs are done to Capability Category 1 of the ASME/ANS Standard, and members of the Subcommittee questioned why we didn't go higher. I believe that was -- and our feeling on this is that, you know, we considered basically a couple of things.

One, we considered, you know, what was the objective of the Commission in having DC applicants or COL applicants do PRA and use PRA? And it was -- the focus was really more on insights, wasn't to do one at the level you do for risk-informed license amendments, or operating reactor issues. So, you know, we felt that you could get what you needed generally, for the most part from satisfying Capability Category 1.

In addition, there are also a number of

areas of the standard that DC applicants and COL applicants can't meet because of the level of information that's available at the time, so we felt that as a general and minimum expectation it was one. Now, there are some areas in there where, you know, one isn't okay. You know, certain specific supporting requirements, and those are, you know, addressed during the review because we ask the applicants to do a self-assessment against the standard and tell us, you know, what they're meeting, and what level they're meeting at, and why that's okay. And if they can't meet something, why that's okay or not okay, or how they're resolving that.

So, in the end we end up with something in between, some -- probably the majority of the supporting requirements are meeting Capability Category 1, and some are meeting Capability Category 2. So, that's about all I have to say on that topic.

CHAIRMAN STETKAR: Yes. We had, you know, substantial discussion. There are varying opinions on this. It has led, at least in my experience, to a rather broad variability in the qualities because you see some of them, some applicants, I think, taking the note of Capability Category 1 to heart and saying we're not required to do anything more than this.

Other applicants develop more detailed PRAs. And then you have applicants who say well, we did a self-assessment, we meet Capability Category 2, and it's clear that they don't.

MR. CARUSO: Right.

CHAIRMAN STETKAR: So, it is a source of confusion, at best.

MR. CARUSO: Yes. There will be another very, very good opportunity to -- for you to talk to the Staff about the subject because we are in the process of developing an ISG which, basically, establishes, essentially, a standard, something that looks very much like the standard for DC applicants and COL applicants which walks through all the supporting requirements. It talks which ones we think you can meet, and which ones you can't meet.

CHAIRMAN STETKAR: Oh.

MR. CARUSO: And identifies in certain cases, you know, you can't meet the letter of the existing standard, but you can meet the intent, and we clarify that. It's a document to help them, you know, deal with the fact that the standard was created for operating reactors. We have drafted that thing up. It's still internal but it's getting very close to the point where we'll go out for public comment. And we do

talk a lot in there, a lot more guidance in there about our expectations for a Capability Category than what's in SRP 19.0.

CHAIRMAN STETKAR: We certainly at the Subcommittee level, we would be very interested in seeing that whenever you get it to a point that you're satisfied with it, even perhaps before you send it out for public comment. So, keep in touch with John Lai and we'll see what we can do to get it --

MEMBER BLEY: And from what you said, you haven't had any participation from industry. Is that right?

MR. CARUSO: No, we have. They have been developing -- the Standards Committee has been developing a revised standard. We -- I don't want to get into this whole topic.

CHAIRMAN STETKAR: Yes.

MR. CARUSO: It's very hairy, but we have looked at it, and we're happy with what was done. We don't want to wait any more, so we're doing this. We're going to be interacting with industry. Our hope would be that they would come around and like this. We have not had that interaction yet with them, but we are --

MS. SCHROER: Yes.

MR. CARUSO: Oh.

MS. SCHROER: We had a public meeting with the high-level goals of the ISG in April, so we have interacted with the industry and the standards organization, as well.

CHAIRMAN STETKAR: Okay, good. We have to be a little bit cognizant of time here, so the message is yes, we're really interested to hear about that effort.

MR. CARUSO: Okay. The rest of this should go pretty quick. Applicability and metrics for risk-significance in Reg Guide 1.200 for designs with very low CDF. So, the issue was when you -- if you have these new designs that are coming in with CDFs that are several orders of magnitude less than operating reactors, but you've developed these metrics and values, thresholds, importance measures, you know, sort of based on the CDF levels you have for operating reactors. They may not look so well, but give you -- if you apply them for designs with much lower CDFs, you might be identifying things that are considered significant in accordance with the guidance when, in fact, they may not be that significant.

So, the issue is that we in SRP 19.0, we basically say you should follow the guidance that's in

Reg Guide 1.200. Reg Guide 1.200 identifies specific numerical thresholds that are basically developed for plants with CDFs in the range of 10 to the minus 6, 10 to the minus 5.

We agree with the Subcommittee that the CDF either on a hazard basis or total basis should be considered when you are doing importance studies, when you're looking at risk-significance and you're applying importance measures and developing those thresholds, you should -- they should consider absolute CDF. And we know that the industry is already doing it. We approved a version of staling for ESBWR. We've discussed this topic with NuScale. They're aware of it. So, I think our believe is that we should go back. There's a revision to 1.200 on the horizon, and that we should make sure that this topic gets addressed in that revision.

CHAIRMAN STETKAR: For those of you who, in a nutshell, for those of you who didn't attend the Subcommittee meeting, the issue is that, as Mark mentioned, there are specific numerical criteria in the guidance. So, for example, if I have a core damage frequency nominal of one times ten to the minus four, something is considered as significant if it could increase it by .005 of the core damage frequency, or

about by five times ten to the minus seven, which is a pretty small number.

On the other hand, if I have a core damage frequency of ten to the minus six, that same numerical significance translates into something that would increase it by five times ten to the minus nine, which is a teeny, tiny, itsy, bitsy number. And, yet, the same numerical criteria are applied regardless of what the absolute value of the CDF is, so the question is should we be treating five times ten to the minus nine equipment the same way as we treat equipment at other plants? And I appreciate your feedback, thanks.

MR. CARUSO: So, the last issue is an issue that Member Brown brought up at the Subcommittee meeting. We were talking about digital ISG-03 which is the treatment of digital I&C in PRA, and he had raised the suggestion about that we should maybe take a fresher look at how we treat digital I&C in PRAs, and that there will be a lot to gain from trying to go I think to a higher level and use the functional block diagrams and the four or five key principles of design for digital I&C to look at risk.

I had hoped that I –- personally, I had hoped that I would be able to come back here and explain, you know, that there's a whole new way to do

PRA, and it was great, because I am personally very interested in the subject, but I wasn't able to do that.

So, we think this is a very important topic. We are in the process of planning a meeting, a collegial discussion of PRA digital I&C in the September time frame, and we would --

MEMBER BROWN: With?

MR. CARUSO: With you.

CHAIRMAN STETKAR: Us, we have a Subcommittee meeting scheduled.

MR. CARUSO: And Office of Research will be involved for a wide range of discussion of this topic. We know they have their views, so we think that this should be subject of that meeting.

MEMBER BROWN: Okay. Bear in mind, I'm not -- I don't know whether it will bear any fruit.

MR. CARUSO: I know.

MEMBER BROWN: It was just a matter of here's a different way to look at it. Give it a shot and see -- if it doesn't work you're not going to break my heart.

MR. CARUSO: I wish I gave it a shot and came back, but I --

MEMBER BROWN: Truth helps.

MR. CARUSO: So, that's pretty much it for 19, I think.

MR. DeGANGE: All right. On to 19.1. 19.1 has been issued as final guidance.

CHAIRMAN STETKAR: All right.

MR. DeGANGE: Thank you. Hahn.

MR. PHAN: Good morning, again. My name is Hahn Phan from NRO. In my presentation today, I will identify the modifications to the SRP, Section 19.1, Revision 3. First, as can be seen on this slide, the titles of –- can you go back?

MR. DeGANGE: Oh, sorry.

MR. PHAN: Yes. The titles of Section 19.1 is modified as determining the technicals of realistic risk assessment for risk-informed license amendments request after release of fuel load. The term risk-informed license amendments request after release of fuel load was added, or has been added to the titles because we want to be clear the use of this section only applicable for COL and DC applicants.

Accordingly, we remove all guidance relevance to the DC and COL –- I'm sorry, all of the guidance in here and for the operating plants, all of the guidance for DC and COL applicants, removed them to Section 19.0.

It should be noted that there are no new sections or subsection added to the Revision 3. The main purpose of this update is to incorporate the regulatory requirements for new reactors, specifically the requirements provided in 10 CFR 50.71(h)(1), (h)(2), and (h)(3) to include the applicability of NFPA 805, a risk-informed performance-based fire protection applications to reflect the issuance of Revision 2 to Reg Guide 1.200, the addendas to the ASME/ANS PRA standard, and at least you know PRA-related guidance.

Revision 3 also update the introductory and history expressions of the ASME and ANS standards. And as mentioned previously, the title is modified to clearly indicate that all guidance in this section now and for operating plants.

These are the key changes to Section 19.1. With that, I would take any questions that you may have on the details.

MR. DeGANGE: Okay. So, next would be SRP Section 19.2, and I think Ayo and Bob, you guys want to come on now, maybe you, Suzanne and Hahn. You guys are done, if you could switch up.

MR. PHAN: I'm sorry. Can I say one more thing?

CHAIRMAN STETKAR: Yes.

MR. PHAN: According to the Chairman, I forgot to say one thing. That Section 19.1, Revision 3 was issued almost two years ago in September of 2012. Thank you.

CHAIRMAN STETKAR: Great. Thanks, Hahn.

MR. DeGANGE: All right. So, SRP Section 19.2. 19.2 has been issued as final guidance some time ago. There's not a whole lot we have to present on 19.2. Are we good to go?

MR. AYEGBUSI: Good morning. My name is Odunayo Ayegbusi. I'm a Risk Analyst in NRO. This is for 19.2. Just a little more detail. This is the only slide I have, that's what I mean. Let's see.

So, prior to 2007 there was really -- Chapter 19, that was it. In 2007, Chapter 19 was rearranged and the information that was in Chapter 19 was moved to Section 19.7, I'm sorry, 19.2. And as the slide says, the guidance in 19.2 was updated to extend its use to Part 52 applicants, as appropriate, and that was pretty much it.

CHAIRMAN STETKAR: This section, essentially, is the SRP that points you to Reg Guide 1.174.

MR. AYEGBUSI: That's correct. So, in

essence, it has Reg Guide 1.174 in it and a little bit more details. Again, this is it.

MR. DeGANGE: Are there any questions on 19.2? Okay.

CHAIRMAN STETKAR: It was worth the trip up there, though, wasn't it?

MEMBER CORRADINI: You don't have to go. Stay, enjoy the ride.

MR. DeGANGE: All right, so we're all good. Let's move on to 19.3, which is a new section on regulatory treatment of non-safety systems. That has been issued as final guidance now just recently, and Mark Caruso will be talking about that one.

MR. CARUSO: Okay.

CHAIRMAN STETKAR: It has been issued as final?

MR. CARUSO: Last week.

MR. DeGANGE: It has, yes.

CHAIRMAN STETKAR: Wow.

MR. CARUSO: So, again, I'd like to just summarize, you know, this new SRP for the Full Committee, and to talk about the key issues that were raised at the Subcommittee meeting on this SRP.

So, as Jonathan said, SRP 19.3 is a new section that addresses regulatory treatment of non-

safety systems for passive designs. It's basically based on the Commission policy that's described in multiple SECY papers that were developed during the time of the AP600/AP1000 reviews. We also applied these policies to the review of the ESBWR which is a passive design.

The SRP provides top level guidance, and a fair amount of specific guidance for reviewers, but because the RTNSS touches systems in many, many areas it's a large –- it's a review that's done by a number of people, a number of organizations. And in some cases when you get to specific systems, water systems, or I&C systems, there's additional guidance that they're putting in their –- well, their design-specific review plans for the IPWRs, which we talked about yesterday a little bit. And then, eventually, in the SRPs they'll include that, too, so there might be some additional SSCs for guidance elsewhere. Can I have the next slide?

So, this slide basically identifies the areas of review that we identify in the SRP to be looked at. The first is the selection process for RTNSS SSCs. How does the applicant –- how is he scoping them in? There are scoping criteria he's supposed to apply. Has he done that correctly? We have

added guidance in the SRP related to the functional design of the SSCs. And this was important because these are non-safety systems and components. And in many cases, there isn't any, you know, guidance how we should review that since, you know, we've always focused on safety systems.

So, we looked at, you know, the four items here. You know, fundamentally, what is it that we need to confirm? What are the design requirements? How are they complying with them? You know, is the thing going to do what they're counting on it to do for an accident beyond design basis? That's really the crux of it.

MEMBER SKILLMAN: Mark, this is a curious area from my background and experience. When I think of non-safety systems, I think of drinking water, sewerage, compressed air, not safety, okay, not I&C compressed air, but plant compressed air. And there are probably 20 systems like that. Why do these need any treatment at all other than to the extent that their behavior could trigger an event?

For instance, if you fail a sewerage tank in the plant, you can add some not so pleasant internal flooding. Okay? If you explode a compressed air tank non-safety in the wrong compartment you can

create an over pressure and maybe trigger some fire system, or some other event. But, by and large, this population within the plant is fundamentally benign, so why does it need treatment at all?

MR. CARUSO: Well, those systems that you mentioned, that type of system doesn't –- probably doesn't need treatment. And probably I didn't see anything of what you mentioned scoped into it.

Remember what this is about. This is about passive designs where, you know, a lot of the systems that were relied upon in the active designs, the current operating plants, things like diesel generators, service water system, pumps, they're all safety-related for the operating plants. The passive designs use passive safety systems. They don't –-

CHAIRMAN STETKAR: Remember, Dick, the emergency diesel generators for AP1000 and ESBWR are not safety-related systems.

MR. CARUSO: That's where this came from, was to say, you know –-

MEMBER SKILLMAN: Got it. Okay. The light just went on.

CHAIRMAN STETKAR: Okay.

MEMBER SKILLMAN: I was thinking sewerage, you're thinking emergency diesel generator –-

CHAIRMAN STETKAR: Anything that is not called safety-related is non-safety related.

MEMBER CORRADINI: But it could be RTNSS.

CHAIRMAN STETKAR: But it could be RTNSS. And, indeed, they are in those plants.

MEMBER SKILLMAN: So, thank you. I'm coming up to speed pretty quickly over here, by the way.

MR. CARUSO: I think at the Subcommittee meeting I went through the genesis of RTNSS, and a lot of these things, and we felt like, you know, we'd sort of scale the presentation down. So, by all means, if something doesn't seem to make any sense --

MEMBER SKILLMAN: It does now.

CHAIRMAN STETKAR: Not that RTNSS makes any sense, but --

MEMBER SKILLMAN: It makes more sense now than it did five minutes ago. Thanks.

MR. CARUSO: We'll get to that on the last slide. Okay. And then the focus PRA sensitivity studies, we identified that -- I mean, the focus PRA studies are actually part of the selection criteria. They're factored into deciding what goes into the program and what doesn't, but they're listed here specifically because that work is done by a specific review organization. And as I said, there are many

review organizations involved in this.

Augmented design standards for RTNSS B SSCs. RTNSS B SSCs, there's –- the B comes from sort of five categories of criteria of what SSCs should be in the program. And B is for –- remember these –- the way these passive designs are done is that they're designed to basically satisfy safety functions after an accident for 72 hours with their passive safety systems. Operators, theoretically, don't have to do anything. They just –- water flows down by gravity and goes in the reactor, and steam comes out, and just goes on and on for 72 hours. But the design philosophy that the Utility Requirements document states that they have been following is that, you know, their systems will be good for 72 hours, but that after 72 hours, you know, if they're relying on a big tank of water to be the heat sync, they need to refill that tank of water to keep cool.

So, the NRC has said okay, you know, you need to have some systems to do that, and it's okay to have non-safety systems to do that. But you need to make sure that those systems you're relying on are available after 72 hours up until seven days.

And, in particular, the NRC was concerned with the possibility of, you know, a natural hazard

event, a seismic event, you know, taking these things out because they're not safety-related so they're not designed to all those standards, and then not being able to get them fixed. And here your 72 hours is up, and these things that you're relying on to refill your water systems, or do whatever are not available. So, they said there should be some very focused requirements for these systems, which is that they can handle safe shutdown earthquake, that they can handle flooding, that they be designed to make it through those kinds of conditions. And that you need to have, if you need supplies like fuel oil or pumps, whatever, water, it's got to be on site. You can't be counting on going offsite and getting this stuff. So, that's what we mean by augmented design requirements for those SSCs, very focused requirements.

And then the last thing we look at, we look at what level of treatment are they applying to the various SSCs that are scoped in the program. Does it seem to be appropriate? Should it be a tech spec for availability, or could it be a simple availability control which has less stringent timing required. The next slide.

So, the Staff's review basically, you know, is focused on, you know, verifying that they've

met the selection criteria and done the scoping correctly. You know, you look at their design to the extent that I mentioned before.

We also –- one of the other issues about passive designs was we wanted to make sure that, you know, if you were going to have these active systems come on in an accident, during an accident, and they do have active systems. I mean, the ESBWR has a low-pressure and ECCS injection system. It's not called that, but it can do that. So, they were concerned that in some cases, you know, they will actually use the active systems first to –- call it investment protection. So, there was a concern about well, could using the active systems and the passive systems at the same time, or if they came on, could there be an interaction that sabotaged the ability of passive systems to perform their safety function? So, part of RTNSS is for them to look at the potential for system interaction, and if they find something, to do a systematic study. And if they find something, to design it out. And if designing it out requires relying on some non-safety piece of equipment, that equipment should be RTNSS. So, that's another part of RTNSS. And we look at their –- at the study they do and the results they've come up with.

We look at the focus PRA results to see that they're reasonable. As I said, we look at their treatment for each of the SSCs at the proposing. Does it seem to make sense in terms of the importance of the SSCs? And we also check to make sure that –- the Commission has stated these RTNSS B SSCs that I mentioned before are very important, and they specifically should have some sort of availability control on them.

These plants have what's called an Availabilities Control Manual, which is –- looks very much like tech specs, but it doesn't have the –- it has surveillance requirements, it has limiting conditions for operation. It just doesn't have the follow-up actions that tech specs have which, you know, if you can't get things fixed in a certain amount of time you need to shut the plant down, that sort of thing. It basically says, you know, if you have something that should be available and it's not available, you know, make it available as soon as you can. So, they're a simplified version of Availability Controls.

And we also look to see that, you know, given the results of the focus PRA and what –- how these systems are being depended on, you know, is

there a case to be made for being in tech specs? And I would mention that we are also working –- we're now working on additional guidance very specific related to technical specifications. There's a criterion in 50.36 that says that anything that shows up as significant to public health and safety from a PRA or from operating experience should be in tech specs. We asked the question of all new reactors, you know, tell us –- show us how you have satisfied all the criteria in 50.36, how you've scoped SSCs into tech specs based on this criteria.

For that last criteria, we haven't had very much guidance as to how you do that, and what criteria you use to make those decisions about how do I know what a PRA is? Probably, I should put something in the tech specs. So, we have developed a draft Regulatory Guide which is still internal, and we hope to issue it for public comment soon. And I believe we will be coming to discuss it with you. And we've developed very specific criteria for deciding –- so, that's very germane to RTNSS, because this guidance that I'm talking about applies to non-safety systems, as well as safety systems. Next slide.

So, these are the key issues that were raised in the Subcommittee meeting. The first is the

observation that RTNSS is a licensing certification activity. There are no requirements on RTNSS. It's a Commission policy for examining these systems and assuring that you have proper backup for the passive systems that's done during the licensing phase. And part of it is to –- part of the process is using PRA to identify what's important in certain areas. And, you know, the issue was well, after -- the PRA you have during licensing is not the PRA you're going to have at fuel load, which will be a much more robust, much more complete PRA, but that PRA is never used to go back and reevaluate RTNSS. And maybe if you did that, you might find that there are additional things to be scoped into RTNSS. You know, very insightful observation.

And, you know, because there are no requirements, all I can say with respect to this is that it's –- I think –- it's not as bad as it sounds. One thing is that the RTNSS SSCs are normally scoped, part of a treatment that they get, sort of a minimum level of treatment any of them get is to be included in the Reliability Assurance Program. And, as we said, they're on the RAP list. They just –- they like automatically go on the RAP list, honorary members. So, they will be scoped into the Maintenance Rule

Program, which as we discussed before will utilize the fuel load PRA to look at things. So, the fact that, you know, you're going to be addressing reliability through the Maintenance Rule Program and using the fuel load PRA to support that, if there are additional non-safety systems that should somehow have been scoped into the Maintenance Rule, that will happen.

In the longer term –- so, in the near term I'm not so concerned about it, because I don't think non-safety systems are going to –- that are very important and should be covered with reliability programs are going to get lost because they were –- you know, because we used a PRA that was less than desirable to identify RTNSS systems.

In the longer term, the whole issue of treatment of non-safety systems is something that's —-- you know, a topic that came up in the Near Term Task Force Recommendation 1. You know, Recommendation 1, which talked about a whole framework for dealing with non-safety systems including treatment. As you know, there were some recommendations made on dispositioning that in SECY-13-132, and the Commission did not accept them, but they said –- they kept the door open by saying, you know, you need to consider this whole topic as part of the work you're doing on the

dispositioning of the recommendations on NUREG-2150, which was Commissioner Apostolakis' Task Force. So, that work is still going on.

MEMBER BLEY: So, is that where this gets covered in the long term, or is it somewhere else, or do we know yet?

MR. CARUSO: I don't think we know. That would be a –- that possibility. If that work was to come out with recommendations that over the longer term, you know, we come up with a framework for dealing with non-safety equipment that's –- you know, have a design extension category that covers that equipment. That would be a place where it would get addressed.

And I think I pretty much have the same comment for the second bullet which is, you know, a policy –- the second comment was that, you know, this whole RTNSS policy was developed a long time ago. You know, it seems very important that important non-safety systems that are important to risk should have some sort of treatment. We only do it on passive systems, we don’t do it on –- we don’t do it for active designs, we don't do it for operating reactors.

You know, within the context of developing the SRPs, this is an issue that's, you know, sort of

above us. And I think that --

VICE CHAIRMAN RAY: Well, this is not a surprise. I mean, having been involved 20 years ago, I can tell you that the weaknesses you're talking about were well known then. Maybe we're rediscovering them now, but --

MEMBER BLEY: Perhaps the surprise is for lack of progress.

VICE CHAIRMAN RAY: No, I mean, I don't want to get into it, but --

MR. CARUSO: No, I think for the passive systems, I think the issues about passive system designs are probably pretty adequately covered by the RTNSS policy. And there is some stuff that's in there for them that, you know, is a little strange to me, too.

I think the more important thing is the larger question of treatment of important non-safety systems for all designs. And I think that's probably the place that fixing the issues here, that would be the place to do it.

CHAIRMAN STETKAR: I'm sure we'll have more discussion about these issues.

MR. DeGANGE: Okay. We're going to move on 19.4, I believe, now. Right?

MR. VETTORI: Okay.

MR. DeGANGE: So, yes, that section has been issued as draft, and the Staff has gotten comments back on that, and is currently formulating the final guidance to be put out. So, Bob, I will let you take it away.

MR. VETTORI: Okay, next. The new SRP section incorporates almost word for word Interim Staff Guidance 016, very few changes from the Interim Staff Guidance.

Basically, the reviews conducted, usually, the ones I've been involved with by two people, someone from usually the Branch responsible for review of mitigating strategies. For us, that's Fire Protection, and also someone from the review of Reactor Systems. Next slide, please.

Okay. The regulatory requirements are there, 50.54(hh)(2) is new in the contents of the applications. NRC guidance, we've had some stuff out since February 25, 2002. We had temporary instructions I believe they used on the existing reactors. All this was rolled up into the ISG-016. Industry Guidance NEI-0612 Rev 2 for the existing reactors, 0612 Rev 3 for new reactors coming in is the ones we've been reviewing here. Conformance with this guidance or

satisfactory means compliance with regulatory requirements. Next slide. Any questions on 19.4, loss of large area of the plant?

MR. DeGANGE: 19.5 is on aircraft impact assessment, and that section has been issued as final guidance. That's also going to be done by Bob.

MR. VETTORI: Okay. As you say, that's been issued April of 2013. It incorporates our Reg Guide 1.217 Rev 0. It considers conformance with NEI-0713 Rev 8 now as acceptable methods for use in satisfying our requirements. Next slide.

And, again, the Impact Assessment Review is usually conducted now by three people, fire protection, one from structures, Division of Engineering, and also, again, someone to review the reactor systems.

The idea behind the aircraft impact assessment that we do here, it's very minimal. It's usually four or five pages, but then these three people also go out and do an inspection on site of the –- for example, Areva down in Lynchburg of the actual aircraft impact assessment that was done by Areva, or their contractors. So, the review in-house is four, five, six pages. The review of the actual inspection down there is hundreds, if not thousands of pages. Any

questions?

MR. DeGANGE: I think that concludes our presentation material. I think I can say on behalf of all of the Staff we really appreciate your time, and giving us the opportunity to come and discuss these SRP sections with you. And I think we did pretty good on time.

CHAIRMAN STETKAR: Miracles occasionally happen. Again, I'd like to thank the Staff. You covered a lot of material. I think it was useful, certainly for me. I learned a lot today that didn't come out during the Subcommittee meeting, and I think the Committee members also benefit from it.

MR. DeGANGE: One comment from Suzanne.

CHAIRMAN STETKAR: One comment.

MS. SCHROER: Hello, this is Suzanne Schroer, again, from NRO. And we just wanted to make one comment about something that was discussed earlier in 17.4, and also then discussed in 19.3 in Mark's presentation. We just wanted to clarify that the RAP list is the RAP at application, or at –- when the license is issued. It's no longer updated. The RAP SSCs do get integrated into the Maintenance Rule Program, and through the Maintenance Rule if there SSCs that are identified as risk-significant, then

they get pulled into the Maintenance Rule Program. But there's not a living RAP list.

CHAIRMAN STETKAR: A RAP list per se.

MS. SCHROER: Right. Exactly.

CHAIRMAN STETKAR: It's folded into the Maintenance Rule, effectively.

MS. SCHROER: Yes.

CHAIRMAN STETKAR: Thanks. That helps an awful lot. A couple of last things before we go back to the Full Committee. Is there any member of the public or anyone else in the room who would like to make a comment? If not, I think we have the bridge line open. If there's anyone listening in on the bridge line, could you do me a favor and just simply say something so we confirm that the bridge line is open. Anyone out there just say hello, or any words.

PARTICIPANT: Hello.

CHAIRMAN STETKAR: Thank you very much. Now, it sounds silly but it's the only way we can actually confirm it's open. It's modern technology.

Now, I'll ask if there is anyone on the bridge line who like to make a comment, please identify yourself, and do so. Hearing nothing, again, I'd like to thank the Staff for a very good presentation, really appreciate all of the

information. And with that, we will recess until, I'll be generous, 10:20.

(Whereupon, the above-entitled matter went off the record at 10:01 a.m., and resumed at 10:19 a.m.)

CHAIRMAN STETKAR: We are back in session. The next topic is Lessons Learned from San Onofre steam generator tube rupture degradation event, and Pete Riccardella will lead us through this process.

MEMBER RICCARDELLA: Thank you. We're here to listen to the Staff's plan for review of the SONGS steam generator event, which although it's been deemed not to be of safety-significance, certainly, it was a shaking event for the industry.

We understand that this is an initial briefing on the topic, and that we're really just going to be listening to a plan of attack and no real results to date. The ACRS appreciates the opportunity to look at this plan in advance and perhaps offer some comments on it.

I would advise that this is an open meeting and so we don't expect to delve into any confidential information during the meeting. And I'd welcome and call upon Craig Erlanger to begin the presentation.

MR. ERLANGER: Thank you, Pete. Good morning, everyone. My name is Craig Erlanger, and I am presently on rotation to NRR, and I will be serving as the SONGS Lessons Learned Project Manager.

You invited us to discuss the recent EDO memo, Review of Lessons Learned from the San Onofre steam generator tube degradation event, and that was issued on March 20th in 2014. Specifically, we understand that you're interested in the steam generator technical review task in that memo.

Today, the Staff will present a plan of action on milestones for this task. This is one of eight tasks that are included in the memo. Each task item has its own items of consideration within that memo.

Some brief introductions before we get started. Seated to the left of me, Kamal Manoly, who is the Senior Level Advisor for NRR's Division of Engineering; Gloria Kulesa, who's the Branch Chief in the Division of Engineering and will be conducting the briefing for this morning; and Jocelyn Lian from NRR's Division of Engineering.

At the back table, Pat Hiland, the Director of the Division of Engineering, and Emmett Murphy is in the back, and he's a Senior Materials

Engineer in the Division of Engineering. He's joining us today. In the audience we have representatives from the other task items. They are available should you have any questions on those items, and they will introduce themselves prior to answering any questions that you may have.

In the package you received today you received the plan of action of milestones and the remaining taskings and those items. I just want to just emphasize that as Pete mentioned in his introduction, we are in the formative stages of this project, so we're going to lay out for you today what our plan of action of milestones are. We're appreciative and interested in any suggestions you have as we move forward. With that, I'm going to turn it over to Gloria who's going to begin the presentation. Thank you.

MS. KULESA: Thank you, Craig. Good morning. As everyone has introduced me, my name again is Gloria Kulesa, and I will be conducting the informational brief on this event that occurred, as well as the Lessons Learned tasking that has come out of this.

I have a special request to the members this morning, and my remarks are very brief, about

five or ten minutes. And what I would ask is that you allow me to complete the remarks, and then we can engage in discussions. I felt this was a good approach to take so that the members and the audience or the public who are involved in this may not have heard much of the details, and this could give you some context to what we're doing today. Is that acceptable to the members?

MEMBER RICCARDELLA: Yes.

MS. KULESA: Thank you. All right. So, this is a steam generator event that occurred at the San Onofre Nuclear Generating Station. So, before you I have three notable points. So, the first would be the licensee did replacements of their steam generators. For Unit 2, this occurred in 2010, and for Unit 3 this was in 2011. The most notable point after this is the status on January 31st in 2012.

For Unit 2, the steam generators had operated at this time for 21 months, so that was one full operating cycle. The plant was in an outage, and this was regularly scheduled. For Unit 2 on that day, the operators received an alarm, responded accordingly, shut down the plant, and went in to investigate. On that they would soon discover that there was extensive tube-to-tube wear in the U bend

region of the steam generators, and this was one tube leaked. So, I want to correct an earlier statement. It was not a rupture, this was one tube leaking.

Afterwards in some more inspections, they would discover that eight tubes would not show adequate tube integrity per the technical specifications. So, what this means, it failed in situ pressure testing.

The licensee had stated that the cause of this was due to in plane fluid elastic instability, and they believe the cause was due to an aggressive thermal hydraulic environment along with lack of effective anti-vibration bar support against this in plane motion in the U tube region.

The last of the points that I'd like to make is the decision made in June of 2013. That was the date that the licensee declared their intent to decommission both of these units. So, that leads us to the Lessons Learned tasking.

So, our Executive Director of Operations had sent a memo to the various offices, and it directed the Staff. The memo contains a charter. It also has in it eight topic areas. We have roles and responsibilities defined, so who has the lead, and who is the supporting folks. We also have items of

consideration for each and every one of the topic areas. So, you expressed an interest today to talk to us about Topic 3, the steam generator technical review.

So, here before you, you see the membership of my team. It's very diverse. I'm showing it on a very high level, office and some of the inter-division level, but it really is eight branches that are working behind the scenes on this, so it's diverse.

We have five items of consideration for us to review. So, what I want to follow on with a point that was already brought up, and I want to reemphasize this. We are very early in this stage. The memo came out in the March time period. One month later we had the kickoff meeting, and the kickoff was for all eight of the teams where we had our first marching order. It was a deliverable at the end of May. And this was to write the draft plans of actions of milestones so they're in your folders. And also, by the way, is the tasking memo. A copy of that is, as well, in your folder.

The first week or so of June, I guess it was, Craig, that we briefed out all our draft plans, and within a few short days after that the teams

officially began working. So, this gets us to pretty much our one-month time period so far in this activity, so there is not much to talk about. But I can share with you the five items of consideration we have, and that's where I will go next, starting with the first.

This would be the Staff looking at review guidance, so standard review plans, regulatory guides. These were last updated in the 2007 time period, and it's looking at the various phases, so this could be for new construction, for replacements, or for modifications. So, add a footnote for this, for replacements there's not a lot of activity planned. There's only one licensee who has declared their intent to replace and that is in 2017.

The next two items, two and three, are somewhat related. And both of them credits the steam generator program. The first one is looking at new degradation mechanisms and should something be placed into the program addressing that. The third one being fluid elastic instability, addressing the phenomena. The fourth one now engages industry with the Staff, and we're looking at codes and standards. So, an example of this could be the ASME code. And the last being inspection procedures. So, the Staff is looking

at both in-service and vendor inspections.

That is really the conclusion of my prepared remarks that I had, so they are very brief. I hope I relayed to you the fact that we have a very diverse team looking at various phases, and we're very early into the process. So with that, Craig, do I turn this back to you, or to the members?

MR. ERLANGER: We can open it up to the members. I'll just offer that we are committed to providing you updates as we get traction leading up to the December due date, so we can discuss that at the end if you prefer, but I'll open it up for questions.

MEMBER RICCARDELLA: I think we were interested in a little more than just the level –- just Topic 3, the technical review. And, in particular, you know, our members have expressed concern, I think it's probably related to the last topic which is vendor inspections. And, you know, in particular, our understanding of the root cause of this event was that there was, basically, inadequate review in accordance with the ASME code and 10 CFR 50, Appendix B, Quality Assurance Standards. And that, you know, that led to the problem that caused the degradation.

And the concern is, you know, this

happened to be a situation in which it was detected by some leakage and didn't lead to a safety concern, but are there other concerns of this type that are latent that might not be so easily discovered, and might not be discovered until something more serious occurs? So, is there something that we should be doing to make sure that these Appendix B programs are being implemented by vendors –- by licensees and vendors? I think that's how I can best express the concern.

CHAIRMAN STETKAR: Kind of as a follow-on to that, Gloria, you mentioned that, in particular, and I think Pete is highlighting areas broader than just steam generators.

MS. KULESA: Yes.

CHAIRMAN STETKAR: But you mentioned, in particular, in steam generators that the next planned replacement is I think you said 2017.

MS. KULESA: Correct.

CHAIRMAN STETKAR: What's the Agency doing today? This is not something that you go down to Walmart and buy off the shelf. The design process for those replacement steam generators and fabrication, I'm sure, is well underway even as we speak despite the fact that they may not be cutting the hole in the containment until 2017. So, what is the Agency doing

today?

MS. KULESA: May I ask Ed Roach in order to respond?

MR. ROACH: Good morning. I'm Ed Roach. I'm the Branch Chief of the Mechanical Vendor Inspection Branch within the Office of NRO. Under my responsibility includes individuals who will inspect the various mechanical vendors who provide both components for operating and new reactors.

Currently, our plan is described among inspection procedures, inspection manual chapters, and our Vendor Inspection Program plan which I discussed probably about a year ago when we came in to talk about large components in the vendor inspection process.

Today, we are tracking by virtue of the vendors we know of and we constantly gather intelligence on those vendors who are providing and preparing large components, significant safety-related components for both operating and new reactors. Sometimes that's a challenge to chase them down, but we are aware of at least one vendor who is preparing steam generators, once-through steam generators for a facility, and we performed an inspection of that vendor.

Typically, the basis of our inspection starts with the Appendix B criteria, 10 CFR 50, and the procurement specifications that are provided to that vendor. And then as we perform that inspection, we attempt to tie that inspection to significant technical work being performed so we can at least assess whether that individual is actually implementing their quality assurance procedures when they're performing the technical activities.

That's how we approach it right now. We are aware of one other vendor at this time. We had a conversation earlier this week who told us they are preparing steam generators for another formerly prepared site that's going into hibernation but possibly coming out later. So, the time frame is 2016-2017 is what I'm aware of right now. But we constantly seek intelligence on which the vendors are preparing various components.

MEMBER REMPE: So, you were doing that, though, in this case, looking at Appendix B as part of the inspection process. Right?

MR. ROACH: Actually, I would say from the period of the late 1990s to the formation of the Office of New Reactors in 2007 time frame, there wasn't as much activity in the area of going out to

large component manufacturers and looking at their inspection of their fabrication.

MEMBER REMPE: So, you are taking increased emphasis on it now as a –-

MR. ROACH: Yes, and I would say we've kind of broadened this. We don't –- it's not just steam generators, it's major modification components. And the one –- one of the teams that's working under this San Onofre Lessons Learned is Team 8, which one of my members is assigned to lead, has members from a couple of the Regions' technical staff to look at how we can make our process better and set the criteria for when we go to inspect. That's the goal out of that one right now.

MS. KULESA: As a matter of fact, the plans are Topic 8, and that's in your book, as well.

MEMBER SCHULTZ: Just for clarity, it sounds as if the resurgence of the program came because of new reactors, not because of this particular issue.

MR. ROACH: I'd say that's correct. The Office Director for NRO, Glenn Tracy, when he was the Division Director for Division of Construction Inspection Programs took the Lessons Learned, NUREG-1055 and encouraged the development and resurgence of

the vendor inspection and the necessity for that. So, some of the challenges are getting to the international vendors in the right time frame, but we've managed to overcome that. And later this month we have team members going to Pusan in Korea to observe welding of the RCP casings onto the AP1000 steam generator, so that will include Appendix B, or affected portions of the criteria when we get there.

MEMBER BLEY: I don't know all the NUREGs by number. What is that?

MR. ROACH: NUREG-1055 was –- I've got to think when it was published, but it basically was the Lessons Learned from the previous construction projects and build of nuclear power plants.

MEMBER BLEY: Okay.

MR. ROACH: And one of the key items in there is to have, basically, a more proactive or aggressive inspection of fabricators, suppliers.

CHAIRMAN STETKAR: You don't need to cite the specific date, but could you narrow it down to a decade or a half a decade?

MR. ROACH: Well, it was the '90s when it came out.

CHAIRMAN STETKAR: Okay.

MR. ROACH: I do remember the '90s.

MEMBER SKILLMAN: I'd like to ask this question. Your comments relate to application of Appendix B to 10 CFR 50 to fabrication of components pretty much. What consideration has been given to inspecting the underlying capability of a sophisticated replacement component? I'll give you an example.

Supposing you change out the seals, the seal package on a reactor coolant pump. It's fairly sophisticated, has the capability to be a LOCA. The basic designs are fairly well understood, but we've learned that a slight tweak to a basic design can create a very different seal package. And that new design is normally tested very rigorously before it is presented for use.

I would go so far as to say in most of the sophisticated components in any of the fleet today there has been a tremendous amount of testing of those components before those components have been brought to use. So, to what extent does your inspection program inspect the test results to insure that the component that you are now watching being fabricated is truly fit for duty?

MR. ROACH: So, to restate the issue, within our Vendor Inspection Program the question is

how well does our program inspect the testing or test results of sophisticated components in the operating fleet that are put into service?

MEMBER SKILLMAN: No, let's talk about a replacement. You're going to have inspectors in Korea, I think you said Pusan, looking at welding, so they're looking at welding of the reactor coolant pump bowls.

MR. ROACH: Yes.

MEMBER SKILLMAN: How do you know that reactor coolant pump is fit for the duty that it is intended for when it is finally brought into use? Do you inspect the test results, the test program to make sure that even with the welds, that device will do what it's supposed to do?

MR. ROACH: We're speaking in general right now about new reactors. And within the new reactor, the AP1000, around the 25th of June we had a limited scope inspection at Curtiss-Wright electromotive devices to look at their reactor coolant pump program where they are –- currently have some parts fabricated for U.S. plants, but they're working mostly on international customers. So, all the risk-significant –- our plan has us look at the risk-significant components and inspect them. So, we did a limited scope, planning to come back for a major inspection,

and also look at –- they have a test loop there that tests the pumps that operating pressure and temperature to do run out loss of cooling, various tests, so we do look at test control, and we've looked at test control on a variety of what I would call risk-significant new components for the AP1000 design, nozzle check valves, squib valves are examples of that.

On the operating fleet we typically depend on operating experience and communication from the Office of Nuclear Reactor Regulation when there are significant issues noted within the operating fleet that they want to engage the Vendor Inspection Program into. We track Part 21 notifications. We look at operating experience. We were aware of one manufacturer's limited leakage seal issues and had talked with the NRR representative to see if we needed to initiate a vendor inspection on that area at this time; however, it's just in a watch and wait mode. But we do monitor that, that’s part of our system for –-

MR. HILAND: If I could add to the discussion.

MEMBER SKILLMAN: Sure, Pat.

MR. HILAND: Okay, thanks. I'm Pat Hiland, and I'm the Director of the Division of Engineering in

the Office of Nuclear Reactor Regulations. And I think your question is a little bit broader than new reactors and inspection, and the Vendor Inspection Program. As I'm sure the members all know, we have, you know, the 5059 process, and if a design change doesn't meet that criteria, you know, that change could come in under the license amendment request.

You know, currently and specific to the seal packages under the mitigation strategies that we're working on, and the Japanese Lessons Learned Program, we are in the Office of NRR reviewing some new designs. And those new designs in the seal packages are to get credit for the mitigation of the seals. So, those seal packages, members from our engineering group in my office, as well as the vendor and mechanical specialists have gone out and looked at –- there’s two manufacturers to date, and we’ve gone out and looked at their test results. We verified their criteria, and we're still looking at it.

So, I think to answer your question, it depends. It depends, you know, is this a finished product, is this a product that's been approved through the licensing process? Then our vendor people would get involved. If it's a new design, something brand new under the 5059 process that you would go

through, we would look at it from an engineering perspective, and then include at the end possibly the Vendor Inspection Program.

I had the Vendor Inspection Program within my Division prior to 2007, and then it was much smaller than it is today. We relied a lot more on industry, the NUPIC industry audits. We accompanied those audits to verify that the industry was looking at the vendor support programs. Now, with the new reactors, though, over the past seven years, that program has grown to what it is today to support the construction of new plants, the Vendor Inspection Program.

MEMBER SCHULTZ: Pat, what I'm hearing from the two discussions we've just had is that the overall quality programs for the vendors, a review of that is held by organizations such as NUPIC, or individual licensees holding the responsibility for performing the review of the vendor quality programs. I'm talking about the whole program associated with quality, or is there particular NRC involvement associated with that other than accompanying the programs that NUPIC, or reviewing the programs that NUPIC develops?

MR. HILAND: Yes. I'll let Mr. Roach speak to the new construction. He's more familiar than I,

but for the operating fleet and how we did business prior to '07, you know, what the vendor group did at that time is we would go out and look at, essentially, problems that were brought to our attention. If we had problems brought to our attention, we would go out and do a specific inspection activity at that vendor. And in parallel with that, of course, would be to accompany industry. They have the overall responsibility to implement the Quality Assurance Programs. Our responsibility is to assure those programs are being done in accordance with the Appendix B and the N Stamp Program, et cetera.

MEMBER SCHULTZ: But from what you've said, and what I've heard here is that it's incident-driven.

MR. HILAND: It's incident –- for the –- prior to '07 it was, I wouldn't say incident-driven, but it was problem-driven, problems brought to our attention. For the most part we would go out, although we did sample from time to time, but we accompanied NUPIC. That was part of the vendor program, the way it was prior to '07.

Currently, I think, and Mr. Roach, you know, they have a selection criteria they go through to visit all of the various vendors that are manufacturing products under the Appendix B program.

MR. ROACH: Again, typically, the first time we go to a vendor we do assess their quality program, whether they're an NQA-1 to meet Appendix B, or they're an ASME code shop under the 3800 Quality Assurance Program. So, we do look at that when we go in there, and we also have representatives, as Mr. Hiland said, that follow with NUPIC. We go on at least two NUPIC audits a year to continue to have assurance that they're performing the right oversight by the licensee, or the licensee's representative. And we also attend the conferences that NUPIC provides, so we have an understanding of which vendors are problem vendors, and we –- if we feel that there's not an active approach to solving that problem we may get involved in there. But our first inspections at a vendor typically include the Quality Assurance Program to make sure we feel that they meet all the appropriate Appendix B requirements, and the procurement specs that they're working on.

MR. HILAND: And just to be clear –- Pat Hiland speaking. Just to be clear, when the Vendor Inspection Program was moved over to the Office of New Reactors they took it all. They have both new construction, as well as the operating fleet today, and we may help them, or we may assist them on

inspections they do, but the Vendor Inspection Program exists in total in the Office of New Reactors.

MEMBER SCHULTZ: Thank you.

MEMBER RICCARDELLA: You know, bringing it back to the SONGS steam generator issue, you know, our understanding is that that was a design problem, not a fabrication problem, and part of the design issue was to test or not test that new design. And that was in the pre-2007 time frame when that design work was being done. So, you know, are there some Lessons Learned there looking back at what the program was back there when that design work was being done, why that decision was made to not test that new large steam generator design?

MR. HILAND: Since, I think you're looking at me, this is Pat Hiland. Let me just try to give an opening comment, and then have Staff respond.

I think the purpose of today's discussion is to look at what our planned activities are, and I'm not sure –- the topic that you're discussing, I'll ask my Staff, do we have that covered in our planned activities moving forward, or is that a suggestion that we could capture?

MS. KULESA: I believe this would be something to capture. I don't believe this is

something that we had intended to bring within this topical area. It might also be an item that –- a possible other topical area, so we could capture this as an action item.

MEMBER SKILLMAN: I'd like to –-

MR. HILAND: Let's be more succinct on what the point is.

MEMBER SKILLMAN: Pat, I'd like to get back into this because I want to kind of push the thread that Dr. Riccardella just introduced.

You raised 5059, and my comments are not intended to be pejorative, but I spent a lot of time in plants making modifications. I understand 5059, and for the uninitiated, 5059 is a screen as to whether or not you need a license amendment. It is not the basis of an engineering evaluation. The engineering evaluation is a completely different piece, and the rigor of that evaluation will determine the success of the plant's operation with that modification, whether it's a teeny modification or a huge modification.

So, I think when I read all of this, and when I thought about what we're trying to do here today, maybe one of the things that the ACRS can do is to identify several other items that are valuable in the consideration of the San Onofre Lessons Learned.

So, back to Dr. Riccardella's point. If the pitch on the tube was fundamentally different than the generators that were removed, if the pitch on the tubes was fundamentally different than the pitch of the RSGs that were removed then I, for one, as a PE in a couple of states would say that's a major change. And if you don't know the thermal hydraulic conditions under which that tube behavior will create some phenomenon, then you probably have not fully evaluated that modification.

So, whether it's a modification to a high-pressure injection pump, a pressurizer heater, a pore, a squib valve, a module in RPS, to the extent that what you don't know is important needs a test, or needs some treatment beyond we think it's okay because it's a like-for-like comparison. I'll give you a good example.

We changed out a bunch of relays at TMI using phosphorous boron springs. We were down deep in the procurement rule, and we said this is a like-for-like replacement, and we learned that the difference between a 5 mil thick and an 8 mil thick spring avoided the wiping contact that is necessary to insure connectivity on ESAS actuation; a very subtle point, but it's the difference between operable and not

operable for that device which happens to be a safety grade device.

Thinking of San Onofre, again, not trying to be pejorative, the Lesson Learned might be that on any component replacement, first of all, you've got to know what's changed, and you need to know from what's changed is there test data to confirm that what you anticipate the success path to be, to be fulfilled. And I will say that I learned that lesson a number of times very painfully. The devil is in the details, and the thick magnifying glass for the modification is what carries the day. And with that, Pete, I'll turn it back to you. That, to me, is the –- perhaps the residual that I would take away from this very significant industry event, world event.

MR. HILAND: Yes, I understand. And I'm not sure that you've had enough time to go through the plan of action under the 5059. I agree with everything you said. Okay? With that, our topics under there and where we are looking those, in general, would be captured, or did we miss something?

MEMBER SKILLMAN: I did not see in the reading that I did that the sophistication of the mod perhaps under 5059 needs a tag. One could say under 5059 I'm doing a like-for-like, so I do not need a

license amendment. But I think an astute person would say wait a minute, this is not like-for-like. The sophistication of this device is so great that this probably deserves greater consideration, not necessarily from an economic perspective, but from an overall plant design and safety perspective because you don't know what you don't know.

MEMBER RICCARDELLA: My perspective is whether it's a 5059 or a license amendment, it doesn't matter. The engineering has to be done right.

MEMBER SKILLMAN: Well, I agree with that. The problem is a 5059 can avoid that step if those writing the 5059 say this is really not –- this doesn't require a license amendment.

MEMBER RICCARDELLA: But it has to meet ASME code –- this particular one had to meet ASME code requirements. And as I read the code, it would have required testing because this is a substantially new design and not a simple geometry.

MR. KOKAJKO: Might I interject for a moment? This is Lawrence Kokajko, I'm the Division Director of the Division of Policy and Rulemaking. And I would say that we agree, we understand your point. And those are the questions that we are evaluating under this plan of action.

One of the things we are doing is to look at –- evaluate the adequacy of 5059 as for such large complex components and to determine whether we need additional guidance in this area. And like-for-like is one topic that we are addressing.

We are in violent agreement with your comment. We understand the concern because we have it internally ourselves, and we are asking those same questions. We're looking at this with a fresh set of eyes right now, so I understand both your points. I, personally, would agree that this needs to be further evaluated, and we are doing that. And that's part of the process that we're going through now, and that's what the –- we were tasked to do, and we have been working this for some time.

Some of these questions were raised as soon as we got wind of this problem some time ago, and we've been trying to assess it ever since. And now we're formalizing it under the plan of action.

MEMBER RICCARDELLA: Thank you. I think maybe the message is that, at the ACRS, I think we would like to be involved in a little bit more than just Topic 3.

MR. ERLANGER: This is Craig Erlanger, and when we come back to brief you again what we'll do is

we'll expand the scope for greater than Item 3 and include that topic, as well. And we'll have to go back and look at all the items, and we can work with your Staff to do that, as well. If there's anything in there you're interested in, we can include that in the brief, as well.

MEMBER SKILLMAN: Thank you.

MEMBER BLEY: An organizational question. I haven't had a chance to read everything that you guys passed on and we found on the website, but is there a single document that's your basic planning document? Do you have something –- there's a lot of parallel activities. Do you have something like a per chart that lays it all out?

MR. ERLANGER: To understand your question, for the actual milestones?

MEMBER BLEY: Yes, how to get there.

MR. ERLANGER: Can you slide up Slide 10, please?

MEMBER BLEY: I mean, you've got all the milestones but there are all sorts of parallel activities that are going on there.

MR. ERLANGER: Absolutely. And what the slide that is being presented, Slide 10, that's the overall project milestones we're working towards. For

each actual item in the backup slides we'll walk through –- we walk through by item what the project plan is. What we can do is streamline that a bit to keep you abreast of what our activities one. And one thing we're going to talk about at the end, and we could talk about it now if it's more appropriate, is when to engage and come back to you all when we get a little more traction. But does that answer your question, sir, kind of the dates we're working towards?

MEMBER BLEY: That's a start. It's a start. Go ahead.

MR. ERLANGER: So, just quickly, as Gloria mentioned, we're just now getting underway. The key milestones that I'll pull out are really in the October time frame when the actual deliverables for the individual items are going to be put into the project team. Obviously, it would make sense that we get back to you prior to that date to understand if we're capturing your concerns, so we'll look and work with your Staff.

I would throw out a fall time frame to talk to you, early part of the fall, at the end of the summer to come back when we get a little bit more meat on the bones and have some information to tell you

where we fell out on the individual items. And that would be my recommendation.

MEMBER RICCARDELLA: John, do you think we should schedule –-

CHAIRMAN STETKAR: October Full Committee meeting looks like a good target date. Work with our Staff.

MEMBER RICCARDELLA: Should we schedule a Subcommittee, do you think?

CHAIRMAN STETKAR: That's up to you, Pete. Probably, but that –- it depends on the level of depth, and that you can work with the Staff –-

MEMBER RICCARDELLA: Okay, I will.

CHAIRMAN STETKAR: –- to decide whether you want –-

MEMBER RICCARDELLA: Maybe we might want to have a Subcommittee meeting –-

CHAIRMAN STETKAR: It probably would make sense to delve into more detailed information than we can in the time available in the format of the Full Committee meeting.

MR. ERLANGER: Absolutely. And those other items such as the 5059 task, and if there's any more in there that you want us to weave into the presentation, we can do that at that time.

CHAIRMAN STETKAR: But I think the message is we'd like to engage as a Full Committee and, you know, earlier rather than later.

MR. ERLANGER: Absolutely.

CHAIRMAN STETKAR: Keep abreast of what you're learning and what's going on, and at the Subcommittee level to delve into more detail. So, kind of September-October time frame sounds, looking at this schedule, like an appropriate opportunity.

MR. ERLANGER: And about the schedule, we did factor in, it looks like there's an enormous amount of time between October and December to pull everything together, but we recognize the holiday season, folks being out, getting a document through multiple offices for concurrence and whatnot, so that's why we're planning to get stuff done in late October.

CHAIRMAN STETKAR: And, quite honestly, from our perspective this, obviously, will have Commission visibility, and we should not be put into a position where our input is too little too late, so we need, I think, collectively to remain sensitive to that as you rush to finish the thing before the holidays.

MEMBER RICCARDELLA: Do any of the Staff

have any –- any of the members have any additional comments or questions?

MEMBER POWERS: Maybe it's too soon to ask this question, but it would seem to me that the inspection program is very much activity focused, and the question that you raised was one of engineering. And is that the issue that's going to be addressed by this task force?

CHAIRMAN STETKAR: And I think that's a fundamental question. I think it is the fundamental question.

MEMBER SCHULTZ: That's one of the reasons why I raised the quality program as being, if you will, the general definition of what resulted in the failure here. That is to say, if you wish to identify how to prevent such problems from recurring, just focusing on engineering, or focusing on 5059 process is really not going to do it. You may demonstrate that you'll address the issue for this type of component replacement, but that –- I don’t feel that should be the objective of the investigation. I think it should be broader than that.

MEMBER BALLINGER: It's really more a process but the process didn't work with respect to the overall –-

MEMBER BANERJEE: But even if the process was there --

MEMBER BALLINGER: It was there.

MEMBER BANERJEE: -- would you have caught the issue? To me, this is really -- I mean, what sort of testing would have caught this? Imagine you did testing. It's not obvious that you would have caught it, you know. So, I think there are always going to be issues like this, which are not going to be very easy to resolve.

CHAIRMAN STETKAR: But if you didn't do any testing you had no opportunity to catch it.

MEMBER BANERJEE: I think we need to look into this.

MEMBER BALLINGER: The process that we failed to point out that you really did need to do the testing.

MEMBER RICCARDELLA: Yes. I think there was an error that led to the -- an error in the calculations that led to the decision not to test that a proper QA program would have detected that error, and that might have driven the decision to test. That's my understanding, anyway.

MEMBER BROWN: Why would it have been -- since I'm not a steam generator guy, why would it

have been calculations? I mean, determining similarity of the design based –- that's looking at what have they done internally, and what are the differences that you see internally in the replacement? That's more of an engineering assessment which brings judgment into play, because it can go all kinds of places, not just necessarily those changes. But what about a manufacturing process that changed slightly? I was involved in one of those where the design was great. We didn't know they shipped it off to Puerto Rico to have the laminations pressed for a relay contactor, supposed to go for a million operations. Well, the operation down there quenched the laminations after they stamped them in oil, didn't clean them, assembled the relays. We got them into ships. The ships were in areas where it was warm, the oil oozed out and the contactors stuck, and your rods keep going out. Not a good plan. I have to deal with Rickover on that one. That wasn't fun, so –- and I had to solve it. It took a while to figure that out. It was merely a matter of how the guys in a U.S. facility, you know, had all the QA stamps, they had all the quality there, they had all the processing paper filled out.

MEMBER SCHULTZ: But in the quality program

the right questions weren't asked.

MEMBER BROWN: I'm not arguing about that, but it took a while to figure out. There's all these –- and just figuring out, you know, what does it look like, what's similar and what's not, you know, changing stuff out and assuming it's similar is just fraught with peril if you're not very, very careful. So I just think it goes more than –- a QA program, that's got -- the engineering at the beginning of the whole thing when you're doing the replacement is what really sets the tone for getting on with it. That's personal opinion.

CHAIRMAN STETKAR: Some of these –- I mean, these are difficult questions to address, but they're fundamental questions to address. If I look at the schedule, this is basically a six-month effort. I know you have several people working on it, but it's still calendar time, it's a six-month effort. And if you address simply the little issues that you've identified in your items here; oh, yes, I can look at procedures. I can look at additional guidance for inspectors, I can look at all of that stuff in six months. Six months sounds like a really short time to really delve into the fundamentals, in the same way that if people had been doing their job and really

asked the right questions of the engineering, we wouldn't be sitting here today. If you're not challenging yourself to ask the difficult questions about the process, at the end of six months we're going to have a very superficial review and conclusions that yes, we need to add the –- you know, one line to one inspection guidance that says an inspector for this type of material should look at this particular element. That's not going to solve the problem.

So, in some sense, if you're not going to tackle the difficult issues, the six-month schedule might be okay. If you're going to tackle the really difficult issues, it's not clear you can do that in six months.

MR. ERLANGER: And I think one possible outcome is we will –- if we can identify those issues and part of the report is the recommendation that a particular program area needs to be a focus of effort and the follow-on, that could be one outcome of it. You're right, it's not a lot of time, but I think we can get some good traction and at least identify what the issues are and come up with a plan on how to approach them in this time period.

CHAIRMAN STETKAR: As I said, you know, in

the sense of our engagement, that's why sort of a third of the way through this timeline here that's up on the screen now seems reasonable, because you'll have –- by that time you'll have had two or three months to actually –- or a couple of months, anyway, to really think about what you're doing. Kamal, you would like to say something?

MR. MANOLY: Yes, I would just like to add that a couple of items that came up in discussion. One is the compliance with ASME Appendix N. We know ASME Appendix N we don't endorse the regulation, but the licensee had committed to it. The fact that the configuration they have for the plant is not the same as the one –- the formulation in ASME describes, so testing clearly would have been the obvious thing that should have been done.

MEMBER RICCARDELLA: It should have been tested.

MR. MANOLY: Yes, that's pretty much obvious thing to me that is missing.

The other thing is the discussion about similarity. Industry use similarity for equipment for seismic, as well as for component that has low induced vibration. There's a lot of work that was done in the seismic area on similarity and grouping equipment in

classes. We look at that closely in the seismic area. I'm not sure how much similarity is used for steam generators testing, but to me that goes to the heart of the engineering deficiency that was found. A lot of other things, how to capture it, I guess that's a different issue. But, clearly, there was not compliance with ASME in that event.

MEMBER BALLINGER: But, again, that was a specific thing. I mean, to me there were a couple of paths that we're on there that the process should have identified and found. There were simple blunders, if you will, in not transmitting the pitch difference between the square pitch and the triangular pitch, errors in calculations. The process should pick that up. And then there are areas in judgment that go on related to test or not test.

How does the –- are you looking at the way the process works, and if you identify these sort of incidents that happen, plus the errors in judgment and things like that that happen, is it –- are you going to flow all that in? I'm maybe not wording it right, but to me it looks like the process didn't find, or didn't see the obvious sort of high school blunders in some cases, but also the more general part that Dr. Riccardella is talking about, and that is the issue of

making a judgment, should I test or should I not test? The code specifically said yes, and in retrospect it's obvious that that's correct, but somewhere along the line they decided not to. There must have been a reason why they decided not to. And that's part of the process itself, and that's the QA thing that Steve is talking about.

MR. ERLANGER: This is Craig Erlanger. I think we understand the comment and suggestion. We've heard it from different angles this morning. We need to take that back and discuss it as a team. We have a meeting this afternoon, and find a way to weave those thoughts into the Lessons Learned product, and we will do so. And, again, when we meet in the next setting we'll have a larger group present, and we'll discuss how the interdependencies between these tasks, and how we have accounted for them.

MEMBER BLEY: Great.

MR. ERLANGER: It's not far enough. We need to take that back and work on it.

MEMBER BLEY: This gets me wondering. I was –- I don't want to get too far –- my nose too far into the management of this thing, but your discussion with John about schedule. When I look at this, this is all team meetings and drafts. We've got feet on the ground

technically actually doing work now, or are we still organizing how we're going to do this? And if we're still organizing and planning, and identifying our actions, it might be a while until we'll really doing some technical digging.

MR. ERLANGER: We have folks working on the actual project depending on –- and what I'd offer is that in all fairness, depending on the item they're at different stages of progress. Some have reached, some are further along, others are just beginning, but across the board we are developing drafts and working on it.

MEMBER BLEY: Okay.

MEMBER RICCARDELLA: Okay. Well, thank you, Craig. We appreciate the briefing, and we look forward to talking further on the subject. With that, I'll turn the meeting back to John with time to spare, more time to work on letters, maybe.

CHAIRMAN STETKAR: Well, no, actually, but –- first of all, before we recess for lunch is there anyone in the room, a member of the public or anyone else who would like to make a statement? If not, we're in the process of getting the bridge line open, so folks who may be listening in on the bridge line bear with us if you're out there for a couple of minutes

until we get the line open.

Okay. If there's someone out there could you just please do me a favor and say hello or something just we confirm that the line is open in this direction.

MR. LEWIS: My name is Marvin Lewis, and yes, I have a statement.

CHAIRMAN STETKAR: Thanks, Marvin, and we can hear you, so the line is open. Please make your statement.

MR. LEWIS: In the matter of SONGS problems with their tubing, I had read many papers and email, and what have you that SONGS had pretty much changed their design of the tubing in order to get an uprating, sneak an uprating around the NRC, sneak through an uprating around anything it could. And I just was wondering how accurate is that? Thanks, bye.

CHAIRMAN STETKAR: Thanks, Marvin. And your comment is duly noted. Is there anyone else on the bridge line who like to make a comment? If not, thank you all, and thanks again to the Staff. We certainly look forward to meeting with you sometime in the early autumn and starting to delve into a little bit more of the technical meat of what you're up to, and appreciate the briefing.

Because this is a Full Committee meeting, we do have to stick to our calendar time, and we do have a presentation at lunch, so we –- or after lunch, so we are now recessed until 12:45.

(Whereupon, the above-entitled matter went off the record at 11:14 a.m., and resumed at 12:47 p.m.)

CHAIRMAN STETKAR: We are back in session. The next topic on our agenda is NRC Staff activities regarding consolidation of rulemakings associated with –- and I'm not going to read the list, several Near Term Task Force Recommendations, and Dr. Steve Schultz will lead us through that session. Steve.

MEMBER SCHULTZ: Thank you, Mr. Chairman, I appreciate it. I'm not going to read the list either, but I did want to provide a background to why we're here today. This is an information briefing for the Full Committee, as I think we're all aware, but for the record the Subcommittee associated with Fukushima is a Full Committee Task Force, as well. So, in thinking about how we might handle this briefing, we determined that rather than go into a Subcommittee for a full day given the information that we want to share with the Committee, that doing this at a Full Committee would be most appropriate for the benefit of

the Staff, and for the Committee, as well.

The purpose of the briefing is to discuss the consolidation of rulemaking that has been proposed by the Staff this spring, thought about earlier than that but proposed this spring to the Commission, and it has recently been approved by the Commission to proceed in combining the two most –- the two primary rulemakings associated with Station Blackout Mitigation Strategies along with Onsite Emergency Response Capability approaches. And there are a number of different features that are combined with those.

The Staff proposes to the Commission because they recognize that there were a lot of elements associated with those primary rulemakings where timing was important, the materials associated with the findings of the rulemaking were interacting and so there were a number of good reasons to consolidate these into one overall rulemaking associated with them.

The result of this is from a practical point of view that it will be better for all participants, stakeholders internal to the Agency will benefit because there will be one package that will move forward, and the combination of the –- and consolidation of the rulemaking will allow different

interacting features associated with rulemaking to be both prominent and able to be considered at the same time. Therefore, it will be more efficient and more effective. Also, from an external stakeholder viewpoint, the same –- those same features come into play, and it will also be more efficient from a resource point of view for external stakeholders. And we think that's important, also.

From the prospective of the Full Committee, we did write a letter associated with the Station Blackout Mitigation Strategies associated with the rulemaking over a year ago. We had several comments associated with the rulemaking, technical comments that I won't go over now, but just to point that we did ask the Staff and comment that in addition to those technical recommendations, we would have to interact further. With the current schedule which the Staff will go through today, we have scheduled a Subcommittee meeting associated with this activity to occur in November. We have blocked out two full days for that Subcommittee meeting, and this is aimed at the understanding that the proposed rulemaking documentation will be completed before that time. And, also, in preparation for delivery to the Commission before the end of the year.

I would also like to –- and so we also have a Full Committee meeting scheduled on that for December for the Committee. I would also like to mention, I'm sure the Staff will get into this, but although the consolidation has been done, the effort and the scope of each of the rulemaking activities which have been combined here has not been reduced, so the overall mission and intent is being retained. And, also, at this time the schedules associated with rulemaking have been at least maintained. That is for delivery by the end of the year for the proposed rulemaking, and the intent also to fit within the overall Fukushima program, the intent is to assure that implementation schedules are not extended as a result of this particular action. So, we think that's important in terms of the overall purpose and prospect of the consolidation.

So, with that, I'd like to turn this over –- the other piece that you can see here is a discussion associated with the new Japan Lessons Learned organization. And, also, in the SECY document that was sent to the Commission, the Staff proposed some modifications and changes, and the Commission has also indicated that those changes are authorized, so we're going to hear more about that, how the

organization in the technical and license support areas particularly with respect to the Fukushima activities are changing. Since we're going forward in a new mode of operation, we'd like to hear about that.

With that, I'd like to turn the discussion over to Aby Mohseni, who is the Deputy Director for the Division of Policy and Rulemaking in NRR, and welcome the Staff to the discussions this afternoon. Thank you for coming.

MR. MOHSENI: Thank you very much, Dr. Schultz, for that introduction and the background. It actually brings us accurately to where we are today. As you mentioned, my name is Aby Mohseni, and I was recently selected to be the Deputy Director for the Division of Policy and Rulemaking in NRR. It is a pleasure to be here. The engagement with you is always very valuable, to discuss the status of the efforts, Staff's efforts concerning the mitigation strategies of Order EA-12-049, and the associated rulemaking activities.

Our purpose today, as Dr. Schultz mentioned, is to bring the ACRS up to speed on where we are with respect to the regulatory efforts and also to apprize ACRS of our plans going forward. As part of that plan, we expect to brief the ACRS on these

activities again in November.

Today, Stew Bailey on my left from the newly formed Japan's Lessons Learned Division will describe an overview of the new organization and provide a status of the efforts associated with the mitigation strategies. Following Stew's presentation, we will have Tara Inverso on my right from the Division of Policy and Rulemaking provide an update status of our ongoing rulemaking efforts both for mitigation strategies and for Onsite Emergency Response Capabilities Rulemaking.

As Dr. Schultz mentioned, we propose to the Commission to consolidate the two, and the Commission approved as of yesterday. As this Committee is also aware, we have had several previous interactions on mitigation strategies, and a previous interaction on the Onsite Emergency Response Capabilities Rulemaking with the Committee. We remain very appreciative of interactions like today's, and from the feedback provided by ACRS members. We will always continue to improve our package.

I would like to point out that as mentioned, this is an information briefing and, therefore, we're not seeking a letter. With that, let me turn it to Stew.

MR. BAILEY: Thank you, Aby. So Aby mentioned, I'm Stewart Bailey. I am one of the Branch Chiefs in the new Japan Lessons Learned Division. My branch is one of the technical branches responsible for containment and balance of plant. So, I'll go to the next slide here.

So, as you've heard, we recently stood up a new organization to deal with the Near Term Task Force issues associated with the post-Fukushima Lessons Learned. The goal of the new organization was to be able to execute the majority of the Tier 1 activities within the new organization, and to provide the management oversight to support these high-priority tasks. We also looking to promote the efficient use of Staff resources since they were using much more –- these activities were using much more resources than previously anticipated.

To this end, the organization is providing the integration and project management of the Tier 1 activities. The organization is responsible for all of the orders including the technical aspects of those orders, and is structured in such a way that additional technical areas could be added if that becomes the appropriate path.

This is, essentially, the merger of the

former JLD and the Mitigating Strategies Directorate with some additional project management capabilities and some additional management in order to facilitate resolution of some of the more difficult issues, and to facilitate communication with the range of stakeholders that are involved in the Tier 1, actually all the NTTF activities.

So, the organization is designed to be flexible. We expect our focus to shift as NTTF activities mature, as they are completed. Looking ahead we see shifts, and we see various technical and policy issues come to focus and then mature, and then we move on to the next one. So, this is really the plan of the organization.

The new organization is also designed with an appreciation of the role of mitigating strategies as they relate to all of the other NTTF activities, and the other Tier 1 activities. What we have done in mitigating strategies really factors into the resolution of the other activities. Mitigating Strategies has added new defense-in-depth, new capabilities beyond those previously available to plant operators. And the new organization is set to integrate that perspective in our dealings with the other Tier 1 activities going forward.

So, what you see here is just a general organizational chart. The new organization is part of the Office of Nuclear Reactor Regulation. It is divided into two directorates, one to address the technical issues, and another to address the policy and project management issues. At the moment, the technical directorate is focused primarily on the orders.

So, speaking of the orders, let me get right to mitigating strategies. So, as an update on mitigating strategies, while no sites are required to be in compliance with the orders as of today, the sites are making significant progress. They are doing a lot of work in mitigating strategies. They have done a lot of analysis and planning, and a lot of the ground work as they developed the integrated plans that were submitted over a year ago, and they continue to do that as they work through the remaining issues and provide their six-month updates.

In terms of modifications for equipment, they're procuring equipment as we speak. They are in various stages based on their compliance date, but for the equipment, many of them have already procured their pumps and their generators. They also have other support equipment such as lighting units, fan units,

communications units, things of that nature that could be brought to bear in a beyond design basis external event. They have generally purchased trucks and front-end loaders to assist in clearing of debris and deploying of the portable equipment. They're building their storage buildings, modifying access points, as needed, to be able to deploy. And many of them are already prefabricating the modifications that can only be done during the refueling outages, so there's a lot of work that's being done to improve plant safety in advance of the compliance date. And the Staff, of course, is reviewing their progress.

The Staff issued Interim Safety –- or Staff Evaluations. This is similar to a Staff Safety Evaluation but we issued our Interim Staff Evaluations in February of 2014 for all of the plants. These evaluations included a list of open and confirmatory items that still needed to be addressed. Generally, these are areas that were still under development by the licensee at the time.

We continue to audit the work that's ongoing, and I'll get to that a little bit on the next slide. This is an ongoing process. The plan is at the end that we would be issuing a Safety Evaluation for each plant. The Safety Evaluation is scheduled to be

issued six months after the last unit at each site is required to be in compliance. Watts Bar will be our first one. As required by the order, Watts Bar is required to –- Watts Bar 2 is required to be in compliance before startup.

VICE CHAIRMAN RAY: Now, you're talking about Watts Bar 1, or 2, or both?

MEMBER CORRADINI: Can I just –- so, I was waiting for a mapping of what are orders, what are rules, and the genesis of the evolution of that. Is that going to come eventually?

MR. BAILEY: I don't have a map laid out. Did you guys lay out ––

MEMBER CORRADINI: I mean, I figured this presentation would somehow make me feel better that everybody understands the big picture, and here's how the big picture is going to fold into codifying this in rules.

MS. INVERSO: We did have something like that ––

MEMBER CORRADINI: So, that's my expectation. Will my expectation be met?

MR. REED: We don't have a map on a slide. I’m able to verbally construct a map, but ––

CHAIRMAN STETKAR: That was your hope.

MEMBER CORRADINI: Well, my hope, but where I'm going with this is if I were a licensee, I kind of want to know where I am, and where I'm going, and is the rule codifying –- in other words, how all the branches fit together, because in my mind it's a bit muddled. So, if it's not here, that's fine. I'm just –- I'll wait for it in September.

MR. BAILEY: Well, it's here in bits and pieces –- or it's covered in the SECY papers. But you're right, part of what we're getting to here is we're going through the mitigating strategies now, not really covered directly is the re-analysis of the hazards which may result in some changes to the mitigating strategies at a later date. We are looking to the rulemakings to codify some of what we're doing in mitigating strategies in terms of the long-term requirements, but there –-

MR. REED: Yes. This is Tim Reed from NRR. I would just say in large measure that long list of NTTF recommendations, the majority of them are being implemented in EA-12-049, okay, so we didn't actually implement these actions the way that the NTTF sliced and diced them. We're doing a little differently, so the major thing that we're making generically applicable is the order, EA-12-049.

Now, in addition to that, those are already imposed requirements, they're not –- but in addition to that, of course, we have the Onsite Emergency Response Capabilities Rulemaking, and it has eight, nine, ten, and eleven additional NTTF recommendations that fall within the main –- parts of those don't necessarily relate directly to any order right now. Maybe a 5054(f) letter now, but we do have a full mapping of it. I could try to construct some of it as we move along, if you want.

MEMBER CORRADINI: That's all right. Because my –- again, I'm just pretending to be a licensee. I don't want to enter a do loop that I did this, and oops, I'm going to do it again.

MR. REED: Yes, I 100 percent agree.

MEMBER CORRADINI: And I'm going to do it again.

MR. REED: In fact, part of the reason for consolidating these rulemakings into one action is to insure that doesn't happen. We don't want people redoing stuff.

MEMBER CORRADINI: Okay.

MEMBER SCHULTZ: Mike, as we go through the presentations today, first I'll ask the Staff to be thinking about Mike's question and consideration as

you make the presentations and go through the –- what is on the slides, and see how far we get with that.

MEMBER CORRADINI: Because my next thing is, if I were a licensee –-

MEMBER SCHULTZ: We can come back –-

MEMBER CORRADINI: I appreciate it. If I were a licensee, that's one thing. The next thing is if we had the four Commissioners here, do they understand what you're doing? And if I were them, I'd want a picture, something that I understand from soup to nuts how this whole thing evolved.

MR. REED: They should. I mean, they should between COM SECY 13-002 and the most recent SECY paper 14-0046 and –-

MEMBER SCHULTZ: You know, that's what the Staff had laid out to the Commission describing why the consolidation made sense. They have provided a lot of information that folds in what the licensees are doing, how that matches up with the rulemaking activities and so forth.

MEMBER CORRADINI: Okay.

MEMBER SCHULTZ: If we don't cover it sufficiently today, then the Committee could consider having another briefing let's say in September, if we have that room. But let’s see how far we can go –-

MEMBER CORRADINI: Okay. All right, thank you.

MEMBER SCHULTZ: –- with your question in mind as the Staff makes the presentation.

MEMBER CORRADINI: Okay.

MR. SNODDERLY: Excuse me, Dr. Corradini. This is Mike Snodderly, ACRS Staff. One example that may help you is when we do our regional visit next month at Palisades one of the issues that they –- one of the confirmatory items they have has to do with the use of charging pumps, existing charging pumps as one of their external injection sources. And part of the confirmatory item is they have to complete their 2.1 seismic analysis to determine if, indeed, those pumps will be available with an additional external power supply. So, it's –- in looking through the confirmatory items and open items there's a lot of that.

MEMBER CORRADINI: I mean, it's interesting that you bring up that we're visiting somebody because when we visit them I'm going to ask them, show me the map of how you're going to do all this. I mean, you're the ones that are spending all this money. I'd like to know how it's going to be done so that you do it most effectively and efficiently.

MR. DAVIS: May I say something? I'm Deputy Director for JLD. We have a paper that we're putting together for the Commission right now that tries to link up the 2.1 activity seismic and flooding with mitigation strategies because we recognize what you're saying, that there is a disconnect, there's a do that would come back around because after you do your flooding evaluations and so on, you might have to come back and readjust your mitigation strategies. And if those timelines don't line up then they don't actually meet the back stop date of 2016. So, we have a paper that we're trying to propose to show the Commission this is how it would work correctly, and how we would line up the time. And that's currently in development right now. We've been briefing the EDO, and my understanding is that EDO is going to start socializing that with the Commission.

MEMBER CORRADINI: Okay, thank you.

MR. BAILEY: Sorry I didn't have the roadmap here.

MEMBER CORRADINI: No, that's okay.

MR. BAILEY: That's right.

MEMBER CORRADINI: I'm very pictorial, I like pictures.

MR. BAILEY: Here's another picture.

MEMBER CORRADINI: There you go.

MR. BAILEY: There you go. So, what we're looking at here is this is the process that we're using to review and close out the mitigating strategies under Order 1204-9. And really we had to develop this process based on two competing concerns. The first concern was the fact that the licensee's plans are still in flux. We're trying to review something that is still under development, and we're trying to give licensees the maximum responsibility to develop an appropriate plan, so we didn't want to lock them into something prematurely. We anticipated that they would –- we are finding that licensees are still changing their plans as they finalize results, or as they do walkthroughs and find that they don't have as margin as they had considered, and we had anticipated that. So, part of the plan that we have put together takes that into account.

But counter to that, industry was looking for the degree of confidence that we could give them that they were on the right path to actually meet the order requirements. So, the plans were not completed yet; however, they were looking for the level of confidence, whatever they could get. This process allows us to give them interim feedback as they

develop their plans. In fact, when we did the interim staff evaluation that we issued by last February, the point was to come to the conclusion that they were on a success path, but then also to clarify what items were still open and what still needed to be confirmed as they completed their plans. I'll say that to date we've determined that all licensees appear to be on a success path if they properly implement the plans as described.

Going down the lefthand side really, the licensee project –- the licensee has –- they submitted their integrated plans and they keep submitting six-month updates as required. The NRC Staff conducted reviews of those mostly through the audit process, electronic audits with the licensees putting things on an electronic portal and having conversations with them, and we developed the Interim Staff Evaluations that I just discussed.

The audits continue as they develop their plans and close out issues. And central to the Staff's review and center on this picture is an onsite audit that the Staff conducts roughly six months before licensees are required –- the first site –- the first unit at any site is required to be in compliance. At this point the plan is still under development. There

is some degree of flux still there for some licensees, but it's sufficiently mature for us to go and dig down into the level of detail that we're looking for. And, also, if we find anything there's sufficient time for a licensee to make any needed modifications to their plans.

VICE CHAIRMAN RAY: Does that detail include the –- and I'll call the durability of the strategy implementation provisions that we're looking at? In other words, is it looking at whether these things are assured to be in place 10 years out?

MR. BAILEY: Well, I'll get to that. That goes more to the rulemaking and the long-term management that we want to put in the rule.

VICE CHAIRMAN RAY: Which is what I'm interested in particularly, because I think everybody is going to respond and do what they say they're going to do, and so on. The real issue is what keeps that in place over the stresses of many years.

MR. BAILEY: That's one of our primary focal points, is to make sure that these are maintained for the life of the plant.

VICE CHAIRMAN RAY: Yes.

MR. BAILEY: And that's one of the things that we'll be doing in the rulemaking.

MEMBER SKILLMAN: Stew, may I ask you to please give us an idea how large a team is needed for that onsite audit, please?

MR. BAILEY: Okay. So, I was just getting to that. So, what we do is we send a team of roughly 10 people. An audit takes the better part of a week. This is following several phone calls with the licensee to prepare for it, and us providing them with a list of questions that we intend to focus on. We provide that in an audit plan three weeks to a month before the audit, before we arrive on site.

So, let me just discuss a little bit what the audit consists of. So, when we get on site we, essentially, walk through the entire plan with the licensee sort of as a tabletop exercise. And a lot of licensees have different plans for different external events. They may have one for seismic, different ones for flooding, or flooding of quick duration versus the long duration flooding.

We walk down the storage plans, or the storage locations, the deployment routes, how they're going to clear those routes, what the access points are. We walk through the critical procedures especially related to the Phase 1 equipment. This would include the battery load shed. The event

essentially starts out procedurally as a station blackout, and if they do not feel that they're going to get power back in a timely fashion they will transition to the FLEX support guidelines. This usually resolve or involve prolonging the operation of the Phase 1 equipment and initiating deployment of the portable equipment, so the procedures include a deeper battery load shed than would typically be done for a station blackout. There are other actions that may be taken to prolong the operation of RICSI such as venting the containment in a BWR, or actions to insure the long-term operation of the turbine-driven aux feedwater pump for a boiler until the portable pumps arrive. So, we walk through those critical procedures. While we're there we also look at the sizing calculations of the portable equipment including such issues as their capacity, any NPSH requirements or power requirements for the generators, we look at their sizing, we're looking at the electronic isolation, we're looking at the overall electrical equipment protection. So, we get into a lot –- we actually get into the calculations although they're not usually formalized at that time, but we'll sit down with the licensee and go through the detailed calculations that support their FLEX guidelines.

MEMBER SCHULTZ: Is that information available to you, Stew, in the electronic audit stage as well, or is it –-

MR. BAILEY: To varying degrees a lot of them will put it on there. In all honesty, the ePortals are a little bit clumsy and so it's hard to get through a large calculation. Usually, we look at the summaries on the ePortals and use the opportunity on site to get into more detail and actually walk through it with the technical specialist from the licensee.

MEMBER SCHULTZ: That sounds logical. Thank you.

MEMBER SKILLMAN: Stewart, is this audit governed by an IMC, and Inspection Manual Chapter, or some form –-

MR. BAILEY: I forget the LIC, LIC-111, I believe, governs the audit process for NRR, and we do issue the formal audit report, public audit report to the licensee and then go on there. I don't know if that –-

MEMBER SKILLMAN: That's fine. And how would Lessons Learned from the first of these audits be made available to others that are coming behind?

MR. BAILEY: That's a great question. We do

our own internal Lessons Learned just to become more efficient and effective. I will share, though, that NEI is frequently there and the industry leads for Fukushima get together and share Lessons Learned amongst each other.

MEMBER SKILLMAN: Thank you.

MR. BAILEY: So, we don't have a formalized process for that at the moment, but industry is taking their own initiative to do that.

MEMBER SKILLMAN: Thank you.

MR. BAILEY: Sure. So, just to finalize here, we go through a lot of the logistics, like the access to points, to the communications, habitability of various areas, so when we're out on site we really do a thorough scrub of the plants that the licensees have.

Experience to date is we do end up closing a lot of items that are in the audit plan, and we end up opening a few other items that are either still in process, or where we still have some questions about how well that's going to work.

All of this is leading to the documentation trail that you see on the right, and this occurs after the last unit at a site is in compliance where they submit to us their final

integrated plan. We review the final integrated plan. This a formal submittal on the docket. We review that against the audits and the Interim Staff Evaluation that we've already issued, and issue a final Safety Evaluation to the plant.

MEMBER SKILLMAN: Are these audits such that a non-compliant licensee would get a finding?

MR. BAILEY: No, because they're not required to be in compliance yet. The audit is conducted six months before the compliance date. You know, if something looks amiss, you know, we could do an inspection shortly after the compliance date.

MEMBER SCHULTZ: Is that how the schedules are being developed for the Interim Staff Evaluation?

MR. BAILEY: Let me jump to schedules. That is my next slide. I hope I'm satisfying your love of graphics.

MEMBER CORRADINI: Now there's another one. I'm getting excited.

MR. SNODDERLY: Excuse me, Stew, before you start this slide.

MR. BAILEY: Sure.

MR. SNODDERLY: Could we –- could I ask, to build on Mr. Skillman's question, did –- my understanding is that you recently completed the North

Anna audit, and that was the initial audit.

MR. BAILEY: So, our initial audit was Watts Bar, but that was a little bit different. We've completed –- the first audit really was Arizona, APS. We've also completed North Anna, and DC Cook. The DC Cook audit report is not out yet.

MR. SNODDERLY: This is again Mike Snodderly from the Staff. So, if you haven't issued the North Anna audit, could we ask you to take an action item for that for the Committee once that's publicly available?

MR. BAILEY: Sure.

MR. SNODDERLY: Because I think that would help given my idea of what they’re –-

MR. BAILEY: That's fine.

MR. SNODDERLY: Thank you.

MR. BAILEY: So, looking at the overall schedule for closeout, and we'll have to integrate this with all the other activities. As you can see, the ISCs were completed the first quarter of this year. Okay? We've also drafted temporary instruction that will be used for the post-compliance inspections. Now, the audits that we're doing are all based on the compliance since we're trying to get out there six months before. We've really just entered the heavy

period of audits, so you can see that the beginning of FY ’15 is going to be a very busy time –-

MEMBER BANERJEE: So, Stew, how many people are involved with these 23 audits that –-

MR. BAILEY: So, we go out there with 10-member teams. I believe we have five electrical engineers to divide between the different audits, and we have six people in my branch, that's Balance of Plant and Containment. We're looking to staff up as necessary, or borrow resources as necessary to get these done. The Containment and Balance of Plant, they're largely interchangeable except where the boilers come into play, and there's a lot more work on the containment reviewer side. So in each of the technical specialties we've got a cadre of people, and trying not to get people too bogged down such that they only do an audit every two, three weeks, you know. Ideally, it would be one a month or less.

MEMBER BANERJEE: It's a heavy load. I mean, it's a sudden peak.

MR. BAILEY: Yes, it's going to be a sudden peak followed by sudden peaks in writing Safety Evaluations, so that's one of the reasons for the flexibility of the new organization. And you'll see peaks and valleys in the other activities.

MEMBER CORRADINI: So, the gentleman back here, I've forgotten his name.

MR. BAILEY: Jack Davis.

MEMBER CORRADINI: Noted that this has got to be folded into –- thank you, with the numbers remaining. So, how does this schedule –- I mean, is this ahead of that? I would assume this is behind that.

MR. BAILEY: Unfortunately, this is ahead of that, and looking at the current guidance, the current guidance says that the plans are to design their FLEX to the current licensing basis hazard of the plant. Now, plants have done their initial assessments already of flooding and seismic hazard.

MEMBER CORRADINI: Okay.

MR. BAILEY: And by and large, while not the requirement in the current ISG, or the current NEI document, they are already planning for the higher hazard level.

MEMBER CORRADINI: If they find it.

MR. BAILEY: Yes. Well, if they find it.

MEMBER CORRADINI: Okay.

MEMBER RICCARDELLA: They know it. I mean, that list has been published, right, at least for –-

MR. BAILEY: The list has been published

already, but if you take a look at seismic, plants came in with one set of seismic curves, and the Staff put out their assessment of seismic curves, and they're a little bit different. The Staff is meeting with licensees individually to discuss the differences, and to come to resolution on what is the seismic curve that that plant should be using going forward. So, we're in similar processes on flooding, I believe, where we're looking at the –- coming to agreement on what is the appropriate levels for a site.

MEMBER CORRADINI: So, let me ask the obvious question, and then you can tell me not to ask that. So, is this schedule-driven, or is this logic-driven? Because the way you just answered my question, it worries me that it's more schedule-driven than logic-driven.

MR. BAILEY: Well, this is driven by the schedule of the compliance date. There's a hard stop on the compliance date for these plants, so to some extent this is –- this initial look is being schedule-driven.

MEMBER CORRADINI: But if you go to the Commission and say Commission, it's not logical, they can say oops, so that it all fits together. Yes?

MR. BAILEY: Well, several schedules –-

MEMBER CORRADINI: Or is there a fear of the messenger being shot when you say that?

MEMBER SCHULTZ: So, the schedules were developed to reach full compliance five years from the time of the Fukushima event.

MEMBER CORRADINI: I know, that was invented, though.

MEMBER SCHULTZ: It was invented and it's still a hold-to point associated with the overall program, including these activities.

MR. DAVIS: But there's a lot of sympathy to go beyond the 2016 as the back stop date for the orders that the Commission issued for this, so that becomes part of the problem. When you look at the reevaluation under 2.1, that runs out well past 2016 in some cases, so how do you fit those two together? Again, that's the paper that I was talking about earlier that we're putting together to show if you actually make a few small changes, you can do what you're suggesting where they fit within one another. And you come up –- by the time it goes to rulemaking everything is in place.

MR. BAILEY: That's part of the genesis of the new organization is to try to pair these up

better.

MEMBER CORRADINI: Okay. But I'm asking more just a very simple question. If you can't make the date because it's not logical, then you go back to the deciders and say we can't make the date, it's not logical, re-decide, or reconsider. And has that been talked about?

MR. DAVIS: Yes. And I think what we're saying is that you can, if you make a few small changes, you can do it where you're not schedule-driven. The schedule is tight, but you're still doing it from a safety standpoint. That's what we're suggesting.

MEMBER CORRADINI: Okay. I'll ask the question again. Okay.

MEMBER BANERJEE: Why are you so obsessed by that?

MEMBER CORRADINI: Because I'm not sure what the residual risk I'm killing off by rushing to judgment. That's what's bothering me. I understand what the Staff is doing, and I appreciate it. I wouldn't want to be them to do it, but on the other hand, if I can't do it in 2016, but I can do it more logically and completely by 2017, and then initiate a rule that creates ongoing watch and maintenance of it,

that's a whole lot better than rushing to it, and then ripping something out, replacing something. It doesn't make any sense to me. It's not –- the engineer in me thinks this is kind of nuts.

MR. REED: I'll just follow-up on what Jack said earlier, and this is an example of a 2.1 issue. We're trying to find creative ways, as Jack mentioned, to fold in the 2.1 into both the implementation of EA-12-049 as well as the rulemaking, so we see that, too. And we're trying to find a way to make everybody happy, so up front trying to find a creative way to –-- you know, folks want to create mitigation strategies for reevaluate hazard, whatever. We're trying to look downstream and get to that final. So, we see that, too, and we're trying to make everyone happy at the same time.

MR. DAVIS: I think it might be helpful, remember that a 2.1 was –- the 5050 Part F letter requesting information to determine whether they're going to modify, suspend, or revoke the license. So, that now brings into question is this a beyond design basis thing that you're looking at, reevaluate a flood hazard or seismic, or is it within the design basis. And, certainly, we probably wouldn't make a change to the design basis. We might do it to a licensing basis,

so that's what was driving that particular effort. If you end up saying that the licensee can always use mitigation strategies for whatever that thing turns out to be, and you say that that's beyond design basis, then it makes sense that you can just go immediately to here and say okay, well, I have a capability to cope with that additional hazard that you just threw at me. Instead of saying well, I need to make it safety-related equipment, so I'm going to bolster whatever I have on site. So, that's why they're on two different separate paths, but we're starting to notice as we've gone along a lot further that maybe that's not the smartest thing to have it on two separate paths, because if the Commission ultimately is going to say well, if they have mitigation strategies to cope with that, that's good enough for us, if they say that, then why would you have it on two separate paths? You can put them on the same one and say mitigation strategy is your answer for –-

MEMBER CORRADINI: Okay.

MR. REED: And it does fold in on reasonable protection and protecting against that you're reevaluating hazard, so it directly does affect the stuff. So, we're looking at it down to a pretty

fine level.

MEMBER CORRADINI: Okay.

MEMBER SCHULTZ: I'll add one more comment. This is the mitigating strategies which is developed, at least I feel appropriately. If the discussion about what one has to do down the road is based upon hypothetical mitigating strategy capability, mitigation capability, then I think that that's a non-starter. Putting all of this in place, putting the mitigating strategies in place allows one to say I have the equipment there. I have the strategy in place and, therefore, I may have an argument to postpone some other things later on. But if you don't have this physically in place, then I don't think there's a reasonable argument to say I want to have more time to implement Part D, E, and F.

MR. BAILEY: It may come that some of the interim actions for the other activities could be modifications to the FLEX equipment such that they can handle the larger strategy. Now, it also would be looking –- entail, of course, looking at your safe shutdown equipment and your Phase 1, which is the onsite equipment that you initially require.

MEMBER SCHULTZ: And I don't presume that –- there's a lot of thought and development that's

going into the overall program, as well, that certainly is not presented, or demonstrated by the chart.

MR. BAILEY: We'll have to have other charts that demonstrate the overall thought process. I'll take that one.

MR. DAVIS: Again, I agree, it's a good point you're making, and we've been reflecting upon that, as well, saying okay, they don't line up exactly, and why not? Is there a reason for that, or not?

MEMBER CORRADINI: But you said something in your discussion that –- let me repeat this, maybe I misunderstood. You made me feel better, but maybe I misunderstood. What I heard you say was that if this is developed per some sort of schedule, they may come back at the walkthroughs for seismic and flooding and say yes, okay, this is beyond the design base, but your mitigating strategy –- this is beyond the current design base, excuse me, but your mitigation strategies are there, so we're not going to change your design base because you already have this in place. That's what I thought I heard you say.

MR. DAVIS: Correct. That can be one of the –- that can be a solution.

MEMBER SCHULTZ: But my point would be that's a non-starter unless, in fact, you have this in place.

MR. DAVIS: Correct. The distinguishing point I was trying to make was if you go through the 2.1 reevaluation, say let's use flooding for an example, and you they get a higher number. And the Commission chooses to say well, I need –- I'm going to revise your design basis to say that that's your new flooding hazard that you have to protect against, that's different than mitigation strategies, so you could understand why they'd be on two separate paths. But if you agree that that reevaluated hazard is a beyond design basis flood hazard, then you say mitigation strategies can be my coping capability. If they agree with that type of an approach, then you could line up the two schedules.

MEMBER CORRADINI: And that's what's going to be in this paper that you develop?

MR. DAVIS: Correct, yes. It's actually pretty far along in development already.

MEMBER CORRADINI: Okay. I'm looking at Stephen, the Chairman, that we might want to see that because that sounds interesting.

MEMBER SCHULTZ: Yes.

MEMBER CORRADINI: Okay. Because the Chairman is giving funny looks at me, I'm not exactly sure.

CHAIRMAN STETKAR: I just like looking at you. That's all.

MR. BAILEY: So, you tell me if you want me to accelerate through the rest of these based on timing.

MEMBER CORRADINI: I think he's telling me to shut up.

MR. BAILEY: No, no, that was a good discussion so I appreciate that.

MEMBER SKILLMAN: Let's –- could I ask another question?

MR. BAILEY: Sure.

MEMBER SKILLMAN: I see 61 sites. I see 87 units. I see a footnote that says 10 got a pass. Please explain.

MR. BAILEY: I believe this already covers it. The 10 BWR units have asked –- 10 of the BWR units have asked for a delay such that their overall compliance date lines up with Order 13-109. Right?

MEMBER CORRADINI: Which is the –-

MR. BAILEY: Which is the severe accident capable –-

(Simultaneous speaking)

MEMBER CORRADINI: So, another one we're working out there.

MR. BAILEY: Right. So, they're –- so, these plants generally are doing all of their analysis and they're procuring all of their other equipment, and they're putting their procedures in place, but they can't say that they're fully compliant with the order until they put the severe accident capable hardened vent in.

MEMBER CORRADINI: Okay.

MEMBER SKILLMAN: I've got 87, plus 10 is 97, so what are we thinking about here? No Oyster Creek, no Vermont Yankee, and no somebody else?

MR. BAILEY: Certainly, no Vermont Yankee, no Kewaunne, no Crystal River. Oyster Creek is still on here, so I'd have to look at my –-

MEMBER SKILLMAN: Okay. Thank you. Everybody is accounted for. Thanks.

MR. BAILEY: The only other thing that I wanted to mention down here is the inspection. So, the TI, the Temporary Instruction has been developed. There was a public meeting on that last week. It will be piloted at Watts Bar. Watts Bar, due to their schedule gets to pilot most of our new directions.

Let me move on to one of the major additions here, and this relies –- you know, this relates to SAFER, as it's called, the Strategic Alliance for FLEX Emergency Response. I'm not sure whether you've had much of an update on this yet. That is the industry collective activity to provide the Phase 3 equipment. The contractor that they've selected is AREVA, and that's why the SAFER Control Center is located in Lynchburg. They, of course, work quite closely with Southern, and so the backup is in Birmingham, Alabama.

I talk about equipment storage locations. These are formerly called the Regional Response Centers but that sort of gives the wrong impression because they are each completely redundant to each other, and each one is able to supply the entire Con U.S., so I believe they're in the process of changing that name. Regardless, they are located in Memphis, Tennessee, and Phoenix, Arizona. As I said, they're completely redundant. They have two of them with the thought that the postulated beyond design basis event could disable one of them.

So, in case you have not heard much about these at the RRCs, they have two sets of equipment. One is considered generic equipment, and one is

consider site-specific. For the generic equipment, this is –- they pooled their resources and they determined what equipment would bound all units, for example, what size generators, what size pumps would be useful for all units, and they purchased five sets. There are five sets at each of the Response Centers. Four of them are loaded on trucks at all times ready for delivery, ready for transport, and the fifth one is taken out for maintenance, so they just rotate the maintenance on the sets. Similar for the plant-specific equipment, but fewer. You know, fewer, if only one site needs it then they have less of it.

The transport is through FedEx. That is their contractor, whether it's through ground, or through air. Each of these is located next to a large airport. In fact, Memphis is right next to the Fed Ex hub. As we get to -- the design specifications for all of the equipment were very interesting. They had a size limitation to get it on a plane. They had a weight limitation to be able to lift it by helicopter. It all has built-in lifting rigs, it all has standard connections so it's interchangeable or usable at any facility.

SAFER is in the process of doing proof of concept activities. They are exercising the Memphis

RRC, and TMI this week, and most of our Staff is there. Next week we go out to see the Phoenix Surrey exercise.

MEMBER CORRADINI: So, another question popped into my head, but maybe you've already done this. So, what's the residual risk that is being left out in case all this doesn't work for mitigating strategy? In other words, there is –- you intentionally have taken a special event of station blackout and you've extended its capabilities substantially, or the plan is to extend that substantially, but there's always a residual risk. Has that been evaluated?

MR. BAILEY: I would say if none of this works, the residual risk puts you back to where you are today, or actually better than where you are today because you've taken a lot of –- you've done a much better analysis of the extended station blackout. Each licensee has done that. You've taken steps to prolong Phase 1.

MEMBER CORRADINI: You've not made it worse is what you’re –-

MR. BAILEY: We certainly have not made it worse.

MEMBER CORRADINI: But has there been an

evaluation of how much better you've made it?

MR. BAILEY: Not to my knowledge.

MEMBER CORRADINI: Does the Staff feel that would be a useful endeavor to know, good thing to know?

MR. BAILEY: I need to think through that a little bit and see just how site-specific that would be. It is a good point, I mean, that there –- the risk has been reduced, and what is the residual –-

MEMBER CORRADINI: Yes, I can't argue with that.

MR. DAVIS: I mean, they're certainly with their Phase 2 equipment, then have N Plus 1 on site. They can get any one of those pieces of equipment from any one of their friends that up or down the street, so to speak. And then they have 10 sets of redundant equipment at the two Regional Response Centers. So, you're basically saying okay, that's the strategy you have. I don't think anybody has looked at sub-optimal solutions to that and seeing how much residual risk you have with that, but I think given the amount of additional equipment and the things that they can bring to bear most would say they're in a much better place than they were prior to –-

MR. BAILEY: Yes, so let me go where I was.

So, in addition to the analysis and the additional protection, or the additional actions on the Phase 1 equipment, this is essentially the portable equipment that they've added. So, each reactor has stored on there what's considered the Phase 2 equipment, that's the number of pumps and generators needed to perform the function for each unit on site simultaneously. And just to be clear, most plants, I believe this will end up being all plants, can last indefinitely on the onsite Phase 2 equipment. Not only do they have N, the number required, but they also N plus 1, that ground rules that you will assume one to fail.

CHAIRMAN STETKAR: I always like the term indefinitely. What's the current political definition of that term?

MR. BAILEY: We've had that discussion, actually, and so for a lot of our evaluations we look to see that they're still in good shape after 72 hours, and in a condition where they're able to bring extra resources to bear at that point.

MEMBER CORRADINI: So, say that again. I'm sorry.

MR. BAILEY: 72 hours.

MEMBER CORRADINI: For?

MR. BAILEY: Well, he's asking what does –

(Simultaneous speaking)

MR. BAILEY: The decay heat lasts a long time.

MR. DAVIS: Yes. Stew, they have –- most of them will have 10-day supply of fuel and so on, so it’s somewhere in the –-

MEMBER CORRADINI: So you evoke another question. So, how do you treat Vogtle and Summer, the new units of AP1000? Are they just lumped in with the current plans, that at three days they are treated like current plants, and they can access FLEX, or because they're passive and they've got stuff, they're different?

MR. BAILEY: I don't know exactly. I know that they have built into the plans, they have the Phase 2 equipment already considered, my understanding. My expectation is, though, that they would tie into SAFER and have the same connections, and have the –-

MEMBER CORRADINI: So, let me ask my questions more provocatively.

MR. BAILEY: Okay.

MEMBER CORRADINI: Are they passive and better enough, whatever better is, that they don't need this for after three days, they might need it

after 10 days, or is the Staff's opinion that they're going to need it after three days regardless if it's an AP1000 or Vogtle 1 and 2?

MR. BAILEY: Well, the three days is just the focus in certain areas where we've set sufficient -- generally speaking, the Phase 3 equipment is expected to be received on site roughly 24 hours after it's called for.

MEMBER CORRADINI: Right.

MR. BAILEY: It's usually called for within the first --

MR. DAVIS: I'm a little bit concerned when Stew was saying, you know, 72 hours because the real limiting --

(Simultaneous speaking)

MR. DAVIS: Right, the real limiting factor would be fuel. Most of these sites will tell you that after three days they can get fuel into that site because if's a flood event, the waters have likely resided enough that you can bring a helicopter in, you can get fuel into the site if you didn't have it on site already. So, you can cope indefinitely at that point, and indefinitely means indefinitely, for as long as necessary. Most of the equipment that's coming from the Regional Response Centers is really a

restoration type of activity, that they're going to start bringing more capabilities back to the site, perhaps getting their emergency diesel generators back, things like that. There's only 13 sites, 13 units that rely on the Phase 3 equipment that it's critical in any time frame. And industry is looking to -- what I had meant to say before, I didn't say explicitly, is they're looking to add Phase 2 equipment so that that's not the case, so that they are completely reliant, self-reliant as a site. And then the RRCs become a complete backup. Or, you know, it is going to be delivered, it is going to be brought to the site in case the Phase 2 portable equipment fails, so it is a backup to the Phase 2 equipment. Also, in the darker green box at the bottom not credited by anybody is they do have plans, they do have contracts in place to share equipment with each other coordinated by INPO. So, over all they've added a lot of capability for the operators to respond to the event.

MEMBER BLEY: Now, where does all this fit within the vision of rulemaking? This is going to be under regulation at some point. Right? That's the thing that I've heard.

MR. BAILEY: Correct.

MEMBER BLEY: So, does it fit in something that's already moving forward, or is it something that has to be worked out?

MR. BAILEY: Well, right now this is how they comply with the order, so I would say that this is going –- at the time that the rulemaking is completed for most of these plants, that is already part of their licensing basis, if you will. Now, I'm not saying that this is the only way they could comply with the order. This is something that we would have to address during the rulemaking process, you know, when you bring in new reactors.

MEMBER BLEY: Yes, that does get covered. Okay.

MEMBER SCHULTZ: And, Mike, I believe this is that answer to the new plants and when this will be considered. It's part of the rulemaking itself, how it's going to affect Part 52, and how it will be applied to plants under construction.

MEMBER CORRADINI: I asked about AP1000 because I was waiting for Harold to start twitching.

VICE CHAIRMAN RAY: I didn't twitch. I just think the rulemaking needs to be careful that it doesn't preempt what is still a matter under review in the AP1000 case. The matter is, if you license the

plant, went through public hearings, did all that you did on the basis of indefinite, that's the word, ability to passively remove decay heat, I don't think we should come along and say well, 72 hours you can have this intervention you're talking about.

MEMBER CORRADINI: Not only can, you must.

VICE CHAIRMAN RAY: Unless we address it as it changed that enables what was presented previously to be changed. In other words it's not indefinite, it's 72 hours. And that's where I think this discussion is coming from. I don't think this is the place to address it other than just give you the feedback that you've got to be careful that you're not creating a change in what is understood in the licensing space to be the capability of a passive plant by saying well, we really need 72 hours, not indefinite.

MR. BAILEY: Right. I should not have mentioned the 72. We keep getting caught on the 72 hours. That is not a hard and fast criteria.

VICE CHAIRMAN RAY: Yes, all right. That's fine. We heard 72 hours earlier today in a different context, so it's not the first time we've heard today.

MR. BAILEY: Okay.

VICE CHAIRMAN RAY: I think we've --

MEMBER CORRADINI: And other days.

CHAIRMAN STETKAR: And other days.

VICE CHAIRMAN RAY: I think we've said enough for now. It's just a matter that you don't want to treat indefinite and 72 as if they were synonymous. Okay? If you're going to go from indefinite to 72, then you've got to go through the steps of doing that, and not just preempt it someplace else and say well, that's what it means.

MR. BAILEY: Yes. So, for the sake of what we've done after –- usually after 72 hours there's an understanding that they are able to bring more resources to bear. Okay? It's not that the requirements are only taken out to 72 hours.

VICE CHAIRMAN RAY: But as soon as you say rulemaking, you know, it triggers everybody to –-

(Simultaneous speaking)

MEMBER SKILLMAN: Would you explain exception as mobile boration, please?

MR. BAILEY: Okay. So, this is one or two plants which have decided that they need a mobile boration unit in order to borate up and achieve the final cool down to shut down cooling conditions. That's not, necessarily, a requirement of the order, and some of those licensees are actually revisiting

it. If they decide they want to maintain that capability that's probably equipment that they would end up buying and storing on site as Phase 2 equipment so that they are not absolutely dependent upon the RRCs. That's not –- that's some of the discussions that have been had. I can't say that they're actually doing that. Those are things that industry is considering at the moment.

MEMBER SKILLMAN: Okay, thank you.

MR. BAILEY: So, I think we've already covered this quite a bit, that we are looking to capture the order requirements in the regulatory process. For the licensee document –- you know, we've considered a lot of options considering the beyond design basis of these events, or they are certainly currently considered beyond design basis. What we are looking for, though, the important attributes I'm sure we would agree on that the strategy should always reflect the current configuration of the plant. We're looking to have a formalized change process, including criteria for when NRC review is required.

At this stage for mitigating strategies, our focus is to make sure that the licensee documentation explains what strategies were developed, and why they were developed. And in a similar vein,

that the Staff's documentation explains what was reviewed, and why it was found to be acceptable.

So, regarding oversight, the Safety Evaluation and the initial inspection verify initial compliance, and we're still looking at the pads that –- for how addressing –- how to address compliance in the long term, as we had discussed a little bit earlier.

We're mirroring alignment internally that the plants will receive direct inspection. As for the RRCs or other components of SAFER, there's discussion that some of that may be addressed something similar to the Vendor Inspection Program. But, again, these are things that are still under discussion internal to the Staff.

Our goal, of course, is to maintain the plans and equipment at the sites and at SAFER to maintain these capabilities that they've added. So, we're looking to the upcoming rulemaking to provide that.

MEMBER SCHULTZ: Is the post-compliance inspection, you just mentioned it again, is that intended to be a special program, or is that not just an extension of the onsite inspection program?

MR. BAILEY: It is going to be conducted

out of the Regions, so I'm not sure what you mean by special inspection. Right now it'll be a special inspection to verify initial compliance, and then we're looking for long term how does that factor into the overall inspection program? And then what do you do with any findings? Do they go through the ROP or more traditional enforcement, or how do you address those? But the plan is definitely to have regular inspection of the plants and SAFER long term. I don't know if that answered your question.

VICE CHAIRMAN RAY: You mentioned Palo Verde. That would have been the one I picked, too, to look at first, but perhaps not because of the equipment we're talking about here other than what -- I mean, the issue there, of course, is you don't have any way to depressurize the reactor coolant system other than cool down to the secondary side of the steam generators, so you don't have any power operated relief valve. And you're dependent upon the reactor coolant pump seal integrity during that time.

Is that review, the viability of that, the operating procedures, the demonstration that that's a doable scenario part of this review, or is that simply the existing licensing basis?

MR. BAILEY: No, that's part of this

review, and so I don't believe that Palo Verde has answered all the Staff questions yet, but that was a lot of the analysis that led up to the ISEs in the first place, questions about RCP seal leakage, and questions about the analysis that was done for the overall sequence of events.

VICE CHAIRMAN RAY: Yes. The ability to charge to a fully pressurized RCS, for example –-

MR. BAILEY: Right, so they have the full head charging pumps and they're adding full head portable pumps.

VICE CHAIRMAN RAY: Okay. Those are the things that would be called for as a result of not being able to depressurize other than by cool down.

MR. BAILEY: Correct. So, each plants, or certainly each class of plants has its own sequence of events developed, so we've gone through a lot to make sure that they –- that we are in agreement on the required flow rates for secondary side, for the timing and the flow rate of makeup and, of course, the seals are a big part of that.

VICE CHAIRMAN RAY: Okay.

MR. BAILEY: For looking at the timing of boration since you're natural circulation, and since you need to maintain shutdown margin, when do you

actually need to do that?

VICE CHAIRMAN RAY: Also, level in the -- because the pressurizer unit is gone, for example, things like that.

MR. BAILEY: Certainly, so if they have very low leakage seals you'll have one set of responses. If you don't have that, you're liable to drain your pressurizer. There are plants that partially inject the safety injection tanks before they get to the point of adding makeup.

VICE CHAIRMAN RAY: Yes. Well, it's very complicated and getting a bubble in the head is something I've done before, so it's not something you want to do, trust me, because you can't tell where the level is.

MEMBER SCHULTZ: Other questions for Stew before we move to the next presentation?

MR. DAVIS: May I offer up something to the Committee? If you all would like to see a walkdown strategy at one of these plants, or if you'd like to get out to the Response Centers either in Memphis or Phoenix, we can make that happen for you. We can work through Ed's staff to set that up, if you'd like to do something like that.

MEMBER SCHULTZ: We would certainly like to

consider it. We'll talk about it tomorrow morning and get back to you.

MR. BAILEY: And licensees are preparing to do the V&V activities on these. That might be a good time to see it, see the V&V and get to some of the SAFER equipment at the same time, the same trip.

MEMBER SCHULTZ: It gives me an opportunity right now to reemphasize that I mentioned the Subcommittee meetings in November. One of the days of the two days we have blocked is a focus on utility involvement and engagement for that meeting, so we'll have an opportunity to get full briefings from several utilities as to where they are with the overall program, and also their comments related to the rulemaking activities, as well, at that time.

So, the other point in case you didn't catch it is that in terms of the overall approach that you described and the report that's almost done, we'd like to see that sooner than later. We can also work with the staff, with Mike to get with you –-

MR. DAVIS: Will do.

MEMBER SCHULTZ: –- to make sure that happens.

MR. DAVIS: Okay, sure.

MEMBER SCHULTZ: We feel we can make a

contribution.

MR. DAVIS: And we agree.

MEMBER SCHULTZ: We have a chance to read it.

MS. INVERSO: Okay, good afternoon. My name is Tara Inverso. I'm the Chief of the Rulemaking Branch in the Division of Policy and Rulemaking, and we also have Tim Reed, who is a Senior Project Manager in the Rulemaking Branch. And he is the Lead Project Manager of the consolidated rulemaking, so he will be chiming in as details come up.

But we're here today to provide the rationale for consolidating the Station Blackout Mitigation Strategies rulemaking and the Onsite Emergency Response Capabilities Rulemaking, and the rationale for that consolidation. And, also, to discuss what the working group is currently working on and the path forward. So, essentially, this is informing ACRS of what we have done up to date as kind of touching base before the November and the December Subcommittee and Full Committee meetings that Dr. Schultz mentioned.

On Slide 3, as Dr. Schultz also mentioned, there have been previous ACRS interactions on both the Station Blackout Mitigation Strategies rulemaking, on

the Onsite Emergency Response Capabilities Rulemaking. On the Station Blackout Mitigation Strategies rule, the Full Committee met in June of 2013, and the Subcommittee met in April and December, and there was a series of letters exchanged after that Full Committee in June 2013. For the Onsite Emergency Response Capabilities Rulemaking, there was a Subcommittee in February of 2013. There has been no letter written on that rulemaking. All of those meetings focused on the regulatory bases for those rules.

There were also publications associated with each individual rule. The station blackout advance notice of proposed rulemaking was issue in March of 2012, and then a final regulatory basis was issued in July of 2013. And there was also a draft regulatory basis issued for comment in between those two.

The Onsite Emergency Response Capabilities Rule was published in April of 2012, and the final regulatory basis was published in October of 2013. In addition to those outreaches to the public, there were also a series of public meetings. We didn't list them all here, but we will highlight public meetings that we held in November 2013 and March of 2014.

Staff has long recognized the overlap between the Station Blackout Mitigation Strategies Rule and the Onsite Emergency Response Capabilities Rulemakings. They were originally two distinct rules with two distinct working groups, but there was a lot of communication and coordination between the two. And the first time we saw any amount of consolidation was in COM SECY-13-0002, and that suggested that the Near Term Task Force Recommendation 4 be consolidated with elements of Near Term Task Force Recommendation 7 into the Station Blackout Mitigation Strategies, and that was because the Staff saw that industry was implementing portions of that Near Term Task Force Recommendation 7 as it related to spent fuel instrumentation into the Mitigation Strategies Order.

The Staff also discovered that the publication schedule for the Onsite Emergency Response Capabilities Rulemaking had to be after the Station Blackout Mitigation Strategies Rulemaking was issued, and that's because the Onsite Emergency Response Capabilities Rulemaking would integrate the Station Blackout Mitigation Strategies in with the emergency operating procedures, and most of the management guidelines and extensive damage mitigation strategies.

The industry reinforced the Staff's

thoughts in a November 2013 public meeting where they described that they were actually implementing EA-12-049 into the emergency operating procedures and the severe accident management guidelines.

In March of 2013, excuse me, 2014, the Staff had a public meeting with the industry where it discussed this potential for consolidation, and the industry largely supported that consolidation. They followed up that public meeting with a letter endorsing such a consolidation, and they had several suggestions, including that the Staff continue to follow the Backfit Rule, that there be inspection guidelines available, that the cumulative effects of regulation be considered among other topics.

On the next slide, we do recognize that consolidating the two rules together among other elements that will also be in the consolidated rule that we'll discuss in a couple of slides does create one larger rule package that is complex from a technical standpoint, and a policy standpoint. And it does result in a larger internal working group, but we feel the benefits largely outweigh those aspects, and would result in a more coherent and understandable framework. There would be no cross-referencing between the two rulemaking. There would be reduced potential

for disconnects.

The review both internally and externally would be smoother. For instance, the public wouldn't be commenting on two different proposed rule packages that pointed to each other. The internal concurrence would be smoother, as would future interactions with ACRS. So, overall, it's more effective, more efficient, and it produces a stable and predictable rulemaking process because you're not writing one set of ruling without knowing what the latter one is.

The scope and schedule, this slide may touch upon the earlier question a little bit, but the scope is larger than just the two individual rulemakings. So, as I mentioned earlier, COM SECY-13-0002 combined Recommendations 4 and 7 into the previous scope of the Station Blackout Mitigation Strategies Rule. The consolidated rule will also incorporate all of NTTF Recommendation 8, which is the current scope of the Onsite Emergency Response Capabilities, and also all Recommendations 9.1, 9.2, 9.3, 10.2, and 11.1 on emergency preparedness with the exception of the emergency response data system capability throughout the accident.

There would also be when we send the proposed rule package to the Commission a very large

set of guidance. The cumulative effects of regulation tells us when we issued proposed rules for comment and when we issue final rules they should have the draft guides, and the final guides with them. So, that would include NEI-1306, NEI-1206, NEI-1401, NEI-1201, and also the Staff has plans to develop draft inspection guidance to go out there.

MEMBER CORRADINI: So, to say it another way, this plus the hardened vent and potentially filter vent, the severe –- forget all the arrangements, but the hardened vent with potential filter vent rule, the spent fuel, and the walkdowns and potential reevaluations, and this is the universe of Fukushima activity.

MR. REED: Yes, I think you got it. I mean, basically –-

MEMBER CORRADINI: I'm back to my map.

MR. REED: Yes.

MEMBER CORRADINI: I'm fixated on one piece of paper that shows me how it all –- the puzzle fits together.

MR. REED: I think there's a few odds and ends, but in large measure I think you got it. Like Tara said, we combined all of 4 and 7 in COM SECY-13-0002, basically combined all the rest of these and

enclosed there are six to the recent SECY paper. And then if you start to map those through, 9.1 and 9.2 the NTTF separated into multi-unit and long-term SBO. We consider that to be –- it's never really one thing for the site, so you think of those as one thing. 9.3 was the orders, so basically getting all of that stuff for the long-term ERDS is the only thing left on that. Everything else we've captured. Some of that was Tier 1, 5054(f) letter, some of it's Tier 2, some of it's Tier 3. 10.2 and 11.1 are actually redundant with what we're doing in Mitigation Strategies, so much of it's coming under Mitigation Strategies order and the way it was implemented is implemented very broadly, but there's also other guidance, as Tara mentioned. The confusion comes really, the complexity comes down in the guidance as it goes much further in 12.06, it goes to some new ones, 13.06, 14.01, 12.01, by the way, staff and communications, those all fold into now additional inspection guides beyond the inspection guides that Stew was talking about. For example, inspection guides that would go to SAMGs, for example, so that's basically all of it.

Now, the one thing that's really sticking out, that I see sticking out there right now is EA-13-0109. Okay? That's the Filtering Strategies Rulemaking

in the order. Okay? Just for you all to know, industry commented that they wanted that in this consolidated rulemaking. We're considering that because it makes a lot of sense in terms of EOPs and SAMGs for those design Mark I and Mark II BWRs, obviously, so technically it makes sense. Scheduling may not be able to do it, so there's one where we are considering. I'm on both those working groups, too, so I'm familiar with those. Hopefully, that helps a little bit. I think there's a few odds and ends, though --

MEMBER CORRADINI: I just wanted to make sure because you're going through a litany of how all this fits together.

MR. REED: Yes.

MEMBER CORRADINI: And I was trying to think what wasn't in the litany.

MR. REED: The one thing that often gets provided, and it's been talked about quite a bit today is 2.1. You don't see 2.1 on there, you know, but you have said the walkdowns which I think had a lot of benefit. But 2.1 reevaluated hazards. Okay? Do affect us. Okay? If somebody wants to credit the mitigation strategies that would fold into his implementation of the order, and also we have to make it generically applicable. But so far I see it down in the guidance

and implementation level. I don't see it changing our requirements level, but it's something we're mindful of, and something that we're currently working on in a paper right now. And, by the way, it's an issue that came up at least a year ago when we were developing the regulatory basis, so we've known about that for a long time and we've been working that issue, too. So, we're familiar with that linkage, too.

Essentially, we're kind of right in the middle of the hub and everything is coming at us, essentially, so try to maintain all that. So, it's probably a really good idea, I think it's a great suggestion to try to have a map of all these things.

MEMBER CORRADINI: I do think two or three meetings we asked about that, too, if memory serves me, but --

MR. REED: Not only for the requirements of the NTTF, but also for the guidance is where it really gets --

CHAIRMAN STETKAR: Before -- Ed Fuller has been standing back here patiently.

MR. FULLER: This is Ed Fuller from the Staff. Tim left a few words unsaid. I want to call particular attention to a couple of the Tier 3 items that don't -- we should not forget about, 5.2

Recommendation and Recommendation 6. And 5.2 would be, essentially, an extension of what we're doing now in 5.1 on the –- that’s right now under the fold of the Filtering Strategies Rulemaking for Mark Is and Mark IIs. And it would be in –- the Tier 3 items are to look at the additional containment designs. And Recommendation 6 is on hydrogen generated in the severe accident, and what we're going to do about that. People would like to forget about those things, but some of us don't want to forget about them.

CHAIRMAN STETKAR: Thanks very much.

MEMBER SKILLMAN: I'm reminded when I was getting out of college a wise person once told me anything that's big enough to give you everything you want is big enough to take everything you've got. It seems like you're making, I shouldn't say you, it seems like this activity is going to make something that's very large and very grand. And this is borne out of a great deal of frustration, fear, sophisticated learning. And here you are saying hey, we've got the plan. We're going to pull all this stuff together, and it's going to be one big integrated rulemaking. And I just wonder if in the colossal size of this if important elements will be missed, and ground up and pulverized so they're no longer

recognizable. If something will be lost because of the zeal to integrate and combine, so a question is what caution is being exercised to make sure that important detail doesn't get lost?

MR. REED: That's a good question. I mean, basically, we're doing our level best to --

(Simultaneous speaking)

MR. REED: Absolutely. We're trying to insure we don't do that. And, actually, I think that's a definite challenge for us to do that and not miss something. But I also remind people of the other side of the coin here, and the other side of the coin is the next slide that Tara will talk about. While we're combining all these things that may, in fact, not pass Backfit. Okay? Obviously, everything under the order has already been backfitted, and it's not a new imposition. All these new requirements, SAMGs, for example, always been voluntary, and they've been carefully considered for the last 30 years and considered to be voluntary. So, I'm mindful of that entire 30 years of policy. I'm going back through it, and I'm making sure my work group is aware of it. So, I'm worried also the policy issues that we need to be aware of, and all the decisions and thoughts from a lot of people over many years that went into that,

when the Commission said verily it can be a voluntary thing. Now we want to make it a Backfit, new requirement SAMGs, for example, so there's definitely complexity, potential missing issues. There's no question we're doing an awful lot very, very fast as was mentioned earlier. You know, I agree with that, but I think you've got to look at it from both sides, so us trying to do our job completely, as well as making sure we follow our processes. Howard, go ahead.

MR. BENOWITZ: Howard Benowitz with OGC. I'm on the working group with Tim, and just wanted to address your question possibly, Tim, and Tara, you might want to mention the size of the working group, all the people that are involved that bring the different perspectives. If you want to talk about that.

MS. INVERSO: Right. Yes, from a higher level perspective, as these pieces folded into each other, the working group essentially remained the same size and joined, so I think last we checked we have upwards of 30 to 40 people that are in the working group, and there's still a Steering Committee that we report to to maintain the higher level vision. And there are still public meetings planned as we develop the rule package, so I think all of those elements

introduce a lot of checks and balances on the Staff. So, the risk of leaving something out in the end, the consolidation provides a greater benefit it not predetermining the outcome of one versus the other.

MEMBER BLEY: There is another side to that commonly, Dick, and we've seen it in existing regulation, and that is if you do the pieces singularly even more stuff can fall through the cracks. There are gaps that aren't picked up until you look at it in an integrated fashion, so I know you guys have a tough job, but you've got to play both sides of it. But integration is pretty important –-

MR. REED: I was going to both Recommendation 8 and the Station Blackout Mitigation Strategies Rulemaking, I was trying to coordinate communicate. And I'll tell you unless –- until we combined those, those people actually heard the nuts and bolts of Mitigation Strategies until they really understand Recommendation 8 side. So, we understood what they were doing, we actually were, I think, missing and disconnecting, and I was like we must combine. So, we saw that issue, so our –- we have a very large group. We have people from NRO, Research, NRR, we have myself, Eric Bowman, you know, folks that are experts in the different areas all in this group,

and we're certainly –- go ahead, Lawrence.

MR. KOKAJKO: Yes, thank you. My name is Lawrence Kokajko, Director of Division of Policy and Rulemaking, and this rule is under my domain in that Division.

I want to say that I'm a believer in this rule because I believe for that reason, so many things when we do singularly, things fall through the cracks. We miss things. And, in fact, you get a smaller group of people looking at it, you tend to look at just your area, and you don't see some of the interconnections.

When we ultimately decided to propose this to the Commission that we needed to look at this more globally and try to integrate everything, it was with the idea that we thought we could come up with a better way of doing this to avoid some of the pitfalls we know we've had with rulemaking. And I believe we do have, as Tara said, checks and balances that exist there today when we go out with a proposed rule, when we go out for comments, we publish guidance with the proposed rule and comments. Those are the things that all provide a more meaningful rulemaking approach and get a more meaningful product at the end.

We have had clearly a lot of folks involved in this. I think you said 40 people, Tara.

That's a huge group, and I'm engaged on the Steering Committee on this, and I can tell you they are very comprehensive in scope. We look at a lot of detail in trying to direct the working group to get everything. And, in fact, we coordinated this across all our offices, some of the stuff that Tim mentioned regarding 9.1, 9.2, 9.3, I think 10. We're discussing this with NSIR. And, of course, they bring up a different perspective because of their unique role in the Agency. So, I believe this is a very sound approach. I'm a big believer in it, and I'm looking forward to see this thing go work through the process.

I also would say that we work with the new JLD organization very well, so that any insights that are gained from their work, that come out of their evaluation, we will factor into this rulemaking, so we have, I think, a very comprehensive approach. I would argue that we're approaching this in an extremely thoughtful manner. And I look forward to seeing it in completion. And, as I said, as Tim pointed out, we still have the same date in mind, which is I think December 16th?

MR. REED: That's correct.

MR. KOKAJKO: So, I just wanted to add that thought.

MEMBER CORRADINI: But in line with what you've said, so you've mentioned a few characteristics or attributes, comprehensive, all encompassing, try to be complete. Are there any other tools that the Agency has and it's clear that naturally go that route, like a Level 3 PRA that would look at all of this in a combined logical fashion? It strikes me if you're claiming all this, if I were an applicant, if I was a licensee and I was thinking out of the box, I'd say I have a Level 3 PRA. I've done it. I don't need this, I need that, I don't need this, I need that, and here's my complete comprehensive look at the problem. Would the rule consider that as a possible solution to the beast?

MR. KOKAJKO: Lawrence Kokajko, Division of Policy and Rulemaking. I would say that that's covered under some other topics, and --

MEMBER CORRADINI: But it's -- I challenge that that it's not. If all the we've just discussed or talking about, attributes of comprehensiveness, completeness, that you've got a big problem you've got to get your hands around. It takes a large team. You've got to understand that system. It strikes me the Level 3 PRA is a way to essentially decide how all these things fit together in some manner, and which

things actually have risk-significance, and have a risk –- a safety effect and which ones don’t.

MR. KOKAJKO: By the way, I'm also engaged with the Division of Risk Assessment, Joe Giiter's group, and many of the people, in fact, two people up there right now are also engaged with them on the risk prioritization initiative. We're also engaged on the Risk Management Task Force, the Regulatory Framework Working Group. And Joe and I, as well as Tim McGinty in DSS all have looked at this, and we are viewing this in a little more comprehensive fashion. And it is not lost –- your comment is not lost on us.

MEMBER CORRADINI: So, maybe my question very pointedly, would the rule allow for a risk-informed attack at this so that you would be able to decide some things make sense, and some things don't make sense because I have a complete risk profile of the plant, or the site. Forget about the plant, the site.

MR. REED: I think right –- I mean, I –- this is Tim Reed, and this is just a snapshot realtime right now, and only my opinion. How is that for a lot of caveats? But, I mean, right now the –-

MEMBER CORRADINI: Do you have another caveat you want to list?

MR. REED: We're standing at a very high level in terms of performance-based, functionally-based requirements. And, of course, the current guidance has been developed largely to meet what the folks in JLD have been doing. And they haven't risk-informed that to any great, really great extent, but they do consider all the applicable hazards at their site, so when I think about what you're saying outside what a risk-informed, for example, what really are the hazards for my site? What really are the vulnerabilities? Where should I make the adjustments? What should I do for my site that makes the most sense, kind of risk-informing the strategy. I think that's a possibility for people to do. I haven't seen it so far, but if they did that it would be –- I think fall under the same set of requirements as an alternative way to meet it, you know. So, I haven't seen anybody try to go to a Level –- or even much PRA really on this, to be honest with you, I mean. But I do understand what you're saying. I think –- I personally think it would be a great tool to use it, but to date we've been going pretty fast. They haven't done that. It's been more about additional defense-in-depth capability for uncertainties, and it hasn't been really looking at trying to understand what is that

risk? What have we done to it, what have we changed? You know, I kind of, you know, have the same sort of feeling as you, but so far I haven't seen that done too much. I don't know. Maybe, Stew, if you guys have seen folks on the industry side? I don't know, have they brought any risk into what they've done?

MR. REED: No, we really have not seen that in the Mitigation Strategies realm. There have been efforts to introduce that into 2.1.

MR. FULLER: This is Ed Fuller, again. I'm on this working group, and I'm also on the technical advisory group for the Site Level 3 PRA. My impression from all of this is, this rule is really based in defense-in-depth. And as far as any relationship with the PRA goes, you'd have to look at it in terms of the systems analysis, human reliability, and what you do when you get into a core damage situation.

In this particular rule, we are looking very carefully at the whole issue of severe accident management guidelines which are, basically, symptom-based as the industry has developed them to date. So, this is a round about way of saying a lot of insights that come about from doing PRAs and severe accident evaluations are finding their way into this rulemaking process, but not explicitly. It comes to, you know,

some collective knowledge among the various members of the working group. For example, we have one guy who's a real expert on instrumentation and he's really been working hard with us to make sure we properly account for instrument availability in severe accident environments. So, it's a collective effort not necessarily grounded in PRA formal approaches.

CHAIRMAN STETKAR: So, I think the answer to your question is no.

MR. REED: Yes, I was actually going to bring it back to what Ed just said. It's really defense-in-depth for uncertainties associated with beyond design basis external events, at least the Station Blackout Mitigation Strategies portion of that. And I think that's the part that hasn't been really risk-informed, if you will, because obviously everybody's external events at each site are not the same. There's not the same level of uncertainty, so I think there could be room for some folks to do that in the future. I'm not ruling it out, so that's what I'm saying.

MEMBER CORRADINI: Well, I've been tutored by the older members of the Committee who seem to tell me that defense-in-depth and risk-informed or a risk perspective on a problem are fairly much intertwined,

so it seems to me that I'd want to know what risk I've eliminated by doing this. And if I haven't, why am I spending all this effort? I won't use the other term, but effort.

MEMBER SCHULTZ: Well, the next slide that Tara has the focus on the Backfit Rule, as well, and Level 3 PRA, and this application could lend information --

MS. INVERSO: Okay. So, the only other thing I would mention on Slide 6, we don't need to go back. I can just mention it, is that the final rule is due to the Commission in December of 2016, so that final end date did not change in the proposal to consolidate. But what did change was the proposed rule package due date which is currently due in December of 2014, which is the rationale for the November and December ACRS meetings.

So, on Slide 7, I think Tim touched upon this a little bit, but the Staff recognized that the supporting justifications for each of the elements in the draft rule language would have different supporting Backfit bases, so for the requirements that are being implemented under the Order EA-12-0409, they would not be new requirements, so they would not need a Backfit justification. But for all of the other

requirements, those that are brought in by the Onsite Emergency Response Capabilities Rulemaking, they would need to be justified for operating reactors under the Backfit Rule, 10 CFR 51.09. And for the new reactors, the issue finality provisions. So, with that in mind and recognizing the complexity and the scope of this rulemaking, the objective is to draft the rule language so that there are independent subparagraphs for each of these different justifications. So, in the end, if the Staff concludes and the Commission agrees that certain elements aren't justified, they can just be lifted out without having too much of an impact on the rest of the rule language.

And then on Slide 8 we begin to get into a very high level outline of the draft proposed rule language, so what I stress here is this is just draft. It's at a working level. There aren't any concurrences, subject to change. So, I'll be like Tim and add on just a couple of more caveats before we continue. But the applicability will start there. It would apply to operating reactors and new reactors, not research and test reactors, and not independent spent fuel storage installations.

The working group is looking into for the reactors that are transitioning to decommissioning,

are there any elements that could not apply to those, and that's a relatively ripe topic right now within the working group.

We then get into the integrated response capability, and I'll point out here that the intent of this integration is not to take these different procedures and guidelines and make them identical, because they'll still have their own purposes. Like, for instance, for the emergency operating procedures, they start out step by step, and then as you transition through the accident and to the severe accident management guidelines you start getting into higher level, providing the decision maker with tools to help inform his or her decision. So, that would integrate the Station Blackout Mitigation Strategies that are being acquired per EA-12-049, so that was the element where you wouldn't need to do a Backfit justification, it wouldn't be a backfit.

The emergency operating procedures are already required by the technical specifications. The extensive damage mitigation guidelines would be –- are already required in 50.54(hh)(2), so that may just be a simple point, the working group may decide to carryover some actual language.

Right now the working group is considering

extensively the severe accident management guidelines as a concept, requirements to have them review requirements, et cetera.

The last piece may seem a little bit strange as an integration, but for something this complex, command and control for the multi-unit events will be key. And that includes things like getting equipment from other sites, or from the new Response Centers that Stew was talking about.

Moving on to Slide 9, the equipment requirements, the regulatory treatment for the equipment that's required under the order. And I think this came up as a question during Stew's presentation, and how does this long term treatment of the equipment get rolled into the rule?

The training requirements that would mostly focus on the communication, again, the multi-unit events. The drills and exercises, what the working group is currently looking into is how all of these different procedures and guidelines would integrate together during the accident. And then for change control, the working group is recognizing the limitations of 50.59 for the beyond design basis events. So, I'm not sure if Tim wants to provide any more detail, or are there any questions on the outline

of the rule language right now?

MR. REED: That's a very high level snapshot. You know, we're also –- equipment requirements, for example, what you see there, the EA-12-049 equipment. Of course, we have reasonable protection requirements, but we have a maintenance, some sort of maintenance and testing over time requirement. We have to maintain that at some level, maybe vendor recommendation, what have you. Some of this is already in NEI-1206 if you've all looked at that. That would probably be an acceptable means to continue doing it. But there could be more equipment requirements there. For example, we could decide that we want to have communications or equipment facilities requirements up from the EP folks. Right now they're implementing that in NEI-1201, which is referenced through 12-06. We may decide to put that up to a requirement. It would be technically a backfit with no impact, if you will. There could be other –- I mean, we're actually considering, for example, high level performance-based requirement for spent fuel pool level –- a means to know level. In other words, more performance-based on that level than the EA-12-051, for example, to make that generically applicable. So, I'm just trying to give you a full scope of everything

just in the equipment part that we're considering. But right now, clearly, we have to make EA-12-049 requirements generically applicable, so that's what you see there.

In drills and exercises, a lot of this is being done right now for EA-12-049. In fact, we're talking about the V&V exercise and other drills. We would see that as being a little bit more broad. In other words, now instead of just being, for example, a mitigation strategy for beyond design –- it could extend into a core damage sequence, so we'd go into the SAMGs and we'd test the SAMGs. For example, are we testing into the SAMGs with mitigation strategies equipment, some alternative way, so you can see it's al little more broad than perhaps just simply EA-12-049. That gets to a new requirement, a new backfit. That's part of that SAMG requirements, and all the functional regulatory assurances that support that SAMG requirement. So, right now as Tara mentioned, that's our principal focus, trying to justify that new imposition, okay, and reflecting back over since 1985 that it's not been a requirement, saying that we think it should be a requirement in defense-in-depth. Okay? And then having the other assurance requirements come in under that backfit. That's kind of the centerpiece,

if you will, for that consolidated portion, that real integrated piece. So, that's our main focus, and if we are successful in that, I think this thing comes together pretty nicely. And the complexity really now is done in the implementation guidance, and there's where also the feedback comes from the folks right now in JLD. And alternatives they allow, anything that people have a better way to skin the cat, that could fold back into revised updated 12-06 guidance which falls into the rule. So, we're staying with connected with those folks as Eric is on both, Eric Bowman is on our working group. So, I just want to give you a little more flavor. There's a lot more than what you see here. I can probably talk for a long time on each of these headings, but I just want to give you some idea.

MEMBER SCHULTZ: Well, as you talked for a very short time you recently raised a number of issues and questions associated with cumulative effects of regulation and backfit, as well ––

MR. REED: Yes.

MEMBER SCHULTZ: –- with the many things that you added to the list. So, I think it's certainly going to be a challenge to work through that ––

MR. REED: Yes, I think it's very –- I'm I

guess the lead again on CER. Always getting back to me, again, and certainly I think, for example, one critical area, just one example, the people that do Mitigation Strategies are highly likely to be the people to do the SAMGs. I mean, they've got the same skill sets, and they're being driven pretty hard to make that tough schedule that we just talked about earlier today. And I see that that's going to be one area where we need to potentially adjust the implementation of SAMGs on the plant-specific basis.

Remember that –- industry has done an enormous amount, I mean, kudos to the industry doing a lot of recent work. I don't know if you folks know, EPRI updated their Technical Basis docket, 20 years knowledge, far more high level actions in there, a lot of good work. Both Owners Groups have done great work putting together new SAMGs. Okay? They're still working that problem. We're looking at all that information. But even with all that, on a plant-specific basis we'd have to take that and adopt it. Okay? And that's still a lot of work, and that's –- we're recognizing that, so that's a big CER impact. I think you've heard a little bit, some earlier about 2.1 being maybe a little bit out of adjustment. I think another area is EA-13-109. Okay? So, I'm

certainly aware of that as those –- as being kind of the lead of this rulemaking process, so it turns out the lead for CER, also. But, yes, I'm very mindful of that issue.

MS. INVERSO: On Slide 10, Tim already covered the CER issues and the resource constraints that we may anticipate. The only other thing I'd mention on this slide is that we're mindful of submittal requirements, particularly with the new reactors. For the currently operating reactors, we would leverage the submittals that have already been provided under EA-12-049.

MR. REED: Yes, just to follow-on a little bit, here's a simple idea. Almost everything that we're doing for EA-12-049 in my view kind of brings that up to T equals zero, so that when these guys do their inspection report say verily you're good, you meet EA-12-049. Okay, you're at T equals zero. You're good to go on mitigation strategies right now.

Now I need to carry that forward and keep it going periodically over time. So, that’s what –- this is an issue that's come up several times today, and that's the way we kind of see it working together. So, that's just one example, but most of that work will be directly applicable to that part. And, of

course, we have some new stuff, like SAMGs I mentioned that we'll have to make some adjustments. But in addition, you should understand that the new requirements are really for new reactor applications under Part 50 or Part 52. A brand new reactor, unless somebody wants to come in, you know, I don't know what the chances of this are to be honest with you, but we want to –- we need to put into Part 50 both for OL and CP portions of that application, as well as Part 52 what kind of information would you need to provide as part of your application in terms of meeting all this new set of requirements? So, that's what we're trying to do there, too. It's part of our rulemaking process and we have to build that into the regulations, also.

MS. INVERSO: Okay. And then on our slide, we've already mentioned current focus. The working group continues to develop the draft proposed rule language and to focus on the SAMGs from a conceptual standpoint. We are planning to have a public meeting in August, probably mid towards end of August, and the purpose of that public meeting will be to seek external stakeholder feedback on the draft proposed rule language itself. So, we'll release that ahead of time so that the attendees can think it over and prepare their remarks. So, that's something that we

can provide to Mike to perhaps distribute to all of the members, or even the members if they're interested could attend. We'll have remote attendance capability if that's something that is of interest.

MR. REED: Our intent there is to kind of go right to the heart of the matter, which I was just talking about. Focus in on SAMGs, what our SAMG requirements would be, what we see as the conceptual elements of the defense-in-depth right now, backfit analysis, put it out there and see what people think because we're developing those two in tandem. They go together. You know, how much in terms you want to impose the requirement of the functional that can support and backfit, so we're working those two together. We want to put that out there and let people see that and see what kind of feedback we get. And, hopefully, it helps us going forward, we produce a much better proposed rule.

MS. INVERSO: And then we'll return to the ACRS on November 20th and 21st for the Subcommittee, and then in December, I don't remember the specific date, for the Full Committee, which will be a review of the proposed rule package.

MEMBER SCHULTZ: Somewhere between the 2nd and the 4th.

MS. INVERSO: Okay.

MR. SNODDERLY: Excuse me, John. Mike Snodderly, ACRS Staff. While we have all the major players here, I just want –- and so we meet the Committee's expectation, I just want to give a little more detail on what we have scheduled for November 20th and 21st to make sure that we're on board with the Staff.

We've been working with Jeremy Bowen of the newly formed JLD group. Unfortunately, he couldn't be here today because he's at one of the Regional Centers, Regional Response Center openings. But we have commitments from four plants, two BWRS, and two PWRs at four different sites. So, what we envisioned was on November 20th, it would be –- we would discuss with each one of those four sites for about two hours, we would discuss their thermal hydraulic analyses that they've done to support what actions they've developed. And then we would also discuss their current confirmatory and open items, because I think that will give the Committee –- the idea was it would give the Committee a good idea of what guidance, what methodologies are being used, and how –- and if there's problems or not problems.

Then that would lead in then to the next

day which would be more the Staff presentations and discussions of the draft proposed rule language as it exists at that time. And we'll work with the Staff to figure out what's an appropriate date to freeze it and submit it to support the 21st. And then as Tara said, then we would follow-up with –- perhaps another Subcommittee meeting right before the December Full. But, hopefully, we can get that all accomplished on November 20th and 21st, and then, hopefully, the Committee will feel comfortable enough to address it during the December Full Committee meeting. But that would allow us to meet the current schedule that was proposed to the Commission. It's aggressive, it's going to be a big package, but I'm not sure how else to do it. But if you could give us some feedback, maybe fewer plants, more time with the Staff, but that’s –- currently right now that’s the plan.

The other opportunity we'll have, as I said, is when we go to Palisades the third week of July, they have their Interim Staff Evaluation, and that's another opportunity where we can look and hear from them about how things are going, and get another data point there. But that's pretty much how we plan to attack this review, which is going to be a challenge for us and the Staff.

CHAIRMAN STETKAR: You know, my initial reaction is that sounds –- it's challenging. It's certainly going to be a full couple of days, but in terms of number of plants, I think we would benefit from that broader cross section. I think the danger of having only one or two, as you –- you see their specific issues, so –-

MEMBER SCHULTZ: Before we get there, we can work on the content of each plant's presentation and make sure we're not –- we don't result in an overlap of information.

CHAIRMAN STETKAR: Yes, I think that's important because having them spend a quarter of their time covering the same programmatic issues doesn't make sense.

MR. SNODDERLY: One thing I was surprised about because I have spent a good bit of time with different interim staff evaluations is how different, how sites –- you really do get a feel for this really as a plant-specific issue, because the issues are –- they have a lot in common, but they're very different about how they approach them, and what equipment they're going to use, and the response time. So, yes, I think we got it right. Thanks.

MR. MOHSENI: And just to react to some of

the good comments we heard, I think we're learning a lot about the complexity of what's before us. By no means are we oversimplifying the challenge before us. Having one consolidated rule has its cons, as well. While it has its pros, it does have its unintended consequences, and it's very difficult to be precise in projecting exactly what implications it might have on the unintended consequences.

The concept about assessing the value-added in terms of risk reduction going through the up front cost of looking into this, the already sunk costs and what is yet to come, it's a great idea, but I think from a policy standpoint the momentum that has been created, it's going forward. While it is good to know so that in the future we can better adjust where the value is when we are committed to risk-informing our processes along the way, but as you can see, this is very much unchartered waters we're entering beyond design basis. And as much as we're learning from the orders and the implementation of the orders, we will continue to live within a lot of uncertainty. And the defense-in-depth concept is really our last protection against the tough questions that we get. When we cannot quantify adequately the uncertainties or the benefits, we will rely on defense-in-depth as a basis,

but recognizing the complexity I think your questioning and your attitude helped us a lot in better focusing our attention on what needs to be done, and we appreciate tough questions that you provide us.

MEMBER SCHULTZ: Thank you. Are there other comments or questions from the Committee Members before we go to public comment? Hearing none, Mike, I'd like to open up the telephone line, and while we're doing that are there any members of the public or others in the room who would like to make a statement to the Committee at this time?

MR. LEWIS: Yes, this is Marvin Lewis, a member of the public.

MEMBER SCHULTZ: Marvin, we don't have any members in the room who are –- of the public in the room who have come to the microphone, so thank you for your offer of comment, and we're ready to listen. Thank you.

MR. LEWIS: All right. Well, at first I thought this was going to be the usual stuff, and I'm taken back that I see some real effort here trying to meet a standard of greater safety. All right. I admit the technical stuff went pretty fast and hard, but I am an engineer and I was able to follow it. I think I

really did see an effort to make –- to provide greater health and safety to the public. And I wish that a lot more meetings show that kind of effort. Thank you.

MEMBER SCHULTZ: Thank you for your comment. Are there members of the public on the line who would like to make a comment? Please state your name and make your comment, please. Hearing none, we'll go ahead and close the public comment period. And, John, I'll turn the meeting back over to you.

CHAIRMAN STETKAR: Thanks very much, Steve. And, again, I'd like to offer my thanks to the Staff. You covered a lot of material. The exchange was very good, and we appreciate the time and effort you put into this. And we certainly look forward to our future interactions.

With that, we are now off the public record as far as our meeting is concerned, and we will reconvene at 3:00, please.

(Whereupon, the above-entitled matter went off the record at 2:28 p.m.)

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Protecting People and the Environment

Revisions to *Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants* (NUREG-0800) : BACKUP SLIDES

Staff: Suzanne Schroer, Mark Caruso, Hanh Phan,
Odunayo Ayegbusi, Robert Vettori, Jonathan DeGange
Office of New Reactors

Presented to ACRS

July 10, 2014

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Re-Noticing SRP 19.0 Description of Proposed Changes

- Staff's expectations for addressing risk of accidents that could affect multiple modules to be reflected.
  - Applicant will systematically search for multi-module risk contributors.
  - Applicant will explain why such contributors are small compared to single module contributors in light of design features and operational strategies for prevention or mitigation of multi-module accidents.
- More explicit description of review procedures for Low Power & Shutdown PRA review to be added to ensure that Chapter 19 of the submitted FSAR is complete.
  - APR1400 readiness review indicated guidance in current draft SRP 19.0 not sufficient to convey expectations

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SRP 19.1 Rev. 3
Section II. "ACCEPTANCE CRITERIA"

- No new sections or subsections added to the SRP Section 19.1 Revision 3
- Updated to include:
  - Regulatory requirements in 10 CFR 50.71(h)(1), (h)(2), and (h)(3) for new reactors
  - "If the applicant shows that its PRA model meets the regulatory positions set forth in RG 1.200, the technical reviewer should be able to conclude that the PRA is technically adequate. If exceptions to RG 1.200 have been identified and the staff has determined that the exceptions would not affect the risk results sufficiently to affect the regulatory decision, the staff should also be able to conclude that the PRA is technically adequate."

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SRP 19.1 Rev. 3
Section III. "REVIEW PROCEDURES"

- Section III.1.2, "Scope of the PRA Model" updated to include:

  "For reactors licensed under Part 52, CFR 50.71(h)(1) requires that each COL holder shall develop a Level 1 and a Level 2 PRA no later than the scheduled date for initial loading of fuel. The PRA must cover those initiating events and modes for which NRC-endorsed consensus standards on PRA exist 1 year prior to the scheduled date for initial fuel load. In addition, 10 CFR 50.71(h)(3) requires that each COL holder shall upgrade the PRA required by 10 CFR 50.71(h)(1) to cover all modes and all initiating events no later than the date on which the licensee submits an application for a renewed license."

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Section III. "REVIEW PROCEDURES" (Continued)

- Section III.2.2, "Assessment of the Technical Adequacy" updated to include:

"The capability category needed for each PRA supporting requirement of the applicable PRA standard technical element is dependent on the application. In general, the staff anticipates that current good practice, i.e., Capability Category II of the ASME/ANS Standard, is the level of detail that is adequate for the majority of applications. However, for some applications, Capability Category I may be sufficient for some PRA supporting requirements, whereas for other applications it may be necessary to achieve Capability Category III for specific PRA supporting requirements."

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SRP 19.1 Rev. 3
Sections IV, V, and VI

- Section IV. “EVALUATION FINDINGS”
  - No major changes
- Section V. “IMPLEMENTATION”
  - No major changes
- Section VI. “REFERENCES” added
  - NEI 05-04, “Process for Performing Follow-On PRA Peer Reviews Using the ASME PRA Standard”
  - NEI 07-12, “Fire Probabilistic Risk Assessment Peer Review Process Guidelines”
  - NUREG-1855, “Guidance on the Treatment of Uncertainties Associated with PRAs in Risk-Informed Decision Making”

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Revisions to *Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants* (NUREG-0800)

Staff: Suzanne Schroer, Mark Caruso, Hanh Phan,
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Agenda

Section	Staff Presenting
• SRP Section 17.4	Suzanne Schroer
• SRP Section 19.0	Mark Caruso
• SRP Section 19.1	Hanh Phan
• SRP Section 19.2	Odunayo Ayegbusi
• SRP Section 19.3	Mark Caruso
• SRP Section 19.4	Robert Vettori
• SRP Section 19.5	Robert Vettori

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Revision 1 to SRP 17.4
"Reliability Assurance Program"

Presented to ACRS

July 10, 2014

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SRP 17.4 Update
Reliability Assurance Program

- SRP 17.4 updated to incorporate DC/COL-ISG-18: “Reliability Assurance Program”
  - Sections of 17.4 were wholly replaced by DC/COL-ISG-018
- Also clarified “Review Procedures”

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SRP 17.4 Update
Reliability Assurance Program

- Sections replaced by DC/COL-ISG-018
  - Review Responsibilities
  - Areas of Review
  - Acceptance Criteria
  - Evaluation Findings
  - References

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SRP 17.4 Update
Reliability Assurance Program

- Replaced the term “quality elements” in SRP Section 17.4, Revision 0 and “essential elements” in SECY-95-132 with the term “implementation controls” in SRP Section 17.4, Revision 1

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SRP 17.4 Update
Reliability Assurance Program

- Additional Review Procedures
  - Documentation of NRC audits and inspections.
  - Regulatory guides that provide information on categorizing risk significance of systems, structures, and components (SSCs) which can facilitate the review of the methodology for identifying SSCs within the scope of the RAP.
  - Participation of other technical organizations in the review of the list of RAP SSCs and the evaluation methodology.
  - Interfacing with other organizations to review the process for integrating RAP into operational programs.
  - Procedure for reviewing the proposed Tier 1 inspections, tests, analyses, and acceptance criteria for RAP.

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SRP 17.4 Update
Reliability Assurance Program

- Sub-Committee Comments
  - What do applicants need to do with their D-RAP list once they have their full-scope, plant-specific PRA?
  - Why is there a focus on dominant failure modes for creating the D-RAP list?

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SRP 17.4 Update
Reliability Assurance Program

Conversion into operational programs

- SRP 17.6 "Maintenance Rule" Draft Revision 2
  - "The NRC has determined that the reliability assurance program may be implemented in the operations phase by (a) the MR program consistent with RG 1.160, **with all RAP SSCs being categorized as having HSS**, (b) the quality assurance (QA) program for safety-related SSCs established through Appendix B to 10 CFR Part 50 requirements, (c) QA controls for nonsafety-related RAP SSCs established in accordance with Part V of SRP Section 17.5, and (d) inservice inspection, inservice testing, surveillance testing, and maintenance programs."

SRP 17.4 Update
Reliability Assurance Program

Dominant Failure Modes

- SECY-95-132
  - "An application for advanced reactor design certification or a combined license must contain….for those structures, systems, and components designated as risk-significant: (i) a process to determine dominant failure modes that considered industry experience, analytical models, and applicable requirements…"

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SRP 17.4 Update
Reliability Assurance Program

Dominant Failure Modes

- SRP 17.4
  - "Prior to initial fuel load, the COL licensee identifies dominant failure modes and integrates RAP into operational programs. During the operations phase of the plant, **performance and condition monitoring is implemented** to provide reasonable assurance that these RAP SSCs do not degrade to an unacceptable level of reliability, availability, or condition."
  - "Process for Determining Dominant Failure Modes: The application should propose a process for determining dominant failure modes of RAP SSCs. This process should incorporate industry experience, analytical models, and applicable requirements (e.g., operating experience, PRA importance analyses, root cause analyses, failure modes and effects analyses)."

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SRP 17.4 Update
Reliability Assurance Program

Dominant Failure Modes

- SRP 17.4
  - "A COL applicant referencing a certified design should propose a process for integrating the RAP into operational programs…**consideration** of dominant failure modes of RAP SSCs in meeting the objectives of the RAP **during plant operation.**"
  - "Integrations of Reliability Assurance Program into Operational Programs…Consideration of dominant failure modes of RAP SSCs, which are determined in accordance with the process established under the referenced DC, as it relates to maintaining the reliability and availability of RAP SSCs commensurate with their risk significance. For example, dominant failure modes **could be used to facilitate** the identification of specific reliability assurance activities or strategies (e.g., inservice inspection, inservice testing, surveillance testing, monitoring, and maintenance) to maintain equipment performance consistent with the risk insights and key assumptions for the RAP SSCs."

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Revision 3 to SRP 19.0 "Probabilistic Risk Assessment and Severe Accident Evaluation for New Reactors"

Presented to ACRS

July 10, 2014

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Agenda for Presentation

- Summary of Changes to SRP Chapter 19.0
- Key issues raised at PRA Subcommittee meeting (March 20, 2014)

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SRP 19.0 Update
PRA & Severe Accident Evaluation for New Reactors

- SRP 19.0 Updated to incorporate:
  - DC/COL-ISG-03 PRA Info for DC/COL Applications
  - DC/COL-ISG-20 PRA Based Seismic Margins Analysis
  - DI&C-ISG-03 Risk-Informed Digital I&C Review
  - New Reactor Review Experience
    - ESBWR
    - AP1000
    - EPR
    - APWR

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SRP 19.0 Update
PRA & Severe Accident Evaluation for New Reactors

- Additional review interfaces identified
  - Structural Engineering
  - Human Factors Engineering
  - External Hazards Review (Chap 2)
  - Digital I&C review
  - Regulatory Treatment of Non-safety Systems
  - Severe Accident Management Alternatives (Environmental Report)

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SRP 19.0 Update
New Guidance Based on New Reactor Review Experience

- **Review Procedures for PRA Technical Adequacy**
- Review Procedures Specific to Passive Designs
- Review Procedures Specific to iPWRs
- Level II PRA Results
- PRA for Non-Power Modes of Operation
- Treatment of Internal Fire Initiators
- Treatment of High Wind Initiators
- **Procedures for Specific PRA Audit Topics**
- Severe Accident Evaluation

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SRP 19.0 Update
Key Issues Raised at PRA Subcommittee Meeting

- Need for COL holders to verify seismic margin when a seismic PRA is required by regulation
- Acceptability of the Capability Category I Standard for design certification and COL PRAs
- Applicability of metrics for risk significance in RG 1.200 to designs with very low CDF
- Use of functional block diagrams provided by applicant to develop a PRA model of digital I&C systems which provides risk insights that help assure the design meets fundamental principles

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Revision 3 to SRP Section 19.1 "Determining the Technical Adequacy Of Probabilistic Risk Assessment for Risk-informed License Amendment Requests After Initial Fuel Load"

Presented to ACRS

July 10, 2014

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Revision 3 to SRP Section 19.1

- The main purpose of this update is to:
  - incorporate regulatory requirements for new reactors
  - include the applicability of NFPA 805
  - reflect the issuance of Revision 2 to RG 1.200, addenda to the ASME/ANS PRA Standard, and additional PRA-related guidance
  - update the introductory/history discussion of the ASME and ANS Standards
  - Changed the title to clarify its intent for risk-informed LARs after initial fuel load

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SRP Section 19.2 "Review of Risk Information Used to Support Permanent Plant-Specific Changes to the Licensing Basis: General Guidance"

Presented to ACRS

July 10, 2014

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SRP 19.2
Review of Risk Information Used to Support Permanent Plant-Specific Changes to the Licensing Basis: General Guidance

- SRP 19.2 is a new section created during the Chapter 19 rearrangement in 2007
- The section contains guidance previously available in SRP 19, revision 1
- The guidance was updated to extend its use to 10 CFR part 52 applicants, as appropriate

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SRP Section 19.3 (NEW) "Regulatory Treatment of Non-Safety Systems for Passive Advanced Light Water Reactors"

Presented to ACRS

July 10, 2014

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Agenda for Presentation

- Overview of SRP Section 19.3
- Key issues raised at PRA Subcommittee meeting (March 20, 2014)

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SRP 19.3 Regulatory Treatment of Non-Safety Systems (RTNSS)

- Overview
  - SRP 19.3 is a new section that addresses Regulatory Treatment of Non-Safety Systems for passive designs
  - SRP 19.3 is based on Commission policy described in SECY papers and SRMs for AP600/1000 reviews
  - SRP 19.3 provides top level guidance; SRPs that address specific SSCs provide additional detailed guidance
  - Review responsibility is spread widely over the technical staff

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SRP 19.3 Regulatory Treatment of Non-Safety Systems

- Areas of Review
  - Selection of RTNSS SSCs using the five RTNSS scoping criteria
  - Functional design of RTNSS SSCs
    - Adequacy of functional design requirements
    - Compliance with functional design requirements
    - Design improvements to minimize adverse interaction between passive safety systems and non-safety active systems
  - Focused PRA sensitivity studies
  - Augmented design standards for RTNSS “B” SSCs
  - Regulatory treatment of RTNSS SSCs

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SRP 19.3 Regulatory Treatment of Non-Safety Systems

- Staff's review assures that:
  - RTNSS SSC selection criteria have been met
  - Functional design requirements adequate
  - RTNSS SSCs meet their functional design requirements
  - Adverse interaction between passive safety systems and active non-safety back-up systems identified and removed through design
  - Results of Focused PRA are reasonable
  - Proposed regulatory treatment of each SSC is commensurate with its reliability/availability mission
  - Controls for RTNSS "B" SSCs are provided in the Availability Controls Manual.
  - Tech Spec established for highly risk-significant RTNSS SSCs

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Key Issues Raised in PRA Subcommittee Meeting

- Those parts of RTNSS that depend on the PRA are not revisited by COL holders with the "fuel load" PRA.
  - fuel load PRA more complete than the design PRA
  - such action might identify needed changes
- Policy on RTNSS was developed 20 years ago. Weaknesses have been identified and perhaps the policy and process should be re-considered
  - RTNSS "B" SSCs appear to get more treatment than other RTNSS SSCs.

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SRP Section 19.4 (NEW)
Strategies and Guidance to Address Loss of Large Areas of the Plant Due to Explosions and Fires

Presented to ACRS

July 10, 2014

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SRP 19.4

- New SRP Section
- Incorporates DC/COL-ISG-016: “Compliance with 10 CFR 50.54(hh)(2) and 10 CFR 52.80(d)”
- Review conducted by
  - Branch responsible for the review of mitigating strategies
  - Branch responsible for the review of reactor systems

SRP 19.4

- Regulatory Requirements
  - 10 CFR 50.54(hh)(2) (LOLA)
  - 10 CFR 50.34(i), 10 CFR 52.80(d) (contents of applications)
- NRC Guidance
  - Interim Safeguards and Security Compensatory Measures Order (February 25, 2002)
  - Temporary Instruction (TI) 2515/168 (SGI)
  - DC/COL-ISG-016
- Industry Guidance
  - NEI 06-12 “B.5.b Phase 2 & 3 Submittal Guideline,” Revision 2 (CPs and OLs issued before May 26, 2009)
  - NEI 06-12, Revision 3
- Conformance with guidance are satisfactory means of compliance with regulatory requirements.

SRP Section 19.5 (NEW)
Adequacy of Design Features and Functional Capabilities Identified and Described for Withstanding Aircraft Impacts

Presented to ACRS

July 10, 2014

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SRP 19.5

- New SRP Section – Issued April 2013
- Incorporates RG 1.217, Rev 0, “Guidance for the Assessment of Beyond-Design-Basis Aircraft Impacts”
- Considers conformance with Nuclear Energy Institute (NEI) 07-13, Revision 8, “Methodology for Performing Aircraft Impact Assessments for New Plant Designs,” an acceptable method for use in satisfying the NRC requirements in 10 CFR 50.150(a).

SRP 19.5

- Primary aircraft impact assessment review is conducted by three different branches
  - Branch responsible for the review of fire protection
  - Branch responsible for the review of structures
  - Branch responsible for the review of reactor systems

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ACRONYMS

- ANS - American Nuclear Society
- ASME - American Society of Mechanical Engineers
- CFR - Code of Federal Regulations
- COL - Combined License
- CP- Construction Permit
- DC - Design Certification
- I&C - Instrumentation and Control
- ISG - Interim Staff Guidance
- LAR - License Amendment Request
- LOLA – Loss of Large Areas (of the plant)
- NEI - Nuclear Energy Institute
- NFPA - National Fire Protection Association
- OL- Operating License
- PRA - Probabilistic Risk Assessment
- RAP - Reliability Assurance Program
- RG - Regulatory Guide
- RTNSS - Regulatory Treatment of Non-Safety Systems
- SAMDA - Severe Accident Management Design Alternatives
- SRP - Standard Review Plan
- SSC - Structures, Systems and Components

Lessons Learned from the San Onofre Steam Generator Tube Degradation Event

Plan of Action and Milestones
Steam Generator Technical Review

Presented by:
Craig Erlanger, NRR/DIRS
Gloria Kulesa, NRR/DE/ESGB

July 10, 2014

Background

- **Replacements for San Onofre**
  - Unit 2: 2010
  - Unit 3: 2011
- **Status on January 31, 2012**
  - Unit 2 outage
  - Unit 3 tube leak
- **Decision on June 7, 2013**

Lessons Learned Tasking

- **Memo from EDO on 3/20/14**
  - 8 Topic Areas
- **Topic 3 – Steam Generator Technical Review**
  - NRR: DE (lead) and DSS
  - NRO: DE and DCIP
  - RES
  - Region IV
- **Five areas of consideration**

Items of Consideration

- **Item 1 – Review Guidance**
  - Staff to evaluate need for additional guidance in steam generator:
    - designs for new reactors
    - replacements
    - modifications

Items of Consideration

- **Item 2 – SG Program: New degradation**
  - **Staff to evaluate if the existing SG program effectively handles new degradation methods**

Items of Consideration

- **Item 3 – SG Program: Fluid Elastic Instability**

  – Staff to evaluate if the existing SG program effectively accounts for the phenomenon

Items of Consideration

- **Item 4 – New standards/criteria for new SG**
  - Staff to engage industry for evaluating the adequacy of industry standards

Items of Consideration

- **Item 5 – Enhancements to the NRC's SG inspection procedures**
  - Staff to evaluate if new guidance is needed in Inspection Procedures
    - Inservice inspections
    - Vendor inspections

Backup Slides

Plans of Actions and Milestones for Other Topics

Overall Milestones

- Region IV Visit: July 1, 2014
- ACRS Meeting: July 10, 2014
- Team Meeting: July 10, 2014
- First Draft of Responses: August 29, 2014
- Team Meeting – Discussion of Draft Responses: September 3, 2014
- Second Draft of Responses: October 2, 2014
- Team Meeting: October 7, 2014
- Final Team Input: October 29, 2014
- Team Meeting: November 4, 2014
- Report Development Complete: November 10, 2014
- Report Out for Concurrence: November 12, 2014
- Final Report Preparation: December 3, 2014
- Report Due to OEDO: December 22, 2014
- OEDO Status Brief: TBD
- TA Brief: TBD

10 CFR 50.59 Process

Plan

- Evaluate adequacy of the 10 CFR 50.59 rule for major or complex component replacements.
- Assess need for additional 10 CFR 50.59 guidance for large or complex component replacements.
- Assess need for clarification for the commonly used phase “like-for-like replacement” with respect to 10 CFR 50.59.
- Engage appropriate stakeholders with the preliminary conclusions.

Internal Milestones

- Begin review: June 2, 2014
- ACRS meeting: July 10, 2014
- Meetings with internal stakeholders: July/August 2014
- Meetings with external stakeholders (ROP working group): July 16, 2014 & September 11, 2014
- First draft: August 29, 2014
- Second draft: October 2, 2014
- Final input: October 29, 2014

Confirmatory Action Letter as a Regulatory Tool

Plan

- Seek input from various stakeholders.
- Reviewed documentation related to this issue.
- Determine the appropriateness of the use of CAL as a regulatory tool.
- Determine if changes to CAL guidance or implantation are needed.
- Determine if additional formal communications to licensees are needed regarding future use of CALs.

Internal Milestones

- Begin review: June 2, 2014
- ACRS meeting: July 10, 2014
- Meetings with internal stakeholders: July/August 2014
- Meetings with external stakeholders (ROP working group): July 16, 2014 & September 11, 2014
- First draft: August 29, 2014
- Second draft: October 2, 2014
- Final input: October 29, 2014

Organization/Roles and Responsibilities

Plan

- Seek input from various stakeholders.
- Review applicable documentation.
- Determine if existing process helped staff respond with the appropriate priority to the event.
- For technical issues, determine:
  - if the agency has appropriate guidance of the roles/responsibilities of each office.
  - if guidance for Technical Evaluation Reviews is needed.
  - If current internal communications are appropriate/effective.
  - any lessons learned on internal communications and coordination among offices for this event.

Internal Milestones

- Review Start: June 1, 2014
- First Draft: August 29, 2014
- Second Draft: October 2, 2014
- Final Draft: October 29, 2014
- Route for Concurrence: November 12, 2014

Communication and External Interactions

Plan

- Conduct data gathering:
  - Interviews and discussion groups with NRC staff.
  - Feedback form for external stakeholders and interested parties.
  - Review documents and records.
- Identify themes and develop recommendations:
  - Public meetings.
  - Use of internal communications plan and external Webpage.
  - Calls with licensees.
  - Coordination on communications within agency.
  - Use of Blog.
  - Small group meetings.
  - External correspondence.

Internal Milestones

- Visit to Region IV: July 1-2, 2014
- Discussions with HQ staff: July and August 2014
- Distribute external feedback form and hold discussions with stakeholders: August to early Sept 2014
- Attend SONGS Community Engagement Panel meeting to distribute forms: August 14, 2014
- Analyze and synthesize data: September 2014
- Develop and submit report: October 2014

Commission Separation of Function Communication Challenges

Plan

- Conduct data gathering:
  - Interviews and discussion groups with NRC staff.
  - Review documents and records.
- Develop recommendations.

Internal Milestones

- Information and Data Gathering: July and August, 2014
- Analyze Data and Develop Recommendations: August and September, 2014
- Initial Draft for OGC Review: September 2, 2014
- Inter-Office Review: October 1, 2014
- Final Input to EDO: October 29, 2014

Inspection Manual Chapter (IMC) 0351, "Implementation of the ROP at Reactor Facilities in an Extended Shutdown Condition for Reasons Other Than Significant Performance Problems"

Plan

- Seek input from various stakeholders.
- Reviewed applicable documentation.
- Identify differences among IMC 0350 and IMC 0351.
- Review decision to implement IMC 0351.
- Evaluate implementation of IMC 0351 guidance:
  - Inspection program modification.
  - Performance indicator program modification.
  - Communication plan, including ROP Web page.
- Develop Recommendations to revise IMC 0351.

Internal Milestones

- Begin review: June 2, 2014
- ACRS meeting: July 10, 2014
- Meeting with stakeholders: August 15, 2014
- First draft: August 29, 2014
- Second draft: October 2, 2014
- Final draft: October 29, 2014
- Concurrence: November 12, 2014

Vendor Inspection

Plan

- Review existing policy and practices for continued vendor oversight and identify areas where enhancements are needed, as applicable.
- Determine if SONGS event exposed any new or unique vendor lessons that NRC's Vendor Inspection Program should take into account.
- Determine if the NRC's Vendor Inspection Program be more focused on the design aspects of major plant modifications.

Internal Milestones

- Kick-Off Meeting: April 24, 2014
- Bi-Weekly Teleconferences: May 8&22, June 19, and July 9, 2014
- WG Meeting to Discuss Preliminary Recommendations: July 28-29, 2014
- Preliminary Recommendations to DCIP Senior Management: Week of July 28, 2014
- Develop Final Report: Week of August 11, 2014
- Final Report out for Concurrence: Week of August 18, 2014

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New Japan Lessons Learned Organization
and
Mitigating Strategies

Advisory Committee on Reactor Safeguards

Full Committee

July 10, 2014

Purpose of New Organization

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- Post-Fukushima activities were expending more resources than originally planned
- Provides capability to execute the majority of Tier 1 activities within the new division
- Effective June 15, 2014
- Organization was developed with flexibility in mind
- New Organization recognizes importance of Mitigating Strategies to other Tier 1 activities

Organization Structure

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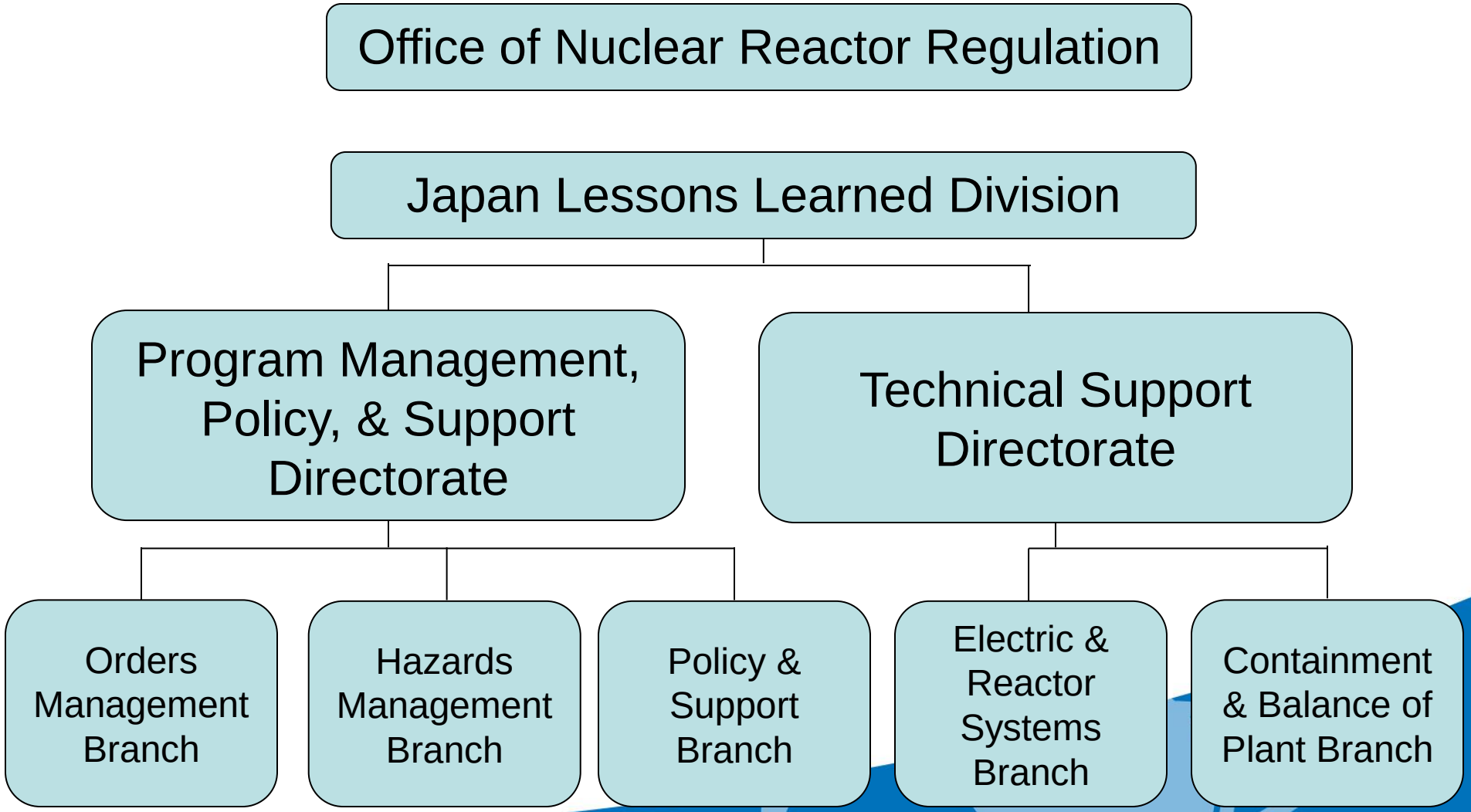

Update on Mitigating Strategies

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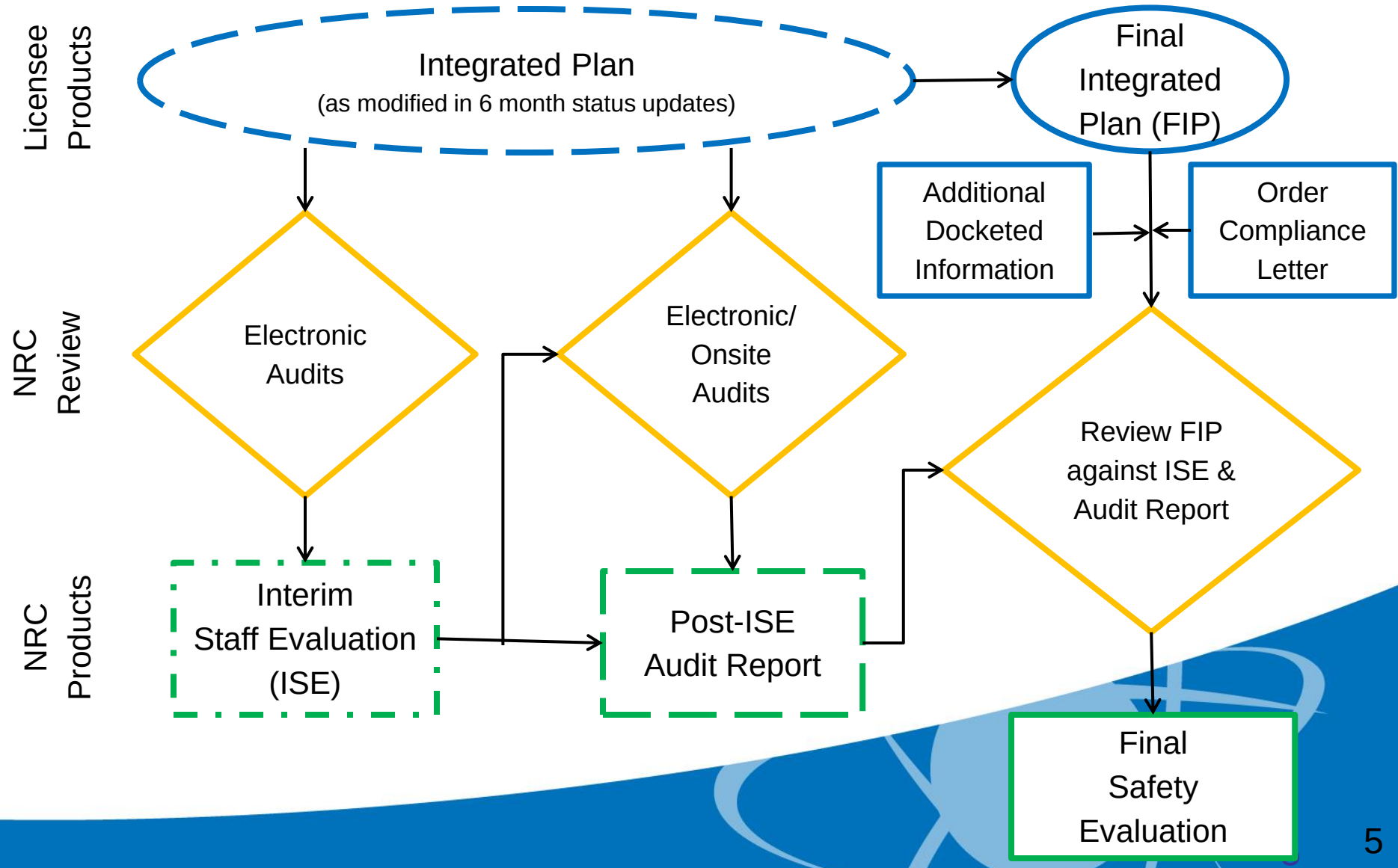
- Sites are Implementing Safety Improvements
  - Procuring Equipment
  - Making Modifications
- Staff is Reviewing Licensee Progress
  - Issued Interim Staff Evaluations (February 2014)
  - Electronic and Onsite Audits
- Safety Evaluations
  - Issued after all units at a site reach compliance
  - Watts Bar will be first compliant site (Fall 2014)

MS Closeout Process



MS Closeout Timeline

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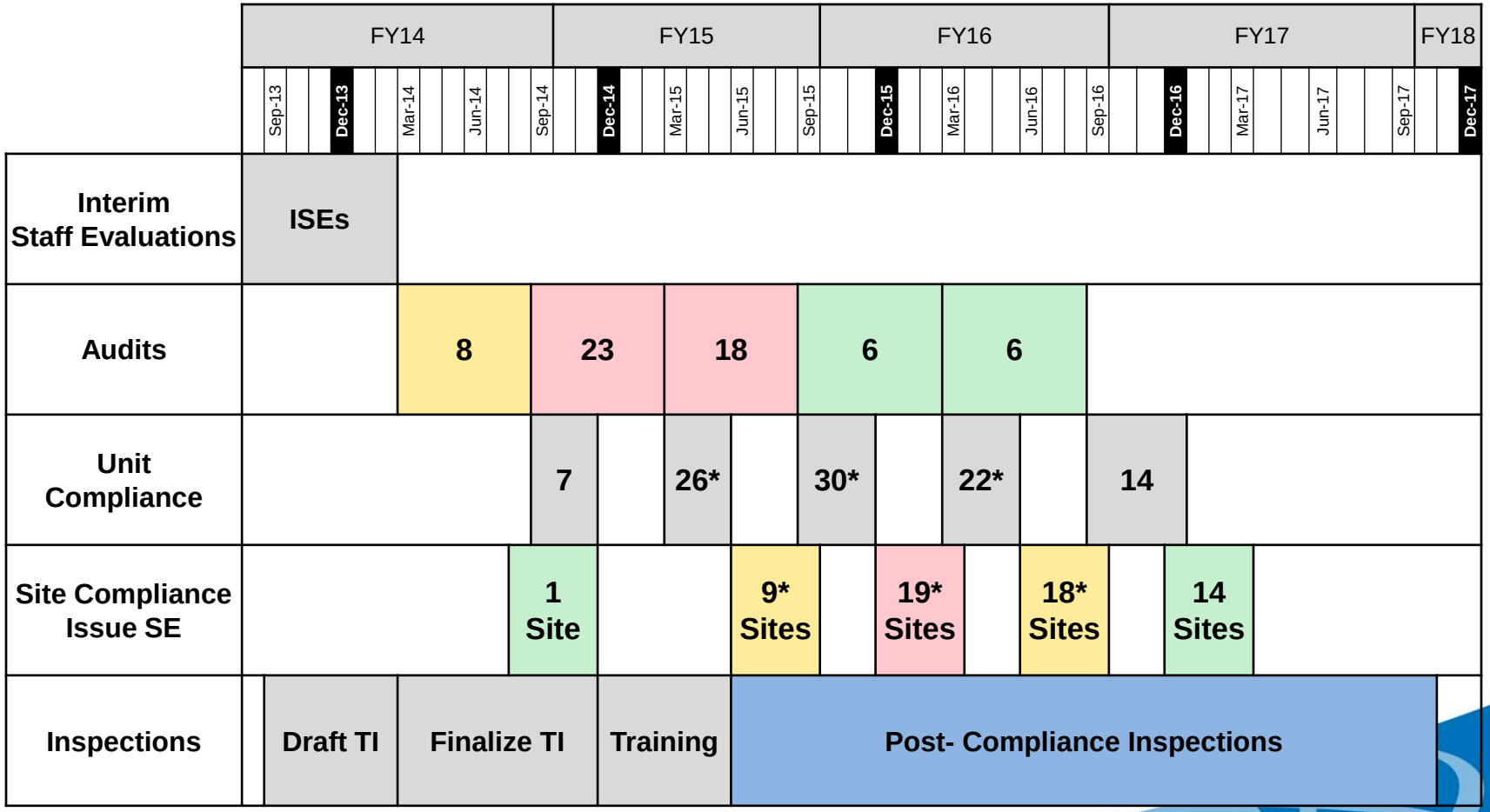

* Ten BWR units have requested relaxation to a third outage (past 2016) to align with EA-13-109

Strategic Alliance for FLEX Emergency Response

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- SAFER Control Center: Lynchburg VA, Birmingham AL
- Equipment Storage: Memphis TN, Phoenix AZ
- Proof of Concept Activities
  - Memphis/TMI week of July 7, 2014
  - Phoenix/Surry week of July 14, 2014
- Staff Evaluation Activities
  - Witness development of individual plant response plans
  - Witness Proof of Concept
  - Staff report September, 2014

FLEX Portable Equipment

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Each Reactor

- Phase 2 Equipment (pumps, generators)
- Most can last indefinitely on Phase 2

FAIL

Backup Equipment

- N+1
- Each type of equipment

FAIL

Phoenix RRC

- Generic equipment (5 sets)
  - Pumps & generators
  - 5 sets
- Site Specific Equipment
  - Primarily for "recovery"
  - Exception is mobile boration

Memphis RRC

- Generic equipment
  - Pumps & generators
  - 5 sets
- Site Specific Equipment
  - Primarily for "recovery"
  - Exception is mobile boration

Other Reactor Sites
(not credited)

- Additional defense-in-depth
- Formal agreements; existing database
- INPO coordinates support
  - Equipment
  - Operators

Long-Term Regulatory Strategies for Orders

- Long-term regulatory treatment
  - Licensee documentation
  - Change process
  - Regulatory review documentation
  - Rulemaking
- Long-term oversight
  - Mechanism for oversight
  - How to disposition issues

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Consolidation of Post-Fukushima Rulemaking Efforts

Advisory Committee on Reactor Safeguards

Full Committee

July 10, 2014

Purpose

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- Discuss efforts to consolidate post-Fukushima rulemakings
- Discuss rationale for pursuing consolidation (supported with conceptual version of a consolidated rule)
- Discuss current status, focus, and path forward

Background

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- Previous ACRS interactions on Station Blackout Mitigation Strategies:
  - ACRS full committee – June 5, 2013
  - ACRS Regulatory Policies and Practices S/C – April 23, 2013
  - ACRS Regulatory Policies and Practices S/C – December 5, 2013

- Previous ACRS interaction on the Onsite Emergency Response Capabilities Rulemaking:
  - ACRS Plant Operations and Fire Protection S/C – February 6, 2013

- Regulatory bases and public interactions:
  - Station Blackout ANPR Issued – March 20, 2012
  - Station Blackout Mitigation Strategies Final Regulatory Basis issued – July 23, 2013
  - Onsite Emergency Response Capabilities ANPR- April 18, 2012
  - Onsite Emergency Response Capabilities Final Regulatory Basis- October 15, 2013

Background Cont'

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- NRC Staff has recognized the overlap between the station blackout mitigation strategies (SBOMS) rulemaking and the onsite emergency response capability rulemakings

- Current concept for onsite emergency response capability rulemaking would prevent it being issued in final form before SBOMS rulemaking completion (i.e., currently onsite emergency capabilities rulemaking would explicitly reference SBOMS rule)

- Industry implementation efforts are tending to align with this approach - reflect mitigation strategies and additional capability in both the emergency operating procedures (EOPs) and Severe Accident Management Guidelines (SAMGs)
  - November 2013 public meeting revealed/confirmed that the ongoing implementation of EA-12-049 mitigation strategies into EOPs and SAMGs was effectively merging these efforts

Background Cont'

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- Staff has concluded that consolidating the rulemakings (and various supporting actions identified later) would align the regulatory framework with implementation and have many benefits
  - More coherent and understandable framework
  - Reduced potential for disconnects
  - Reduced review and comment burden both internally and externally
  - More effective/efficient approach

Scope/Schedule

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- Consolidating SBOMS and onsite emergency response capability rulemakings includes consolidation of supporting implementation guidance
- Scope: This rulemaking would include regulatory actions stemming from the following NTTF Recommendations:
  - All of Recommendations 4 and 7 (i.e, current SBOMS scope)
  - All of Recommendation 8 (i.e., Onsite Emergency Response Capability)
  - All of Recommendations 9.1, 9.2, and 9.3 with one exception (maintenance of ERDS capability throughout the accident), 10.2, and 11.1
  - 9.4 Emergency Response Data System (ERDS) (modernization only)
- Final rule schedule would remain unchanged:
  - Final rule package to the Commission: 12/2016

Consolidated Rule

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- Different portions of the consolidated rule would have different supporting backfit bases:
  - Portions that make EA-12-049 requirements (or equivalent license condition for new reactors) generically-applicable would not be new imposed requirements (i.e., not backfits)
  - All other requirements would require justification under the Backfit Rule (10 CFR 50.109) and the Issue Finality Provisions of 10 CFR part 52
  - With this in mind the intent would be to construct the rule with sub-paragraphs that can (if not supportable) be removed from the rulemaking

- The consolidated rule would address these actions within a single rulemaking but will be designed recognizing the different regulatory bases/justifications

Consolidated Rule Cont'

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- Applicability
  - Power reactors only (both current and new): Not applicable to RTRs and ISFSIs
  - Intent to incorporate decommissioning provisions
- Integrated Response Capability:
  - Station Blackout Mitigation Strategies (SBOMS)
    - Functional/performance-based beyond-design-basis external event mitigation strategies requirements (from EA-12-049)
  - Emergency Operating Procedures (EOPs)
    - Symptom- based procedures already required by Technical Specifications
  - Extensive Damage Mitigation Guidelines (EDMGs)
    - Either move 10 CFR 50.54(hh)(2) into the rule or simply link
  - Severe Accident Management Guidelines (SAMGs)
    - Functional/performance-based SAMG requirements
  - Command/Control
    - For multi-unit events

Consolidated Rule Cont'

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- Equipment requirements
  - Station blackout mitigation strategies equipment: Regulatory treatment for equipment relied upon in the mitigation strategies (i.e., from EA-12-049)
- Training Requirements
- Drills and Exercises
  - Conceptual requirements for integrated drills, exercises, or both for emergency operating procedures/severe accident management guidelines/extensive damage mitigation guidelines/station blackout mitigation strategies
  - Intent would be to allow licensee flexibility
- Change Control
  - Conceptual "beyond-design-basis" change control recognizing the limited applicability of 10 CFR 50.59 and 10 CFR 50.54(q)

Consolidated Rule Cont'

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- Submittal requirements: Amendments to part 50 and part 52
  - There would need to be new reactor applications/licensing submittal information in applicable portions of Part 50 and Part 52
  - The actions performed by the current fleet (per EA-12-049) would satisfy mitigation strategies requirements
- Implementation challenges
  - Numerous post-Fukushima regulatory actions
  - Significant potential for Cumulative Effects of Regulation (CER)
  - Implementation adjustments to address any CER issues

Status and Path Forward

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- Current focus:
  - Development of proposed rule language
  - SAMG conceptual treatment
- Future planned interactions
  - Public meeting in August
- Future ACRS interactions
  - Late 2014 – November/December on proposed rule package