UNITED STATES
NUCLEAR REGULATORY COMMISSION
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
WASHINGTON, DC 20555 - 0001

November 28, 2011

MEMORANDUM TO: ACRS Members

FROM: Ilka Berrios, Staff Engineer /RA/
Technical Safety Branch, ACRS

SUBJECT: CERTIFICATION OF THE MINUTES OF THE ACRS SUBCOMMITTEE ON THE UNITED STATED – ADVANCED PRESSURIZED WATER REACTOR, OCTOBER 20, 2011

The minutes for the subject meeting were certified on November 6, 2011. Along with the transcripts and presentation materials, this is the official record of the proceedings of that meeting. A copy of the certified minutes is attached.

Attachment: As stated

cc w/o Attachment: E. Hackett
C. Santos
Y. Diaz

cc w/ Attachment: ACRS Members

UNITED STATES
NUCLEAR REGULATORY COMMISSION
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
WASHINGTON, DC 20555 - 0001

MEMORANDUM TO: Ilka Berrios, Staff Engineer
Technical Safety Branch, ACRS

FROM: John Stetkar, Chairman /RA/
United Stated – Advanced Pressurized Water Reactor

SUBJECT: MINUTES OF THE MEETING OF THE ACRS SUBCOMMITTEE ON THE UNITED STATED – ADVANCED PRESSURIZED WATER REACTOR ON OCTOBER, 2011, IN ROCKVILLE, MD

I hereby certify, to the best of my knowledge and belief, that the minutes of the subject meeting are an accurate record of the proceedings for that meeting.

/RA/ 11/06/2011
J. Stetkar Date

Chairman of ACRS Subcommittee on the United Stated – Advanced Pressurized Water Reactor

ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
MINUTES OF THE ACRS US-APWR SUBCOMMITTEE MEETING
OCTOBER 20, 2011

The ACRS United States – Advanced Pressurized Water Reactor (US-APWR) Subcommittee held a meeting on October 20, 2011 in Room T-2B1, 11545 Rockville Pike, Rockville, Maryland. The meeting convened at 8:30 a.m. and adjourned at 4:16 p.m.

The entire meeting was open to the public.

No written comments or requests for time to make oral statements were received from members of the public related to this meeting.

ATTENDEES

ACRS Members/ Staff
- John Stetkar, Member
- Dennis Bley, Member
- Charles Brown, Member
- Joy Rempe, Member
- Michael Ryan, Member
- William Shack, Member
- Gordon Skillman, Member
- Ilka T. Berrios, Staff
- Kathy Weaver, Staff

NRC Staff
- Hossein Hamzehee, NRO
- Jeff Ciocco, NRO
- Tarico Sweat, NRO
- Ngola Otto, NRO
- Stephen Monarque, NRO
- Steve Williams, NRO
- Ron LaVera, NRO
- Michelle Hart, NRO
- Edward Roach, NRO
- Andrew Hon, NRR
- Bob Tjader, NRO
- Lynn Mrowca, NRO

Other Attendees
- Don Woodlan, Luminant
- Bob Reible, Luminant

Mike Blevins, Luminant
Tim Clouser, Luminant
Aditi Kolheker, Bechtel
Bobby Bird, Luminant
John Conly, Luminant
Scott Kiffer, MNES
Irving Tsang, URS
Hiroshi Hamamoto, MNES
Urmi Shome, MNES
Todd Evans, Luminant
Russ Bywater, MNES
Frostie White, MNES
Nick Kellenberg, MNES
Futoshi Tanaka, MNES

SUMMARY

The purpose of the meeting was to review Chapter 11, "Radioactive Waste Management" and Chapter 12, "Radiation Protection" of the Safety Evaluation Report (SER) with Open Items associated with the Comanche Peak Combined License Application (COLA). There was also an information briefing on the Risk Managed Technical Specifications. The meeting transcripts are attached and contain an accurate description of each matter discussed during the meeting. The presentation slides and handouts used during the meeting are attached to these transcripts.

The following table lists the significant issues that were discussed during the meeting with the corresponding pages in the transcript.

SIGNIFICANT ISSUES	
Issue	Reference Pages in Transcript
Comanche Peak COLA, FSAR Chapter 11 presented by Luminant	8-51
The applicant discussed the open items in chapter 11.	9-11
Chairman Stetkar raised a question regarding the bypass line around the effluent discharge valves. This line is shown in Comanche Peak FSAR Revision 2 and is addressed in the COLA SER (RAI 5474, question 11.2-17). The bypass line is not shown in US-APWR DCD Revision 3, and it is not addressed in the DCD SER. However, it is apparently part of the certified design.	14-32
Member Skillman raised a question regarding the bypass line not being identified as a departure.	16, 31-32

Chairman Stetkar raised some questions regarding the evaporation pond.	34-38, 41-42
Member Ryan questioned design contingencies for the onsite interim waste storage facility, in case the required storage volume for specific waste categories exceeds the nominal 10-year capacity.	45-47, 53-57
Comanche Peak COLA, SER with open items Chapter 11 presented by the NRC staff.	51-57
The staff discussed with the members some items that will be discussed during future meetings.	58-60
Comanche Peak COLA, FSAR Chapter 12 presented by Luminant	61-80
Chairman Stetkar raised a question regarding the water monitoring wells placement.	63-66
Member Ryan raised some questions regarding the underground piping including the manholes.	68-73
Member Brown raised a question about the doses presented in table 11.3-9R of the FSAR regarding integrated population dose from gaseous effluents.	76-80
Comanche Peak COLA, SER with open items Chapter 12 presented by the NRC staff.	81-83
An information briefing was provided by the staff regarding risk-managed technical specifications	86-141
The staff discussed the risk-management technical specifications initiatives. Chairman Stetkar and other members asked a number of questions regarding these initiatives.	88-110
The staff discussed in detail initiatives 4b & 5b, ISG-08, and NEI 06-09 & 04-10.	110-140
The staff discussed the risk managed technical specification for the Comanche Peak COLA.	142-215
The staff discussed the PRA regulations for new reactors and the regulatory guidance related to risk-informed applications.	145, 154-160
Chairman Stetkar raised some concerns regarding completeness of the DCD PRA vs. the plant-specific PRA that is developed after the COL is issued, and before fuel load	146-153
The staff discussed the challenges for new reactors in using the existing guidance, how these challenges will be resolved and the path forward	161-196
The subcommittee and the staff discussed peer reviews and audits of the PRA technical adequacy to support specific risk-informed tech specs applications	161-168
Member Bley raised a concern regarding staff audits and reviews of changes to the tech specs after the COL has been issued.	198-213
Luminant discussed the risk managed technical specifications for the Comanche Peak COLA.	216-288

Luminant presented some of the modifications made to NEI 04-10 and 06-09.	248-267

The following table lists some items that the members will be following up during future meetings.

FOLLOW UP ITEMS	
DCD or COLA Chapter	Action Item
DCD/COLA Chapter 11	Configuration control between the DCD and the FSAR regarding the effluent discharge bypass line. The DCD does not show the bypass line in Figure 11.2-1.
COLA Chapter 11	How does the design of the interim waste storage facility account for the possibility that the waste quantities and duration of onsite storage may exceed the nominal 10-year expectations?

DOCUMENTS PROVIDED TO THE SUBCOMMITTEE

The following documents were provided to the members prior to the meeting:

- Luminant Generation Company, Comanche Peak Nuclear Power Plant, Units 3 & 4, Combined License Application, Part 2, Final Safety Analysis Report, Revision 1, Chapter 11, "Radioactive Waste Management," 11/20/2009, (ML100082083)

- Luminant Generation Company, Comanche Peak Nuclear Power Plant, Units 3 & 4, Combined License Application, Part 2, Final Safety Analysis Report, Revision 1, Chapter 12, "Radiation Protection," 11/20/2009, (ML100082086)

- Luminant Generation Company, Comanche Peak Nuclear Power Plant, Units 3 & 4, Technical Specification Methodology for Risk-Managed Technical Specifications and Surveillance Frequency Control Program, 06/29/2011, (ML111823229)

- Memorandum to Edwin M. Hackett, U.S. Nuclear Regulatory Commission, Comanche Peak Nuclear Power Plant, Units 3 and 4, Combined License Application - Safety Evaluation with Open Items for Chapter 11, "Radioactive Waste Management," 09/20/2011 (ML112560358)

- Memorandum to Edwin M. Hackett, U.S. Nuclear Regulatory Commission, Comanche Peak Nuclear Power Plant, Units 3 and 4, Combined License Application - Safety Evaluation with Open Items for Chapter 12, "Radiation Protection," 09/28/2011 (ML112580366)

Official Transcript of Proceedings

NUCLEAR REGULATORY COMMISSION

Title: Advisory Committee on Reactor Safeguards
US-APWR Subcomittee

Docket Number: (n/a)

Location: Rockville, Maryland

Date: Thursday, October 20, 2011

Work Order No.: NRC-1218 Pages 1-287

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

UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

+ + + + +

ADVISORY COMMITTEE ON REACTOR SAFEGUARDS

(ACRS)

+ + + + +

US-APWR SUBCOMMITTEE

+ + + + +

THURSDAY

OCTOBER 20, 2011

+ + + + +

ROCKVILLE, MARYLAND

+ + + + +

The Subcommittee 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.

SUBCOMMITTEE MEMBERS:

JOHN W. STETKAR, Chairman

DENNIS C. BLEY, Member

CHARLES H. BROWN, JR. Member

JOY REMPE, Member

MICHAEL T. RYAN, Member

WILLIAM J. SHACK, Member

GORDON R. SKILLMAN, Member

DESIGNATED FEDERAL OFFICIAL:

ILKA BERRIOS

C-O-N-T-E-N-T-S

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

8:28 a.m.

CHAIRMAN STETKAR: The meeting will now come to order. This is a meeting of the United States Advanced Pressurized Water Reactor Subcommittee. I'm John Stetkar, Chairman of the Subcommittee meeting.

ASCR members in attendance are: Joy Rempe; Charles Brown; Bill Shack; Mike Ryan; Dennis Bley and Dick Skillman. Ilka Berrios of the ACRS staff is the designated federal official.

The committee will review Chapter 11, Radioactive Waste Management; and Chapter 12, Radiation Protection and the Safety Evaluation Report with open items associated with the Comanche Peak combined license application. There will also be a briefing on the risk-managed technical specifications. We'll hear presentations from the NRC staff and Luminant Generation Company.

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

The Subcommittee will gather information, analyze relevant issues and facts, and formulate proposed positions and actions as

appropriate for deliberation by the full committee.

The rules for participation in today's meeting have been announced as part of the notice of this meeting previously published in the *Federal Register*.

Parts of this meeting may need to be closed to the public to protect information proprietary to Luminant or other parties. I'll ask the NRC staff and the applicant to identify the need for closing the meeting before we enter into such discussions and to verify that only people with the required clearance and need to know are present.

A transcript of the meeting is being kept and will be made available as stated in the *Federal Register* notice. Therefore, we request that participants of this meeting use the microphones located throughout the meeting room when addressing the Subcommittee. The participants should first identify themselves and speak with sufficient clarity and volume so that they may be readily heard.

We'll now proceed with the meeting, and I call on Steve Monarque. Steve, good morning.

MR. MONARQUE: Thank you, Mr. Stetkar. My name is Stephen Monarque. I'm the lead project

manager for the Comanche Peak COL review and I'm with the Office of New Reactors.

I want to thank you for giving us the opportunity to present our chapter to the ACRS Subcommittee. This is our third meeting. We've previously presented Chapters 5, 8 and 10 to the Subcommittee. This morning we will present Chapters 11 and 12 for the Comanche Peak combined license application.

The staff's review for both of these chapters was conducted through Revision 1 of the COL application which implemented Revision 2 in the DCD. We did receive Revision 2 of the COL in June of this year, but staff's still doing the review.

And with that, I want to introduce my branch chief, Hossein Hamzehee for opening remarks.

MR. HAMZEHEE: I don't have any.

CHAIRMAN STETKAR: You've always been a man of few words.

MR. MONARQUE: With that, I conclude my remarks.

CHAIRMAN STETKAR: Thanks, Stephen. And with that, I'll turn it over to, I guess, John? Don?

MR. WOODLAN: I'll start it off.

CHAIRMAN STETKAR: Oh, okay.

MR. WOODLAN: Good morning. Glad to be back here again. My name is Don Woodlan. I'm the licensing manager for Luminant for the new unit, Comanche Peak units 3 and 4. And like I say, it's a pleasure to be here in spite of the Rangers' loss last night.

MR. WOODLAN: As you pointed out, we're here today to give a briefing on Chapters 11 and 12, and then we'll talk a little bit about risk-informed technical specifications and where we're heading with regard to those. As you probably already know, having looked over some of the materials, Chapters 11 and 12 are really not anything all that unusual. We're pretty much following what current operating plants are doing and the guidance that's been developed for new plants. And so we're adopting it. Most of it should look very familiar. Something a little different; we'll talk about it, is the interim radwaste storage building that we're constructing on site.

With respect to risk-informed technical specification, this is a fairly new area. We're the first Part 52 plant to pursue these, and so I think the concept of doing a briefing at this point in

time to introduce the Subcommittee to what we're doing is a really good idea. And of course, we'll follow up with the full presentations when we do the chapters, probably 16 and 19.

I guess that's all I really wanted to say in the way of an introduction. Like I say, I'm the licensing manager, so I'm going to give my seat up to somebody who knows something technically, and I'll turn it over to John Conly to start Chapter 11.

MR. CONLY: Thank you, Don. Good morning. My name is John Conly. I'm the COLA project manager for Comanche Peak, Units 3 and 4. I will present Chapter 11 of the FSAR.

The agenda or the order of presentation: I'll make a brief introduction; we'll look at an overview of the chapter and discuss briefly the SER open items; we'll look at proposed license conditions; and finish with site-specific aspects in the FSAR.

The FSAR uses the incorporation by reference methodology and there are no departures taken from the US-APWR design control document in Chapter 11. All COL items are addressed in the FSAR. The NRC staff has two open items in the SER. There are also 17 SER confirmatory items consisting

of the staff confirming that FSAR markups that we submitted to the Commission in response to RAIs actually make it into the COLA revision. There are four proposed license conditions by the staff and there are no contentions pending before the ASLB.

An overview of the chapter. As you know, there are five sections in Chapter 11. There were 30 questions asked in the chapter, all of which have been responded to and resulting in two SER open items.

You are familiar with all of the acronyms on this slide perhaps except PERMS, Process Effluent Radiation Monitoring and Sampling System. PERMS is a lot easier to say.

The first SER open item noted by the staff is 11.02-1 regarding detailed design information for site-specific sampling locations in our evaporation pond, and I'll describe that in more detail later. The resolution of this open item is that Luminant will submit a supplemental response and additional information.

The second open item in the SER is 11.04-1 regarding detailed design information for the interim radwaste storage facility Don alluded to earlier. We will address that in more detail in the

presentation, and the resolution of the SER open item is that Luminant will submit a supplemental response with further information.

Regarding the proposed license conditions, the NRC noted in the SER four proposed license conditions as shown on the slide, each one of which requires the implementation of an operational program such as the Process Control Program, the Radiological Effluent Tech Specs, Off-Site Dose Calculation Manual, or the Radiological Environmental Monitoring Program.

In part 10 of COLA Revision 1, Luminant had listed each operational program to be implemented as a separate license condition. In May of this year, Luminant simplified it's proposed license condition for operational programs based on discussions with the staff in February regarding the model COL that the staff was developing. That simplification proposed a single license condition to control the implementation of all operational programs annotated as being implemented by license condition in FSAR table 13.4-201.

This is a page out of that table showing that indeed there are four sub-parts for this particular Process Effluent Monitoring and Sampling

Program to be implemented by license condition. The bottom line is, regardless if its one license condition or four license conditions, the operational programs will be implemented by license condition as stated in FSAR table 13.4-201.

The site-specific aspects, Section 11.1, the Source Terms, there are no site-specific aspects. It's incorporated by reference without departures for supplements. 11.2, the Liquid Waste Management System, 11.2.1.5 subsection addresses the cost benefit analysis which determined that there are no cost beneficial liquid radwaste augments and no further cost benefit analysis is needed to demonstrate compliance with 10 C.F.R. 50, Appendix I.

MEMBER BLEY: Can I take you back a page --

MR. CONLY: Yes, please.

MEMBER BLEY: -- to that table? When I thumb through the table and look at the things; and maybe this is really a question for staff rather than for you, a lot of the items on there look very similar to the kind of things we see in ITAACs and other systems. I'm just wondering why these end up being license conditions rather than tests and

inspections.

MR. CONLY: Reg Guide 1.206 --

MEMBER BLEY: Requires it. Okay.

MR. CONLY: -- has this table.

MEMBER BLEY: Got you. Okay. I saw that going through, but that's just the way it is.

MR. MONARQUE: I think I can answer. There's a SECY 05197 which discusses operational programs --

MEMBER BLEY: Yes.

MR. MONARQUE: -- and it lists the license conditions we would have for such operational programs, including the process of monitoring effluent.

MEMBER BLEY: Okay. But then when you get down to the detail, they're really essentially like ITAACs, so you'll confirm them by inspections, I suppose. Is that right?

MR. MONARQUE: That is correct.

MEMBER BLEY: Okay. Thanks.

MR. MONARQUE: Program.

MR. CONLY: It would probably be beneficial to walk through the flow diagram just to refresh nomenclature. Beginning in the upper left of this figure, liquid radwaste is collected from

tanks in the auxiliary building, in the reactor building and from the containment vessel sump and transferred to the waste holdup tanks, the four tanks on the upper left. Next are the radwaste effluent inlet filters where suspended solids and radioactive particulates are removed. At this point the US-APWR design allows for portable or temporary additional equipment. And you can see that going off to the upper right is the tap for that additional equipment. Space is provided in the auxiliary building. We will describe that in more detail later.

CHAIRMAN STETKAR: You haven't made that decision yet?

MR. CONLY: Yes.

CHAIRMAN STETKAR: You have? Okay.

MR. CONLY: We have decided to use de-watering system. Additional liquid waste treatment skids could be brought in in the future as technology improves, etcetera. So there are two separate areas that are available to us.

CHAIRMAN STETKAR: Okay. But so far you just made the decision about the de-watering for the --

MR. CONLY: That's correct.

CHAIRMAN STETKAR: -- processing, yes, solid stuff. Okay.

MR. CONLY: Next are the activated carbon filters to remove organic contaminants that could fowl the ion exchange columns followed by the waste demineralizers themselves where the ion exchange resin removes radionuclide impurities. The waste effluent outlet strainer then removes any fines left from the resins. And finally the treated effluent is stored in the waste monitor tanks awaiting discharge. The Liquid Waste Monitoring System boundary is at the waste monitoring tank discharge isolation valve. There is a radiation monitor prior to discharge to either the Squaw Creek Reservoir or to the evaporation pond, and we'll address that in more detail later.

CHAIRMAN STETKAR: Address the radiation monitor or the pond itself?

MR. CONLY: The pond itself.

CHAIRMAN STETKAR: Okay. Let me ask you a question about this drawing, if you're finished with the overview of the system. This drawing does not show the bypass line around the effluent discharge valves that apparently Comanche Peak added to the certified design. There are some RAIs about

it. The figure in the FSAR shows the discharge line bypass, and indeed it bypasses the radiation monitor, you know, some discussion about administrative controls that will provide samples for the discharge and how that will be controlled administratively, but curious that our Subcommittee is not seeing the representation of the system as it will be installed at the plant, and I'd like to know why.

MR. CONLY: This is the flow diagram from the DCD itself.

CHAIRMAN STETKAR: It is. It is not the flow diagram for the Comanche Peak Nuclear Power Station, which is the subject of our meeting here. Because I had some questions about that bypass line and this drawing would have given me the opportunity to ask about those questions, if indeed the bypass line was shown on this drawing.

MR. CONLY: Let me ask Mr. Sang to address that.

MR. SANG: My name is Irving Sang. Good morning. Yes, we received the RAI and we looked at the bypass around the radiation monitor and also the two on/off valves. And our decision, working with Luminant and MNES is to maintain administrative

control on that. It is still on the P&IDs, piping and instrumentation diagrams. That's the current status.

CHAIRMAN STETKAR: Okay. But it does exist?

MR. SANG: Yes.

CHAIRMAN STETKAR: Okay.

MEMBER SKILLMAN: This is Dick Skillman. May I please ask a question?

CHAIRMAN STETKAR: Sure.

MEMBER SKILLMAN: You've identified on your second slide that there are no departures. Why is not that line identified as a departure?

MR. SANG: We still have that line on the P&ID drawing. It's not showing up on the process flow diagram.

CHAIRMAN STETKAR: Are you saying that it shows up on the P&ID for the certified design?

MR. SANG: Yes.

CHAIRMAN STETKAR: Oh. Oh, well, that's interesting that there are pieces of pipe in the certified design that don't show up on the drawings in the design certification document.

MEMBER SKILLMAN: Bingo. That's the issue.

CHAIRMAN STETKAR: That's the issue. I wasn't aware of that line at all when we looked at the design certification. There was no mention made of it. It does not show up on any drawing in the DCD. So now that brings into question about the completeness of the information that you're providing for the design certification so that people can perform a reasoned review of that design. This is not a DCD, but if you guys could take that back, please. To me that's really upsetting. If I see a flow diagram in the design certification document, I would like to have confidence that indeed I can get water from point A to point B and know how to get water through the flow paths from those points.

MEMBER SKILLMAN: Yes, and not have it go someplace else --

CHAIRMAN STETKAR: And not have it go someplace else.

MEMBER SKILLMAN: -- not shown on the drawing.

CHAIRMAN STETKAR: And it was not -- I mean, we've done our interim review of Chapter 11 for the DCD, and as you said, this is a copy of the drawing from the DCD. I thought this was something

that Luminant had added to the design to increase operational flexibility for some reason.

MR. SANG: We have not shown all the bypass lines on these process flow diagrams. In general, we have bypass line on the filters, etcetera, and we --

CHAIRMAN STETKAR: Some things like bypassing filters are one thing. Bypassing the radiation monitor and the automatic isolation of the discharge point from the plant is a bit different in the sense of system design information and system operation information.

MR. SANG: I understand, yes.

CHAIRMAN STETKAR: It's a little different than bypassing a demin. So I don't know where the appropriate point to ask the question is essentially for the COL. The question that I had is I could design that system with the bypass line tapped into the discharge downstream of the radiation -- between the radiation monitor and the isolation valve such that even if I was using the bypass line I would at least have a monitored release with alarms in the control room. And according to the design certification information the radiation monitor also trips the discharge pumps

so that even if I was using the bypass line with the manual valve with administrative controls, I would at least shut it off if I had high radiation.

MR. SANG: Agreed. We will look into that, but currently when we look at the drawing --

CHAIRMAN STETKAR: That sounds like a question for the design certification though, if that exists there. So I guess we'll table that for the design certification and put it on our -- we keep a tickler list of these questions, so this one will come back for the DCD.

MEMBER BLEY: Well, I guess before we leave this, there have been other cases where we've seen some of the DCD drawings for some of the designs are not complete and we've raised the issue with staff, if they get the P&IDs and look through them, to confirm single failure, that sort of thing. And the story changed from no to yes, indeed we looked through them. So the fact that staff didn't pick this one up as a possible bypassing of monitoring and protection is troublesome as well.

CHAIRMAN STETKAR: The reason I picked it up is (a) it shows up on a drawing in the COL FSAR and the staff asked questions about it, you know, in regards to the proceeding that we're

hearing today. There were no questions asked about it during the DCD, at least --

MR. MONARQUE: Mr. Stetkar, I think we have a response to your question.

CHAIRMAN STETKAR: Okay.

MR. MONARQUE: I'll turn it over to staff.

MR. WILLIAMS: My name is Steve Williams with --

CHAIRMAN STETKAR: Steve, you got to get real close to the mic, otherwise -- that one doesn't pick up quite as well as some of the other things.

MR. WILLIAMS: I'm with NRO in the health physics section, and we did ask an RAI. It was RAI 5474, question 11.2-17, in April. And they did respond to it.

Usually if you had a setup like this, which I've done effluent programs before. I worked at Three Mile Island and we -- anytime you have a bypass line like that, you want to release without a rad monitor, you have to go to the tech spec conditions for release. You go to the tech spec. It requires you take two representative samples and also that they're verified by two plant staff and signed off by a supervisor in accordance with plant

procedures and tech specs before you could release that tank without the rad monitor through the bypass line.

CHAIRMAN STETKAR: And how many times have we read double sign offs with all administrative controls not working?

MR. WILLIAMS: I don't have any statistics --

CHAIRMAN STETKAR: Okay.

MR. WILLIAMS: -- on that, but that's the requirement.

CHAIRMAN STETKAR: How difficult is it to tap in that bypass line between the radiation monitor and the two fail closed valves as opposed to the point where they have it tapped in?

MR. WILLIAMS: Right. Yes, I understand that.

CHAIRMAN STETKAR: Since this is your paper design.

MR. WILLIAMS: Right.

MEMBER SKILLMAN: This is Dick Skillman. For me this issue is one of configuration control and fidelity with the design certification. And as far as I see this, had that line that John had been talking about been shown on this diagram, we would

not be having this discussion.

CHAIRMAN STETKAR: Well, we'd have had the discussion --

MEMBER SKILLMAN: Perhaps in --

CHAIRMAN STETKAR: -- in the earlier meeting.

MEMBER SKILLMAN: But for me this issue is configuration control and assuring that what we're doing here with no departures is accurate. And so I think the questions that we raise, Steve, are appropriate questions --

MR. WILLIAMS: Right. Right.

MEMBER SKILLMAN: -- so that we can understand how this application fits the design certification.

MR. WILLIAMS: Sure, I understand that, but also the staff was aware of it and we did evaluate it in terms of design.

MEMBER SKILLMAN: Okay. Thank you, Steve. Thank you.

CHAIRMAN STETKAR: I didn't recall -- you know, we don't see all of the RAIs and I have to apologize if we missed that one, but --

MR. WILLIAMS: Well, it's in the SER on page 11-12.

CHAIRMAN STETKAR: 11-12?

MR. WILLIAMS: Right.

CHAIRMAN STETKAR: Okay. Thanks. I'll go back and look it up, because I must have missed it when I read through. It was pretty prominent in the SER for the COL.

MR. WILLIAMS: Right, we spent significant time on that --

MEMBER BLEY: Yes, just clarification, you're talking -- there's an RAI for the design cert, or for the COL?

MR. WILLIAMS: For the COL.

CHAIRMAN STETKAR: Oh, for the COL?

MR. WILLIAMS: Right.

CHAIRMAN STETKAR: Oh, I'm sorry. I misunderstood twice. I'm not been doing all that well this morning. I thought you were saying it was an RAI for the design certification.

MR. WILLIAMS: No, it's right in page --

CHAIRMAN STETKAR: No, that's where -- I can quote it. I have it written down here.

MEMBER BLEY: I think the question was why wasn't it?

CHAIRMAN STETKAR: Why wasn't it for the design certification if indeed the line exists as

part of the certified design? Why wasn't that question asked when the design certification --

MR. WILLIAMS: Well, that I can't answer because I wasn't involved --

CHAIRMAN STETKAR: Okay.

MR. WILLIAMS: -- in the DCD review and evaluation, but I definitely can go back and look at that and see if it --

CHAIRMAN STETKAR: I mean, that's becoming more of our -- I mean, there's still a concern about controlling the releases through that line and does the design -- you know, is the design adequate to give us assurance that the releases will be monitored, but it's a question of whether we should be raising those questions. We should be raising those questions. We will raise those questions. Whether those questions are pertinent to the certified design or the COLA, it sounds like they're pertinent to the certified design because essentially they're just adopting the certified design with this particular --

MR. HAMZEHEE: You're right, John, but just in general some of these systems under DCD are more conceptual design and the details are on the COLA applications, or in general they don't provide

a lot of details under DCD?

CHAIRMAN STETKAR: Well, obviously the flow diagram didn't.

MS. WHITE: Excuse me, Dr. Stetkar?

CHAIRMAN STETKAR: Yes?

MS. WHITE: Frostie White with Mitsubishi. We actually do provide the diagram in the FSAR. It's figure 11.2-201 and it shows the bypass lines.

MEMBER BROWN: I've been looking at that and I -- which sheet? There's 10 sheets.

MS. WHITE: Sheet 9.

MEMBER BROWN: Oh, sheet 9?

MS. WHITE: Nine and ten.

CHAIRMAN STETKAR: We can look that up. Let's keep the meeting moving. I'm having a little trouble opening the file here. And it's sheet what?

MS. WHITE: Nine and ten.

MEMBER BROWN: I'm looking at 9 right now. What's the symbol for the radiation monitor?

MS. WHITE: RE.

MEMBER BROWN: RE? Okay. We don't have a symbol list here, so -- all right. So those are the two isolation valves you're talking about that -- in both places.

CHAIRMAN STETKAR: Frostie, what's -- I'm having trouble opening my file here. What was the figure number, 11.2 --

MS. WHITE: 11.2-201. Sheet 9.

CHAIRMAN STETKAR: Oh, that's 201. That's from your -- I know. I have -- there's a blowup of it. I know it's in the COLA FSAR. It's not in the DCD.

MS. WHITE: I think I can explain that. There is a --

CHAIRMAN STETKAR: Okay. Okay. So --

MS. WHITE: There's a COLA action item in the DCD that says that the applicant will provide P&IDs. These are flow diagrams and so they're distinguished between the two, and that's why we provided these under the FSAR even though they're part of certified design.

CHAIRMAN STETKAR: I got that.

MS. WHITE: That's the simple different.

CHAIRMAN STETKAR: Maybe I'm just being dense, but a bypass line around the plant discharge valves and radiation monitor that exists in the certified design and is neither shown on the flow diagrams in the design control document nor questioned by the staff during their review of the

certified design gives me problems.

MS. WHITE: I understand.

CHAIRMAN STETKAR: As far as Luminant is concerned, I don't have any problem with you folks. You folks are accurately representing the depiction of the system. The FSAR indeed is accurate and indeed the discussion, you know, in your responses to the staff's RAI regarding this, you know, is basically what you're planning to do. So, you know, as far as Luminant and Comanche Peak is concerned, you know, the questions that I had are really not relevant to today's meeting. It's just that the first time I saw that line and the first time I saw any discussion of its use happened to pop up in the RAIs that were issued for Luminant and in the FSAR drawing that indeed shows that line, where it's tapped in and things like that.

MS. WHITE: Right.

MEMBER BROWN: But your earlier point I think raises a question about why is it bypassing the radiation monitor in the first place?

CHAIRMAN STETKAR: Well, that's right. I mean, if you look --

MEMBER BROWN: I mean, I thought that's what you --

CHAIRMAN STETKAR: Well, but I was going to ask them because I thought they added it. You know, there are places to put that tap in that would keep the radiation monitor in play, and indeed the radiation monitor, as it's described in the design --

MEMBER BROWN: Yes.

CHAIRMAN STETKAR: -- in both the DCD and the FSAR --

MEMBER BROWN: I think that was Dick's point earlier.

CHAIRMAN STETKAR: -- trips the pumps. Now regardless of closing the valves, it trips the pumps. So it would stop the discharge flow regardless of whether you're using, you know, the normal discharge line or the manual line. Anyway, I think we've probably --

MS. WHITE: We're going to take a look at it. We'll take a look at it. Mitsubishi will.

CHAIRMAN STETKAR: Oh, okay. No, I was going to say, putting your other hat on.

MS. WHITE: My other hate.

MR. HAMZEHEE: John, just another quick question: Isn't that comment that usually in those lines you put the bypass with closed valves for

maintenance purposes?

CHAIRMAN STETKAR: I know a lot of plants do, but I don't know -- I'm not a radioactive release guy. I don't know whether they tap them in upstream or downstream of the fire modeling. It doesn't make any difference what's common. We're talking about a new design here and things that we understand about un-monitored releases, you know, from our operating fleet. So if we can improve the design, we ought to at least examine that.

MR. ROACH: Ed Roach. I'm the branch chief of the health physics --

CHAIRMAN STETKAR: Yes, Ed, step up. Those microphones don't pick up from a distance.

MR. ROACH: I'm am the branch chief of the Health Physics Branch. And operationally usually there is a bypass around that monitor because periodically the effluent particulate falls out and you'll see background rays on those detectors and you'll need to backflush it, decontaminate it, maybe even for ALARA purposes.

CHAIRMAN STETKAR: On the other hand they're not talking about a lot of discharges from this plant, so that, you know, for a short period of time holding the stuff in the monitor tanks and

delaying a batch from the holdup tanks so that you can clean out the radiation monitor -- you know, you can still bypass the discharge valves if you have a problem with one of the air-operated valves that won't close or something like that. You know, I can --

MR. ROACH: I understand that. I just --

CHAIRMAN STETKAR: I have to think about it. You know, this isn't a necessarily a -- you know, a large volume continuous discharge plant as opposed to some of the operating plants.

MR. ROACH: I'll agree with you, concede the volume available for the Liquid Waste System.

CHAIRMAN STETKAR: Thanks, Ed.

MR. HAMZEHEE: John, do we have time for one more staff comment?

CHAIRMAN STETKAR: I do. Sure.

MR. WILLIAMS: Yes, but as I said before, that bypass would not be used unless it followed all the requirements that were in the ODCM, that were in plant procedures and there was some need to bypass the rad monitor. There wouldn't be any other reason for them to use that. And like Ed said, it would be ALARA purposes. They wouldn't

want to contaminate the rad monitor. So actually, I worked at TMI. Ran the effluent program there. And our setup is the same as the setup that they're showing. And I could verify that also.

CHAIRMAN STETKAR: Okay.

MEMBER BLEY: One thing that causes us to hang up on these a bit is that in Part 52, since the single failure analysis is going to be done later on, it's not clear that such things are flagged as important when they could be. And something like that missing from the DCD is troublesome to us.

MR. WILLIAMS: Okay.

MEMBER SKILLMAN: This is Dick Skillman. While I'm new to this Subcommittee and to the ACRS, I'm not new at all to the whole process of Part 52. And when the applicant communicates that there are no departures, my radar goes to what is it that you are presenting and what is different from the design cert? And that was the question I was asking. I thank you for your responses, but I'd sure like to know whether or not that bypass line shows up on the design cert. If it is, as you have communicated, no departures are involved. If the level of detail has been given over to the applicant, I understand your

comment. But if that comment is not there and the bypass is on this application, then I think you're in departure territory.

MS. WHITE: I understand. We're going to take a look at it.

MEMBER SKILLMAN: And that's my point, yes, but thank you.

CHAIRMAN STETKAR: I was going to ask them about the departure also, but I wanted to make sure that the line existed. With that --

MEMBER BROWN: One other observation, John, on this same subject is that when we really start looking at the I&C and have more details, you know, we've raised the point about the level of detail in terms of the I&C when you get to that point also. So --

CHAIRMAN STETKAR: It's a pretty simple radiation monitor --

MEMBER BROWN: -- the fidelity relative to the DCD as opposed to what you're talking about, because detail that's been provided in many of the -- well, we've been trying to insist on a higher level of detail so we don't get caught with these types of things. So just keep that in mind.

CHAIRMAN STETKAR: We'll wait for that

until we see Chapter 7 --

MEMBER BROWN: Yes, I just wanted to --

CHAIRMAN STETKAR: -- because this one's pretty simple.

MEMBER BROWN: Just wanted to highlight it because it's more complex with the I&C stuff.

CHAIRMAN STETKAR: John, you don't show it here, but -- and this is something that I believe is Comanche plant-specific, and I don't -- I guess you might talk about it. Are you going to talk about the tie-in to the units 1, 2 circulating water discharge when you get to the evaporation pond discussion?

MR. CONLY: Briefly, yes.

CHAIRMAN STETKAR: Okay. I'll wait and ask about that. You can now move off this slide.

MR. CONLY: Subsection 11.2.2 describes the evaporation pond that is site-specific. I won't go through all the design features. You're probably familiar with them from your study of the FSAR.

The key points are that the evaporation pond is not part of the Liquid Waste Management System. It is downstream of the waste monitor tanks which hold the effluent ready for discharge. And the second point is the sole purpose of the

evaporation pond is to allow temporary hold up of treated effluent before discharge into Squaw Creek Reservoir if it's necessary to control the tritium concentration in Squaw Creek Reservoir.

As shown in the last two bullets, the response to a recent RAI, No. 224, stated that the pond discharge pump has a recirculation line back to the pond to ensure that we have a representative sample before discharge. The pond discharge is mixed with the unit 1 and 2 circulating water return to Squaw Creek Reservoir, which is between 1 million and 2 million gallons a minute.

CHAIRMAN STETKAR: A few questions before you go to the gaseous waste. First question is, as noted on the slide here, it's an acre-and-a-half, four-foot-deep, two-foot-freeboard pond. So it's a sizeable hole in the ground. It's lined with HDPE with I guess a little matrix in between that's got, you know, drainage mesh. What's the expected life of the HDPE? How frequently are you going to have to change out the liner?

MR. SANG: We consult with the manufacture for this particular material. The expected life is 20 to 25 years expectancy.

CHAIRMAN STETKAR: That's about right.

So probably two or three. Sometimes you only get 15. I mean, you've got a pretty high UV environment down there --

MR. SANG: Yes.

CHAIRMAN STETKAR: -- on the -- or your location. So maybe it would be closer to 15. So you're talking about three our four probably change outs. That was just more of a curiosity. There are various versions of stuff that's called HDPE.

MR. SANG: Yes.

MR. WOODLAN: This is Don Woodlan. We already have some ponds of this nature --

CHAIRMAN STETKAR: Oh, do you?

MR. WOODLAN: -- for units 1 and 2. They've been in place for over 20 years. We obviously inspect them periodically, do repairs, but they're still functional --

CHAIRMAN STETKAR: Oh, okay.

MR. WOODLAN: -- over 20 years.

CHAIRMAN STETKAR: Oh, okay. Good. good. That's good information.

As I read the process, you said that, well, because of concerns about precipitate and dried material remaining in the pond, if you discharge the whole pond, that you'd wash the pond

with demineralized water so you made sure you cleaned it up. How do you wash an acre-and-a-half plastic-lined pond?

The reason I ask this is not to be cynical. It is because the staff used a response to an RAI as justification for why you don't need to worry about wind-borne solid releases from, you know, precipitates in the pond if it's dry. So it is actually a relevant question.

MR. SANG: In the pond design, at the bottom of the pond we have rows of piping, perforated piping with holes drill into it to stir up the bottom due to the recirculation design that we have. And currently in our design we circulate quite a higher flow rate, very high flow rate in terms of 300 to 400 gpm. And we have nine rows of pipes throughout the bottom of the pond and each row would have eight holes drill into it to stir up the bottom.

CHAIRMAN STETKAR: Okay.

MR. SANG: And we tie in the demin water through the header system. That's how we intend to wash the pond.

CHAIRMAN STETKAR: Okay.

MR. SANG: Each row or pipe will be --

CHAIRMAN STETKAR: You're not actually going to wash it. I understand. Agitation and flushing. Okay. Thanks. That helps.

The tie-in to the units 1 and 2 circulating water discharges, as I understand it, is in the unit 1 turbine building. Is that right?

MR. SANG: Yes, the flow box is outside of the waste management pond C area and from the waste monitor tank it would discharge through the line that's described in, I guess --

MR. CONLY: Again, this is sheet 9 of 10, figure 11.2-201.

CHAIRMAN STETKAR: Yes, I saw that. The FSAR says the header where the Waste Management System intersects with the Circulating Water System is located within the unit 1 turbine building. And that drawing that you show there doesn't quite show where the building boundaries are, if I recall. I didn't pull it up here, but I looked at it pretty closely. So at least the words in the FSAR seem to indicate that the piping connection is actually in the turbine building. And what I'm asking is, is that true or not?

MR. SANG: No, that's not true.

CHAIRMAN STETKAR: That's not true?

Okay.

MR. SANG: I'll make that correction.

CHAIRMAN STETKAR: Now, I had questions about if you get higher than normal discharges for whatever reason under emergency conditions or abnormal conditions. You know, if you were in the unit 1 turbine building, what implications does that have for folks who have to perhaps get somewhere near that intersection point? I'm assuming it would be down in the bottom. But if the connection point is not in the discharge building, then look at Section 11.2.2 in your FSAR and there is a sentence that says that it is in the turbine building.

MR. SANG: We will. That was the original design that we have to go through the water box.

CHAIRMAN STETKAR: Okay. And in deference to the staff, I actually pulled this out of Revision 3 to the COLA FSAR. So it's one step ahead of what they reviewed.

MR. SANG: Thank you for pointing that out.

CHAIRMAN STETKAR: And it's still in there.

Okay. You're going to now go into

gaseous and solids. So does anybody on the Subcommittee have anymore questions about liquids?

PARTICIPANT: No, thanks.

CHAIRMAN STETKAR: Thanks.

MR. CONLY: Thanks. Section 11.3 describes the Gaseous Waste Management System. Subsection 11.3.1.5 once again is the cost benefit analysis which demonstrates the addition of equipment or technology is not favorable or cost beneficial. Design conforms with 10 C.F.R. 50, Appendix I. Of interest, the gaseous release point is at the top of the containment, approximately 230 feet above grade. The Gaseous Waste Management System discharges into the auxiliary building ventilation system which discharges about 250,000 CFM, of which 1.2 standard CFM is from the gaseous waste.

MEMBER RYAN: Your third bullet there, what do you mean by "well within?"

MR. CONLY: There is a table in the FSAR in --

MEMBER RYAN: Is it half, or 10 percent, or 92 percent of the limits? I'm just curious what the general range of the margin is. The calculated dose is well within the applicable 10 C.F.R. 50,

Appendix I limits.

MS. WHITE: They're anywhere from 1/100th of them to 1/1000th of the --

MEMBER RYAN: Okay. So it's a factor of 100 or 1,000?

MS. WHITE: Yes.

MEMBER RYAN: Okay. That's all I wanted, just a general idea. Thanks.

MR. CONLY: Are there other questions?

MEMBER SKILLMAN: Yes, Dick Skillman. What is the radius of your emergency planning zone, please? Don? Two miles? Five miles? Ten miles?

PARTICIPANT: I'm showing two and five.

MEMBER SKILLMAN: Fifty-thousand people within two miles?

MR. WOODLAND: For the purposes of this calculation? This is Don Woodlan speaking. Is that what you're asking?

MEMBER SKILLMAN: Well, I'm wondering. Two hundred and thirty feet above grade, that sounds pretty high. It's not too high if there's a farm 500 yards away.

MR. WOODLAN: Well, we have various radiuses in our emergency plan for different purposes, but the standard radius is around 10

miles. There are some deviations on that.

MEMBER SKILLMAN: Thank you. That's all I had.

MR. CONLY: Thank you, Don.

Anything else on gaseous?

CHAIRMAN STETKAR: I don't think so. I had a question. I've been reading my notes here. Back on the evaporation pond; this is just curiosity, I understand its function. How are you doing in terms of releases to Squaw Creek Reservoir during the current drought situation? I mean, you know --

MR. CONLY: I'm sorry, I don't understand your question.

CHAIRMAN STETKAR: Okay.

MR. CONLY: How are we doing?

CHAIRMAN STETKAR: Texas, as you're well aware, is going through a bad drought. I'm assuming reservoir level is down pretty far from normal. Is that true, or do you still have --

MR. CLOUSER: This is Tim Clouser from Luminant. The Squaw Creek Reservoir has makeup from Lake Granbury. The Lake Granbury level is low, although it is currently coming up. Squaw Creek Reservoir is not low.

CHAIRMAN STETKAR: It's not low? Okay.

MR. CLOUSER: We have continuous flow through the reservoir and --

CHAIRMAN STETKAR: Thanks. I thought maybe you were down, you know, in terms of you were getting -- might get into trouble in terms of concentrations. So, thanks.

MR. CONLY: Let's move onto Section 11.4, Solid Waste Management System. Subsection 11.4.1.3 states that laundry service will be performed offsite by a vendor.

11.4.2.3 discusses the radioactive waste interim storage facility. We are preparing an additional response in this area to include more specific design criteria for this building. Our plans are that it will store class A, B and C waste from all four units for up to 10 years. We have specially shielded above-grade cells, separate control room and equipment room ventilation, rad monitoring and fire protection systems. We have a remotely-operated bridge crane, closed-circuit TV, bay lights. All of this is in case we need to store radwaste on site.

At the same time, the subsection notes that Waste control Specialists in Andrews, Texas is

the only commercial facility that is licensed in the U.S. to receive and dispose of class A, B and C waste and they will start receiving waste for disposal late this year.

MEMBER RYAN: They're not authorized for disposal yet though?

MR. CONLY: That is correct.

MEMBER RYAN: And any forecast of when that might happen from your perspective?

MR. CONLY: According to their Web site, late this year.

MEMBER RYAN: Late this year.

MR. CONLY: Yes.

MEMBER RYAN: By the way, there are others that are authorized. You just don't have access to them. And it's not the only one authorized in the United States.

MR. CONLY: Thank you.

MEMBER SKILLMAN: Before you leave this, in your opening comments you made the comment that there were provisions in the plant for waste. Is this the specific slide you were referring to when you made that comment? You had place in the aux building or one of your adjacent buildings that had specially designated areas for future waste? Is

this what you're talking --

MR. CONLY: This is not it.

MEMBER SKILLMAN: This is not it?

MR. CONLY: This is basically a warehouse situated between units 3 and 4 specially designed for this storage purpose. The additional temporary and mobile equipment that we're talking about is in the aux building on either side of the truck bay. One side we will use for the solid waste resin de-watering system and the other is reserved for liquid waste management skids if we need them in the future. So this is not --

MEMBER SKILLMAN: This is not.

MR. CONLY: -- one of either two of the --

MEMBER SKILLMAN: May I ask a question about what is in the aux building, please?

MR. CONLY: Yes.

MEMBER SKILLMAN: Where you're going to have these potentially temporary skids --

MR. CONLY: Yes?

MEMBER SKILLMAN: -- what shielding provision is there, please?

MR. CONLY: It is described in the FSAR. The walls are shielded on three sides. There's a

shield door into the truck bay. The floors are sloped away from the truck bay. Everything is curbed. Go ahead.

MS. WHITE: With liquid return back to the liquid radwaste system.

MEMBER SKILLMAN: Thank you. Thank you.

MEMBER RYAN: With your provision for A, B and C, I guess, are you anticipating any irradiated hardware going into this facility over time, or what's the time horizon I guess that you're planning on this being in service? I'm guessing you'd much rather have a disposal facility off site to send it all, but you're obviously planning for the contingency of not having that capability. Is this facility going to be plant life capable or --

MR. WOODLAN: Yes, this is Don Woodlan. I mean, let me take a shot at answering that.

I think essentially we don't have the details yet. As you're pointing out, there may or may not be off site facilities to collect this stuff. They may be easily accessible. They may not be easily accessible. This is meant to give us the flexibility to deal with any of those situations. So we really haven't designed the internal to the building yet. We've got several years to accomplish

that.

MEMBER RYAN: Okay.

MR. WOODLAN: And so I think we'll -- as we approach -- we will be constructing the building, but as we approach the need, then we will finalize the details and we'll build the storage areas within the building to meet the needs at the time and we'll stay flexible over time and continue to modify it. Hopefully we don't actually need interim storage, but if we need it, we wanted to have this available.

MEMBER RYAN: I appreciate that, but you could also be in the situation where you don't have enough space or headroom to design the shielding you do need. So without some idea of what your range of designs need to accommodate at this point, you could be in a situation where you don't have the room or the headroom or some other design parameter to accommodate what you will need.

MR. WOODLAN: Absolutely there's that potential, although we do have some storage for unit 1 and 2, so we have a little bit of experience of what it takes to create an interim storage facility. We in fact did convert a warehouse to interim storage to support units 1 and 2. But you're absolutely right; there's a potential that this in

fact won't be enough. If there's no off site storage anywhere, then we may have to pursue alternate paths in the future.

MEMBER RYAN: Thank you.

MR. CONLY: Anything else? Subsection 11.4.3.2 addresses the Process Control Program, which is one of the operational programs that will be implemented by license condition, and the PCP adopts NEI 07-10A.

11.4.4.5 addresses the mobile de-watering system, which is the currently planned system, and temporary or mobile system for auxiliary building. The space is adjacent to the truck bay, as I mentioned. The floor is curbed and sloped away from the truck bay. This location provides a short transfer distance for the high integrity containers to the truck bay. Demineralized water is provided for decontamination of the facility. The connections and fittings are uniquely designed to prevent cross-connecting radioactive and non-radioactive systems. There are flow inhibitors, backflow inhibitors in the piping and drainage is collected and transferred to the waste holdup tank. Non-condensibles vent to the auxiliary building ventilation system. As I mentioned earlier, that's

quite a large volume of ventilation. The equipment will be vendor supplied and operated.

11.4.6 addresses the Epoxy Coating Program, again an operational program implemented by license condition. This is also addressed in 11.2.4 in the Liquid Waste System. The Epoxy Coatings Program controls refurbishment, repair, replacement in accordance with the manufacturers' data sheets and good painting practices.

11.5 is PERMS, Process Effluent Radiation Monitoring and Sampling System. There are two radiation monitors in addition to those mentioned in the US-APWR design control document. One we addressed when we talked about Chapter 10; and that is, the startup steam generator blowndown heat exchanger discharge radiation monitor which measures total gamma, isolates steam generator blowdown if the set point is exceeded and transfers the steam generator blowdown to the waste holdup tank.

The second we have also addressed earlier. The radiation monitor in the evaporation pond discharge measures total gamma, isolates the discharge line, stops the pump and sounds an alarm in both the radwaste control room and the main

control room.

Subsection 11.5.2.6 regarding reliability and quality assurance for the sampling systems. Procedures are for taking and evaluating samples, inspection, calibration and equipment maintenance meet Reg Guides 1.21 and 4.15, including periodic system checks with standard sources, routine calibration and maintenance and daily system channel checks.

MEMBER SKILLMAN: If I could?

MR. CONLY: Yes, please.

MEMBER SKILLMAN: At your 11.5.2.5, if those are differences from the standard plan, are those departures or are those under the applicant's ability to add without departure?

MR. CONLY: They are applicant --

MS. WHITE: Supplements.

MEMBER SKILLMAN: They are supplements? Thank you. Thank you.

MR. CONLY: 11.5.2.9, Off Site Dose Calculation Program. Once again, an operational program to be implemented by license condition. The existing ODCM for units 1 and 2 will be written to include all four units and brought up to date with the list, the items -- documents listed in the

bottom bullet, specifically NEI 07-09A. The ODCM describes monitor controls and monitor setpoint calculations, provides the rationale for compliance with the Radiological Effluent Technical Specifications, RETS, provides planned effluent discharge flow rates. Again, there will be a combined ODCM for all four units.

CHAIRMAN STETKAR: John, are you going to talk about the ODCM when we go to Chapter 12 this morning also, or is this our --

MR. CONLY: Yes.

CHAIRMAN STETKAR: You are? Okay. Thank you.

MR. CONLY: Finally, 11.5.2.10, the Radiological Environmental Monitoring Program, again implemented by license condition, is described in the tech specs and in the ODCM. We use this program to measure direct radiation using thermoluminescent dosimeters and by sampling air, water, vegetation and fauna in the site area, again following NEI 07-09A and the two NUREGs listed in the bottom bullet.

MEMBER RYAN: Do you have any thoughts on NUREG 0808, the ground water initiative with regard to the new unit or your existing units and how all that fits together?

MS. WHITE: I'm sorry, I couldn't --

MEMBER RYAN: NEI 08-08, the ground water protection initiatives.

MS. WHITE: Oh, yes, we have a discussions coming up on the ground water --

MEMBER RYAN: Okay. Fair enough.

MS. WHITE: Yes.

MEMBER RYAN: Later.

MR. CONLY: That completes my presentation. If there are other questions?

CHAIRMAN STETKAR: No, sir. Anybody?

(No response.)

CHAIRMAN STETKAR: No. Thank you.

MR. CONLY: Thank you. Thank you for your attention.

CHAIRMAN STETKAR: We will hear from the staff on Chapter 11.

MR. OTTO: Good morning, everyone. My name is Ngola Otto. I'm the project manager for Chapter 11, Radioactive Waste Management System. To my right here is Steve Williams. He's our technical staff reviewer for Chapter 11 and he's going to cover the details about the open items that we have in Chapter 11. So far we have two items, one in 11.2 and one in 11.4, which will be discussed today.

MR. WILLIAMS: Hello. My name is Steve Williams. I've been with the NRC for almost five years in the new reactors division. I've worked in health physics for over 35 years, 20 years in the nuclear industry. I'm the technical reviewer, as Ngola said, for Chapter 11, Radioactive Waste Management, and this presentation is a summary of the chapter review open items.

In 11.1, the source terms that are used in the radwaste chapter are incorporated by reference from the DCD, and there are no COL information items.

11.2, the staff has had discussions with the applicant on their initial response to this open item. And as they stated, will provide a revised response to this open item with additional information concerning the evaporation pond, the design, sample points, locations and representative samples and cover that in detail in their revised response.

Section 11.3, as they discussed, the gas waste management system again is covered. I think it had four RAIs and essentially no open items.

Section 11.4, the open item again that they discussed. We've had discussions with them

again on their initial response. And again, as they've stated, they'll provide a revised response, additional information concerning design details such as ventilation, structural requirements, shielding, as was mentioned before, waste capacity, airborne activity, rad monitors, along with the acceptable programs and procedures to comply with regulatory guidance.

CHAIRMAN STETKAR: Steve, does the scope of this open item and the question address some of the items that -- issues that Mike Ryan was raising regarding not only design of the facility under some snapshot of current expectations but design of the facility to handle what they expect they might need? You know, in terms of, you know, physical design, physical plant, right, Mike?

MEMBER RYAN: You know, I guess you can envision under normal operating circumstances dry active waste and other waste that has to be either processed and/or disposed. But if you're in the business of storing resin and other irradiated hardware and things like that, it's a whole different ball game. You know, some of those waste packages can be in the R to tens of R per hour. So, I'm just curious what the scope is here at this

point. I know that's a little bit of a crystal ball question.

MR. WILLIAMS: Yes, it's a projection more or less, but --

MEMBER RYAN: There are plants that have thought that or have added to their facilities and done pretty well at it, and there are some that are boxed in by they don't have the space or they don't have the capability. And I'm just curious with the existing plants and the new plants being added on the same site how that shapes up in this case.

MR. WILLIAMS: Well, I think you got it right as far as it is a crystal ball and projection as far as what they'll handle. At the same time, they have, you know, 1 and unit 2 storage available to them also. Besides, looking ahead and considering a facility like this that's still in the planning stages can incorporate a lot of changes and revisions to take care of what it is you're talking about.

MEMBER RYAN: Oh, yes, I mean, we're way away from needing the facility, but I mean, I guess I'm just curious what the scope of the plan is at this point from your perspective and analysis. I mean, are they going to be able to handle irradiated

hardware and everything down from that, or is it just going to be a resin facility, or a DAW facility with a little bit or resin? And what's your insight as to what they'll be able to do?

MR. WILLIAMS: I guess the only thing I can say on that is they've projected some numbers as far as what they plan with normal operations. Now, obviously things could change and they could have additional radwaste that they hadn't planned on. Like you said, it's a crystal ball type thing.

MEMBER RYAN: Yes, but it's not altogether a crystal ball, because if you're looking at a 10 or 20-year period where there's significant maintenance activities, you will have irradiated hardware, highly activated metals, other things that go with it that you won't in routine operations for five years. So my point is there's a change in scope as to what level of waste you need to handle on site, if you're talking about relatively short periods versus a few decades. So I'm just curious what strategies are in place here from your perspective. Maybe that's a question we can take away and think about for our next visit.

MR. WILLIAMS: Yes, okay.

CHAIRMAN STETKAR: That's why I asked,

because you have an open item on this. You know, I don't know what sort of scope the questions and what sort of responses you're expecting back.

MR. WILLIAMS: Yes, in covering another design, I mean, they projected a lot of that, and I think that's what I expect to see from these guys, too, as far as what their projection is.

CHAIRMAN STETKAR: Okay. And I think that's a little bit of what Mike was asking about.

MR. WILLIAMS: Yes.

CHAIRMAN STETKAR: But projection over what sort of time horizon, you know, if it's five years, it's different than --

MR. WOODLAN: Well, can I have the floor a little bit again?

CHAIRMAN STETKAR: Please.

MR. WOODLAN: Maybe I should have mentioned earlier, when we scoped the size of this building, we went back to our radiation protection experts for units 1 and 2. And what we tried to assure ourselves is that we had enough storage -- or that we're building the building large enough for storage up to 10 years. And that's relying on their experience from operating 1 and 2 for the past 20 years, what they projected the type of materials we

would need, the setups that are necessary to store those materials for a 10-year period for all four units. So that's what our going in design objectives were.

MEMBER RYAN: Okay. Well, you know, based on the experience for the existing two units, that's a pretty good starting place I guess in my view.

MR. WOODLAN: Yes, I don't have any numbers, but their expertise is what we relied on.

MEMBER RYAN: Yes, yes. Okay. Well, maybe we will hear more about that as time goes on. Okay. Thanks.

MR. OTTO: 11.5, the Process Effluent Radiation Monitoring and Sampling System. Again, essentially I think there were four RAIs with various questions and the review of this section does not have any additional open RAIs.

And the next page is some acronyms. And at this point any questions, additional questions?

CHAIRMAN STETKAR: Members have any questions?

PARTICIPANT: No.

PARTICIPANT: No, sir.

CHAIRMAN STETKAR: Great. Since we're

ahead of schedule -- I'm sorry. Steve?

MR. MONARQUE: When you're done, I wanted to go over the take away items, make sure we understand them.

CHAIRMAN STETKAR: Oh, okay. Sure. I think we're done, so let's do that.

MR. MONARQUE: Okay. One item I had was concern by staff regarding configuration control between the DCD and the COL with regard to control of bypass line in the DCD. And I think there was a question asked of whether or not it was a departure.

CHAIRMAN STETKAR: That's correct.

MR. MONARQUE: Okay. And that was --

CHAIRMAN STETKAR: Well, and, you know, something to take back to --

MR. MONARQUE: Something to take back.

CHAIRMAN STETKAR: -- the DCD folks. the questions that were raised during your review of the COL FSAR --

MR. MONARQUE: Yes.

CHAIRMAN STETKAR: -- are actually more pertinent for the DCD.

MR. MONARQUE: Right, and we'll communicate that --

CHAIRMAN STETKAR: Okay.

MR. MONARQUE: -- through the DCD project.

CHAIRMAN STETKAR: I mean, they should be raised in the context of the certified design, not in the context of --

MR. MONARQUE: Correct.

CHAIRMAN STETKAR: -- necessarily of this proceeding.

MR. MONARQUE: Right. I don't want to walk away and not --

CHAIRMAN STETKAR: Yes, okay.

MR. MONARQUE: You know, I wanted to make sure we understood this.

And then the other one was there was a discrepancy in the FSAR regarding the location of the discharge line which says unit 1 turbine building.

CHAIRMAN STETKAR: Right.

MR. MONARQUE: And I think that was brought up. And the next one, the last one was change in scope and storage for low-level waste facility, possibility of strategy.

CHAIRMAN STETKAR: Yes, that's just basically --

MR. MONARQUE: Yes.

CHAIRMAN STETKAR: I think, you know, we're interested -- as you heard, we sort of raised the question and would be interested to see how that open item that you have on the interim waste facility gets resolved. Perhaps, you know, sufficient information will be available in the responses to the RAIs to close out that open issue, the open item that, you know --

MR. HAMZEHEE: And usually when we come back to you we let you know how we closed all the open items.

CHAIRMAN STETKAR: Yes, yes, yes. But I mean, this is just sort of a reminder to you that we want to hear about sort of how they did those projections.

MR. WILLIAMS: Yes, that's -- normally with an operating plant it usually makes it a little easier.

CHAIRMAN STETKAR: Oh, yes. Yes. No, sure. Their experience from units 1 and 2 and getting input from the people who, you know, are tired of stuffing things in really small closets is probably, you know, a good thing.

MEMBER RYAN: There's only so much you can do with compaction and super compaction.

CHAIRMAN STETKAR: That's right. With that, I think to keep us moving and because I'm a task master, I think I'll ask Luminant to come up and see if we can get through Chapter 12 from Luminant at least before we take our break.

MR. EVANS: Whenever you're ready, we'll start Chapter 12.

CHAIRMAN STETKAR: We are ready, Todd.

MR. EVANS: Okay. Good morning. My name is Todd Evans. I'm the Manager of Engineering, Project Management and Operating Systems for Luminant for the new build Comanche Peak 3 and 4 project. And today I'm glad to present to you Chapter 12 of the FSAR which deals with radiation protection.

Similar to John's presentation, after a little bit of an introduction we'll give an overview of the chapter, the SER open item that we have, proposed license conditions and the site-specific. Then we'll get into each section on the site-specific aspects.

The FSAR uses incorporated-by-reference methodology. No departures from the US-APWR DCD are taken from Chapter 12. All of the COL items are addressed in the FSAR. There is one SER open item

which we'll discuss in a little more detail here in a minute. There were 23 SER confirmatory items for Chapter 12. The majority of these have been incorporated into Rev 2 of the COLA, the FSAR. There are a few that were done after Rev 2 of the COLA and those would be incorporated into Rev 3. There are five proposed license conditions and there are not contentions pending before the ASLB.

For an overview of the chapter, this table gives an account of the number of questions that were asked for the different sections. There were a total of 24 questions that have been asked so far. And as you can see, each section was handled separately except for 12-3 and 12-4 questions came together.

As far as the SER open item, license conditions have been proposed to address by-product, source and special nuclear material being received prior to full implementation of the plant's emergency plan and security plan in order to meet the requirements of Parts 30, 40 and 70. The resolution, a response to the questions have been submitted and it's currently under the NRC staff's review. There is a remaining issue on that and we feel like that we will be able to resolve that and

be able to close out this RAI and this open item.

For the proposed license conditions the first four are listed here on this slide; 12-1 through 12-4. These all deal with implementation of the RP Program and they include implementation of the RP Program prior to initial receipt of by-product, source and special nuclear materials. Also, prior to fuel receipt and prior to fuel load, and then prior to the first shipment of radiative waste. These are actually being proposed by us to be combined into two license conditions.

The first license condition would be associated with 12-1, and then 12-2, 3 and 4 would be combined into a single license condition, similar to what John described in the table that he showed for Chapter 11. Then the final license condition, as mentioned earlier, dealing with the Ground Water Monitoring Program, the licensee shall implement the Process Effluent Monitoring and Sampling Program, including the Ground Water Monitoring Program prior to fuel load. So we intend to commit to that license condition.

CHAIRMAN STETKAR: Todd, I didn't look at the right drawing probably. Do you have ground water monitoring wells down gradient and in

reasonably close proximity to the evaporation pond, that being a source of tritiated water that's -- you know, I know the liners never leak, but --

MS. WHITE: Are you asking, sir, if we're going to place them in that area, or do we currently have a --

CHAIRMAN STETKAR: I'm asking you will there be.

MS. WHITE: That will certainly go into consideration. That will be one of the deciding weighting criteria for placement of a monitoring well, yes.

CHAIRMAN STETKAR: Okay. But and I'm talking in reasonable close proximity, not out at the fence line.

MS. WHITE: Understand. That's correct.

CHAIRMAN STETKAR: Okay.

MS. WHITE: That would be one of the major deciding factors for --

CHAIRMAN STETKAR: But you haven't actually decided on a placement of the wells yet?

MS. WHITE: No, sir.

CHAIRMAN STETKAR: Okay.

MS. WHITE: We're going to wait until we finish up with actual post-construction drawings and

finalize that, look at the gradients and everything else before we decide --

CHAIRMAN STETKAR: Okay.

MS. WHITE: -- the best approximate locations for those wells.

CHAIRMAN STETKAR: Okay. Thank you.

MEMBER RYAN: That seems like a real reasonable answer. I'm guessing you've got a pretty decent understanding of the geohydrologic model for the site now. I'm also guessing that you realize that two new units will change it a lot.

MS. WHITE: Yes, sir.

MEMBER RYAN: So do you have a strategy where you're going to kind of reevaluate your entire ground water monitoring and modeling effort to accommodate the new units and all the rest of the features of facilities that you've described?

MS. WHITE: Yes, sir. We have a commitment to take a look at post-construction and take a look at again of how the ground water modeling would flow through this site post-construction. And then that would be a deciding factor for determining where we put those wells in.

MEMBER RYAN: Yes, and I guess, I mean, it would seem reasonable to me that that is not

something you're going to do in year one after you finish. It's probably a multi-year kind of effort to see how things equilibrate, I guess is the best way to say it.

MS. WHITE: Yes, sir.

MEMBER RYAN: So, okay. Thanks.

MR. EVANS: Okay. Next we'd like to go into the site-specific aspects and go through each of the five subsections of this chapter.

12.1, Ensuring That Occupational Radiation Exposures are ALARA. Compliance with Reg Guides 1.8, 8.8 and 8.10 by utilizing NEI 07-08A, which is "Generic FSAR Template Guidance for Ensuring that Occupational Radiation Exposures are ALARA." Operational considerations for achieving ALARA are provided by utilizing NEI 07-03A, which is "Generic FSAR Template Guidance for Radiation Protection Program Description." And then development and implementation of operational procedures for SSCs which could be potential sources of contamination with the objective of limiting leakage and the spread of contamination with the plant provided by utilizing guidance in Reg Guide 4.21, "Minimization of Contamination." Our intent is to comply with these Reg Guides and with the NEI

guidance.

CHAIRMAN STETKAR: And you will be installing the zinc injection system?

MR. EVANS: That is our plan at this point. In unit 1 and 2 we have not employed that yet, but the plans are -- based on the industry experience they're proceeding in that direction, so our chemistry folks feel like that we definitely would do that for unit 3 and 4.

CHAIRMAN STETKAR: Thanks.

MR. EVANS: Section 12.2 is on radiation sources, most of which obviously are covered in the design control document. But site-specific radiation sources include the interim radwaste storage building that was discussed as part of the Chapter 11 discussion. Likewise, the evaporation pond and then the standard calibration check and radiography sources required for plant operation and construction.

MEMBER RYAN: I'm guessing the radiography sources are vendor owned and just on site. You have provisions to bring them onto the licensed site and take them off?

MS. WHITE: Yes.

MR. EVANS: I think it can be done

either way, but typically that would be the -- yes.

Section 12.3 deals with radiation protection design features. The site-specific designs include Mobile Liquid Waste Processing System, ultimate heat sink, Startup Steam Generator Blowdown System and the evaporation pond.

The Mobile Liquid Waste Processing System, as mentioned earlier, has shield walls surrounding the area to maintain lower radiation zones and special connectors to prevent cross-contamination and equipped with drain collection to transfer spills and leaks to the Liquid Waste Management System.

Ultimate heat sink is our on site cooling towers as discussed in another part of the FSAR and it interfaces with the Essential Service Water System and is designed to minimize contamination.

And I think we've kind of discussed the evaporation pond and the Startup Generator Blowdown System already.

Continuing on with 12.3, underground piping is site-specific, especially as far as the route and to things like such as the evaporation pond. Some of the features of the underground

piping system that we will employ concrete pipe trenches which are coated with epoxy and equipped with a sealed cover and manholes for inspection and have leak monitoring points. We'll use double-wall HDPE for buried piping with manholes along the routing pathway.

MEMBER RYAN: So the manholes will give you access to the double-walled pipe exactly how? Will this be a culvert and you'll be able to -- is the double-wall piping going to be --

MR. EVANS: It would be sloped --

MS. WHITE: Slowed to the --

MR. EVANS: -- to a manhole.

MS. WHITE: Right. We don't want to -- and we're going to select intervals for the manholes so that if you do get a leak, you can collect it in a manhole and then we have to possibly dig up a small section to repair. So that's the consideration given there.

MEMBER RYAN: Okay. I'm trying to understand if it's all flowing downhill in one direction.

MR. EVANS: I think it would depend on -- well, it would flow to a manhole.

MEMBER RYAN: Yes.

MR. EVANS: A particular section between two manholes would flow to the manholes. So it would be sloped to flow to the manhole.

CHAIRMAN STETKAR: Manholes will be effectively drain slopes, sumps for leakage, right?

MS. WHITE: Right.

MEMBER RYAN: Okay. So you'll have something like -- I don't know what the length would be. One hundred feet or two hundred feet of pipe would be represented in one manhole? Something like that. Maybe 50 or maybe 1,000. I don't know what the range of the pipe is, but --

MR. SANG: Again, this is Irving Sang. Currently our plan is to stage the manhole roughly about 300 feet apart.

MEMBER RYAN: Three hundred feet apart?

MR. SANG: Yes.

MEMBER RYAN: And have you decided that that's going to give you a sufficient collection volume so you'll know what fraction is leaking or not, or you're collecting it all? That's the hard part of manholes is you don't know what your volume really is. So you don't know what fraction --

MR. SANG: That's correct. That's correct.

MEMBER RYAN: You do not know, you know, what fraction could be leaking.

MR. SANG: And we don't -- we can't -- with the current -- there are two types of leak detection system. One is the current method of manholes in between and the wall pipe going through. And there's a basin at the end, bottom of the manhole. These manholes are six foot in diameter with a ladder going down to -- for maintenance and calibration purpose. And there's a basin, a simple floating device as a liquid level detecting instrument. And with that kind of instrument is very difficult to detect exact location of a leak or the volume of the leak. But as soon as leak water is accumulated in the basin, it will initiate the alarm signal. I think this address the Reg Guide 4.21 issue, early detection. So I agree with the comment that it's very difficult to --

MEMBER RYAN: It certainly gives you the early detection piece, but it doesn't tell you -- I guess I'm having a hard time figuring out -- the flow is going be inside a pipe and I guess what you're relying on is that the pipe goes through this manhole area and if there's any accumulation outside the pipe in this culvert, this manhole, whatever it

is, that tells you there's a leak. But it doesn't give you any idea about the magnitude or the point of origin of that leak, right?

MR. SANG: That's correct.

MEMBER RYAN: So you'd only know for 300 foot --

MS. WHITE: You only know between manholes, basically.

MEMBER RYAN: Yes, I mean, between two manholes you know something happened.

MS. WHITE: Right.

MEMBER RYAN: Okay.

MR. EVANS: So once you get the alarm, then you would --

MEMBER RYAN: Yes, then you've got to --

MR. EVANS: -- take a sample and determine whether it's just rain water or whether it was actual, you know, leak, that kind of thing and then do your investigation to try to locate --

MEMBER RYAN: How deep is the pipe?

MR. SANG: It depends on the terrain, where the location is, but general they are about five, six feet.

MEMBER RYAN: Five or six feet is your unsaturated zone? Must be a little deeper than

that, I'm guessing. I'm just trying to think of the ground water scheme you're in, because all those factors can really influence whether you're actively monitoring anything or not.

MS. WHITE: Yes. The answer's yes it's deeper than six feet.

MEMBER RYAN: Yes, I guess you haven't got to that detailed of a drawing yet.

MS. WHITE: No.

MEMBER RYAN: Okay.

MR. EVANS: Okay. Anymore questions on that slide?

(No response.)

MR. EVANS: Okay. The last part of 12.3, we have some more site-specific aspects. There are some radiation zones which are site-specific. These are primarily in the yard areas and those are designated in the FSAR. Operational programs. Programmatic considerations are consistent with NEI 08-08A, "Generic FSAR Template Guidance for Life Cycle Minimization of Contamination."

And operational/programmatic programs include: Periodic review of operational practices to ensure operating procedures reflect installation

of new or modified equipment and personal qualification and training are current; maintaining of records to facilitate decommissioning by retaining before and after construction surveys; site conceptual model development that aids in understanding the plant footprint and the effect on the environment; performing final site configuration that aids in understanding the migration of radionuclides off site; and on site contamination monitoring program along the potential pathways.

And then the FSAR also discusses that we have availability of portable radiation detection equipment as needed in different various areas of the plant.

Section 12.4 is dose assessment. The site-specific aspects of this section deal with dose to construction workers. And we have it that direct radiation dose will be less than 2.5 millirem per year, and that the gaseous and liquid effluent dose would be significantly smaller than that.

We have evaluated for a multi-unit site for contained sources of by-product, source and special nuclear materials. I would like to note that the direct radiation dosage figure we're giving here of 2.5 millirem is as estimated at the unit 1

and 2 protected fence so that the actual doses to construction workers should be significantly lower due to the distance between unit 1 and 2 and unit 3 and 4.

CHAIRMAN STETKAR: Those doses will effectively be controlled by the units 1 and 2 ODCM during the construction period, right?

MR. EVANS: Right.

CHAIRMAN STETKAR: The integrated ODCM won't become operational until units 3 and 4 start up. I mean, you won't have any sources over on --

MR. EVANS: Yes, they're --

CHAIRMAN STETKAR: -- except for radiography.

MR. EVANS: There are -- yes, exactly. There are different milestones for implementation, but that's correct.

And the last section in Chapter 12, 12.5, Operational Radiation Protection Program. The program is in accordance with NEI 07-03A and includes such aspects as instrument calibrations, performance of radiation surveys, monitoring of the RWSAT, refueling water storage auxiliary tank and the primary makeup water tank, and boric acid evaporator room monitoring as required by the DCD,

source term reduction strategies, control of access to VHRAs, very high radiation areas, utilization of NEI 08-08A for contamination minimization, and for respiratory protection aspects.

And that concludes discussion of Chapter 12.

CHAIRMAN STETKAR: Members have any questions?

(No response.)

CHAIRMAN STETKAR: Thank you.

MEMBER BROWN: I do have one, and I think I missed this when I was reading. It was your dose thing that you just made relative to the direct radiation dose. There was a table in Chapter 11 that talked about dose to the population from gaseous effluent and all the rest of the numbers in this table, table 11.3.1, were down in the millirem, and this one popped up at 1.6 person-rem per year. Is that the total body? And I'm not a radiation health guy. Just the numbers. Everything else was in the millirem per year.

MR. EVANS: Which table?

MEMBER BROWN: Table 11.3.1.

MR. EVANS: In the FSAR?

MEMBER BROWN: Yes, I believe that's

correct. Chapter 11?

MR. EVANS: Oh, Chapter 11?

MEMBER BROWN: And I apologize for being late.

MR. EVANS: It's okay. Now, which one were you referring --

MEMBER BROWN: Table 11.3.1.

MR. EVANS: Okay. Parameters?

MEMBER BROWN: Yes. Well, it says estimated site gaseous effluent dose calculations.

MS. WHITE: 12.3.1 maybe?

MR. EVANS: 12.3.1.

MEMBER BROWN: That might well be the case. I'm looking at the SER with open items right now and they reference FSAR Section 11.3.3.1 for just tables.

11.3.1 DCD SER, so the reference is -- there's a note that says gaseous effluent doses from FSAR Section 11.3.3.1 in tables 11.3-9R, or 11.3-204.

MR. EVANS: Oh, there we go. Okay.

MEMBER BROWN: And the low was doses to the population from gaseous effluent at a factor of 10 greater than everything else in the table roughly. That's why it caught my attention.

Oh, I'm sorry you're right.

MS. WHITE: Millirem versus rem.

MEMBER BROWN: It's a factor of 100 more. Maybe even 1,000.

MR. EVANS: Beta dose in air, 1.62? Is that you --

MEMBER BROWN: It says total body and then person-rem thyroid were the two items. And there were the two tables. I didn't go back and look at the FSAR. I just looked at the -- just all the numbers in the SER. Just a big difference. And it was site-specific calculated dose.

MR. EVANS: Get up the SER here and see if we can get on the same page with you.

CHAIRMAN STETKAR: Charlie?

MEMBER BROWN: Yes?

CHAIRMAN STETKAR: I was looking for the table. It's 11.3-9R in the FSAR?

MEMBER BROWN: It lists three tables. There's three table references. It's 11.3 -- Section 11.3.3.1 and tables 11.3-9R, 11.3-204 and 11.3-205.

MS. WHITE: These are calculated for a single unit. This is for total in both units. That's one difference.

MEMBER BROWN: It says CNPP units 3 or 304. That's in the description column.

MR. EVANS: What page of the SER are you looking at?

MEMBER BROWN: 11-40.

MR. EVANS: 11-40?

CHAIRMAN STETKAR: If it's the SER, it might be easier to ask the staff.

MEMBER BROWN: Yes, but I was just -- the staff did a reference with their note, the appropriate tables in the FSAR, and that's why, you know, I kind of lost the bubble going through Chapter 11, so it fully escaped the applicant here.

MR. ROACH: Hi. This is Ed Roach from Health Physics Branch. In the -- I think it's page 11-34 of the SER for the COL, it addresses our evaluation of what the applicant did calculate to show how they met the requirements for Part 20 and Part 50, Appendix I, as well as the EPA regs 40 C.F.R. 190. And the population dose is a calculation of the whole body, total body and thyroid doses, and those were on the order of 1.58 person-rem and 1.98 person-rem, but that's to the population to the entire --

CHAIRMAN STETKAR: That's within 50 --

MR. ROACH: Fifty mile --

CHAIRMAN STETKAR: -- radius. So it's the integrated collective population dose --

MR. ROACH: Right.

CHAIRMAN STETKAR: -- within 50 miles.

MEMBER BROWN: Is that it?

CHAIRMAN STETKAR: Yes.

MEMBER BROWN: Okay. So it's a total of everybody that's out there in the relative --

MEMBER RYAN: It's collective dose, yes. Added up all the doses, yes.

MEMBER BROWN: All right. It just was a big dose to the population. Like I say, I'm not a health radiation health guy. Just that I noticed the difference in the numbers as I was going through the table. If our resident expert understands, I'm happy as a pig in a mud wallow.

CHAIRMAN STETKAR: You good?

MEMBER BROWN: Yes, I'm fine. Just the discontinuity between sizes, magnitudes and numbers.

CHAIRMAN STETKAR: Sure.

MEMBER BROWN: Thank you.

CHAIRMAN STETKAR: Any other question for Luminant?

(No response.)

CHAIRMAN STETKAR: With that, I think we will recess for a break before the staff comes up. We will recess until 10:25.

(Whereupon, the above-entitled matter went off the record at 10:05 a.m. and resumed at 10:24 a.m.)

CHAIRMAN STETKAR: Okay. We are back in session and we'll hear from the staff on Chapter 12.

MR. OTTO: Good morning again. I'm Ngola Otto. I'm the project manager for Chapter 12, Radiation Protection, and we're going to discuss the staff's review of Chapter 12. To my right is Ron LaVera. He's our reviewer for the chapter. He's going to discuss the open items. We have one open item is Chapter 12 out of the 25 questions we've asked so far. And I'll go ahead and turn it over to Ron.

MR. LaVERA: Good morning. My name is Ron LaVera, as Ngola mentioned. My experience is 30 years of experience at PWR utility plants. I'm a certified health physicist. I have six years of experience in the Navy. I completed senior reactor operator school. So that's my background.

Before I begin I would like to take a moment to thank the applicant for the professional

manner in which they dealt with our questions and concerns. It certainly facilitated my review of this section.

In addition to the information that the applicant talked about in their presentation, the staff also sought additional clarification on several items, including: Site-specific design features to satisfy 10 C.F.R. 20.1406; minimization of contamination; operational program elements for minimizing the contamination source term in the reactor coolant system; documentation of facility construction for the purposes of facilitating eventual decommissioning; site-specific provisions for implementing zinc injection; content and control of site-specific sources, in particular the evaporation pond; processes for maintaining construction worker dose ALARA; compliance with 10 C.F.R. 20.1301 and 1302 for the members of the public; uses of standards for the selection and calibration of radiation protection instrumentations; respiratory protection program consistency with Reg Guide 8.15 on respiratory protection; program elements associated for primary to secondary leakage minimization and program elements for ESF. That's --

MR. MONARQUE: Engineer safeguards.

MR. LaVERA: -- engineer safeguard facilities. Thank you very much. Sorry. Did a short circuit there. Engineering safety features and leakage minimization program elements. Sorry about that.

The only open item we have is the question related to the 10 C.F.R. Part 30s, 40 and 70s, license materials. We are in the process of reviewing the applicant's response to that.

And that concludes my presentation. Are there any questions?

CHAIRMAN STETKAR: No questions?

PARTICIPANT: No.

CHAIRMAN STETKAR: Well, that was good. Thank you very much. I'm almost sorry we didn't go through that before the break, but there you go.

Thank you.

And I'd like to again thank the applicant and the staff for good discussions for both Chapters 11 and 12. I think 12 worked pretty quiet, so --

MR. MONARQUE: And I wanted to confirm, there's no takeaway items on Chapter 12.

CHAIRMAN STETKAR: I didn't hear any.

MR. MONARQUE: Okay.

CHAIRMAN STETKAR: Now is the staff --

MS. BERRIOS: They're going to be ready in 10 minutes for the --

CHAIRMAN STETKAR: Now I'm really sorry I didn't -- let's go off the record just so that we can speak at will here.

(Whereupon, the above-entitled matter went off the record at 10:28 a.m. and resumed at 10:49 a.m.)

CHAIRMAN STETKAR: Okay. We are back in session, and we'll hear from the staff I guess first about risk-managed technical specifications. And as you're aware, this is a very interesting topic to us because this is the only applicant, at least that we're aware of so far among any of the new reactor design centers, that is proposing to adopt risk-managed technical specifications going on. So this is kind of a first of a kind, so we're pretty interested in the process and how it's going to be implemented and how the staff is going to -- what level of detail the staff is going to do in their reviews and so forth. So really appreciate the opportunity to have this briefing.

For the record and for members; benefit,

this is an information briefing. There isn't an SER on any of this yet, so we'll be revisiting this topic under the context of probably both Chapter 16 and Chapter 19, the PRA and the tech specs of the COL application. And, you know, pending the vagaries of scheduling, we're trying to keep those meetings together. But they're quite a bit out in the future right now, so this isn't something that we're going to be hearing about in terms of an SER or formal review for --

MEMBER BROWN: For the COLA?

CHAIRMAN STETKAR: For the COLA.

MEMBER BROWN: Oh, okay. Because, I mean, there are SERs on the NEI documents that they reference.

CHAIRMAN STETKAR: That's right. There are SERs on the NEI documents already. Those have already been approved by the staff.

With that introduction, I don't know who --

MEMBER SHACK: I just had a quick question. Is anybody doing risk-informed ISI, which sort of strikes me as the easiest risk-informed application to take. I mean, somehow it just seems like a big leap.

PARTICIPANT: No, no.

MR. HAMZEHEE: The answer is no.

CHAIRMAN STETKAR: Typically what you see is they say, well, you know, we'll get through the COLA process and then we'll do it after we get our license.

MR. HAMZEHEE: This is the first risk-informed application in the new reactors, as John said.

MR. MONARQUE: Okay. My name's Steve Monarque with the Office of New Reactors and thank you for giving us the opportunity to present this informal briefing today on risk-managed tech specs.

I want to introduce two presenters today. Bob Tjader, who will go first and give a historical perspective on all this, and followed by Nick Saltos, presentation.

We've been communicating -- we've had meetings and dialogues with Luminant for the past three years since our initial application, and I think even before their application regarding risk-managed tech specs, so this has been an ongoing three-year review. And with that, I'll go ahead and --

MEMBER BROWN: Go ahead. I just wanted

to make -- there's two pieces from what I saw in the agenda. There's the risk-informed tech specs and then there's the risk-informed or risk-managed --

MR. MONARQUE: Surveillance.

MEMBER BROWN: -- surveillance and completion times.

MR. TJADER: Well, I'll get into that. The risk-informed completion time and the Surveillance Frequency Program. Each of those are one of the initiatives. There are two parts to our presentation, which I'll discuss briefly here.

CHAIRMAN STETKAR: Well, give your presentation.

MR. TJADER: Good morning, members of the ACRS. I'm Bob Tjader. I am in the Technical Specifications Branch of NRO and I'm responsible for the overall responsibility for the review of both the US-APWR and the Comanche Peak technical specifications. What I am going to present is a brief overview of the risk-management tech spec initiatives as they exist.

Now, as has been alluded to, US-APWR MHI is the only vendor, the only design cert that is incorporating what we call the risk-management tech spec initiatives. Basically that is, when we say

that, we mean basically Initiatives 4b and 5b, because they're the significant ones, which I'll get into briefly here. Some of the others have some of the other less significant ones like missed surveillances and things like that, but they're the ones that have come in and basically wanted to adopt the scope as approved currently.

The risk-management tech spec initiatives; as we can see in this slide there are eight of them, they were conceived by a joint task force of NRC staff and industry in basically as a response to the NRC policy statement on PRA, the use of PRA and risk in regulatory decision making. And in about the 1998 time frame, we and the industry got together and tried to conceive of ways in which we could improve tech specs through risk information. And at that time we came up with eight initiatives, and these are the eight initiatives that we deal with today primarily.

When they were conceived they weren't conceived -- in other words their numerical order wasn't conceived on the degree of complexity. It was just as basically they occurred to us.

MEMBER BLEY: What point in time did this happen?

MR. TJADER: Nineteen-ninety-eight was when the first eight initiatives were written down, so to speak. And from that point on we, the staff and industry together, have worked to review and -- they've proposed and we've reviewed and approved. And it's taken many years to get approval on these things, on these initiatives.

Basically this slide here presents them in the order of relative complexity, if you will. The first two initiatives approved, Initiative 2 and 3; 2 is missed surveillances and 3, mode change flexibility, basically rely on the use of the risk -- or the Maintenance Rule (a)(4) Program as it exists to licensee. It does not require any necessarily quantitative approach, but it does require an approach that they utilize, the licensee would utilize in implementing their (a)(4) Program. Maintenance Rule (a)(4) just briefly says that prior to performing maintenance or surveillances you have to assess and manage risk. Okay?

Okay. Initiative 2 and 3; they were the first two approved -- Initiative 2 basically -- if you missed a surveillance in the past, you used to have to -- at power. Let's say it was -- you missed it and you determined you missed it at power and

there's something that you have to be performed at a shutdown mode. You would have to shut down to perform that surveillance. Now, this allows for risk assessment to determine whether or not you can remain at power prior to performing missed surveillances up to one surveillance frequency.

Mode change flexibility. Similarly in the past prior to starting up all surveillances and all equipments had to be completed. If in the process of starting up now you find that you inadvertently missed an inoperable piece of equipment, you can transition up in mode to power as long as you restore that equipment to operable status within the existing completion time of the condition and required action of that tech spec.

MEMBER BLEY: As if you were at power essentially?

MR. TJADER: As if you were at power. Now it doesn't apply to all systems. Now, this one here, there has to be a pre-assessment of the systems of which you're applying. It assumes that the risk of mode 1 bounds the risk of the other one. So in other words, the highest risk you would experience with inoperable equipment would be in mode 1 where you have a condition and a required

action that can be performed. Now, there are some -- like diesels, this does not apply to diesels. It doesn't apply to, you know, RHR systems and some of the others. And there are notes in the specs that that doesn't apply to.

The next three require an analysis, a quantitative analysis prior to approval of these for the systems for which they apply. Initiative 1 modified end states. Basically that allows you to shut down the hot shutdown rather than all the way to cold shutdown to repair and restore equipment and then you can proceed up.

Initiative 6 is the only one that has -- mode 1 has been approved for some vendor types, but not all. Initiative 6 has not yet been approved. It's been in negotiation this whole while. Basically that adds additional time to 3.0.3 shutdowns. If you do not have a condition that addresses a condition of inoperability in a tech spec, then you have to enter 3.0.3, which is the shutdown. Or, if you find that you have not completed the required actions within the allowed completion times, then you have to shut down and enter 3.0.3. This allows additional time prior to completing the 3.0.3 shutdown, or prior to entering

to 3.0.3 in certain cases. This has sort of evolved over time, but it's -- and it's under negotiation.

CHAIRMAN STETKAR: Bob, how is that -- and I really appreciate this, because you know, this is the first coherent summary of these initiatives that I've heard. How is that Initiative 6 conceptually different from 4b?

MR. TJADER: Conceptually it's very similar. In fact, because basically --

CHAIRMAN STETKAR: 4b allows you --

MR. TJADER: Yes, the --

CHAIRMAN STETKAR: -- no additional time.

MR. TJADER: Yes. Conceptually they're the same other than the fact of say that Initiative 6 would allow a specific period of time for an existing condition prior to entering 3.0.3. It's not a -- you could conceivably apply 4b to that condition.

CHAIRMAN STETKAR: Yes.

MR. TJADER: And perhaps proposals will come in house that do that. In fact --

CHAIRMAN STETKAR: Okay. I was just trying to --

MR. TJADER: But it is in a risk-

informed completion time that can be adjusted, depending upon the risk associated with configuration of the plant. It is a specific time that is additional to restore the equipment prior to entering shutdown.

CHAIRMAN STETKAR: But I mean, if for example you did a 4b analysis and determined that you've got, you know, 67.25 hours to restore a piece of equipment to service, risk-informed completion time. Then you get up to 67.25 hours. You would then normally trigger 3.0.3. And you're saying --

MR. TJADER: Well, no, in risk-informed completion time if you use up the completion time, then you're treating it as the specs treat completion times now. You then take the next logical -- it could be 3.0.3.

CHAIRMAN STETKAR: Could be 3.0.3.

MR. TJADER: It could be shutdown --

CHAIRMAN STETKAR: Well, I was trying to obviously --

MR. TJADER: -- but you then take the next -- enter the next logical action.

CHAIRMAN STETKAR: Let's suppose you did enter normally 3.0.3. Would 6 then give you an additional window?

MR. TJADER: Yes, if --

CHAIRMAN STETKAR: Okay. Beyond what you calculated in -- beyond your 67.25 hours?

MR. TJADER: But keep in mind we haven't --

CHAIRMAN STETKAR: I understand you haven't got there yet.

MR. TJADER: We haven't got there yet. What we haven't done is we -- I don't think we've envisioned applying 4b to Initiative 6 completion times. Okay? I don't think we've envisioned that. That doesn't mean licensees can't propose it, but I don't --

CHAIRMAN STETKAR: Yes, but I'm thinking about, you know --

MR. TJADER: Yes.

CHAIRMAN STETKAR: -- holistic risk-informed tech specs.

MR. TJADER: Well, to be honest with you, we are finding as we are in the process of reviewing and approving these, we do have to consciously think about the interactions of these initiatives, you know? And for instance, there's mode change flexibility where you can go back up in time. Well, you know, there's all kinds of

scenarios that can come up. Well, what if you've come down, you know, to hot shutdown to use -- load initiative mode 1 to restore equipment, you know, and then, you know, you don't restore it. And, I don't know, then you're -- how does that interact with --

CHAIRMAN STETKAR: Well, nobody would ever --

MR. TJADER: -- the change to flexibility, whatever? I'm not very good at describing the complexities of the interactions, but we're finding that it turns out to be somewhat complex and we have to think about that.

MR. HAMZEHEE: Bob, correct me if I'm wrong, for 3.0.3 it's more generic approach.

CHAIRMAN STETKAR: No, I understand. I'm just trying to understand -- obviously as Bob was saying, there are interactions that if I do a risk-informed completion time for restoration of this particular piece of equipment and determine it's; let me use a round number, 80 hours, and if I find that I cannot restore that within 80 hours and the next step in the tech specs would be enter 3.0.3 and shut down, I'm curious whether Initiative 6 would then somehow give me --

MR. HAMZEHEE: Add more time.

CHAIRMAN STETKAR: -- add more time, because this -- that 80 hours was in principle --

MR. TJADER: I guess I'd like to -- let me qualify a couple things first of all. Initiative 6 is very limited in scope. Okay? It does not apply to loss of function. Okay? Initiative 4b does not apply to loss of function. You just can't do that at all. I think back in the beginning when we thought of Initiative 6 we were thinking of 3.0.3 in general where it could conceivably apply to loss of function, but that has now been taken off the table as part of the review process. Okay? So it is very limited in scope, initiative 6, at this point in time.

CHAIRMAN STETKAR: Well, because it doesn't apply to loss of function, in my mind it even -- and neither does 4b.

PARTICIPANT: That's right.

CHAIRMAN STETKAR: In my mind it gets even a bit more muddy about how they interact with one another.

MR. SALTOS: Yes, as it stands right now, Initiative 6 is not included in 4b. 4b excludes 6. The purpose of 6 was to extend the one

hour. In other words, you find the system is not -- loss of function, especially with some systems that are not as risk-significant or some systems that are not even included in the PRA, some radiological control systems. To extend that to four hours, six hours so they can perform the maintenance, that was the idea. It was not intended to use this together with 4b.

CHAIRMAN STETKAR: Okay. Charlie?

MEMBER BROWN: Yes, I mean, if you go look at whatever it's the total of Part 4, I mean, under 5.5-18 it says, "The program shall ensure the assessment of configuration-specific risks to support the extension of completion times." Item A says, "When entering the spec, the following actions shall be taken in accordance with NEI 06-09 within the completion time of the referencing spec determined that the plant configuration is acceptable beyond the completion time. Then you calculate the risk-informed completion time and you can restore the system to operable status within the RIC or the backstop of 30 days."

So to me, when I read this, plus 06-09, plus your SER, it said -- the way I read that is they're putting in place the program to extend the

completion time beyond it. As long as you do your calculation within the completion time to say I'm okay --

MR. SALTOS: But you don't have loss of function.

MEMBER BROWN: -- then it's a risk-informed analysis.

MR. SALTOS: There is no loss of function.

MR. TJADER: Yes, no loss of function. But in addition to that --

MEMBER BROWN: That wasn't real clear when I read it.

MR. TJADER: Well, it is in 06-09. It explicitly states in 06-09.

MEMBER BROWN: Hey, that was 60 pages of stuff.

MR. TJADER: But keep I mind too -- no, it's very explicit, it does not apply to loss of function. But let me further say that it doesn't apply to all completion times. It only applies to completion times within which they reference the program. So in other words, there are a limited set of conditions and required actions. In fact, Luminant takes a very limited and conservative

approach to that --

MEMBER BROWN: You said that.

MR. TJADER: -- you know, in that they only apply it to a limited number of systems and they only apply it to basically when one train of their four trains are out. Okay? So they have even limited it more voluntarily. But it only applies to those required actions where the completion time explicitly calls out the risk-informed completion time. So there's a all slew of conditions and required actions where risk-informed completion time, Initiative 4b, does not apply.

MEMBER BROWN: Two questions relative to that because in their paper, the white paper they submitted just said exactly what you did. They had a limited range. One train. Then they had the second train or third train. They had that explanation. But there was no discussion in here of how this gets cranked or incorporated into the COLA. This is just a paper. I didn't -- there was no reference --

MR. TJADER: Yes, well it's cranked into the tech specs themselves.

MEMBER BROWN: No, I mean, this document that they presented is -- I mean, this limitation --

MR. TJADER: They have --

PARTICIPANT: Let him get through and you'll get an idea of what --

MR. TJADER: No, I think what the -- is this in here?

Basically this limitation, what it does, it's a description of the -- oh, that's a program. The Initiative 4b incorporation into both the DCD and the Comanche Peak specs, it incorporates the program and it incorporates the specific specs. And there are -- there is a specific required action, which says -- I don't know have the Luminant specific wording, but basically there's a specific action that, you know, within -- if -- and it's a voluntary entry.

If you don't anticipate restoring the system or equipment within the allowed completion time, perform a risk assessment to determine the quantified risk-informed completion time and determine what that is and apply it. So it only applies to very specific not only specs, but specific conditions and for risk-informed completion time. It is not a carte blanche application to all completion times. It is not that. Okay?

So but at any rate, good questions.

Basically what I'm going to do is I'm going to talk a little bit more; I think we're doing that right now, of Initiatives 4 and 5, which are the significant ones, the ones that have been termed the risk-management tech specs. I'll talk about them a little bit more. If you're interested in some of these others, I have slides, backup slides on those.

CHAIRMAN STETKAR: We have a little bit of time here.

MR. TJADER: Okay.

CHAIRMAN STETKAR: And we have to break at noon --

MR. TJADER: Okay.

CHAIRMAN STETKAR: -- is our only constraint.

MR. TJADER: Okay.

CHAIRMAN STETKAR: But, you know, we're running ahead of schedule.

MR. TJADER: Okay.

CHAIRMAN STETKAR: So if you could, go through -- just as you said earlier, this is kind of the first time I think that many of us have seen all of the initiatives laid out. So if you could, you know, briefly go through Nos. 7 and 8 just so we understand what those, and then back to 4 and 5,

which are really the crux of what we're going to learn about.

MR. TJADER: Okay. Initiative 7 briefly is --

MEMBER BROWN: Are we going to have some more on -- I mean, the application of 6 to 4 seemed to me to have some credibility -- I mean, not credibility, some application. There's an interaction there that you got to deal with, isn't it? I mean --

CHAIRMAN STETKAR: Luminant is not proposing anything regarding Initiative 6, are they?

MR. TJADER: Well, keep in mind Initiative 6 is not yet approved.

CHAIRMAN STETKAR: Right.

MR. TJADER: It's not even out on the table for adoption by even operating plans. It's not -- because it is difficult and we have concerns about the interaction and things like that. They're not easy things to review and approve. You can imagine, the NEI 06 and the 04-10 document took years to negotiate. They took literally years to negotiate, I mean, from '98 to 2007, you know? And so they're not easy things. And because of some of these complexities, with 6 -- like I said, the scope

of 6 over time has been narrowed because of concerns of applying it, you know? Perhaps -- I don't know, it is not yet approved.

MEMBER BROWN: But their paper recommended changes -- or not changes, additions to NEI 06-09 and 04 whatever, because they're a new plant as opposed to an operating plant.

CHAIRMAN STETKAR: Well, we're getting -- Let's wait until we talk more about 4b and 5b.

MEMBER BROWN: All right.

MR. HAMZEHEE: I just want to say that Bob has put together a very good presentation that covers most of these, so to go through --

CHAIRMAN STETKAR: That's what --

MR. TJADER: Well, I put together a brief presentation. If I had known that we wanted to dive in deeper, I probably should have made it a little more detailed, and I --

CHAIRMAN STETKAR: It's an information briefing, so it's --

MR. TJADER: But any rate --

CHAIRMAN STETKAR: Go ahead.

MR. TJADER: But, no, the revisions with 06-09 and 04-10 that may arise are a result of concerns about the quantitative metrics of Reg

Guides 1.174 and 1.177 as the apply to the new operating plants. And the Commission has directed the staff to assess that through some tabletop discussions which are ongoing. And those recommendations haven't been made yet.

But depending on whether or not; and that's a whether or not, a big one, whether or not there needs to be changes to quantitative metrics or whether or not there even need to be changes to defense in depth or something like, then there may need to be some supplement to the NEI 06-09. I think that's what that's referring to.

MEMBER BROWN: But they were making these modifications as part of the implementation to the program in their COLA. That's the way it was read. Because they're a new plant and they were introducing -- we don't have experience, therefore our PRAs aren't going to be as complete based on the --

MR. TJADER: Well, they --

MEMBER BROWN: -- supporting background data.

MR. TJADER: There are two trains going down the track and we anticipate those trains getting to the station at the same time. And one is

the evaluation of the new metrics, what the Commission directed us to, and their applicability to new reactors, the existing risk guidance, is it acceptable for new reactors? Okay? If we find it's not, then Comanche Peak has got a different problem. Then they've got a problem of extracting this from their tech specs because then we're not going to meet their schedule.

CHAIRMAN STETKAR: Charles? Charlie?

MEMBER BROWN: I'll stop.

MR. TJADER: Maybe some of it will be clarified in the Luminant --

MEMBER BROWN: I'm going to stop. I just had to get all of my -- I had to do a data dump here.

STETKAR: Well, I'd just suggest from what I've seen -- Bob's given us the whole background and the next talk is going to be Comanche Peak.

MR. TJADER: Well, actually what I had actually envisioned was giving you a brief background on the tech specs --

MEMBER BLEY: Yes.

MR. TJADER: -- and sort of putting in a perspective as to why Initiative 4b and 5b -- why

it's significant with regard to scheduling Comanche Peak and the PRA and how it affects the program. Basically --

CHAIRMAN STETKAR: Let's see if we can get through that by noon.

MR. TJADER: Okay.

CHAIRMAN STETKAR: This is brief --

MR. TJADER: Okay.

CHAIRMAN STETKAR: -- and there's about 25 slides here.

MR. HAMZEHEE: He already covered most of them.

CHAIRMAN STETKAR: I understand. Then the rest of them will go quickly.

CHAIRMAN STETKAR: So again, back to Initiative 7.

MR. TJADER: Initiative 7 is basically systems that are not in specs; snubbers -- snubbers at one time were in spec, but that gets into the whole history of the thing. But in the revised standard tech specs and in the new reactor specs there is not a snubber tech spec. And so if snubbers are inoperable, it de facto makes the support systems inoperable. And basically that could provide -- in light of the fact that we

perform maintenance at power, could provide and inadequate amount of time to perform snubber maintenance at power.

And so, since the old snubber specs provided a 72-hour completion time; i.e., 72 hours to do snubber specs, industry proposed a snubber inoperability spec, which in the standard tech specs is basically a 308 spec, depending on the standard we're looking at. Basically it provides time to perform snubber maintenance. Okay?

And then the other one is barriers. Barriers -- if a hazard barrier, you know, water tight barrier or fire barrier or something is inoperable, it de facto would make the supported system inoperable. And at times that would be sort of a drastic -- and the end result would be a drastic response in the tech specs to perhaps something where a watch could be stationed or things like that. So that allows time for hazard barriers to become fouled, inoperable, whatever and restored to status without taking Draconian tech spec actions. That's what basically Initiative 7 does.

MEMBER BLEY: And what's its status?

MR. TJADER: Well, both snubber and hazard barrier inoperabilities have been approved.

MEMBER BLEY: Have been approved?

MR. TJADER: Have been approved. There was actually at one time thoughts of applying this to much more wide variety of systems, but I think that due to the complexity of doing these generic risk assessments that that probably -- I don't envision at this point in time 7 being any more than those two initiatives at this time, the snubber and the hazard barrier unavailabilities.

CHAIRMAN STETKAR: People have folded Initiative 7 into their fire protection programs? Is that how it's implemented basically, or is -- how is it -- I mean, how is that initiative --

MR. TJADER: It doesn't in fact require fire protection revisions or -- yes, I don't believe. They may have some procedures in their fire protection program or something that, you know, addresses this, but there's nothing that is explicitly required.

CHAIRMAN STETKAR: No. 8.

MR. TJADER: Okay. Eight is basically -- there was an 8a and an 8b. 8a is basically to -- 10 C.F.R. 50.36 has four criteria. They were part of the initial Commission paper on improving standard tech specs. The fourth criteria is that

you have to incorporate a system if engineering judgment or if the staff finds it's risk significant and has to be incorporated into the specs.

There were a few systems; RICT and some RHR systems, that the staff determined initially way back when the Improved Standard 92 was created that should be in specs. And industry did not agree with us, but they were included nonetheless. And industry has promised through -- in Initiative 8b a review of those systems and assessment of those systems to in fact have them removed to tech specs. We're waiting for that from industry and I don't know if we're ever going to receive it because it's been a number of years.

CHAIRMAN STETKAR: The equivalent of a 50.69-type analysis, or what?

MR. TJADER: Well, that's for industry to determine what kind of analysis they want to do on removing those systems. I don't know. But, yes, that could be some sort of 50.69, system significant, things like that.

And then 8b is in fact probably an extension of 50.69, and 8b is sort of futuristic, pie-in-the-sky-type things where we envision having maybe risk-based rather than risk-informed tech

specs and using risk to actually determine whether or not things should be in specs. So that would probably require rulemaking and things like that, but that is not yet the scope.

CHAIRMAN STETKAR: Essentially the whole Initiative 8 is still --

MR. TJADER: Yes, that's --

CHAIRMAN STETKAR: -- on the table.

MR. TJADER: -- still off --

CHAIRMAN STETKAR: Or off the table.

MR. TJADER: -- the table and in the future.

CHAIRMAN STETKAR: Okay.

MR. TJADER: Things like that. But the big one's, Initiatives 4b and 5b, are not only on the table, they've been approved for some plants already.

Yes, the next slide. Where this becomes particularly significant for Luminant and Comanche Peak is that ISG-08 -- the Commission has determined that at the time a corporate licensing is issued tech specs have to be complete. And that means in accordance with ISG-08, that either the plant-specific value, the limit has to be in the specs that -- or a bounding value has to be in specs, or

that a tech spec program -- that's a 55 -- that's the admin control section of 55, program has to be implemented using an NRC-approved methodology.

And this is what Nick's presentation's going to get into, is a tech spec methodology for ensuring that a PRA is acceptable for the applications envisioned; 4b and 5b, when the plant needs to implement them; i.e., a PRA -- at the time the COL is issued, the PRA will not yet be final. The systems, instrumentation systems and other things will not be in place where the plant-specific PRA can be completed. It will be completed, the PRA, sometime prior to fuel load. Okay?

So that means that in accordance with ISG-08 we have to have a methodology in tech specs to ensure that the PRA is capable. And this applies to 4b and 5b. Particularly 4b is what this applies to, is that the -- in other words, to do a quantified risk assessment for a risk-informed completion time, the PRA has to be adequate to ensure that you're addressing the risk associated with the configuration of the plant and determining an appropriate completion time. And that's where that comes in.

And that methodology that has been

proposed we are currently reviewing. We've had RAIs out on it. We're negotiating it currently with Luminant. I think you may have a copy of that. I think that's what was referred to. And Nick is going to get into that in a little more detail, or a lot more detail. And basically that will be essential for approving 4b for Luminant.

Okay. The next slide.

CHAIRMAN STETKAR: Bob, when did ISG-08 come out?

MR. TJADER: I believe it was probably about two years ago. Originally I think it came -- it became necessitated through and apparent that it was necessary because of instrumentation systems, the fact that you wouldn't have the full package of instrumentation readily available at the time and you had to have then a setpoint control program, a methodology for determining your instrumentation setpoints, which are required in tech specs. That's where it first, I think, came to light and that was --

CHAIRMAN STETKAR: Yes, I understand that --

MR. TJADER: I believe it was like 2009 time frame.

CHAIRMAN STETKAR: I understand that concept. I was curious how it relates to, you know, expanding methods for determining PRA adequacy to support things.

MR. TJADER: Well, as long as you can have, you know, an acceptable methodology for determining something, a process that you find acceptable and confident in, then --

CHAIRMAN STETKAR: Okay.

MR. TJADER: -- you can apply that methodology.

CHAIRMAN STETKAR: Well, we'll talk --

MR. TJADER: Basically NEI 06-09 and 04-10 are methodologies for 4b and 5b, and they are referenced in the tech specs. 06-09 and 04-10 are referenced in tech specs and the requirements contained therein become in essence tech spec requirements.

Okay. The next slide? Going back to 4b; I think we've discussed this a lot, but basically Initiative 4b is the real time quantified calculation of a completion time based upon the configuration of the plant and it is a quantified risk assessment that deals not only with tech spec equipment, but whatever equipment are reflected in

the PRA.

Basically you can extend the existing framework of -- the tech specs exists as -- in other words, the existing standard-type framework exists. What you have then is overlaid on this, the I 4b format. In other words, you apply then -- you add required actions and completion time. The required is is that you have to perform -- if you determine that you may exceed your front stop -- we call the existing completion time the front stop. If you find that -- if the licensee finds that they may exceed that front stop, then within that front stop they have to do this quantified risk assessment to determine what an appropriate risk-informed completion time is, and then they can apply that. And they can either apply the risk-informed completion time or 30 days, whichever is less. In other words, there's a 30-day what we call backstop. They cannot take a risk-informed completion time beyond 30 days. Okay?

MEMBER BLEY: Bob?

MR. TJADER: Yes?

MEMBER BLEY: Can I interrupt you?

MR. TJADER: Sure.

MEMBER BLEY: I appreciated your first

slide a lot, because we've been trying to understand this whole history. One piece, it doesn't look like you're going to talk about, so I'll ask you to. I understand what 4b is. We've talked a lot about that here and otherwise. There must have been other 4a's and c's. What were those and did they disappear or did they become something?

MR. TJADER: No, Initiative 4a is not the real time calculation of risk to determine a completion time. It is where either industry, through the Tech Spec Task Force, revises the standard tech spec, or a licensee can on their own want to revise one specific completion time and change it from 72 hours to 7 days.

MEMBER BLEY: From basis?

MR. TJADER: Yes, it isn't a risk-informed completion time, but it uses risk information to change a completion time from one value to another.

MEMBER BLEY: Okay.

CHAIRMAN STETKAR: It's how an applicant would come in, or a license would come in and say I want to change my diesel generator time --

MEMBER BLEY: Yes, okay.

CHAIRMAN STETKAR: -- from 72 hours to 7

days, or 14 days, or whatever.

MEMBER BLEY: Thank you.

MR. TJADER: And likewise with 5a and 5b. 5a was a licensee came in and requested a one-time change to a --

CHAIRMAN STETKAR: To a specific --

MR. TJADER: -- surveillance frequency.

CHAIRMAN STETKAR: Yes, and it's a specific surveillance frequency.

MR. TJADER: Now, we have internally and with industry of course discussed the interaction of these things, too. In other words, we have to ensure that we keep in mind the application of 4b in the 4a approvals and things like that, the potential. So, let me leave it at that.

MEMBER SKILLMAN: Bob, let me ask a question. I'm Dick Skillman. For Luminant, and let's presume that they have found an incident where they wish to exceed your front stop, they're confident they're not going to exceed their backstop --

MR. TJADER: They cannot, without coming in for a notice of enforcement discretion, go beyond 30 days.

MEMBER SKILLMAN: Got it. But let me

finish my question.

MR. TJADER: I'm sorry.

MEMBER SKILLMAN: Does the NRC staff see that process being entirely internal to Luminant, or does the NRC staff see that risk assessment communication of exceeding the front stop and basis to believe continued operability, or whatever that might be, being a negotiation between the region and the applicant?

MR. TJADER: When the NRC staff approves the application of I 4b, the implementation of NEI guidance of NEI requirements contained in NEI 06-09, when it approves them, we then allow the licensee to implement the extension of completion times, of front stop completion times following the requirements and guidance in NEI 06-09. NEI 06-09 not only has the process in which that's done, it also has documentation requirements which must be retained for auditable purposes by the resident inspector.

This is something that -- so far I 4b has only been approved for South Texas 1 and 2 and there's -- probably they've entered it maybe a half a dozen times. And when it's done, the resident is aware of it and the reviews, the application of it

-- and we're very familiar. In fact, South Texas, when they've done it for -- in advance and they knew about it in advance, they've let us know in advance that they intended to do it. So basically they can apply it, but we will review it.

MEMBER SKILLMAN: Thank you.

CHAIRMAN STETKAR: Well, you won't review it -- well, it's audited by the inspector.

MR. TJADER: Yes. Yes. Okay.

CHAIRMAN STETKAR: It's open to audit by the inspector.

MEMBER SHACK: There's no prior approval.

CHAIRMAN STETKAR: There's no prior approval and there's no review. There's only an audit.

MEMBER SHACK: And the discussion is yes they can do it on their own and the regional inspector has the option to either audit it or check to see if they've been doing it or whatever.

CHAIRMAN STETKAR: It's logically equivalent of a 50.59 analysis. You can go in and audit --

MR. SALTOS: Well, there are requirements to document certain things --

CHAIRMAN STETKAR: Sure. As you have to document --

MR. SALTOS: -- that are spelled out what they have to document. And even the PRA analysis, from the PRA analysis.

MEMBER SKILLMAN: Thank you.

CHAIRMAN STETKAR: Go to the next slide?

MR. TJADER: Okay. This is what I've alluded to is that the NEI 06-09 has certain requirements. And these are a list, a summary of the requirements, the decision making process requirements.

CHAIRMAN STETKAR: Be careful your paper. You're on the microphone.

MR. TJADER: Oh, I'm sorry. There are requirements for PRA adequacy, capability, and there are requirements for the attributes of the configuration risk monitor spelled out in 06-09. Of course it's a quantitative risk assessment. There are quantified limits that you calculate to in ICDP and ILERF and things like that. And there are documentation requirements and there are staff training requirements in NEI 06-09.

CHAIRMAN STETKAR: I'm woefully uneducated about these documents. Has NEI 06-09

been revised since the SER approved version of it?

MR. TJADER: No, Rev 0 of 06-09 has --

CHAIRMAN STETKAR: Is still the operative?

MR. TJADER: Is still the operative one. 04-10 has been revised once. It's Rev 1. And that was --

CHAIRMAN STETKAR: The SER was written on Rev 1, right?

MR. TJADER: Yes.

CHAIRMAN STETKAR: Okay.

MEMBER SHACK: You could change that, but you would have to come back for a review.

MR. TJADER: Yes, basically the staff would have to review and approve any revision for 06-09 that would be applied to Initiative 4b. Whatever is approved would be incorporated into the license, into the tech specs.

CHAIRMAN STETKAR: My only question was, you know, has the industry gone to here and now, you know, what's in is -- you know, an SER on, you know, some outdated sort of guidance?

MR. TJADER: In the tech specs the NEI 06-09 Revision 0, specific revision, is called out.

CHAIRMAN STETKAR: Hence my question.

MR. TJADER: And they have to apply that. Even if Rev 1 is approved, that doesn't automatically change the specs. They'd have to come in for a license --

MEMBER BROWN: Okay. Within that context, their paper on what they did, they did call out -- they say these modifications to 06-09 are necessary as 06-09 was prepared for an operating license as opposed to a new -- an already operating plant as opposed to a new license. So --

MR. TJADER: Well, keep in mind --

MEMBER BROWN: Let me just make sure I get my -- I got to get this right in my own mind. I viewed those as they're taking 06-09 Rev 0 and saying in order to implement this, based on the words that are there now, for a new COL, that we need these modifications to the NEI document. And just listening to you right now, since you've already written an SER on Rev 0, I would imagine -- or I would have interpreted that you would have had to approve or write an SER on their revised document.

CHAIRMAN STETKAR: They will and we'll see that when they do that.

MEMBER BROWN: Yes, but even though 06-

09 Rev 0 may not actually be changed by NEI, you still have to approve as with some of a safety evaluation for them to apply these modifications in their application. Is that --

MR. TJADER: Yes, those modifications will eventually be incorporated, but --

MEMBER BROWN: Not initially?

MR. TJADER: Exactly. That's right.

MEMBER BROWN: Okay. So you all would have to do another SE to cover this in terms of their --

MR. TJADER: Well, we envision that SE being in the SE for Luminant, you know, a COL.

MEMBER BROWN: Well, it will be when you do --

CHAIRMAN STETKAR: It's the SE for Chapter 16 for the --

MR. SALTOS: Chapter 19.

CHAIRMAN STETKAR: Sixteen or nineteen, one of those. Sorry. It'll be 19 for the COL.

MR. TJADER: Well, if it is in 19, 16 will certainly reference it.

MEMBER BROWN: Well, this is in Part 4, Tech Specs, Tier 1, Section 5.

MR. TJADER: That is the proposed tech

spec changes, exactly.

MEMBER BROWN: So that would have to be applied --

MR. TJADER: Right, the methodology would be under 19 probably.

MEMBER BROWN: Okay. All right. I'm just trying to separate Tier 1, Tier 2, 19, all the other -- the alphabet soup, or numerology that gets applied to this. Excuse me. Thank you.

MR. TJADER: Next slide. As I've already said, NEI 06-09, have the program requirements for applying risk-informed completion times. The methodology, 06-09 is in the administrative control section of the tech specs. Any revisions to NEI 06-09, any modifications that are not in Rev 0 but we need to incorporate into Rev 0 will be specified one way or another in that Administrative Controls Program. It will be referenced there. And then of course any subsequent changes would require a license amendment to revise that methodology.

Next slide. Now, Initiative 5b is a Surveillance Frequency Control Program. Basically what that does is the surveillance requirements themselves remain in tech specs. The requirement

for a surveillance frequency remains in tech specs. But where an applicant applies the Surveillance Frequency Control Program and where we approve it to be applied, it then references that program and the specific frequency will be relocated to a license control document where they will list those Surveillance Frequency Control Programs, or those surveillance frequencies.

The frequencies that are in that program are treated just as the frequencies are as they are in specs. In other words, they're not adjustable as the risk-informed completion time is or anything on the fly, okay, or in real time rather than on the fly. But they're not real time adjustable. Okay? So they are firm frequencies that are in a program that are listed outside of specs.

What the Surveillance Frequency Control Program does, 04-10, it allows an approved process to be applied, a process that takes both a qualitative assessment and a quantitative assessment, and applies it to the surveillance that the licensee desires to change and determines whether or not it is acceptable to change that surveillance frequency. There are a whole bunch of constraints and requirements on this that they need

to follow and to adjust these frequencies. And then once they've adjusted it, there's also a feedback loop to determine that in fact the surveillances are not being failed, you know, frequently or something like.

The intent -- keep in mind that surveillances, when there are -- surveillances are checks for system or equipment operability, and the intent is that when a surveillance is performed it is passed. So part of the approval process and part of the -- in fact, there is a whole documentation sheet in the back of 04-10, a multi-page thing that the licensee has to fill out and he has to have an expert panel evaluate both the qualitative and quantitative assessments that are done to change these things. And part of the assessment is to ensure that these surveillances have passed an overwhelming amount of the time in which they've been performed in the past for them to even be considered to be adjusted. Yes?

CHAIRMAN STETKAR: Bob, you mentioned that feedback loop that you were just talking about. Is there any requirement to revisit, formally revisit those surveillance frequencies at any fixed interval, or under any forcing function? What I'm

thinking about is those -- if they're risk-informed, they've used some version of something called a PRA at some time in the history of the universe to generate some quantitative basis for these surveillance frequencies. PRAs tend to evolve over time. Data, plant-specific data, generic data evolves over time. Scope and content of the PRA evolves over time. You might add a fire analysis to your PRA that might change your perspectives about certain surveillance frequencies for certain SSCs.

Does that process require a formal reevaluation of those, because they are fixed, as you mentioned. They're different than the 4b that's done on the fly, if you want to call it that way.

MR. TJADER: There is the requirement to monitor. The surveillances that have been changed, there's a requirement to monitor the --

CHAIRMAN STETKAR: Yes, but what I'm saying is every time I perform the surveillance on this pump; and I have a surveillance frequency of once every three years, you know, it's passed every time in the last 10 years, the three times that I performed that surveillance. Suppose the surveillance frequency, instead of three years, ought to be a year-and-a-quarter because of

evolution of the PRA model, not because it didn't fail in the last three times I tested it. Certainly if it had failed twice out of the last three times I'd be curious about whether or not I should go that long between tests. That's my question about --

MR. TJADER: Well, I think --

CHAIRMAN STETKAR: -- revisiting the basis for that three-year, let's call it.

MR. TJADER: -- maybe Nick could address this better than I can. Here's my perspective on that: My perspective is that the PRA is going to assess the risk significance of that equipment or component. Okay? And the PRA incorporates failure rates and things like that in coming to their numerical decision point. There are certain numericals, IDCF, or whatever. Now, what --

CHAIRMAN STETKAR: But those change. My point is; and maybe Nick is better, but my point is those IDCFs and conditional core damage probabilities, CCDPs, can change over time as both the data input to the PRA and the PRA models themselves --

MR. TJADER: Right.

CHAIRMAN STETKAR: -- change over time. The PRA model is not a fixed beast. And if it is,

that's a problem.

MR. TJADER: Well, what that will do is that PRA will then reflect the risk significance of the system. But if the surveillance still passes all the time, you know --

CHAIRMAN STETKAR: It passed every time I tested it. Three times in 10 years it passed.

MR. TJADER: Then --

CHAIRMAN STETKAR: But I've operated for a decade when according to the risk significance of this thing I should have been testing it more frequently because my measuring stick, my PRA has changed, my understanding of the risk significance has changed.

MR. TJADER: I think that if it were risk significance -- and I think the PRA would determine it would be more frequency if in fact it fails --

MEMBER SHACK: No. no. You're looking at the reliability. You're saying the reliability hasn't changed. John is saying the consequences of the failure have changed, therefore its risk importance has changed.

MR. TJADER: But keep in mind the surveillance is checked to ensure operability. And

if it passes every time you do the surveillance, that means it's still operable.

CHAIRMAN STETKAR: Suppose it fails the next time, the next three years? Now I've gone 12 years and I've suddenly decided that, oh my God, this thing has a much higher unavailability than I thought it would have had.

MR. TJADER: Well, if the surveillance had been increased and then there was a requirement to monitor the subsequent performance of that surveillance, and if it then fails, there has to be an evaluation as to whether or not that frequency needs to be reset. But keep in mind, surveillances that have not been changed in accordance with the Surveillance Frequency Control Program, that are not extended, we don't have any existing requirement to reassess the surveillance frequencies that are in tech specs right now.

CHAIRMAN STETKAR: That's true. But they're arbitrarily set by --

MEMBER BLEY: Let me narrow John's question a little bit and relate it to something else that's going on. We're going to be doing this work early on and then at some point in time the PRA is going to be finalized and the plants as-built and

you're going to be starting it up, and there's a change. There's about to be -- or sometime in the future there will be a change to Part 52 with respect to ITAACs, even though you closed the ITAACs at some point, that just before startup they have to go back and confirm that nothing has changed such that the ITAAC closures are in fact still valid. Is there going to be something like that for this set of tech specs? Just before startup are we going to have to go back and see has anything changed such that the PRA analysis that was used to establish the tech specs is still giving us the same information?

MR. SALTOS: This is part of our tech spec methodology that I would be talking next actually.

MEMBER BLEY: Okay. We'll look for that. Given the answer to that one, John's question is in the future is there some kind of updating that will be done to --

CHAIRMAN STETKAR: In other words, you've said --

MEMBER BLEY: -- keep current?

CHAIRMAN STETKAR: -- that the last bullet here is over 40 percent of the operating plants have already adopted or requested, you know,

5b, which -- so my question would apply, you know, to the current operating fleet, regardless of Dennis' concern about the period between COL issuance and fuel load, or whatever, and then on out into the future.

MR. HAMZEHEE: John, if I may say just conceptually when the staff came up in 1998 with risk-informed applications and use of PRAs, to the maximum extent practical, at that time, including the Maintenance Rules, whenever you update and upgrade your PRAs and the results change, you're supposed to go back and look at all your risk-informed applications and make sure that whatever you use from PRAs are still applicable. And if they change and your risk profile changes, then you need to go back and adjust all those risk-informed applications and programs accordingly.

CHAIRMAN STETKAR: And that's a formal requirement.

MR. TJADER: HAMZEHEE: It was -- like for maintenance, for instance.

CHAIRMAN STETKAR: Yes. Okay.

MR. HAMZEHEE: When they come out with risk significance systems, every few years they have to go back and make sure that list is still the

right list.

CHAIRMAN STETKAR: Okay.

MR. HAMZEHEE: So, now how we do it for new reactors and how we're going to formulate this, I think --

CHAIRMAN STETKAR: Well, but I mean, the process going forward for new reactors conceptually shouldn't be any different than the process, you know, for currently operating --

MR. HAMZEHEE: Because that's overall. I'm talking about overall risk informed -- specifically for risk-informed tech specs.

CHAIRMAN STETKAR: Okay. Thanks. That helps a lot.

MEMBER REMPE: How often do they have to upgrade their PRAs or change them, if there's any requirement?

MR. HAMZEHEE: There are requirements already. Nick, would you like to --

MR. SALTOS: Yes, every time they have any major change, of course they have to incorporate right away, but periodical I think every two years.

CHAIRMAN STETKAR: It's I think three years for the new reactors.

MR. SALTOS: Three years.

CHAIRMAN STETKAR: There's no formal requirement for frequency, if I'm not --

MR. HAMZEHEE: I think the reason is --

CHAIRMAN STETKAR: -- wrong.

MR. HAMZEHEE: -- for new reactors, the PRA is not a regulatory requirement.

CHAIRMAN STETKAR: Right. Right.

MR. HAMZEHEE: Only when you come out with the risk-informed application then the staff has a right to go back and question the quality adequacy of the PRA. On the Part 52, PRA is a requirement. So we have also identified the frequency at which we need to go back and update and upgrade your models and --

MEMBER BLEY: Even with current ones. So if you have a risk-informed application, Reg Guide 1.200 --

MR. HAMZEHEE: Correct.

MEMBER BLEY: -- enforces the standard which does have requirements for --

MR. HAMZEHEE: You're absolutely right.

MEMBER BLEY: -- updating the PRA on it.

MR. HAMZEHEE: That's part of the maintenance program for the risk-informed applications. You're right.

CHAIRMAN STETKAR: So even if somebody's going -- for a current operating plant if somebody adopts 5b, that's a risk-informed application. You'd fall under 1.200 and --

MR. HAMZEHEE: Yes.

CHAIRMAN STETKAR: Okay. good. Thank you.

MEMBER BROWN: You're about to leave -- you're almost finished with this, so I wanted to try to make a fundamental -- I'm just trying to wrap my hands around 4b and 5b from a bigger picture. The way I came away with all this stuff on 4b, on the risk-informed completion times, was that something happened. The train was out. Didn't lose your functionality yet, depending on the plant design. There's a set of completion times in that. And within that time you calculate your risk-informed extension, whatever that is, up to your backstop, but that's a one-time item. In other words, once it's back in service and you're back to full four trains; I'm just using that as an example since that was in the paper, you've reset back to where you were before. And now you go along and you operate for another year. The same thing happens. You have to do another risk-informed -- in other words, it's

a one-time. You execute, but it doesn't stay in place. You have to evaluate each one on a case basis as it occurs. Is that a fair --

MR. TJADER: Yes.

MEMBER BROWN: Now, on the surveillance part though is an assessment using whatever the analysis or risk-informed basis you use of you want to increase the surveillance time, that is a permanent change. You've allowed them to make a permanent change unless you've had a change in configuration of a system and/or you fail later. You fail. You know, you've gone --

MR. TJADER: Unless the monitor determines that in fact we shouldn't have increased the surveillance frequency and we need to reset it.

MEMBER BROWN: Well, if it doesn't fail, when would you ever figure out -- instead of doing it every year and now you're doing it every three years, why would you ever change it back to a year if it didn't fail in one of the three -- what's the other criteria to reset it back to one again? If you had a system change, I could understand that.

MR. TJADER: Well, if there's a redesign change --

MEMBER BROWN: That's what I meant,

right.

MR. TJADER: -- then I think probably as part of the plant change --

MEMBER BROWN: Okay. I understand.

MR. TJADER: -- then I think we would evaluate --

MEMBER BROWN: Oh, yes.

MR. TJADER: -- that every part that you evaluate, yes.

MEMBER BROWN: Yes, I understand that. I'm just saying the system has not changed. You went from one year to -- you know, we've been doing this for 10 years. It's passed every year for 10 years. You change it to every three years for whatever reason. Now you go along and 16 years, now, ooh, it failed. You have to do a reassessment. That's what I got. Now, you may decide to stay with the three years, depending on what the failure was, but you do have to do a reassessment at that time to determine whether you got to reset it backwards. Is that not -- okay. So I've got a picture of what --

MR. TJADER: There has to be an assessment. There isn't anything that says you failed, you know, the first time after you increased the frequency, therefore you have to reset it.

There's no hard statement.

MEMBER BROWN: Understood.

MR. TJADER: But I mean, if it fails twice, I think we the staff would take a pretty dim view of that extension and would encourage them to reset it, but there's nothing that --

MEMBER BROWN: You really wouldn't know it. The region would --

MR. TJADER: Yes.

MEMBER BROWN: Your regional inspectors would know that --

MR. TJADER: That's right.

MEMBER BROWN: -- presumably.

MR. TJADER: Yes. If we audited it or reviewed it and we found that, then --

MEMBER BROWN: All right. I just wanted to kind of calibrate my --

MR. TJADER: Limerick was the pilot on this and I think that they have got the program. And they have only applied this on maybe at most a dozen systems so far. So it's not like we've given them the power to do this and now they're going to go crazy. Okay? They're doing it responsibly as they should. And also, keep in mind, as I said, the intent of surveillances is that they pass when they

are performed. If you find that you don't -- if you pass a surveillance, if it's not met, actually during performance or otherwise -- if you know a surveillance wouldn't be met if it was performed in the middle, then you have to take the required action. If surveillance fails, you have to enter a condition in the tech spec. You have to enter -- what we say, enter the LCO. You then have a condition of inoperability. If you fail, there a few surveillances where there aren't conditions that apply to them. And in those few cases, then you're entering 3.0.3. Okay?

MEMBER BROWN: Okay.

MR. TJADER: Yes, so that type of thing. So the licensee does not want to fail surveillances because that means they are entering tech spec required actions they do not want to enter. They want to pass surveillances. So I don't think they're going to willy-nilly extend all of these surveillances, because then they're going to have a whole bunch more failures and they're going to have a bunch more tech spec entries and they're not going to like that, I don't think.

MEMBER BROWN: Thank you very much.

MR. TJADER: Sure. Next slide, please.

Now what this is just sort schematically is an attempt to show basically 4b and 5b. And the new issues that are raised as a result of the new reactors issues. In other words, the fact that the PRA has to be capable for applying these. And that includes the performance of peer review. Nick will get into these things.

There are procedures at the time of issuance that may not be complete. Training may not be complete at the time of issuance. And plus there's the risk metrics which I indicated we are in a parallel train path evaluating and hopefully get to the station at the same time that Comanche Peak wants to issue their COL.

So the idea for this is just to show some of the issues that are raised with the application of 4b and 5b and the effects that are associated primarily with PRAs.

The next slide. And this basically just summarizes I think what the whole thing that I've been driving to. In other words, that 4b and 5b require capable PRAs. They will not be complete until after COL issuance, sometime prior to fuel load. Plant-specific PRAs are required for new reactors. And plant-specific PRA and infrastructure

are required. They won't be ready at the time of COL issuance. Therefore, in accordance with ISG-08 a methodology is determined to be the appropriate solution for applying these risk initiatives with tech specs and to finalize the tech specs at COL issuance through a methodology which Nick will discuss.

And as I said, the backup slides deal with the initiatives in a little bit more detail.

MEMBER BLEY: I just want to whine actually, Bob.

MR. TJADER: Okay.

MEMBER BLEY: You show this slide about what do you need in the PRA. I think you ought to add Reg Guide 1.200 on your list.

MR. TJADER: Okay.

MEMBER BLEY: What is a PRA?

MR. TJADER: I'll add that.

CHAIRMAN STETKAR: It's a big deal. Thank you.

Any other questions for Bob?

(No response.)

CHAIRMAN STETKAR: hearing none, I'm sure he's relieved. And thanks a lot. You know, as much as we were babbling at you, we really

appreciate the overview, because as I mentioned earlier, it's the first time I've really seen in the four years I've been on the Committee all of the initiatives in one place in sort of an idea of how they do or may fit together eventually. And I guess after lunch we'll hear a little bit more about 4b and 5b and in particular the Comanche Peak approach.

And with that, we will recess for lunch and come back at 1:00.

(Whereupon, the hearing was recessed at 11:54 a.m. to reconvene at 1:00 p.m. this same day.)

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

1:00 p.m.

CHAIRMAN STETKAR: Okay. We are back in session and we're going to hear from the staff on more Comanche Peak-specific stuff. But I've been told that perhaps Lynn Mrowca would like to start off the discussion. Is that --

MS. MROWCA: At a higher level. My name is Lynn Mrowca and I'm the PRA and Severe Accidents Branch Chief in the Office of New Reactors. And I apologize for being later. I had another commitment that kept me until 11:00. So I wanted to be here to give some opening remarks when we started to kind of put this meeting in context.

And this idea, you think, is pretty simple that we have an applicant that comes in; Mitsubishi and then Luminant that comes in and asks for risk-managed tech specs, 4b, 5b, on something that we've approved for an operating plant and that it would be a very easy thing to just say let's supply that to new reactors and go. But it has been a long road and we've had to make some decisions. We've had some struggles along the way.

And what we wanted to do today was to share those thing with you and the points that we

had struggled with and where we are today, and to do it in this information meeting prior to meeting for the actual document review, which is probably scheduled for mid-next year, something like that. And that if you had any questions or concerns about what we're doing and the approach that we're taking, the laborious trail we got to get here, that we'd rather hear from you now than later when we come back for Chapter 19 review.

So what we on the higher level were trying to do is instead of -- typically I think the applicant goes first and provides you with I guess a summary of their application. Then the staff comes in with the review. But this being an information meeting, we thought we'd first start with Bob Tjader from the Tech Spec Branch talking about what these tech specs really are, and then from a tech spec perspective what was one of the bumps in the road? And he mentioned it already, and that was ISG-08, that tech specs must be complete at the time of COL issuance. And in the schematic that he showed it pointed out some of the differences that we found between, you know, applying for this as an operating plant and applying for this as a COL applicant, for instance.

And so we're going to go into that in more detail with Nick's talk about what some of those specific issues are and how we got to the point where we think this methodology and the deltas, the changes that we're showing in the NEI documents is a way that we can move forward and say that this is okay. We're still in the midst of our review. We still have some things to work out, but we think the concept of this methodology is the best way to go.

After we're finished with our presentation, then Luminant will come up and talk about their specific -- how this is actually written into the tech specs, the changes that they're actually making to the methodology document so you have a better idea of, you know, once we start here with our background of what tech specs are and the issues that we found and some of the resolution you'll see in the methodology document that Luminant will present. So I just wanted to give you context for why we're here and the issues that we've had on this path and to answer any questions, and hopefully hear from you any concerns that we can try and take care of now and address before we come back for tech review.

MR. MONARQUE: Okay. And with that, we'll turn it over to Nick Saltos for his presentation.

MR. SALTOS: I'm Nick Saltos from the PRA Branch in the Office of New Reactors and I'm going to be presenting mostly the risk specs of this exercise.

The following will be discussed: PRA regulations for new reactors, the Regulatory Guide related to risk-informed applications. Then I will talk a little bit on the application-specific guidance. And then I'll present the challenges for new reactors in using existing guidance. And finally, I will talk about -- I will address how these challenges will be resolved and talk about the status and the path forward.

MEMBER BLEY: Nick, are you going to talk about the Comanche Peak methodology, or are we going to wait to hear that from them?

MR. SALTOS: I'm going to talk about the methodology in general and the one that we're using for the Comanche Peak.

MEMBER BLEY: Okay.

MR. SALTOS: Okay. The PRA regulations are the 10 Code of Federal Regulations 52.79(a)(46)

which basically requires that COL applications has to contain a PRA, description of the PRA, plus specific PRA results. 10 Code of Federal Regulations 50-71(h)(1) requires that the COL holder shall develop a level 1 and a level 2 PRA that covers initiating events and modes for which NRC-endorsed standards exist one year prior to the scheduled date for the initial fuel load. And the 10 Code of Federal Regulations 50.71(h)(2) which requires that the COL holder must maintain an updated PRA.

CHAIRMAN STETKAR: Before you guys -- and I hate to do this to you, but it is an informational meeting. The first bullet up there, the COL application must contain a description of the plant-specific PRA and its results. What is a plant-specific PRA? And let me give you an example.

Suppose that the design certification PRA includes a subset of the equipment in systems. Doesn't include all of the equipment. Even though I can look at a P&ID for the design as it's available in the design certification document, if I look at all the pumps and pipes and valves in there, not all of the pumps and pipes and valves are included in the PRA model because somebody decided it was okay

to do a simplified PRA model. Because for the design certification process all I need to do is to demonstrate adequate assurance that the level of safety from my new plant design is better than the existing plants and that I have some risk-information that I could use qualitatively to do things like populate reliability assurance program lists or RTNSS lists for the passive plant so that I have a PRA that's a simplified approximation to even the information that's in the design certification. Is that a plant-specific PRA for the COL applicant?

MR. SALTOS: Well, this is the language that is used in the Code of Federal Regulations 52.79 --

CHAIRMAN STETKAR: And attorneys not risk assessors, so I'm asking you as a risk assessment professional.

MR. SALTOS: Yes. No, this is not my definition. Plant-specific -- you cannot have a plant-specific PRA at the COL application stage, in my opinion, because you don't -- it's simple. You haven't built the plant yet.

CHAIRMAN STETKAR: Okay.

MR. SALTOS: But this is the language that's taken out of Code of Federal Regulations

52 --

CHAIRMAN STETKAR: Well, if somebody comes in, let's say; and let me twist it around, and says, well, I used this design certification PRA that's named Wow and we named that design certification PRA my, quote, plant-specific PRA, unquote, and submit it at my COL application. Does that mean anything in regulatory space? In other words, when they go to load fuel, can they say, well, I have a plant-specific PRA that has been accepted by the NRC staff in the COL licensing process and therefore I don't need to make any changes to it because it is my plant-specific PRA?

MR. SALTOS: Yes, but --

CHAIRMAN STETKAR: You've had a chance to look at it, you know, at the COL application stage and you didn't identify any deficiencies that were not plant-specific. It is --

MR. SALTOS: We are aware of that. We're well aware of that. Our methodology is going to include the process for how to go there to a plant-specific PRA.

CHAIRMAN STETKAR: Okay. Good.

MR. SALTOS: They don't have a plant-specific PRA now.

CHAIRMAN STETKAR: And the methodology that you're developing --

MR. SALTOS: Yes.

CHAIRMAN STETKAR: -- would address that gap?

MR. SALTOS: Yes, to a higher level. You know, I will talk about how it's going to --

CHAIRMAN STETKAR: Well, high level is what I want to get to, because --

MEMBER BLEY: I'd like to offer one thing more: If you look at his second bullet on 50.71(h)(1), that requires that the PRA at fuel load follow NRC-endorsed standards. And I think that means the PRA you were talking about isn't the same thing as this one.

CHAIRMAN STETKAR: Right.

MEMBER BLEY: Okay.

MS. MROWCA: I'll add something to that. Plant-specific PRA, you could say maybe the Mitsubishi design, the US-APWR is the plant and so plant-specific could be used as -- you know, that could be used as the COL PRA. I like to kind of talk about it as a site-specific --

CHAIRMAN STETKAR: You mean the fact that they didn't use the BWR marked 1 PRA?

MS. MROWCA: Well, plant versus site-specific PRA. Sometimes people think that this might mean --

CHAIRMAN STETKAR: I'm sorry, Lynn. You're starting to sound more like an attorney than --

MS. MROWCA: Oh.

CHAIRMAN STETKAR: -- an engineer.

MS. MROWCA: Well, plant-specific, the difference between the DC PRA and this one for the COL application is that they address external hazards. And sometimes they address it in different ways for different design centers. So for instance, if -- like, you know, high winds, if that wasn't addressed in the DC, then -- or shown that they had a bounded value that now the COL is within, then they need to do that as part of the COL.

CHAIRMAN STETKAR: I understand that and they in principle will add -- for example, if they -- and I don't know the details of this particular applicant. I'm asking this in more of a generic sense.

MS. MROWCA: Yes.

CHAIRMAN STETKAR: That if they reconfigured their service water system or

reconfigured their off-site power supply system or something like that for a site-specific, they need to make sure that those differences are captured in the PRA, or at least addressed somehow at the COL stage. I'm asking more of a fundamental question, that the DCD PRA, for things that are completely unchanged at the COL application, you know, safety systems and things like that, is yet incomplete because it has not included all of the equipment, all of the failure modes, you know, things like that.

MS. MROWCA: Yes, and the level of detail at fuel load will be different. For instance, we have a standard that we've endorsed on seismic PRA, so we expect to have a seismic PRA and not seismic -- well, seismic margins, comparisons, but also a seismic PRA.

CHAIRMAN STETKAR: But the real key is that transition from the first bullet to the second. Regardless of whether you call a plant-specific PRA a Ralph or a Mary, or a whatever it is, it's just simply that has -- something that has a name at this stage of this process. Okay.

MR. SALTOS: Okay. Next slide includes regulatory guidance that we use in general for this

kind of risk-informed applications that we're talking about here. And these are basically risk-informed technical specifications programs which are based on staff-approved methodology. And these methods, the licensee is going to be able to use and make changes in the completion times or in the surveillance frequencies. This guidance is based primarily on the Reg Guide 1.174 on risk-informed decisions on plant-specific changes to the licensing basis and Regulatory Guide 1.177 on risk-informed changes to the technical specifications.

Guidance also is included that Bob Tjader talked about before, the Interim Staff Guidance-08 that would require that at the time of the COL the tech specs have to be complete. And Bob talked about three ways of completing those. One is the methodology. We're using this approach, this option, the methodology. We're having the application-specific guidance for these two initiatives, Initiatives 4b and 5b, which are documents and provide criteria and requirements of how to implement this tech spec programs.

CHAIRMAN STETKAR: Nick; and I have to again the lack of familiarity, those documents provide guidance about how to implement the

initiatives given an acceptable PRA, right? Do they provide any --

MR. SALTOS: They provide guidance on the PRA also. What is an acceptable PRA?

CHAIRMAN STETKAR: Okay.

MR. SALTOS: At the high level.

CHAIRMAN STETKAR: But I mean, they refer back to 1.200?

MR. SALTOS: Oh, yes. Yes.

CHAIRMAN STETKAR: Okay.

MEMBER BROWN: Is that really 06-10 or is that 04-10?

MEMBER SHACK: Typo.

MEMBER BROWN: I just wanted to make sure there wasn't another document thrown in here; that's all.

CHAIRMAN STETKAR: There is and it's 6,000 pages long and we expect a report on it next week.

MEMBER BROWN: Don't hold your breath.

MR. SALTOS: And then of course is Regulatory Guide 1.200 that we're using to -- that NRC is endorsing all this SME standards, all the PRA standards that provide guidance on how to develop an acceptable PRA for different risk-informed

applications.

Okay. Now the application-specific guidance that we have, that exists for operating reactors is mostly applicable also to new reactors, but several changes to this guidance have been proposed to address the following issues: There is several issues that stem from the difference in timing of the review of the approval process with respect to new reactors. For operating reactors is after you have the PRA, after you have the infrastructure. And this is before. This is -- you don't have the plant-specific PRA that we talked before. You don't have all the infrastructure is needed to -- in order to be able to implement this risk-informed tech spec programs.

And there are some other issues that stem from some -- for example, initial lack of plant-specific operational experience. In your plant you don't have plant-specific operational experience, although you have the industry experience. There is limited or no operational experience with novel features. You have -- in this design you have of course digital I&C, you have gas turbine steam generators for AC power, on-site AC power. You have passive accumulators as part of the

high-pressure injection.

Then there are some regulations also that impact the existing guidance. These regulations; for example, like the Code of Federal Regulations 50.71(h)(1), require that a PRA model should be developed once you have endorsed standards for additional initiating events and modes of operation that you have for operating reactors right now. And of course, there is the potential erosion of enhanced safety of new reactors, which is the risk metrics issue that is addressed parallel with this.

Now, what are the challenges for new reactors? Basically there are two main issues here. One is to have complete tech specs at the COL stage, and the other is to determine whether the current guidance, the current application-specific guidance ensure that there is not going to be degradation of enhanced safety that the Commission expects for these new reactors.

Now, with respect to having complete tech specs at the -- that are required per ISG-08 for COL applicants, existing NRC-endorsed industry guidance assumes that they're available at Category II, Capability Category II PRA. Also, application-

specific infrastructure. For example, configuration risk management tool and procedures and training and integrated risk part of -- I don't remember exactly the terminology that is used.

MEMBER SHACK: (Off microphone.)

MR. SALTOS: I'm sorry?

MEMBER SHACK: The decision making.

MR. SALTOS: Decision making for 5b. Actually it's a panel of experts that has to be established and take all the qualitative and quantitative and work them through and consider monitoring. So these are things that have --

MEMBER SHACK: Does Comanche Peak have a 5b Program for the existing plans?

MR. SALTOS: No, not that I'm aware of. They can -- so all this infrastructure that is not available at this point, but it has to be available when -- before this tech spec programs are going to be implemented I assume when the plant goes into operation. So for tech spec completeness at the COL stage an NRC-approved tech spec methodology is needed that specifies how the criteria that are addressed in the existing guidance will be met before the risk-informed tech spec programs are implemented.

With respect to the other issues that we're talking about here with the risk-informed regulatory guidance, the risk metrics for new reactors, there is higher safety performance expectations for new reactors and we need to determine whether current guidance can maintain this enhanced safety. And this is not the subject of this presentation. We're just talking about -- we're going to continue discussing the issues we have with respect to have complete tech specs at the COL issuance.

MEMBER BROWN: You're talking about the risk metric guidance in general here, not necessarily as it applies to completion times and/or surveillance frequencies. I was trying to decouple this.

MR. SALTOS: We're talking in general, but is a crucial input to this --

MEMBER BROWN: Well, no, I understand that.

MR. SALTOS: Yes.

MEMBER BROWN: It's just that completion times --

MR. SALTOS: Yes.

MEMBER BROWN: Inherent safety

expectations don't necessarily -- from a plant design standpoint, these are somewhat administrative things in terms of how you operate, how you check stuff or how long before you -- how long you allow somebody to go on. There was a differentiation relative to this enhanced -- you didn't want to degrade your enhanced capability, theoretically the new reactors, and I didn't -- just maybe I wasn't thinking broadly enough that this really degraded that fundamentally enhanced design feature.

MR. SALTOS: Well, if you extend the completion intervals more and more and you extend the surveillance testing intervals more and more, you -- eventually you will degrade --

MEMBER BROWN: Oh, yes, on the limit.

MR. SALTOS: And the point is that this regulatory guidance, the risk metrics, they put some thresholds out there so they don't go -- the risk that is accumulated --

MEMBER BROWN: My biggest concern is the risk metrics is not here. But was on actual -- what you expect out of a -- systems we're putting in where you're -- or the analyses that you use where you --

MEMBER SHACK: This is the man that dies

over 30 days for the DAS.

MEMBER BROWN: I'm still dying over 30 days. Well, that because they had no DAS left after -- you know, for 30 days and that wasn't a matter of having one. It was nothing left for 30 days. So that was a functionality issue, not a 30-day put-a-stake-in-my-heart issue. I'll take the stake out every now and then. But they're different. That's all I'm -- we can argue some more later, I'm sure.

Thank you. Just trying to calibrate myself; that's all.

MS. MROWCA: Yes, and these two things, like Nick said, they're running in parallel. The second one was already presented in front of the ACRS Subcommittee on PRA and reliability.

MEMBER BLEY: Oh, yes.

MS. MROWCA: I don't remember how long ago. Not that long ago.

MEMBER BLEY: Not very long. You know, it seems like as soon as I see -- that was said with tongue in cheek, in jest, sort of.

CHAIRMAN STETKAR: Okay. Next slide?

MR. SALTOS: Okay. Now the changes to existing guidance to ensure complete tech specs at the COL issuance involve additional guidance with

respect to the following items: PRA technical adequacy; application-specific infrastructure; PRA scope and standard; and uncertainties associated with novel features and lack of plant-specific operational experience.

MEMBER SKILLMAN: Nick, I'm Dick Skillman. Like to ask a question, please.

Is this information Tier 1, Tier 2 star or Tier 2? Where does this fit?

MR. SALTOS: My understanding is Tier 2, but it's tech specs basically. Maybe Bob --

MR. TJADER: Yes, tech specs are Tier 2.

MEMBER SKILLMAN: Thank you. That's all I have. Thanks.

MEMBER BROWN: Yes, but the place where they're incorporating stuff is in Tier 1, Part 4. That's where the Luminant stuff -- at least that's where I extracted this 5.5. program stuff.

MR. WOODLAN: That's in COLA Part 4.

MEMBER BROWN: Yes, COLA Part 4.

MR. WOODLAN: Right. Tier 1 is DCD.

MEMBER BROWN: Oh, okay. All right. I stand corrected.

MEMBER SKILLMAN: I asked the question because I was trying to test in my own mind if the

applicant goes down this path; this is the first applicant to have this process in place, if they make a change, do they have to come back to the staff, or can they make that change on their own as they do in Tier 2 with a 50.59-like process? It sounds like it's really Tier 2, but there might be some strings attached to it.

MR. TJADER: Well, the tech specs are a part of the license.

MEMBER SKILLMAN: Understand that.

MR. TJADER: So if they make a change, any change at all to the tech specs, it is a license amendment. They have to come back to us. Now, tech specs obviously cover systems that are -- you know, and programs that might be Tier 1, but the specs themselves are considered Tier 2.

MEMBER SKILLMAN: Thank you. Thanks for the clarification.

MR. SALTOS: Okay. PRA technical adequacy. Risk-informed tech spec programs require PRA models which realistically reflect, to the extent practicable, the as-built, as-operated plant. And we know that the PRA capability, the required PRA capability required for a certain risk-informed application depends on the application itself. And

these capabilities are identified in the application-specific guidance, like the guidance that we talked before for the two initiatives, 4b and 5b.

The PRA is peer reviewed per NRC-endorsed guidance. So this PRA is not considered peer reviewed yet, although it is reviewed -- the design certification and the COL application PRA is reviewed by the staff, it is reviewed by the ACRS, but is not considered peer reviewed. And the peer review is going to happen sometimes before -- at least a year before fuel is put into the reactor and it is going to be an integral peer review. Is not going to be just part of it, parts done later or anything like that. It's going to be everything from scratch basically.

CHAIRMAN STETKAR: But the staff will not separately review that PRA, will they, perform a review of the PRA?

MR. SALTOS: My understanding is that they are not going to put fuel in and perform a review per se, but they can audit the PRA. As part of this initiative the PRA is available anytime the staff they feel like going to the site.

CHAIRMAN STETKAR: No, I understand

that. Yes.

MR. SALTOS: And the other thing is typically operating reactors requesting NRC-approved risk-informed programs such as the risk-management technical specifications have plant-specific PRA models with a required capability available. But that's not true for new reactors. New reactors do not have at the COL stage detailed plant-specific PRA models needed to support risk-informed tech spec programs.

As-built, as-operated information is not available at this stage. Design certification and COL PRAs may not be detailed enough to support the risk-informed programs such as this that we're talking about here. Risk-informed tech spec programs have specific PRA capability requirements. For example, in order to be able to implement risk-managed tech specs, the PRA has to be able, capable of assessing configuration-specific impacts. In other words, the systems have to be modeled. Some assumptions about relative significance -- this is not significant with respect to another one, therefore, I'm not modeling it. That can screw up the --

CHAIRMAN STETKAR: Things like assuming

pump A is always running and pump B is in standby messes things up.

MR. SALTOS: Yes, well, this is --

CHAIRMAN STETKAR: It does.

MR. SALTOS: Okay. But there are issues. For example, I modeled the operating error, which is 10 to the minus 2, or minus 3. Why should I model the failure of the equipment themselves, with an order of magnitude less or more, which, if you're using that to calculate configuration-specific impacts, can make a big -- the other thing is asymmetries. There are many asymmetries in the -- especially in this PRA. Always this train fails. But that's not true. So this can screw up the calculations and the results if -- has to be addressed before the PRA capability support is -- this application --

CHAIRMAN STETKAR: Nick, have you seen -- I'm assuming that -- well, maybe that's the wrong term. Have peer reviews been done of PRAs for currently operating plants that have applied -- I know 4b has not been applied very much, but at least 5b. Is there guidance for those peer reviewers out there to be sensitive to these types of issues?

MR. SALTOS: For sure there is a

guidance to meet a Category II, the Category II PRA. But also, the application --

CHAIRMAN STETKAR: But in some sense you can meet a Category II PRA, I think --

MR. SALTOS: Yes.

CHAIRMAN STETKAR: -- and still --

MR. SALTOS: Yes.

CHAIRMAN STETKAR: -- and still have some of those issues that you were just talking about, artificially-induced asymmetries and things like that.

MR. SALTOS: Yes, the rest is included in the application-specific guidance. For example, in order to be able to use for risk-managed tech specs to extend the completion times, you -- it says -- it provides guidance on how to make sure that all these systems that are in 4b are included in our model. You understand if there are any weak points in the model. You understand the uncertainties. You consider the uncertainties. If you are not sure about the uncertainties, how big they are, then may conservative assumptions. So all included, there is a guidance there that is not in the -- it talks about they have to have this configuration --

CHAIRMAN STETKAR: I was just curious

because the staff relies quite a bit on the quality and experience of those peer reviewers as a surrogate for an in-depth staff review of the PRA with audits performed by whomever performs the audits. I was just curious whether you had any actual real world experience from the current operating fleet on how effective those peer reviews may be in identifying some of these concerns, because the concerns are not unique to new plant PRAs.

MR. SALTOS: Oh, yes.

CHAIRMAN STETKAR: They're concerns, you know, that apply to --

MR. SALTOS: Except for novel features, of course.

CHAIRMAN STETKAR: Oh, yes. But that's right.

MR. SALTOS: Yes.

CHAIRMAN STETKAR: But I mean in terms of the basic structure of the PRA, level of detail, level of reality in terms of scope of the equipment modeled, you know, operating versus standby and that sort of thing, assumptions about, well, I don't need to model that valve because I don't think I need to model that valve. I was just curious about whether

there was any experience from looking at peer reviews that have been performed to support risk-informed tech spec, you know --

MR. SALTOS: Yes, I think the peer reviews --

CHAIRMAN STETKAR: -- applications for the operating experience to give you -- essentially to give the staff confidence that that peer review process will work such that, you know, in this first-of-a-kind application for a new reactor it's kind of okay to rely on that.

MR. SALTOS: Okay. I think the peer reviews are done primarily to meet certain capability category. Like for this application, both for 4b and 5b capability, Category II is needed. I don't think that that peer review is done to make sure that all the systems are modeled that are required for the application or to make sure there are not some weak points in the model that might impact the results of the applications. Although I think if they had -- if some licensee is on detail and significant number of new systems in the model or made a more detailed model, is required to have a supplemental peer review.

CHAIRMAN STETKAR: Okay.

MR. SALTOS: But at least for the plants that initially requested to implement these initiatives, I know that the staff went and audited the PRAs for at least a week, and I participated in three of those. And we were a group of 15, with contractors also. So although these plants were plants that had significant long experience with PRAs, using the PRAs, and they had this and send us many license amendments. And pretty much maybe it was as piecemeal, but we knew the PRA. A little of the fact for every license amendment we received, we had a different part of the PRA. So we felt pretty confident that they would have a good PRA to use.

CHAIRMAN STETKAR: Okay. Thanks.

MR. SALTOS: And for the reasons we talked before, there must be guidance included in the COL that specifies how this criteria that I included in current existing guidance regarding the PRA model are met before these applications are implemented. For example, before fuel load. And this guidance should specifically address the unavailability of information at the COL stage with respect to the criteria in existing application-specific guidance.

Application-specific infrastructure.

New reactors do not have, as we said before also, at the COL stage detailed infrastructure needed to support the risk-informed tech spec programs such as risk-managed technical specifications.

Examples of needed infrastructure are a tool to track and calculate configuration-specific impacts for Risk-Managed Technical Specification Program and integrated decision making for the Surveillance Frequency Control Program. Therefore, there must be guidance included in the COL which specifies how all criteria regarding infrastructure that are addressed in the application-specific guidance are met before we go ahead with implementing these initiatives.

PRA scope and standards. Per Code of Federal Regulations 50.71(h)(1), new reactors are required to -- that the PRA must cover those initiating events and mode of operation for which NRC-endorsed consensus standards on PRA exist one year prior to the initial loading of fuel. Consensus standards are currently available for external events and internal fires and floods and have been -- and are being developed also for Level 2 PRA and other modes of operation.

CHAIRMAN STETKAR: How do you handle --

all right -- current technical specifications apply not only during plant power operation, but they also in many cases -- and I haven't looked at the APWR, but I assume it does apply to certainly some systems during shutdown modes. There is currently no guidance, endorsed guidance available for PRA for shutdown modes, not to mention, you know, the evaluation of fires and floods and everything else that can happen during plant shutdown. I don't know whether in particular the scope of -- I assume, because it's just a process, in principle applies to risk-managed technical specifications for Comanche Peak during shutdown also. Is that correct?

MR. SALTOS: Not for 4b. 4b is basically when you're at power.

CHAIRMAN STETKAR: Well, but doesn't --

MR. TJADER: Most of this -- the risk-management tech spec initiatives are designed primarily for at power operations.

CHAIRMAN STETKAR: I know what historically what they've been designed for, but don't the tech specs also have completion time requirements for equipment that's out of service during shutdown modes?

MR. TJADER: Yes, there are a few of

those, but I mean --

CHAIRMAN STETKAR: There are a few.

MR. TJADER: There are a few, but 4b is not --

MR. SALTOS: Is not applicable there. It's applicable to Mode 1, 2, 3 basically for PWR.

CHAIRMAN STETKAR: Okay. So if I look in the Comanche Peak tech specs, I won't see under any of the shutdown mode conditions that reference to -- I always forget the numbers, but whatever the 5.5. something or other. Is that right?

MR. TJADER: Yes. Well, no, not for shutdown. In fact, the specs that cover Modes 1 through 4, there are notes where we apply risk-informed completion time. There are notes that explicitly exclude Mode 4.

CHAIRMAN STETKAR: Okay.

MR. SALTOS: Okay. So they're not applied for shutdown except 3, Mode 3, of course.

CHAIRMAN STETKAR: Okay. I haven't -- as I said, I didn't look at the specific tech specs and test that, but that solves my concern. Because if it was just generically listed everywhere through all modes as, you know, if you don't need X or Y or the risk-informed completion time, then it would be

a real problem during shutdowns. Thanks.

MR. SALTOS: Of course for 5b you need to consider the shutdown risk also for surveillance testing evidence. You have to consider the risk from all sources from all initiators for all modes of operation. But that's the good thing for the new reactors is -- for the new reactors they're going to have more detailed PRAs because standards have been developed for -- already they've been developed for example for internal fires. They've been developed for Level 2. They're going to be developed for shutdown by the time -- for seismic also. Operating reactors don't have that. Operating reactors, they have to use qualitative and semi-qualitative and bounding type analysis regarding many external events, even including internal fires.

CHAIRMAN STETKAR: Yes, that's true.

MR. SALTOS: So here --

CHAIRMAN STETKAR: You know, I'm aware the standards for Level 2 and shutdown are being developed in the sense that the age of the universe is also increasing. The question is, you know --

MEMBER BLEY: There was a draft 12 years ago.

CHAIRMAN STETKAR: Yes, it was --

thanks. If we're confident that indeed those standards will reach fruition before -- and because this is the first and only so far, you know, within one year before Luminant loads fuel, which I recognize is also somewhere out in the future, that's okay, you know? But just saying positive statements that they're being developed doesn't necessarily mean that we won't be having this discussion, you know, one year prior to their loading fuel just because the standards haven't made it yet.

MR. SALTOS: If there are no standards for some initiating event, they are going to use the bounding approach that we use with operating reactors.

CHAIRMAN STETKAR: Well, but if they're not going to be for shutdown PRA, it's not clear at all how you use a bounding approach quantitatively, for example, to 5b.

MR. SALTOS: Well, it's been used -- for 5b it's been used.

MS. MROWCA: And for instance, 50.71(h)(1) says that they shall develop a Level 1 and Level 2 PRA. So even if a Level 2 standard isn't available, they'd still have to develop one.

CHAIRMAN STETKAR: That's interpreted as a quantitative PRA.

MR. SALTOS: Oh, yes, if there are standards, PRA standards for that, there's going to be a quantitative -- it's going to be --

CHAIRMAN STETKAR: I'm more concerned about the shutdown stuff.

MR. SALTOS: Because of these reasons there must be guidance included in the COL to ensure that the COL licensee will use results and insights from the available detailed PRA model in implementing risk-informed tech specs programs and not making bounding analysis like operating reactors. So this is a change also in the plant application-specific guidance.

Okay. Another difference now with respect to operating reactors is treatment of uncertainties. Of course, operating reactors have to consider key uncertainties in their methodologies that are used to extend completion times and surveillance testing intervals, but here we have some additional stuff. We have novel features, novel design features, but we don't have operational experience or not much operational experience or operational experience in this country. And also of

course we don't have plant-specific operational experience.

MEMBER BLEY: So when they do their PRA at this stage to use for tech specs; and let's say for initial lack of operating experience and information they don't have operating procedures, they don't have a crew, are you expecting them to account for the range of possible situations associated with those procedures to incorporate something in their uncertainty analysis to show that depending on how the training and procedures are all put together the results could be fairly high or fairly low in terms of risk?

MR. SALTOS: Well, the procedures are going to be developed by the time that the plant comes into operation.

MEMBER BLEY: They will, but not by the time they develop the tech specs based on the PRA that they have for the COL. I mean, they're using a PRA now --

MR. SALTOS: Yes, but the PRA is --

MEMBER BLEY: -- to develop their tech specs, so I'm reading this -- I'm hoping that when I read "uncertainty" here that we're counting on them to include some extended uncertainties on these

issues that aren't yet established.

MR. SALTOS: Well, no, it does include uncertainty for not developing a procedure or developing a procedure that is not good. These uncertainties are included here. We assume that they're going to develop the procedures and the procedures are based on assumptions made in the PRA. And if they are developed according to these assumptions and -- they're supposed to be --

MEMBER BLEY: Last time I looked at --

MR. SALTOS: They're not supposed to come uncertainty.

MEMBER BLEY: I haven't looked at the PAR for US-APWR yet. I've looked at several other DCD PRAs and the HRA analysis wasn't in any way specific about assumptions about procedures. It was a fairly sketchy rough HRA that needed to be extended once procedures and training were in place. So it didn't even say what it thought things would like. It just was a real cursory analysis.

MR. SALTOS: Yes, that's possible. And this is an issue that is related to the PRA, to have a capable PRA. PRA capability, in other words.

MEMBER SHACK: But I mean, let me just -- I'm assuming that the actual tech specs will be

formed on the fuel load PRA. It'll have nothing to do with the COL PRA. Your process will be set up so that they will develop that, but the actual numbers, for example, would come out of the fuel load PRA, not the --

MEMBER BLEY: ISG-08 requires the tech specs to be --

MR. SALTOS: I think their procedures are not developed based on the PRA. The PRA insights are good.

MEMBER SHACK: No, but to say the 5b surveillance frequencies which comes out of the fuel load PRA. What will go into this thing is a process for doing that. At least that's the way I'm thinking that it's happening.

MR. SALTOS: Yes, we're talking about procedures for how -- for example, the operator is going to -- what to do here is --

MEMBER SHACK: Well, but I keep hearing Dennis saying the COL --

MEMBER BLEY: No, you're right. You're right.

MEMBER SHACK: -- and the COL PRA has really nothing to do with this.

MR. TJADER: Keep in mind surveillance

frequencies in the program, the initial surveillance frequencies are the standard tech spec frequencies.

MEMBER SHACK: Right.

MR. TJADER: Okay? And the completion times, the front stop completion times are those in the standard tech specs --

MEMBER SHACK: And -- okay.

MR. TJADER: -- or that we approve in the review process, primarily standards. So, I mean, there's nothing contingent upon PRA at that point or existing frequencies and --

MR. SALTOS: Of course if the plant-specific PRA finds something is wrong with a procedure or with the tech specs, probably will point it out.

MEMBER BLEY: Thank you. Very good. No, I back off of everything I was saying a moment ago.

CHAIRMAN STETKAR: Nick, one thing: You say -- we've had numerous discussions about how one models digital I&C systems in a PRA. And in the sense of standards for shutdown PRA and Level 2 PRA, it's not clear to me what the future holds in terms of kind of a consensus on methods of how to do that. When you say in that second bullet that additional

guidance is needed to account for novel design features, for example, digital I&C software, I think I know how to handle a gas turbine generator in particular and I think I probably know how to handle an advanced passive accumulator. I'm not sure I understand how to handle digital I&C software.

So in the sense of this particular presentation and this particular application, do you mean that within the context of the Comanche Peak COLA they will need to have explicit guidance on how to treat uncertainties in particular on digital I&C?

MR. SALTOS: In particular the digital I&C software. Digital I&C software -- digital I&C system in general, but the software in particular is modeled in the PRA design certification. The COL is going to continue to be in there in the final plant-specific PRA. But this is a very small number. There is -- the basic software has a probability of 10 to the minus 6, I believe.

CHAIRMAN STETKAR: Yes, but that's a number in the sense that it's just a number.

MR. SALTOS: Yes, it's a number.

CHAIRMAN STETKAR: It's a place holder that everybody recognizes as simply a place holder. That doesn't mean anything. It's just a box. Okay?

MR. SALTOS: Yes, but -- yes and no, because when you use the methodology to extend your testing intervals, this number might have a very --

CHAIRMAN STETKAR: Okay. But again, that gets back to the whole purpose of the design certification PRA in regulatory space is only to give us adequate assurance that the safety of the new plant design has been evaluated and we have assurance that it's improved safety over currently operating plants. That's why I've seen applicants come in. It's not used for anything. So that 10 to the minus 6 number, you know, could be a 10 to the minus 3 number and you could still have adequate assurance that this plant design is substantially better than current operating plants.

So the fidelity in that number really doesn't mean anything unless it's identified as a very, very risk-significant issue. It's safety-related, so it's in the tech specs. So you don't have to worry about its significance for RTNSS or DRAP or any of that kind of stuff -- DRAP in this sense.

MR. SALTOS: It might make a difference in decision making.

CHAIRMAN STETKAR: Not necessarily at

the design certification stage.

MR. SALTOS: No. Oh, yes. Of course.

CHAIRMAN STETKAR: But now as we transition to that; and not at the COLA stage, because we're not using the PRA for anything at the COLA stage, at the fuel load stage, at that time when we're actually going to use that PRA, whatever we call it at the -- the fuel load PRA, let's call it, then we need to have assurance that we either have adequately detailed models for the digital I&C hardware and software that meets some sort of PRA standard, or that we have in place, as you characterize it here, guidance so that we understand how to address either incompleteness in those models or uncertainties.

Now, my question now, backing way up to where we are now, or you know, the process that we're going through in real time now, is do you expect the -- in this particular case, Luminant, as the COL applicant, to have in their COL application a methodology that the staff can review and accept on how to address uncertainties for digital I&C?

MR. SALTOS: Yes.

CHAIRMAN STETKAR: You do? Okay.

MR. SALTOS: And they already have

included --

CHAIRMAN STETKAR: Okay. Okay. But that's something that --

MR. SALTOS: I don't know if they're talking digital I&C specifically, but --

CHAIRMAN STETKAR: Uncertainties in other -- like I said, I can handle gas turbines. I, you know --

MR. SALTOS: Well, yes.

CHAIRMAN STETKAR: But because we've been struggling with this notion, the fundamental notion of how to model digital I&C --

MR. SALTOS: Well, we're not going to discover something new here, but because we cannot -- we don't know how to model the system in details, does not mean that we cannot plug a number in there that is defendable and we -- and experience can support. Ten to the minus -- I think it's ten to the minus seven for the basic software. Ten to the minus seven might be a good number, but we don't know. It's very --

CHAIRMAN STETKAR: Well, or it might --

MR. SALTOS: -- very shaky now.

CHAIRMAN STETKAR: Or it might be one under some types of scenarios.

MR. SALTOS: Well, I don't --

CHAIRMAN STETKAR: So, that's a range.

MEMBER BROWN: How can anybody --

MR. SALTOS: No, it seems to me that a number 10 to the minus 4 is definitely defendable based on --

CHAIRMAN STETKAR: Or it might be one under some scenarios.

MR. SALTOS: One? I don't see any scenarios.

MEMBER BROWN: Well, just a minute. Hold it. I mean, you're talking about modeling or a failure number for software; 10 to the minus 4, 10 to the minus 5, 10 to the minus 6, when you don't -- there's no basis for that. I mean, software -- what type of failures are you looking for? I mean, whether you've got an interrupt-driven system, whether you've got a fixed sample time system, whether you've got -- whether type of data that comes into, whether you've got analog data being moved from one microprocessor to another, whether you've got high-speed serial data links, all of that's different. And how you can come up -- anybody walks up to me and says 10 to the minus 7, okay, I would throw up on that; and excuse my being

graphic, but I think that's just an unreasonable number.

MR. SALTOS: Yes, that's the reason that we want this -- instead of this number to use a number that is more -- is defendable when they do the calculations to determine how much they can extend this surveillance testing interval or this completion time. Because 10 to the minus 7 is not -- to me is not acceptable.

MEMBER BROWN: I spent 22 years --

MR. SALTOS: Might be through though, I don't know.

MEMBER BROWN: Just a minute. Okay? I spent 22 years on 40 different systems, okay, trying to come up with perfect software. Tested it, tested it. We tested it for two-and-a-half years constantly in an active plant -- a set of equipment with real hardware and we kept coming up -- for two-and-a-half to three years we kept detecting errors in the code. And we'd go fix it. Then we'd test it some more and another error would pop up. They just kept popping up. I mean, there was a lot of them at first and then, you know, it gets less and less. But they never go away. And this was -- we're talking 10,000, 15,000 lines of code, not a half a

million or 200,000. So, you know, tossing a number in, you know, like that and say, hey, we can predict the performance of this code under all these various circumstances is --

MR. SALTOS: Well, we have experience --

MEMBER BROWN: I'm sorry, I lost the bubble here for a minute. I get very excitable because we just said it's never going to work perfectly, so we just assumed it failed. It was one and we designed our systems and our architectures to handle that.

MR. SALTOS: If you assume one software failure, then you have a CDF of 10 to the minus 3 or something.

MEMBER BROWN: Sorry.

MR. SALTOS: But that's not realistic.

MEMBER BROWN: That's life in the big city.

MR. SALTOS: This is not going to be --

CHAIRMAN STETKAR: I think, you know, we're drifting a little bit off here, but it is relevant. I was more trying to understand within the scope of this COL application when you say "additional guidance is needed to address uncertainties," you know, in particular because of

the parentheses there, about --

MR. SALTOS: Well, that's an example.

CHAIRMAN STETKAR: -- digital I&C software. But I mean, it is an example, but it's probably -- it's a very, very difficult -- there could be a very, very difficult example, as you can imagine here.

MR. SALTOS: If they --

CHAIRMAN STETKAR: And the question is how -- you know, what is the expectation, and let's just focus -- you know, get myopic on that topic. What is the expectation --

MR. SALTOS: Well, user number. User number is 10 to the minus 7. Use 10 to the minus 4. I think 10 to the minus 4 can be defended based on industry experience with I&C software. And the way that this software has been developed and verified and --

CHAIRMAN STETKAR: Okay. I guess -- but I think, you know, wanted to some feedback from --

MS. MROWCA: Yes.

CHAIRMAN STETKAR: -- the Committee in terms of, you know, prescriptive things like, well, we'll use the 10 to the minus 4 instead of 10 to the minus 7 may not be --

MS. MROWCA: Or understanding the impact on how sensitive something is.

CHAIRMAN STETKAR: May not be the appropriate way to do it.

MEMBER BLEY: I think they're you're getting to something. I think --

MS. MROWCA: Because that's the bottom line --

MEMBER BLEY: Our committee has been on record for the last few years of saying until we really understand the failure modes and digital I&C software doing meaningful reliability modeling of that is extraordinarily difficult or has great uncertainties, maybe more than we're normally willing to acknowledge. I think on tech specs that are related to things driven by digital I&C software it's going to be tougher to make -- to treat the uncertainty in a way that is really convincing, but as you were just saying, then there are ways to bound off the problems so that you could still deal with things you can calculate well and use that to do a better job.

MS. MROWCA: It may not impact the AOT that you're specifically looking at.

CHAIRMAN STETKAR: Exactly. Right.

MR. SALTOS: Exactly. Not all tech specs are impacted equally.

MEMBER BLEY: That's right. That's right.

MR. SALTOS: Exactly that's my point here. If you look at my bullets down there, basically that's trying to say that having key sources -- identify a list of key source of uncertainty and then characterize this key source of uncertainty using sensitivity and importance analyses results, use appropriate conservative, defendable though, reliability data for novel features and calculations, and then incorporate plant-specific experience into the PRA as it goes as you get more operational experience. So sensitivity -- of course, the sensitivity is very important and the importance is very important. And operating experience with software is very important. We don't have zero experience with software, with digital I&C. I believe we have significant experience. Even in the nuclear industry we have some, but also in the defense industry and the airline industry.

MEMBER BLEY: Well, we do, but there are -- and that experience is sometimes pointed out that

if for odd reasons the input information into those systems isn't within the range it was tested; and it could be that it's erroneous information coming in, you don't know what's going to come out the other end. And sometimes it's been very uncomfortable.

MR. SALTOS: Yes, my understanding is that these software are tested extensively though for operations --

MEMBER BLEY: Extensively under expected conditions. When the input conditions, which are signals, turn out not to be in the range of expected conditions for operations, very uncomfortable things happen. And that's happened in systems in all walks of life, not just in nuclear and in automobiles and airplanes and medical.

CHAIRMAN STETKAR: And even what we've seen from the nuclear stuff there doesn't seem to be extensive testing of the type that Dennis is talking about. It's within design basis parameters and --

MEMBER BLEY: And you can't test for all --

CHAIRMAN STETKAR: And you can't test for all possibilities.

MR. SALTOS: Yes, I understand, but that's the reason we have a probability

favorability. Because if we follow the results of the tests, we will have zero probably. The number would be basically zero.

MEMBER BROWN: You have to get down to the details. I mean, even selecting on software, basically you would start to exceed a range where you get unexpected data. The default value programmed in can totally screw up your system. If you default to the wrong number, all of a sudden that default number can bias everything else that goes on. And I know that because we made that mistake, okay, and had to recover from it.

So, I mean, there's subtle little pieces in programming and expected data that's going to be coming through. It's just -- it's very, very difficult to anticipate. And Dennis is right on the money. I mean, if you get -- some of those values change a little bit or somebody doesn't think of some outside-the-box circumstances, it just doesn't work right. Just burps. I mean, the only way to really defend yourself on that stuff --

MR. SALTOS: -- have a diverse actuation system that is --

MEMBER BROWN: Well, that's the point: You want independence and you want diversity. And

there you can model as long as you maintain -- you got four trains, for protection channels. As long as those are truly independent from each other, you can -- I think you can draw some plausible conclusions. And then you add a diverse system in place. Now you have a boundary set of conditions that you can work with, and I think you can model that type of stuff. But if you allow -- and I'm going to back to this other one, the diverse system, to be out of --

CHAIRMAN STETKAR: Charlie?

MEMBER BROWN: -- service, then you're back to square one. Anyway, I'll quit now.

CHAIRMAN STETKAR: Let's --

MEMBER BROWN: I know, you want --

CHAIRMAN STETKAR: Well, but --

MEMBER BROWN: We need to get on.

CHAIRMAN STETKAR: Well, you know, we still have ongoing discussions, obviously, on modeling digital I&C and PRA. And I hate to say it, but nobody sitting up in the front of the room is a digital I&C person, so --

MEMBER BROWN: No, I understand that.

CHAIRMAN STETKAR: We've got a couple more slides to get through on this, so let's try to

do that.

MR. SALTOS: Yes.

MEMBER BROWN: Well, I'm just trying to emphasize from somebody who's got 80 reactor plants with 80 sets of protection equipment out there that I was responsible for for 22 years, it was not painless and we had burps all the time that we had to deal with. And if you think we have an extensive knowledge of who else has that long of a history of stuff and still finds it difficult to say this is going to perform the way we think it is, even though we have all these magic rules in place, it's very -- and the V&V that you do on it, very difficult. So I'm just trying to communicate that as an experience factor to those who haven't had to live with it and had phone calls at 2:00 in the morning from a submarine in the middle of the Indian Ocean where their stuff is broken. It's just no fun. Excuse me.

MEMBER BLEY: (off microphone.)

MEMBER BROWN: Huh? What was that?

MEMBER BLEY: It's an old joke. That's two.

MEMBER BROWN: Oh, okay.

MR. SALTOS: How we propose to address

the new reactor challenges. For the first big issue that we have; that is, to ensure completeness of technical specifications, we propose to -- actually we been developing Comanche Peak with our review also is development of tech spec methodology document as part of the COL. This we intend to incorporate by reference the existing application-specific guidance; for example, NEI 06-09 for risk-managed tech specs, into the tech spec methodology document and include the additional regulatory guidance. That is, the changes that we talked about before into this tech spec methodology document. And incorporate this tech spec methodology document into the tech spec administrative controls.

CHAIRMAN STETKAR: And that roughly, I guess, eight-page document that we've seen a draft of is that document?

MR. MONARQUE: This is the June 30 document. This is the Luminant letter dated June 30.

MR. SALTOS: The Luminant --

CHAIRMAN STETKAR: That is --

MR. SALTOS: This is not complete yet.

CHAIRMAN STETKAR: Okay.

MR. SALTOS: Okay. With respect to the

risk-informed regulatory guidance risk metrics, we have proposed options and requested Commission directions; have been obtaining stakeholder input; working on response to staff requirement memorandum; and the staff response to the staff requirement memorandum is due June 2012.

Status and path forward. Luminant submitted draft tech spec methodology document in June 2011. The staff reviewed Luminant's proposed tech spec methodology document and prepared request for additional information in September 2011. We're continuing to work with Luminant on the development of an acceptable tech spec methodology document.

MEMBER BLEY: Will this be -- this document, given you approve it, essentially part of the COL, would it get tied into the tech spec chapter?

MR. TJADER: It'll be referenced in the tech spec --

MEMBER BLEY: Okay.

MR. SALTOS: Yes, in administrative controls part. That's right.

MEMBER BLEY: Okay.

CHAIRMAN STETKAR: And your SER for; I'm take a shot at it, Chapter 16 would -- essentially

it isn't being reviewed as a separate -- like a topical report, is it? It's just --

PARTICIPANT: Oh, so it'll be part of the --

CHAIRMAN STETKAR: It'll be part of the Chapter 16 review.

PARTICIPANT: Oh, okay.

CHAIRMAN STETKAR: So all the RAIs that are generated relative to that methodology will come under I guess Chapter 16?

MR. SALTOS: Well, right now we are on Chapter 19.

CHAIRMAN STETKAR: One of the two.

MR. SALTOS: I don't know where exactly it would go.

MR. MONARQUE: And I think will 16 will refer to 19.

CHAIRMAN STETKAR: Okay.

MR. MONARQUE: But both documents will be tied in --

CHAIRMAN STETKAR: I mean, the key is this isn't being treated as a separate -- essentially as a separate topical report or anything like that.

MR. MONARQUE: No, it's not a topical --

CHAIRMAN STETKAR: It's just folded into the --

MR. TJADER: And both Tech Spec Branch and PRA Branch have reviewed and commented on that.

MEMBER BLEY: Since we just tossed those words around, can you give us a little summary of the kind of RAIs? You know, is there anything really substantive that you and Luminant are trying to work out now on this methodology?

MR. SALTOS: Actually we're talking I guess Luminant. But I can give you a couple of examples. They fail primarily to uncertainties --

MEMBER BLEY: Yes.

MR. SALTOS: -- especially uncertainties to how you treat the key uncertainties with respect to novel features. This is an important issue in there.

PARTICIPANT: (off microphone.)

MR. SALTOS: Oh, okay. Thanks.

MS. MROWCA: Do you want us to go over it in more detail now or do you want to --

CHAIRMAN STETKAR: It's really up to you --

MS. MROWCA: -- ensure that Luminant has

CHAIRMAN STETKAR: -- because it's kind

of a preliminary interim --

MS. MROWCA: -- a chance to discuss --

CHAIRMAN STETKAR: Yes.

MS. MROWCA: -- their part? We still have a presentation from Luminant.

MR. MONARQUE: We've not received Luminant's response to the RAIs yet. They're not going to give it to us until June -- until November, rather.

MEMBER BLEY: Well, let's see if they mention them when they're up.

MR. MONARQUE: Okay. I'll be glad to answer them.

MR. SALTOS: Yes, and of course they're on the PRA developing an acceptable PRA. There are questions on all these elements that I discussed before.

CHAIRMAN STETKAR: Okay.

MS. MROWCA: We just wanted to get --

CHAIRMAN STETKAR: But I think in the -- the only thing I'm trying to do is keep it a little bit careful because, you know, it's a public meeting on the record. Obviously you're in the early stages of asking RAIs about a developing document and we haven't had the opportunity to see any of this, and

we won't, you know, until it reaches a better degree of finality.

MS. MROWCA: I think our main purpose today was on the concept of the use of the methodology and to give you an idea of what's in it, and if you have any questions or concerns about that today.

CHAIRMAN STETKAR: Do any of the members have anymore questions for the staff?

MEMBER BLEY: Yes, I do, and mine deal with this trying to come to grips with what we have at COL time, what we're going to have later. Once we're doing with the COL, you folks will have a license and you'll have a set of tech specs that link to this idea that you can do the risk-informed completion times. You'll develop the PRA and submit it at least a year before fuel load.

MS. MROWCA: No submittal.

MEMBER BLEY: I'm sorry, they won't submit to you. They'll do it.

MS. MROWCA: They'll do it.

MEMBER BLEY: And tell they've done it. And you could audit it at any time. Now what I'm thinking is once you have a license -- I keep looking over here where people were this morning.

There's nobody over there. I'll look here. Since this is a risk-informed application, once that revised PRA is done for fuel load and it's applied to developing completion times and frequencies for the tech specs, doesn't our normal requirements fall in place that the PRA has to -- or is subject to inspection to ensure that the results, which in this case would be the risk-informed tech specs, are consistent with the version of the PRA that is applied to them?

MR. SALTOS: Well, this is part of the application-specific guidance. The application-specific guidance has all this information --

MEMBER BLEY: The risk-informed application-specific guidance is what we're talking about?

MR. SALTOS: Yes, that -- 4b, for example.

MEMBER BLEY: Yes.

MR. SALTOS: Or 5b.

MEMBER BLEY: Yes.

MR. SALTOS: This guidance is talking about they do not have to extend the completion times.

MEMBER BLEY: Right, but they could.

MR. SALTOS: If they believe that there is a problem with -- they have -- there is some uncertainty or they don't -- the PRA model can support something, they can say we're using the front stop. They don't have -- in other words, the completion time --

MEMBER BLEY: Right, they don't have to make it a risk-informed application.

MR. SALTOS: They don't have to make anything --

MEMBER BLEY: But if they decide --

MR. SALTOS: But if they decide --

MEMBER BLEY: -- to do a risk-informed application and change the completion time --

MR. SALTOS: They have -- first of all, if they decide that, they have to document. We were -- and this is --

MEMBER BLEY: Just as an operating plant would have to do.

MR. SALTOS: Yes. We are in this configuration. This and this and this and this trains or systems are out. We did the PRA. We made these assumptions with respect -- we consider these key uncertainties. We addressed in this and this way and we came to these results. Then the NRC

inspector can go inspect that. Actually will inspect that stuff.

MEMBER BLEY: Okay.

MR. SALTOS: And if we see that they did something inappropriate or the PRA that they're using is not -- has something that grossly underestimate or compromises safety, then of course we would take an appropriate action.

CHAIRMAN STETKAR: What happens there though, Nick? That's a kind of reactionary approach, that if I'm a licensee, I make a decision, you know, it's the middle of the night Sunday night and I call in my PRA staff and I'm in a particular plant configuration and they say, lo and behold, you know, you can extend the 72 hours out to 3½ weeks. Fine. Go forward. And six months later, you know, an audit staff comes in and says, hey, wait a minute, you know, your PRA wasn't capable of making that determination. What happens then? I mean, you know, they get cited?

PARTICIPANT: Sure.

CHAIRMAN STETKAR: But the whole PRA now is at fault. You know, how many decisions did they make --

MR. SALTOS: Well, I don't think they

can do for the PRA --

CHAIRMAN STETKAR: -- based on that tool that was faulty?

MR. SALTOS: They can look if was some -- if they -- they did -- they didn't consider something, you know, important.

CHAIRMAN STETKAR: Now wait a minute. You said they can't? They who? The inspectors can't look at the PRA?

MR. SALTOS: Yes, they can look at the PRA, yes, if they think there is a problem. You are -- of course. If they say in a recommendation that they used the PRA and they hand the concepts for that part that they're using in the decision making, and that's not true, then yes, they have to go through their significant determination process I guess to the reactor.

MR. TJADER: That may be with the PRA, but with respect to tech specs, the tech specs have the PRA requirements in there. They have the methodology to ensure that the PRA is adequate. If we find that the PRA is not adequate for that application, then you're in tech spec space. They cannot then enter for instance a completion time where the PRA does not support it. That would be a

violation of tech spec requirements. And potentially if we find in hindsight that they have invoked this initiative inappropriately, I think we could in hindsight invoke a tech spec violation on them.

CHAIRMAN STETKAR: But the whole point is that the determination that the PRA is technically adequate for this purpose is made solely by a peer review of that PRA that is subject to staff audit. It is not based on an NRC staff review of the adequacy of that tool.

MEMBER BLEY: Just as it is for operating plants.

CHAIRMAN STETKAR: Just as it is for operating plants.

MR. SALTOS: But it's not completely true given that we have extensively reviewed the design certification PRA and the COL PRA. I do not anticipate to see a PRA that will be drastically different. So, I mean, you know --

CHAIRMAN STETKAR: Well, we haven't seen the PRA yet either, so --

MR. SALTOS: Well, you're going to find there are issues there that come to be connected with respect to operating plants. There are. But I

don't think that this -- you see this -- if they change the completion time and they extend it, okay, then I'll accumulate a little bit more risk. This risk eventually, we will find out that they're doing that. How many times -- it's important how many times they do that because it's the sum of all this accumulations that -- and this is trended every two years, it's trended to see where they go.

MEMBER BLEY: Yes, but unless you go in and look, you never know. Or if they go and look and report that they made a mistake -- that can happen.

MR. SALTOS: But the philosophy of this risk-informed application is that they are going to be documented and then the NRC will look at that. If we don't look at that, that's -- what can I say?

MS. MROWCA: Yes, just to clarify is that in terms of inspection of the fuel load PRA, that is not required. I think we understand it's a prudent thing to do, and there has been precedent with the plant that has implemented 4b that there was an implementation inspection afterwards. And so I think --

MR. SALTOS: TJADER: Well, there was an audit prior to also.

MS. MROWCA: Yes, there was an audit prior to that, but there was an inspection afterwards.

CHAIRMAN STETKAR: But there was a specific focused inspection?

MS. MROWCA: Yes. And like I said, I think that we feel it's a prudent thing to do.

MR. TJADER: Yes, while it's not required; and I can't state that we will in fact do it, I would be surprised if we don't.

MEMBER BLEY: Well, it's important that it was done on the one case where this has been --

MS. MROWCA: Right, there has been a precedent for doing an implementation inspection.

CHAIRMAN STETKAR: And, you know, precedent -- we are -- this is the first one. Might be the only one, but it's the first one. You know, the sense of prudence and sense of confidence in how the process is actually working, I think is important.

Anything more, Dennis?

MEMBER BLEY: No, I've just been spinning in my head. Somewhere along the line we usually do -- well, on COLs I don't know that we do. Do we do -- have we typically done an interim letter

from --

CHAIRMAN STETKAR: We haven't, but --

MEMBER BLEY: What I'm thinking is if we do and -- if you come in and we do an interim letter somewhere along the way, I think we ought to at least go on record about having looked at this process.

CHAIRMAN STETKAR: Yes, I think we haven't -- and this -- you know, unfortunately we probably won't visit this in terms of the draft SER with open items until middle of next year sometime. At that point, yes, we can always write an interim letter. And we haven't been doing it as much for COLs because there typically aren't issues that come up. We do do it somewhat more routinely for, you know, the DCD process. And certainly, you know, we always say if there's something that we feel is important enough that rises to the attention of the full committee, we'll send an interim letter out to essentially alert the staff, you know, formally to the concern.

MEMBER BLEY: I guess I'm thinking this is --

CHAIRMAN STETKAR: It's interesting --

MEMBER BLEY: -- interesting enough and

significant enough that having a full committee meeting on this issue sometime before you're all the way done makes a lot of sense.

CHAIRMAN STETKAR: Yes, and that might be -- it's certainly too premature to do it now.

MEMBER BLEY: Yes.

CHAIRMAN STETKAR: Perhaps when the draft SER comes out on --

MR. MONARQUE: And we would probably do --

CHAIRMAN STETKAR: -- 19, 16, whatever I want to call it, you know?

MR. MONARQUE: And we will probably do 16 and 19 together in the same meeting.

CHAIRMAN STETKAR: Yes, I mean, that's -- we've been trying to schedule a subcommittee meeting --

MR. MONARQUE: Yes.

CHAIRMAN STETKAR: -- to do that because it's so integrated, and that might be the appropriate time to think of a full committee meeting.

MR. MONARQUE: Do you see need for a second informational meeting, informal meeting?

CHAIRMAN STETKAR: Let's hear what

Luminant has to say.

MR. MONARQUE: Okay.

CHAIRMAN STETKAR: And then we'll kind of go around the table at the end and see how the subcommittee feels.

MR. SALTOS: But is important to underline here that we're concentrating in the difference between operating reactors and new reactors. We aren't looking at the whole of approach for risk-informed tech specs for --

CHAIRMAN STETKAR: Right.

MR. SALTOS: -- operating reactors also because that's been discussed and approved.

MEMBER BLEY: And I think; this is a personal opinion, the way you've -- it's been set up seems to transition you from the new reactor to something like operating reactors and what at least at first blush seems a reasonable --

CHAIRMAN STETKAR: Yes, it does. It's just that that transition getting from what it is at the COL stage; and when I say "what it is," the tools and the process, to what it is once you're in the operating stage, which I think we do have some experience with, making sure that that transition -- nothing gets lost in that transition, or

misinterpreted or something like that.

Any other questions for the staff?

MEMBER BLEY: But you still got to make sure you're consistent on 16 and 19, whatever's done there, that Part 4 gets done consistently also because there's two programs in there, 5.5-18 and 19, which deal with configuration of risk-management and surveillance frequency, whatever the other words are, control programs. So right now they're a little bit more general, but whatever falls out on the rest of this you can't just leave that one out.

CHAIRMAN STETKAR: You reminded me of something, Charlie.

Bob, if you're the right guy to ask, I know at the COL stage, the COL -- we have COL tech specs right now. They exist. They have a hook into 5.5-18, or whatever the heck it is, for risk-informed completion times.

MR. TJADER: Yes.

CHAIRMAN STETKAR: Will the Comanche Peak COL tech specs have risk-informed surveillance frequencies, explicit frequencies of you shall do this surveillance once every 37.26 days?

MR. TJADER: For those --

CHAIRMAN STETKAR: Because those

specific numbers. They are not a fly -- you know, on-the-fly-type calculation.

MR. TJADER: Comanche Peak going to adopt it as any other plant would. In other words, those surveillance frequencies for which we're applying the Surveillance Frequency Control Program, those frequencies will be in the program.

CHAIRMAN STETKAR: Okay.

MR. TJADER: They will be there.

CHAIRMAN STETKAR: So as a separate document that's --

MR. TJADER: It's a separate document.

CHAIRMAN STETKAR: -- referred to out of the techs? Okay.

MR. TJADER: But as I said, they're treated just the same as if they were in tech specs.

CHAIRMAN STETKAR: But the numbers in that program won't be generated until fuel load, is that right?

MR. TJADER: No. Those numbers are the existing standard tech spec numbers as they are today.

MEMBER BROWN: In the DCD?

MR. TJADER: Yes, the DCD has the number or the Surveillance Frequency Control Program. The

number that will be in Comanche Peak's program will be that number, that DCD number where it says the number or.

CHAIRMAN STETKAR: But, okay, at the COL stage, that's true. But in principle that number in the Surveillance Frequency Control Program could change?

MR. TJADER: Yes. Yes.

CHAIRMAN STETKAR: Okay.

PARTICIPANT: But you don't know when it will change.

CHAIRMAN STETKAR: You don't know whether it will? It certainly will not change --

MR. TJADER: It certainly won't change --

CHAIRMAN STETKAR: -- at the COL stage.

MR. TJADER: It won't change at the COL stage. And in fact, it won't change until they obtain some operating experience.

CHAIRMAN STETKAR: Oh, so you even got a --

MR. TJADER: You know, I mean, I think we'd be -- that's part of the program is that they have to look at their personal -- their plant-specific operating experience. And if they have

none, there's no change immediately.

CHAIRMAN STETKAR: I got it.

MR. TJADER: And it would be some time in the future.

CHAIRMAN STETKAR: Thanks.

MEMBER BLEY: I have one last question. Early, Bob, you were talking that the tech specs are not Tier 1 or Tier 2 because that's the DCD, but they are part of the license and if you want to change one, it's a license amendment. How does what goes into the COL -- if it's not this Tier 1, Tier 2 star, how does that end up -- what is it in the COL that makes it clear that it takes a license amendment to change this insertion and it doesn't take a license amendment to change some of the other insertions at the COL stage, because I didn't understand what you said?

MR. TJADER: Well, first of all, I think what you're driving at is, for instance, the Surveillance Frequency Control Program, the numbers that are in the program. Any change whatsoever in the tech specs proper, whether it's a comma, a change in a capital or -- you know, a letter of something like that requires a license amendment. That's it. Now, you can invoke a methodology, an

NRC-approved methodology to determine some numbers outside of specs.

Now, those surveillance frequencies are not Tier 1 and they're not Tier 2 star. You know, those -- there's nothing in the regulations that explicitly call out either completion times or surveillance frequencies. And in fact, that is the underlying -- one of the underlying reasons that we can even apply a methodology or a program such as NEI 06-09 or NEI 04-10 to completion times and frequencies is that they're not explicitly called out by regulation. Okay? It's an implied requirement.

If you're going to ensure that something is operable and you're going to perform a surveillance to ensure that, the implication is you're going to do that at a certain frequency. And so we have taken that implied surveillance frequency requirement and put it in specs. But because it's not explicitly in regulations, we're now saying that we can make that determination and put that risk-manage external to specs.

MEMBER BLEY: Okay.

MEMBER SHACK: I just want to go back to this notion that they're going to have to have

operating experience before they can do it. I mean, as I read this, it seems to me that once they have the PRA and it's been peer reviewed and approved for the --

MR. TJADER: Well, perhaps there's some industry experience, overriding industry experience. I won't, you know, exclude that possibility. But if you take a look at the process, there is both a qualitative branch and a quantitative branch. And in fact, since probably most of the changes in surveillance frequency really wouldn't make -- hit quantitative triggers, more likely than not it's going to be qualitative decision making on the panel that's going to make the determination. That is with the understanding that the surveillance frequencies -- we have the experience that they've passed. So you have to have some experience that the surveillance frequency reliably passes and performs its function. And if you have that experience, then you can make the change.

So if there is a new type of equipment, you know, that performs the same function as it does in the standard tech specs and things like that and yet we don't have the experience to ascertain that in fact doing this surveillance every quarter is

adequate, then they should not make that change.

MEMBER BLEY: Of course if you don't have that experience you don't know that the initial number is very good either. So I don't see the distinction, tell you the truth. I think this process forces at least an engineering judgment by a collective group that's probably better than a priori numbers would be.

MR. TJADER: Well, frequently the -- I mean, more often than not surveillance frequencies initially were done on manufacturers' guidance or, you know, engineering judgment,, things like --

MEMBER BLEY: Right.

CHAIRMAN STETKAR: Anything else?

(No response.)

CHAIRMAN STETKAR: No? Okay. We're going to take a recess. Thank you very much, by the way. This was good.

Steve, we'll revisit the notion at the end of the meeting about whether we need another briefing.

MR. MONARQUE: Okay.

CHAIRMAN STETKAR: Kind of go around the table.

Let's take a break until five until

3:00, and we'll recess.

(Whereupon, the above-entitled matter went off the record at 2:36 p.m. and resumed at 2:54 p.m.)

CHAIRMAN STETKAR: Let's reconvene and hear from Luminant on their process or methodology.

MR. WOODLAN: Okay. And my name is Don Woodlan. I'm still the licensing manager for Luminant.

CHAIRMAN STETKAR: I was going to say, there have been people who have come before subcommittees who have made statements that, you know, may put those titles in jeopardy. We won't speak of the names, but we all know who they are.

MR. WOODLAN: As in the previous presentations, we have an agenda here starting with introductions and opening remarks, and then a little bit of background, and then we'll get into the tech spec methodology, which I'm sure you gathered from the earlier presentations is a pretty key part of what we're doing.

As part of the opening remarks, let me first of all thank the staff for everything they've done. They gave my whole presentation already, so that helps a little bit.

CHAIRMAN STETKAR: Oh, good.

MR. WOODLAN: But no really, when we decided before we filed our application to pursue the risk-informed tech specs, we did that recognizing it wasn't going to be easy, but we felt the safety improvements offered by these programs were the right thing to do and that we wanted to pursue them. When we presented it in our application to the staff, I'm sure there were a good number of people that wondered why we did that. We certainly created a challenge for them and a lot more work, but I can say they never flinched. They got right on board. They picked up the ball and they began to run with it. I think we have the very first meeting like in the spring of 2009. And since then we've had a series of interactions including public meetings and exchanges of documents and products.

I think, although they talked a little bit about it during their presentation, they really didn't give justice to the amount of work that was done to get to where we are today, because when we started out, we weren't even close to knowing the right answers, and we had a lot of options on the table. We were looking at license conditions, we

were looking at making it a DAC, we were looking at other ways of -- back then we still had COL Holder items. And there were several other options. We had all these on the table as possibilities.

And then we gradually over time, between the NRC and Luminant, discussed those, discussed the pros and cons of the various options. Certainly ISG-08, which I didn't really consider a new product. It's always been in my mind that you don't issue a license without finalized tech specs, so to me that just was a clarification. We know that all along. And certainly that was a driving force in helping us decide what was the right solution to pursue?

So with that, I think I'll get going with the presentation. The next slide. I do hope you save some questions for us from this morning.

Okay. This slides talks about the background and the conservatism. And again, I'm probably going to repeat a lot of things that were said this morning. But like my wife says, who's a former teacher, this is reinforcement, not repetition.

In order to ensure safe operation of the plant many things get involved; and I think a lot of

you know, but let me make just a few comments that many things go into the safe operation of a nuclear plant and many of those are not obvious and you can't really see those by looking at the paper. You know, tech specs and the license, the license including the tech specs define a level and certain rules and controls we have to live by.

But that's not what makes a safe operating plant. There's many, many other things. I've listed a couple here. Conservative decision making is certainly one of them. One of the very specific things we do is the way we control maintenance using the train week concept where you only work on one train during a given week. The Maintenance Rule itself and the way it's been implemented by all the operating plants is a significant contributor. We feel that adding risk-informed tech specs is another tool which allows us to operate these plants safely and allows us to operate them safer than we might have otherwise.

And I list some of the advantages here, just a few of them. It promotes situational awareness of equipment being out of service. And the Maintenance Rule did that as well, but any time you go into the risk-informed tech specs you're

entering that realm and the entire plant staff, including the operators, are going to become more aware of that. We feel that's important.

It may; or may not, but somewhere during the life of a plant there's probably a chance it may avoid an unnecessary plant shutdown. And that doesn't necessarily mean a full shutdown. It means just maybe just starting in the shutdown. And I think we all agree that taking the plant through unnecessary excursions is not a good thing and is not conducive to safety. So if it's not appropriate to do that, you shouldn't be doing that, and these risk-informed tech specs help us to not do that when it's not necessary.

And reduce likelihood of NOEDs.

MEMBER BLEY: What's that? I don't know every acronym in the world yet.

MR. WOODLAN: Notice of enforcement discretion.

MEMBER BLEY: Okay. Thank you.

MR. WOODLAN: And when you think about it; and to me this is part of the concept, many of the NOEDs, or enforcement discretion we had to pursue in the past will probably be avoided because of the ability to adjust completion times ourselves

based on risk. That's not a trivial thing, I don't think. It was a dramatic exercise for the utilities and for the NRC who had to review it. And in many cases you were relying on assessments, in particular PRA, because we didn't use PRAs to justify any kind of enforcement discretion. That had to be done very much in a rush. By having these processes in place, now we're more programmatic, we have a process that everybody understands. To me, it's a better way to go than NOEDs.

Okay. Next slide. Now here's where I get into some of the stuff that's somewhat repetitive, but I'll run through it anyhow. Adoption of risk-informed tech specs first of all appears in the US-APWR generic tech specs. I think you're probably aware of how it works between the design, the US-APWR certified design and how they create generic tech specs. And then we have to adopt those pretty much verbatim with the exception of areas that might be in brackets which allow plant-specific work to be done to fill in those brackets with an appropriate number.

CHAIRMAN STETKAR: You don't have to adopt.

MR. WOODLAN: Well, pretty much the way

the processes and rules are, you pretty much do. That's the way the process is written. And if you're going to deviate --

CHAIRMAN STETKAR: You can for a rule change.

MR. WOODLAN: Yes. We can for a rule change; that's right, and I guess that could happen down the road.

And so we've already mentioned even in the generic tech specs, although it's in brackets, they -- for these two -- and we worked with Mitsubishi to get these two into the generic tech specs. Like I say, we wanted it and so we went to Mitsubishi and said we want it. Please put it in the certified design. And they were very cooperative. They did. They put it in there. They include bracketed references to the NEI 06-09 and 04-10, which we've already referred to earlier today. And we included it in our initial application back in September of 2008.

I've already mentioned that we've had a series of meetings --

MEMBER SHACK: I was sort of curious the Japanese even knew about these when those applications came in. Now I understand where it

came from.

MR. WOODLAN: Yes, I remember a meeting several months before we filed, maybe six or nine months, where we sat down with Mitsubishi and Luminant, expressed why we wanted them and what -- I wouldn't say they didn't know what they were. I don't think they understood the value of them. And we went through that with them a lot, because it would obviously work for them, too, to now go back and modify their product to incorporate what we were asking for here.

Yes, like I say, we've had a series of meetings. We did address ISG-08, which was a key element in picking the options that we went with. Risk metrics, as mentioned. When we first started out it appeared to be a huge mountain. How do we deal with this? In fact, I believe we probably kind of forced the issue. Certainly risk metrics was probably thought of by some people before we actually filed our application. But once we filed our application, now it was on the table. You got to deal with it. You got a new plant that's going to be out there and you've got these old standards that were written for operating plants which -- who have PRAs at a different level now. Doesn't make

sense, and so this issue now had to be dealt with.

CHAIRMAN STETKAR: Don, I think I know the answer to this question, but help me. Has Luminant been actively involved in the tabletop exercises that have been and are still ongoing with regards to risk-informed -- specifically with regards to risk-informed applications for new reactors to kind of examine this whole issue of risk metrics?

MR. WOODLAN: Let me answer that by saying that Luminant is working with Mitsubishi as a team on the risk-informed tech specs for the US-APWR, and as this team, yes, we have been involved.

CHAIRMAN STETKAR: Okay. I was just curious. In terms of actually running some of the case studies and looking at the changes in the values and -- you have? Okay.

MR. WOODLAN: Yes, and I'm --

CHAIRMAN STETKAR: But I mean not necessarily Luminant, but --

MR. WOODLAN: Well, your question reminded me that I forgot to introduce the other people up here right now.

CHAIRMAN STETKAR: The folks who are nodding their heads like this?

MR. WOODLAN: And that's because they're the ones that actually did this. Next to me is Dr. Tanaka. He is very strongly involved in the PRA development for both the US-APWR design and for the Luminant activities.

Russ Bywater also works for MNES. Formerly he worked as an SRA, was a PRA person for the NRC. So both of them have very strong PRA knowledge.

And next to me is Tim Clouser who is Luminant. Has a lot of operating experience, so if you have questions like that, we'll get him the answer it. A former licensed operator for 1 and 2, so he brings a wealth of experience in that area.

CHAIRMAN STETKAR: Good. Thank you.

MR. WOODLAN: Okay. The second to the last bullet there: As we proceeded down the path, we finally recognized I think that we should look at the precedents that were out there in technical specification on how to deal with these challenges that needed to be part of the specs but you didn't want to put all the details in there. And there is precedence on using programs that are described in the technical specifications that have very specific processes that are well defined, and those processes

are addressed in the technical specifications, but the material can be outside. And this seemed to fit that precedent, so that clearly become the best approach. And in order to make that work, we needed methodology. We had the NEI guidance to start with, but we needed to make sure that it was adequate for a new plant.

Okay. Next slide. This slide may help a little bit with some of the discussions we had earlier about how these specs get applied. This is actually not any given spec. It's a kind of generic explanation of how the specs work. This is part of the generic tech specs, or this is what a generic tech spec would look like. And the key item is the box that's in red there. Without the red box is what it would look like if it was just a normal deterministic tech spec. You would have your item A.1, do it in 72 hours.

With the generic tech specs that has the option for the modified completion times, you have that additional step in there, and it's in brackets because some plants may choose not to adopt risk-informed tech specs. And it gives you an "or" statement that, as mentioned earlier, you can apply. As long as you make your decision within 72 hours,

you can apply the risk-informed completion time approach.

MEMBER BROWN: Which means you could go for three weeks?

MR. WOODLAN: Yes.

MEMBER BROWN: I'm just using that as a --

MR. WOODLAN: That's correct. Anything up to 30 days. Thirty days is --

MEMBER BROWN: Thirty days. Twenty-nine and twenty-three hours.

MR. WOODLAN: That's correct.

MEMBER BROWN: Yes.

MR. WOODLAN: Now, another way to look at this, let's say we were talking a normal operating plant now with 200% trains. The first one there about one required train inoperable. The specs probably says you need two trains operable for one to accomplish the function and then redundancy. This would allow you to apply this to the first train and the first train only. In the case of our design where we have four 50% trains, only three trains would be required to be operable by the technical specifications. So this would only come into effect when you're taking one of those required

trains and you're challenged because it has a problem and it appears to be inoperable. If a second train is challenged, you can't apply this. It only applies when one required train is inoperable.

MEMBER BROWN: So the first train -- as you explained in your other thing, if one train of the four goes out, it's a nothing?

MR. WOODLAN: It doesn't related to tech specs.

MEMBER BROWN: The second of the -- now you're into the failed -- you don't want -- you can handle one failure, but now you're going to allow yourself to keep going with just two --

MR. WOODLAN: Yes.

MEMBER BROWN: -- for this RICT, risk-informed completion time, whatever it comes out to. That's when you would apply it. But the third train, you're back to square one again?

MR. WOODLAN: That's right.

MR. CLOUSER: Well, let me just add one thing I know if I could. That technically is correct for risk-informed tech specs. When that first piece of equipment goes out, the first of the four trains, that's a safety-related piece of

equipment and that's treated very seriously within the industry and specifically at Comanche Peak. That's a Critical 2 item That's a defined item that's safety related and that means that it's tracked daily.

MEMBER BROWN: I didn't mean to blow -- that wasn't my -- the way I phrased that didn't mean it wasn't going to be taken seriously. I just means --

MR. CLOUSER: No, and I understand that. I was just taking an opportunity to make sure I got that information out because we are talking about it strictly from a legal perspective, but there's a lot more to it than that.

MEMBER BROWN: Understand. Thank you.

MR. WOODLAN: I'm glad Tim brought that up, too, and not just because you made the comment, because other people -- and as I mentioned at the very beginning, their perception of what the plant does is only what's written on the paper. And they think, well gee, if tech specs isn't required, you can do anything you want with that fourth train. And that's not the way you would operate a plant safely. We maintain and will control that fourth train.

MEMBER SKILLMAN: I'm Dick Skillman. Let me ask the question now that I asked an hour or two ago.

MR. WOODLAN: Okay.

MEMBER SKILLMAN: Is the red box in the design certification?

MR. WOODLAN: In brackets, yes.

MEMBER SKILLMAN: Oh, it is?

MR. WOODLAN: Yes, in brackets though. And being in brackets means that the applicant has the choice of how he uses that, or she, and --

MEMBER SKILLMAN: Okay. Thank you. That's all I need.

MR. WOODLAN: Okay.

MEMBER SKILLMAN: Thank you.

MR. WOODLAN: All right. You're welcome.

MEMBER SKILLMAN: Okay.

MR. WOODLAN: Anymore questions on --

MEMBER BLEY: Yes, I had a question. You're allowed to do this, so you do it. Is there a requirement -- since they are LCOs, once you do develop a risk-informed completion time and start using that, do you have to notify NRC?

MR. WOODLAN: Well, that came up a

little bit this morning. Let me elaborate a little bit. Every time you pursue this you redo the assessment, because assessment is based on the current plant configuration. And every time you go into it the plant configuration is going to be different.

MEMBER BLEY: Yes, that I understand.

MR. WOODLAN: Okay.

MEMBER BLEY: But my question was do you have to tell NRC --

MR. WOODLAN: No.

MEMBER BLEY: -- our completion time's no longer 72 hours; it's 150 hours?

MR. WOODLAN: For this given event, no, we don't have to tell them that.

MEMBER BLEY: Don't have to? Okay. So they don't necessarily know what your completion times are at any particular point in calendar time?

MR. WOODLAN: Okay. I answered you based on requirements. We are not required --

MEMBER BLEY: Yes, well, that's what I mean. By requirements --

MR. WOODLAN: We're not required to tell the NRC, no.

MEMBER BLEY: You aren't required? Yes,

that's --

MR. WOODLAN: The reality is --

MEMBER BLEY: Of course you have a site inspector who --

MR. WOODLAN: There will be a resident there. We would not do this without calling the resident. We have a standard -- at Comanche Peak we have a standing order that anytime we do something significant with respect to the operations of the plant, if the resident isn't there to tell them, we call him at home and we say, hey, we're doing this. And I'm not going to speak too much for the staff, but I wouldn't be surprised at all about what their response and action is, very similar to -- like I say, this is much like an NOED, but their response is going to be very similar to when we do NOEDs today and they're going to be very interested in how we did it and what we did. When we do an NOED today, we provide them our assessment of the risk and they frequently run a parallel assessment based on their own models. And if the numbers don't match up, they come back to us and say something doesn't look right here. Please explain.

I think -- Bob, do you have a comment?

MR. TJADER: Yes, excuse me for

interrupting. Yes, this is Bob Tjader. I just wanted to make something clear which may not be clear, and I apologize if it is clear and I'm just being redundant.

But the fact is that with risk-informed completion times, when you voluntarily enter a risk-informed completion time, you've done the calculation, you determine what it is and you're not extending your completion time out to whatever it is, up to 30 days, that is done on a one-time basis. That is, that on this entry it is now 14 days. On this entry it is 14 days. And in fact, when you're in risk-informed completion times, what the requirements have is that any time there is a plant configuration change that affects the PRA, it has to be recalculated and the risk-informed completion time adjusted.

When all systems -- once you're in a risk-informed completion time and now you've restored systems to operable status and you're out of the risk-informed completion time, everything resets. The original completion time goes back to 72 hours and the next time you enter, if you want to go beyond 72 hours, you recalculate again.

MEMBER BLEY: So if you wanted to reset

a bunch of these permanently, you'd have to go in with a license amendment?

MR. TJADER: Exactly.

MEMBER BLEY: Okay. It's --

MR. TJADER: Okay.

MEMBER BLEY -- only the one time?

MR. TJADER: So if one stops, it would --

MEMBER BLEY: I missed that.

MR. TJADER: -- remain the same.

MEMBER BROWN: Yes, that was the question I asked when we were talking --

PARTICIPANT: Yes, I know, but I slid past.

MEMBER BROWN: -- for the RICT. This is -- it's a case-by-case basis.

MR. TJADER: Exactly. That's --

MEMBER BROWN: For a surveillance frequencies you can change it and it stays there unless you meet some other metrics to have to go back and readjust or reevaluate.

MR. TJADER: Exactly. Yes. That's correct.

MEMBER BROWN: And the DCD does have this -- no, I just went and looked. It's there.

MR. TJADER: Yes, the -- Don is absolutely right. In the DCD it's bracketed where it has "or," you know, and then un-bracketed. Now, Don will get into it further with surveillance --

MR. WOODLAN: Good clarification. It's not redundant. It's reinforcement.

MR. TJADER: Okay. Thanks.

MR. WOODLAN: Okay. More questions on this slide?

(No response.)

MR. WOODLAN: Here is an equivalent slide for the Surveillance Frequency Control Program. And just like before, the portions that the applicant can work on are in brackets. In this case it's in the frequency column, the two red blocks there. The seven days is the number that is recommended by the generic tech specs. It's also in brackets because if you're using different equipment or something, you may need to modify that number just as a base number. But it includes that "or" statement which allows you to go over to the Surveillance Frequency Control Program. And of course in our tech specs the brackets won't be there. It'll be there without the brackets.

CHAIRMAN STETKAR: Done, in the risk-

informed completion times; I didn't check all of the tech specs, do you have any systems for which the first out actually has a time? You know, you have a four-train plant and basically you can have one train out indefinitely and the risk-informed completion times kick in when the second train goes out. Do you have any systems for which there is actually a completion time for the first train?

MEMBER BLEY: Where you need all four.

CHAIRMAN STETKAR: Where the tech spec is written, you know, all four shall be operable during plant operation?

MR. WOODLAN: Why would -- I guess I don't understand the surveillance for the first --

CHAIRMAN STETKAR: Not surveillance.

MR. WOODLAN: Oh.

CHAIRMAN STETKAR: This is risk-informed completion times.

MR. WOODLAN: Oh, back on completion times?

CHAIRMAN STETKAR: Yes, on completion times.

MR. WOODLAN: I don't believe so. Do you recall?

MR. BYWATER: This is Russ Bywater with

MNES, and we thought we might have an example, but we checked and --

CHAIRMAN STETKAR: I'm not sure. I actually checked a couple. I couldn't find any, but I wasn't going to go -- the tech specs are 800-and-some-odd pages --

MR. BYWATER: Right.

CHAIRMAN STETKAR: -- with the basis.

MR. BYWATER: There are some systems that are a little different little emergency feedwater where you have some diverse drivers of the pumps, and that was one that we just did a quick check on.

CHAIRMAN STETKAR: The reason I ask is if there are any that do have a requirement that hangs a time on, you know, the first piece of equipment going out, are those also candidates for the risk-informed completion times such that --

MR. WOODLAN: If it's required by tech specs and if its loss does not negate the safety function --

CHAIRMAN STETKAR: Yes. Okay.

MR. WOODLAN: -- yes, it can be.

CHAIRMAN STETKAR: Then that would be in the -- okay.

MR. WOODLAN: That doesn't necessarily -- I don't think we do have any in there like that --

CHAIRMAN STETKAR: I don't -- I was just curious if you knew off the top --

MR. WOODLAN: -- but it could have happened.

CHAIRMAN STETKAR: -- but in -- I mean, there's a statement made in the methodology that it always applies only to the second train out.

MR. WOODLAN: And that's only when there's four 50 percent trains.

CHAIRMAN STETKAR: Yes.

MR. WOODLAN: That statement was meant to be for that situation.

CHAIRMAN STETKAR: Okay. Thanks.

MR. WOODLAN: Okay. This is -- we went ahead and pulled for you to look at -- not necessarily going to go through in detail. There's two slides here that show the proposed Configuration Risk-Management Program as it's stated in tech specs. And you'll notice in the middle of the page there in the red block there is a sentence there that's in brackets. Again, this is the generic tech specs. So this is how they wrote it in the generic

-- actually this whole 5.5.18 is in brackets because if you don't have risk-informed tech specs you don't need this program in your tech specs.

But within the brackets there's brackets relating to NEI 06-09. And the reason for that is in these types of tech specs, when you have a program description like this, you need to link it to a very specific methodology. And it's by title, name, date, revision level, whatever, but it's a very specific document. And that's why that's in brackets and that's what we need to fill in.

In fact, we're working on that now. We have some draft words. Probably going to provide the staff within the next day or two of how we intend to fill that in. It's basically going to say NEI 06-09, Revision 0, as modified and supplemented by the Comanche Peak supplement document. That's essentially what it's going to say.

Under No. 3 there you'll see the 30 days. That's where the back stop is, so you can't beyond the 30 days.

And this is just the remainder of it. You'll see some of the key aspects. There's another entry there where we'll fill in. It's much like the first bracket, you'll see though that some of the

key things that Nick mentioned in his presentation that are important going forward as a Part 52 plant that need to be addressed are station procedures, training, the PRA model, the CRM tool itself. And all those are covered by the supporting documents.

CHAIRMAN STETKAR: What is an appropriate CRM tool? Do you have a risk monitor that's actually been in place and people have looked at the translation of the PRA model to whatever model is used in the risk monitor, if it's a different --

MR. WOODLAN: Well, that is not the risk monitor.

CHAIRMAN STETKAR: It isn't?

MR. WOODLAN: No.

CHAIRMAN STETKAR: Okay.

MR. WOODLAN: This is the configuration risk management tool.

CHAIRMAN STETKAR: Okay. Well, some people --

MR. WOODLAN: I know, that would be confusing.

CHAIRMAN STETKAR: -- call that a risk monitor.

MR. WOODLAN: And this is the -- it's

covered by the 06-09, but it's basically the tool that you use that allows you to make the decision when it's time to make a decision.

CHAIRMAN STETKAR: Oh, okay.

MR. WOODLAN: And, you know, it says who needs to do what, and how you go to the PRA, and how it goes to the Committee, and the decision gets made. It's all part of --

CHAIRMAN STETKAR: I was interpreting this as, you know, kind of the online risk monitor that people use --

MR. WOODLAN: No. No.

CHAIRMAN STETKAR: -- and some people call that a configuration risk management or monitoring tool.

MR. WOODLAN: Yes. We do have risk monitors, but that's not what this is about.

CHAIRMAN STETKAR: Thanks.

MR. WOODLAN: Now here's the equivalent program for the Surveillance Frequency Control Program. Again, these are the words right out of the generic tech specs. And again, there's a red box down there where we'll fill in the Comanche Peak-specific methodology. And again, it would be by rev level or date, whatever it is at the time

that gets approved.

CHAIRMAN STETKAR: Now, these -- happened to have printed something out from Rev 3 of the FSAR, and the places where you show these red little squares here and the brackets don't appear bracketed, for example, in Rev 3 of the FSAR.

MEMBER BROWN: Rev 3? They're in Rev 2 in brackets. I've got Rev 2.

PARTICIPANT: I think I have Rev 3.

MEMBER BROWN: Is there a Rev 3?

CHAIRMAN STETKAR: I have a piece of paper here that says Rev 3 down here; I'm sure you can read it at that distance, and it doesn't have the brackets or things in it.

The question is though because -- and I didn't go back and check the DCD. Since the tech specs are repeated directly from the DCD, is this a change to the tech specs from the DCD? In other words, if the DCD doesn't have those brackets in there -- I don't know, in terms of legal, you know, sort of licensing things, if you'd made a change to the text of the tech specs from the DCD to the COL FSAR, is that considered a departure from the design certification? I have to ask our staff folks here.

MR. MONARQUE: Bob's going to give an

answer.

MR. TJADER: Well, we've bracketed those which allows for the appropriate revision to NEI 06-09. In other words, there's going to be a Rev 1 and a later SCOL comes along and wants to adopt Rev 1, we have -- and because it's bracketed, it allows them, the applicant, the option to adopt the appropriate revision number. That is a use that we're taking from the standard tech spec usage. So we do not believe that that is a departure.

In addition to that, the appropriate methodology document, which is bracketed in the DCD, the applicant can have their plant-specific methodology inserted there and I do not believe that that is a departure.

MEMBER BLEY: I think the question was if the DCD does not have brackets but the FSAR does, would that be a departure?

MR. TJADER: Well, I think if the DCD specs do not have brackets, then unfortunately that would be a departure.

CHAIRMAN STETKAR: And I believe I misspoke earlier. I'm just trying to find the right page on the DCD, if you give me chance here.

MR. TJADER: I know that we are still

negotiating with Mitsubishi. We are still reviewing responses to RAIs and I noticed that Rev 3 of the DCD for the APWR tech specs does not have the latest version in there. So it will appear that it'll be a departure for Rev 3, but they have promised me that the next version will have it in it.

CHAIRMAN STETKAR: And you're correct, Bob. I just found the page. What I thought I had when I said that I had the FSAR, I indeed have a page from the DCD which does not have the correct version in it, Rev 3 of the DCD.

MR. TJADER: And if I could just have one other comment, if I might; and excuse me, Don.

But the CRM tool in fact includes the risk calculator, if you will, and that risk calculator has to have risk attributes of NEI 06-09 in it. In other words, there has to be an adequate representation or -- and a -- I don't know if "exact" is the appropriate word, but it has to adequately represent the PRA. The risk monitoring tool has to do that. So, yes.

And as far as experience, there's only one plant that has a CRM tool at this time and that is South Texas 1 and 2. And their CRM tool uses a different process, and that is a huge database of

20,000 pre-calculated configurations, 20,000-plus. So theirs is a database approach rather than an online actual monitor approach.

CHAIRMAN STETKAR: If that's the case; that's sort of the way I understood it, we now have a tool, as you called it a risk calculator, which is not the PRA. It's something that's different than the PRA; the PRA being a supposedly pedigreed calculator, neither of which things are reviewed by the staff, each of which has assumptions and limitations in it. Who looks at the risk calculator? Is that also subject to a peer review against standards? I'm not aware of standards for that conversion.

MR. TJADER: I don't believe there are any peer review requirements for the tool, however, it is subject to audit by the staff, as is the PRA.

MEMBER BLEY: Well, you just raised something, John. This isn't quite aimed here, but I've been thinking about it. I'm just jumping to something a little different, but related.

When the site-specific complete PRA before fuel load is completed, there's no requirement to submit it and there's no detailed review. However, NRC's lab contractors; and

therefore NRC, maintains their own PRA models, SPAR models, that are benchmarked against the real PRA at the sites. And you had said the resident would run it in their own models, which would be the SPAR models.

I'm just curious if anybody's thought through when the SPAR models actually get calibrated against the real PRA when it's done. And that ought to be something like -- not quite independent, but a separate check of all of this stuff, that PRA and all of these other calculations along the way. Can anybody address that just to give me some confidence?

MS. MROWCA: I can. This is Lynn Mrowca, and in fact we do have right now an APWR Level 1 internal event SPAR model that the NRO staff is reviewing. The idea is that we can use that as kind of a baseline and then develop site-specific modules for seismic, for fires, for flooding, for low-power shutdown, Level 2. And then we would then have -- and they would be based on the site-specific aspects of Comanche Peak so that we would use that as our SPAR model for Comanche Peak.

So between now -- which like I said, I think we've got a head start on, and then we would

come and benchmark it just like we do with the operating plants.

MEMBER BLEY: Okay. That helps. I've never quite seen what kind of benchmark is done, but I understand they run many different scenarios and compare them.

MS. MROWCA: Run scenarios and then -- yes, and then look at differences, look at big differences and see if you can figure out what the differences are.

MEMBER BLEY: And revise --

MS. MROWCA: And adjust accordingly.

MEMBER BLEY: -- one of the models to --

MS. MROWCA: And adjust accordingly.

MEMBER BLEY: Okay. One day it would be nice for us to understand that process a little bit as risk-informed applications become more important, such as this one.

MS. MROWCA: Yes, and that would be another opportunity to work with the applicants or the licensees at that time to check their PRA, you know, kind of an inspection by doing this benchmarking with the SPAR models.

MEMBER BLEY: Okay. I'm sorry.

MR. WOODLAN: Thank you, Bob. And I

checked. Our heads were nodding. We agree with what you said.

Okay. Anymore questions on the slide so far?

(No response.)

MR. WOODLAN: Okay. The next group of slides talk about the methodology document itself, which I think you have because I think you mentioned it several times. It is the product that was attached to our June 30 letter. That was our first formal submittal of that document. And as Nick mentioned, there is an outstanding RAI, which actually I think we're planning on answering this week, or we're very close to having a final answer and submitting it.

It's basically broken down to a group of sections. We address the NEI documents 06-09 and 04-10 and this is where we discuss where we are making modifications to those documents. We address the programs as written in the tech specs. We talk about the programs, brief descriptions of both programs in that methodology document, the qualities of the PRA necessary to support the document. And currently we have a section in there discussing risk metrics that was created at the time that we thought

we may have to do some unique things. We're now of the opinion that the generic activity based on the Commission's -- what was it, a SECY that they filed earlier this year, and the follow up tabletops, and whatever the conclusions are next year, we think that section probably won't be necessary and probably should not be in the methodology. But it is in the version that we have originally published.

Now, the next group of slides shows some of the modifications we made. And in lieu of the way it's shown in the document, which just says "insert this sentence," or something, we've tried to show it in context.

CHAIRMAN STETKAR: Don?

MR. WOODLAN: Yes?

CHAIRMAN STETKAR: Just thinking about the risk metrics; and I'm pretty well aware of what's going on there, if you apply the current risk metrics, and let's say that your risk-informed completion time for a particular configuration gives you a core damage frequency of 9.99 times 10 to the minus 5, just as a number, you're still under some magic 10 to the minus 4 threshold, so that indeed if -- you know, if you'll allow me to draw a solid black and white line at 10 to the minus 4 as being

acceptable, and you're just under your 30 days backstop, is there any guidance -- is that okay or is there any guidance anticipated to say that as an application of this process I should also consider margin, or is it strictly a black and white, go/no go so that 9.99 times 10 to the minus 5 is check the box green and 1.001 times 10 to the minus 4 is check the box red?

MR. WOODLAN: I understand. And let met give you the best answer I can. I'm not sure I can get this completely right. My understanding, this is a risk-informed activity. It's not a go/no go based on what -- the numbers you get out of a calculation or a PRA. Obviously, the numbers can make it a no go if the numbers are --

CHAIRMAN STETKAR: Yes. Sure. Sure.

MR. WOODLAN: Just because the numbers are adequate, it doesn't make it a go though. There's a lot of things to consider, and some of them are talked about in here in some of the modifications we made and part of the rules. And part of the challenge of being a Part 52 plant -- and Nick touched on several of them in his presentation -- clearly, one of them is that we don't have plant-specific experience.

Now, in some cases we have good experience. Pumps tend to be pumps, valves tend to be valves, but there are some unique applications, and we don't have Comanche Peak 3 and 4 experience. And all of that information; and that's just one example of some of the key things or the uncertainties that need to be considered, is rolled in to the assessment which is then passed by our team that's assigned to make the decision.

And I would only guess that if it was close and if there were any uncertainties involved at all, they would probably say this is a no go. We're not going to do it.

CHAIRMAN STETKAR: Yes.

MR. WOODLAN: On the other hand, if it was that close and in fact we had a lot of confidence in all those numbers, it might be a go. So I don't think there's a clear yes or no answer to that. It will be risk-informed. Many factors will go into making that decision.

CHAIRMAN STETKAR: Okay. I was just curious. I was trying to get more of a sense of -- some folks have talked about the risk metrics rather than having, you know, an absolute value, that there we be, you know, some measure of relative margin,

things like that. And I was just -- I was trying to probe a little bit whether you'd thought a little bit along those lines or --

MR. WOODLAN: Well, like I say, you can definitely make it a no go.

CHAIRMAN STETKAR: Yes. Oh, yes. I mean, that's pretty clear.

MR. WOODLAN: Yes.

CHAIRMAN STETKAR: I was trying to make it, you know, as close to the no go margin as possible.

MR. WOODLAN: And I don't pretend to be an expert here and I just described it to the best of my understanding.

Does somebody want to add something?

MR. BYWATER: No, I think you're exactly right, Don. Russ Bywater, MNES. It's part of a risk-informed decision making process. And as a participant in benchmarking activities in response to the SRM for the SECY paper 10-0121, we were actively involved in trying to benchmark risk-informed processes and to try to understand whether or not the enhanced safety margins of new reactors would be degraded in implementation of these programs. And as a part of that overall process,

you know, we would have to inform our decision making, treat the key sources of uncertainty, as Mr. Saltos mentioned in his presentation, and treat it holistically. It's a bigger decision making process than evaluating a number against a criterion.

As another aside, back to your previous question about evaluation of risk of plant configurations with NRC tools; for example, the SPAR model, it was very reminiscent to me of my days of doing NOED assessments as a regional office senior reactor analyst and using a SPAR model that had been benchmarked in one way or another to the plant-specific PRA and then coming up with some results and fully realizing that the results that you get are not -- they're point estimates of something with a range of uncertainty and that that all factors into an informed decision.

CHAIRMAN STETKAR: Thanks.

MR. WOODLAN: Does anybody else on the staff want to make a comment?

(No response.)

MR. WOODLAN: Okay. Back to the slide. Like I say, I'm not going to spend a lot of time and I'm not going to read these the way they are in context. If you see something and you want to ask a

question, okay.

I did want to point out though, most of these changes are to adopt the operating plant guidance and processes to properly fit a Part 52 plant. So you'll notice the words that are in the middle about one year prior to initial fuel load and endorsed standards. That's to make it consistent with the regulations that apply to us. And likewise, the words down below about operating experience, that's consistent with what Nick was talking about and what we have to deal with with the fact that we're a new plant. We don't have plant-specific operating experience, so that needs to be incorporated.

Go to the next slide.

MEMBER SHACK: You're not going to allow yourself any deviation from capability categories?

MR. WOODLAN: No, we intend to follow what the guidance is requiring.

MR. TANAKA: Well, actually category -- yes. We'll follow, yes, the guidance of Reg Guide 1.200, which says Category II to IV is necessary for the application. So it's not -- when this says all, it's not literally all.

MR. WOODLAN: Okay?

MEMBER SHACK: Yes.

MR. WOODLAN: Okay.

MEMBER BROWN: On slide 10 how come you deleted references to the Reg Guide 1.2 and the ASME stuff, which is kind of the base documents for some of the stuff you were talking about like, you know, the Category II PRA? And then reading some other parts of the NEI document, they referred to the ASME Code and the Reg Guide 1.2 explicitly. And now you've deleted them from your --

MEMBER BLEY: But they added in NRC-endorsed consensus standards.

MEMBER BROWN: Pardon?

MR. BYWATER: This is Russ. I think I can help address that. Again, what we are doing here is we're incorporating by reference the NEI documents themselves with modifications that are necessary for our new plant. And in our case, where we have to have PRA that meets the 10 C.F.R. 52 requirements and then also the 50.71(h) requirements that we mentioned earlier, this is a way to address that to say that we will have our PRA meeting Category II for those supporting requirements important to RMTS of those NRC-endorsed consensus standards in effect at that time, which the language

in the NEI document now states of the ASME internal events at power PRA standard. We want to make sure it's identifying in this document now that we will use the NRC-endorsed consensus standards in effect at that time one year prior to fuel load.

MR. WOODLAN: So the operating plants are linked to Rev 0 by the NEI guidance.

MEMBER BROWN: I understand that.

MR. WOODLAN: We need to comply with whatever the NRC-endorsed version is at the time one year before our fuel load. So if that were Rev 2, we'll be applying to Rev 2. So the only reason for crossing that out was to eliminate the specific revision that's being linked to. And instead we're relying on the words down below, which says the NRC-endorsed consensus standard. So it's really not divorcing us from 1.200. We're still tied, and that's covered clearly in 06-09 and 04-10.

MEMBER BLEY: That's where NRC endorses the standard is in 1.200, and it tells how they endorsed it.

MEMBER SHACK: Yes, I mean, I had the same reaction to Charlie when I read that, when I noticed it was gone, but then if you go back to Section 3.3, you bring back a reference to 1.200.

MR. WOODLAN: Oh, yes, 1.200's still in the methodology.

MEMBER SHACK: It's still in the document, so --

MR. WOODLAN: We just wanted to delete the specific reference by revision level at this point.

MEMBER BROWN: Yes, I read 3.3 and I saw that, but I didn't --

PARTICIPANT: Didn't --

MEMBER BROWN: Well, I didn't connect it because they still got --

MEMBER SHACK: It leaves those as the three primary documents for looking at the PRA adequacy, which is the two NEI documents and the one --

MEMBER BROWN: Yes, but the ASME stuff still wasn't dumped back in.

CHAIRMAN STETKAR: 1.200. It's pulled in through 1.200. The problem is that the ASME standard for at power PRA might not be what you need to use by the time they get around to being one year for loading fuel. There might be an ASME shutdown including, you know, external events and stuff by that time.

MEMBER BROWN: But does that exclude them from having to reply for the operating plant-type requirements later as opposed to just the standard involved at the initial load? I mean, does that mean -- do they ever transition back to what every -- I don't know, is the thing they do with an initial fuel load then going to be satisfactory for all operations subsequent to that?

MEMBER BLEY: Well, it says NRC-endorsed consensus standards which would you force you back to the same place.

MEMBER BROWN: It just seems a little bit rubbery.

CHAIRMAN STETKAR: I mean, some of the sense that we're talking about before is that because this -- it's at least my interpretation that the confidence builder is that because this is a risk-informed application that the PRA quality to support that risk-informed application has to be kept up. I mean, you know, you can't fall back to something once you start operating, if that's your concern.

MEMBER BROWN: Okay. I guess Capability Category II was related to Reg Guide 1.200.

MR. WOODLAN: Yes, it still is.

MEMBER BROWN: But now the reference, now the connection to it was gone in this --

MEMBER BLEY: Actually the capability categories are laid out in the standard that 1.200 points to.

CHAIRMAN STETKAR: Yes, and 1.200 endorses -- as the standards are developed, 1.200 says, okay, now we endorse this additional standard.

MEMBER BLEY: With the following exceptions.

CHAIRMAN STETKAR: With the following exceptions. Okay. So just pointing to 1.200 sucks it -- pulls it all in. They deleted it.

MEMBER BLEY: And I guess the real problem is they don't want to refer to a specific revision which will change as time goes on.

MEMBER BROWN: Well, but they could have done that by just deleting the revision number and say the revision level that applies at the time as opposed to deleting the whole Reg Guide. It just seemed to me the whole thing disappeared as well as the ASME references disappeared as opposed to the revision levels endorsed by the NRC at the time. That's just a different way of framing it, but it retains the reference to the base documents; that's

all.

MR. WOODLAN: Well, I guess we didn't want to limit it. The way the words were, it looks like it's kind of limited to Reg Guide 1.200, whereas the new words we've added shows that it's not limited to 200. It's all the NRC-endorsed consensus standards. Maybe we could have worded it differently, but that's how we chose to do it.

MEMBER BROWN: Going to write another one other 1.200?

MEMBER SHACK: Well, they have written other consensus standards. 1.200 will endorse although, you know, as the standard develops, from internal events, to external events, to shutdown.

CHAIRMAN STETKAR: I mean, it's clear in 3.3. It says the supporting PRA will have the following essential elements: Numerous documents are used to describe the PRA model being used. Three primary documents; Regulatory Guide 1.200, NEI 06-09 and NEI 04-10. 1.200 endorses those standards, you know, endorses whatever standards are endorsed at the time you develop the PRA.

MEMBER BROWN: Okay. All right. I quit.

MR. WOODLAN: Well, we've heard your

concern and obviously somebody has it. Somebody else might. We're still working on this document --

MEMBER BROWN: Well, I understand that.

MR. WOODLAN: -- like Nick said, and if we think we can make the wording clearer, we may do that.

MEMBER BROWN: We'll get another shot.

MR. WOODLAN: You will get another shot.

All right. The next slide shows another area where we made modification. And it's essentially the same thing. We're making sure that this addresses how we're dealing with uncertainty and we link it directly back to the DCD information about key sources of uncertainty and key assumptions. And again, this is all to bring it up to Part 52 and make sure we're consistent with being a new plant and with being under Part 52. Talk about operating experience again.

Ready for the next slide. Another area of change. Again, without going through it in detail, it's the same types of additions. We bring in again key sources of uncertainty and we talk about operating experience.

CHAIRMAN STETKAR: Don?

MR. WOODLAN: Yes?

CHAIRMAN STETKAR: I just suddenly got confused. The last slide, 11, where you've highlighted text --

MR. WOODLAN: Yes.

CHAIRMAN STETKAR: -- then there's a lot of other text, what is this text from? From what did you extract this text?

MEMBER BROWN: The black print?

MR. WOODLAN: The black comes directly out of 06-09.

CHAIRMAN STETKAR: Oh, 06-09. Okay. I'm sorry. Okay. Fine. I was --

PARTICIPANT: You were looking for it in here.

CHAIRMAN STETKAR: I was looking for it in your methodology.

MR. WOODLAN: Yes, maybe I didn't make it clear up front. We tried to present them in context as how they fit into 06-09.

CHAIRMAN STETKAR: Okay.

MR. WOODLAN: It makes a little more sense than just reading the methodology where it says "insert this sentence."

CHAIRMAN STETKAR: Okay. I'm sorry. Thank you. That helps.

MEMBER BROWN: But when I read through your methodology, I hung up on "epistemic uncertainty" and I said I don't remember seeing that in there.

MR. WOODLAN: Okay. We'll just continue through the slides now. This is just another example of another location where we felt it was important to reinforce these same facts.

Go ahead to the next slide. I think this is the last one on 06-09. And again, you'll see the same areas of discussion consistent with consistent with standards. And here we do have Reg Guide 1.200 still in there, which we inserted --

MEMBER BROWN: Well, what you've -- other words -- you replaced the first sentence and you retained that except ASME was mentioned in the other one and now it's gone. That's just a note I had.

MR. WOODLAN: Okay.

MEMBER BROWN: Why was the reference to ASME standards deleted.

MR. WOODLAN: And the next slide. This is 04-10. And again, here you'll see the modification that we've made to 04-10.

Before we leave all of these, I mean --

well, I'll cover it on the next slide.

As Nick pointed out, we do have an RAI. This is still a work in progress. There's still a good exchange I think of discussions about what modifications are appropriate to this methodology to make it the right document to be discussed in tech specs. We want to come up with words that clearly establish the process so that it works for a new plant and takes into consideration the needs with respect to lack of plant-specific operating experience and the tie to consensus standards as required by the regulations.

So there are several areas that we're looking at very, very closely. We want to review the clarity of the document, as mentioned earlier, for the current operating plants. And there are some words in the documents that talk about using bounding assumptions, because they don't have a lot of the analyses that hopefully we'll have in place and I think we're required to have such as seismic and fire and things like that. We will have those. So bounding analysis is not -- needs to be clarified on how we apply that as opposed to the current operating plants.

A good link to the regulations, a

discussion on common cause. We believe our PRA covers that, but it needs to be clearer how common cause is addressed if in fact there is aspects that are not covered by the PRA. And then in general text cleanup.

So these are just some of the areas that we're looking at. Many of these are already covered by the RAI that the NRC asked for us. And by the way, we didn't have any real challenges or differences of opinion from that RAI. We think we have answers to the questions that meet the intent of what those questions were asking, and we'll get that to the staff, and we'll probably go through another round once we fine those responses.

CHAIRMAN STETKAR: Don, I've just been stewing over what -- as Bob described what South Texas did --

MR. WOODLAN: Yes.

CHAIRMAN STETKAR: -- and the situation here where on completion times it's a one-shot deal based on the configuration. But nothing would preclude you from putting together a catalog of plant conditions, doing the analyses and then, if you're in one of those plant conditions, invoking that risk-informed time for today, right?

MR. WOODLAN: Well, except, as I mentioned earlier, that's just one input to making the decision.

CHAIRMAN STETKAR: Well, sure.

MR. WOODLAN: And --

CHAIRMAN STETKAR: Okay. "Invoking's" the wrong word.

MR. WOODLAN: And I think --

CHAIRMAN STETKAR: Putting it forward then to your committee to decide.

MR. WOODLAN: And I believe that's exactly what South Texas does.

CHAIRMAN STETKAR: Okay.

MR. WOODLAN: They have all those models that are preset in place, and when they get in this situation, they go and see if there's a model in place that already works. And if they do, that becomes their input.

CHAIRMAN STETKAR: Okay. So we could do just the same?

MR. WOODLAN: Yes, we could do the same.

MEMBER BROWN: You save what you already did, if nothing else.

MEMBER BLEY: You betcha.

MEMBER BROWN: One would hope you'd

regurgitate it.

MR. WOODLAN: I think the other hypothetical model; because I don't know that anyone actually has one fully in place, is to actually have a dynamic model that you just go in and punch in five or six inputs and then it actually turns the crank. Using your current PRA you put in the conditions, the current plant conditions and then it gives you a result. And that's a big challenge, too, which is why I'm not sure anybody's got that.

Does anybody have that in place?

CHAIRMAN STETKAR: Some sales people tell you that --

MR. WOODLAN: That they could do it for you, yes. Okay. Maybe Bob has the answer.

MR. TJADER: This is Bob Tjader one more time. Actually, I think there are many plants out there that in the application of their Maintenance Rule (a)(4), assess and manage risk, they actually use their monitor, and they have pretty good programs now that accurately, or if not accurately actually use the PRA. So it's not so much a translation of the PRA; which is what we're worried about in 06-09 where we have those attributes, but they actually use the PRA.

And the programs are fast enough now that you can get within a relatively short period of time, matter of minutes, an ICDP of the plant, you know, the core damage frequency, the state that it is in right now. And they do that for (a)(4), for Maintenance Rule at the time. And then they actually have some of these computers in control rooms where they -- you know, equipment becomes inoperable. They'll put it into their program and they relatively quickly know what the status of their plant is. So it's not -- I don't think it's --

CHAIRMAN STETKAR: Current day computing power has helped an awful lot, you know, that --

MR. TJADER: I believe that plants -- many plants that adopt I 4b in the future will go that way, rather than the database method.

CHAIRMAN STETKAR: Or a simplified version of the PRA, you know, yet another kind of --

MR. BYWATER: Yes, all plants will have to assess the risk of maintenance in accordance with the Maintenance Rule, so this is one extension of that capability.

MR. WOODLAN: And that's all I had to say.

CHAIRMAN STETKAR: Great. Are there any other questions for any of the members for Luminant?

(No response.)

CHAIRMAN STETKAR: If not, thank you very much. That certainly helped an awful lot. I think we learned a lot.

I have to do this. Before we go around, I want to kind of get a sense from the Subcommittee members about whether or not in particular we feel that another information briefing on this particular subject is worthwhile.

So think about that a moment as I scan around the room here and ask if there's anybody from the public here who wants to ask any questions or make any statements?

(No response.)

CHAIRMAN STETKAR: Okay. And then let's just -- if anybody has any closing remarks or comments -- and I'll ask you each if you feel that an additional information briefing on this particular topic -- before we visit the interim SER with open items, which will occur -- June/July kind of time frame is what we're looking at right now. but in that kind of time frame. It's not next month and it'll be several months from now.

I'll start with Dick.

MEMBER SKILLMAN: I am confused, but I think it's my problem. I don't think it's Luminant's problem or the staff problem. I was trying to get clear in my mind what is a departure from the design certification? And I don't raise that point to challenge. It is my own confusion, because it seems as though by going to the risk-managed tech specs, as the first plant to have done that, this applicant has stepped aside of what is the design cert and imposed upon themselves, to their credit, a huge workload that is in fact different than the design certification.

So what I was listening for is how this is handled in departure territory and how it's handled with regard to Tier 1, Tier 2 star and Tier 2. So for me it's an administrative confusion. It's not a challenge to what's being done here. But I was just trying to get it clear in my mind.

So what I was going to say, Mr. Chairman, is there may be others at the full committee that would have this same confusion.

CHAIRMAN STETKAR: Yes.

MEMBER SKILLMAN: And so perhaps a module in presentation; several minutes, that would

say here's what the design certification presents. Here is what Luminant is doing at Comanche Peak and here's how it's handled under Part 72 would be beneficial. That's my comment.

PARTICIPANT: I think what might help --

MR. TJADER: If I might, this is Bob Tjader one more time. We could certainly do that in the future. The design cert specs have bracketed the option for plants to adopt risk-informed tech specs. We do not interpret that as a departure. We interpret that as any other bracket, for instance, for instrumentation setpoints or something. You put in that bracket the plant-specific value, the plant-specific application.

So if a plant is adopting a risk-informed initiate, I 4b, they would put in there what the design cert allows you to do, that option. And furthermore, where there's a bracket in there for the latest rev, for instance, they're putting the plant-specific number in there. So we interpret it as an application of plant-specific values, if you will, those brackets. And if they don't opt for that, then they just don't opt to adopt what's in the brackets.

But what they have to adopt for the

optional brackets is in essence what the design cert allows them to adopt.

MR. MONARQUE: Now, Bob; and correct me if I'm wrong, that's because a DCD is giving the COL applicant an option or a choice whether to use risk-informed tech specs or deterministic.

Now, let me use a converse idea: If they had mandated deterministic and the DCD did not have an option for risk-informed tech specs and Luminant came along, then that would be a considered a departure.

CHAIRMAN STETKAR: Oh, yes. I mean, if the DCD --

MR. WOODLAN: MONARQUE: If there's no choice.

CHAIRMAN STETKAR: If what Don has up there -- if the DCD only said seven days --

MR. MONARQUE: Seven days.

CHAIRMAN STETKAR: -- period.

MR. MONARQUE: Yes.

CHAIRMAN STETKAR: Then it's certainly a departure.

MR. MONARQUE: But here because they were given a choice, it's not --

MEMBER SKILLMAN: I withdraw my comment.

I'm okay. As I said --

MEMBER BROWN: They did that for both areas.

CHAIRMAN STETKAR: Yes.

MEMBER BROWN: I mean, the completion times and this. There's, I don't know, a half a dozen or more on the -- I don't know, there are probably a few more, but a quick count was a half a dozen or so, or a few on the completion times and a bunch of surveillance. I mean, you all pretty much covered the waterfront.

MEMBER SKILLMAN: As I said, the purpose for my comment was not to challenge. It's clarification in my own mind. And I thank you for your explanation.

MR. MONARQUE: Oh, you're welcome.

MEMBER SKILLMAN: And I'm good. Thank you.

MR. WOODLAN: Let me emphasize -- maybe this -- I'm unnecessarily elaborating, but this slide here kind of shows -- you notice both the seven days and the Surveillance Frequency Program area in brackets. If that option for Surveillance Frequency Program wasn't there, the seven days would still be in brackets.

MEMBER SKILLMAN: Understand.

MR. WOODLAN: And the reason for that -- and maybe now that we've had this discussion you might want to go back and look again at ISG-08, because that's kind of where they lay out the rules that we follow as far as using brackets and how plant-specifically we need to address whatever's in brackets. And we saw this and that precedent in ISG-08 and said this is the right technique to also handle risk-informed tech specs.

MEMBER SKILLMAN: Thank you. I'm good.

MR. WOODLAN: I say that right, Bob?

CHAIRMAN STETKAR: You see this and the calibration stuff is a good analogy, that in a lot of other tech specs that we see in the certified designs, a lot of the calibration setpoints are treated exactly this way. This is the only one where the tech specs are bracketed this way, to my knowledge.

MR. WOODLAN: That's right.

CHAIRMAN STETKAR: I think that's true.

MR. WOODLAN: Okay.

CHAIRMAN STETKAR: Thank you.

MR. WOODLAN: Okay.

CHAIRMAN STETKAR: Dennis?

MEMBER BLEY: I have three things. See if I can remember them.

No. 1, I came into today kind of nervous about all of this, and I want to thank Luminant and Mitsubishi and the staff for a really good day. I've changed. I'm quite comfortable with this. I think you're doing what looks like a really good approach. I look forward to following it. That's No. 1.

No. 2; this is for just the Committee, we have enough new members that it would probably be good to have another briefing like we've had in the past of the overall how does the design cert business work? What's Tier 1, Tier 2, Tier 2 star? I hate to do that, but there's --

MEMBER SHACK: That's all right. We'll just get confused again, but we can --

MEMBER BLEY: No, I think it's starting to sink in.

MEMBER SHACK: We'll probably figure it out.

MEMBER BLEY: Yes, the whole process. No. 3 is --

CHAIRMAN STETKAR: For the full committee?

MEMBER BLEY: Yes, full committee. Yes, but that's a separate thing.

CHAIRMAN STETKAR: Yes, that's a separate thing.

MEMBER BLEY: And No. 3 is I don't think the Subcommittee needs another briefing on this until there's some, you know, advancement, you know, with the tabletops and all of that, and then we probably do. But I think an information brief for the full committee on the material we've talked about today would be very appropriate and I think everybody would be quite interested in it. It's something new and something we've been wondering about for a long time. That's all.

CHAIRMAN STETKAR: Okay. Bill?

MEMBER SHACK: I don't think we need an update, like Dennis, until -- you know, when they come back in, I think that'll be fine.

I came in sort of wondering why the rush. You know, why not wait until you have a PRA in hand before you do this. But I must confess I'm not uncomfortable with the process and I'm not sure it would really be any different if you waited.

By and large, I mean, I like risk-informed tech specs. To me it's like taking (a)(4)

and applying it to everything. It just extends what you sort of do anyway and it's a good idea. So I'm quite comfortable with the whole process, I think. You know, it comes down to having a good PRA.

MEMBER BLEY: And a good committee that interprets --

MEMBER SHACK: A good integrated decision making panel, yes.

CHAIRMAN STETKAR: What do you think about the notion that Dennis raised about having a full committee briefing on the subject?

MEMBER SHACK: Oh, design certs in Tier 1 and 2?

CHAIRMAN STETKAR: No, no, no. No, no. Of this topic.

MEMBER BLEY: No, of this -- risk-informed in particular, I expect, for new plants.

MEMBER SHACK: Since it only applies to one design, I think it just can be dealt with in terms of this design. I mean --

CHAIRMAN STETKAR: That may be the way to do it is to have a committee briefing at the time that we see the draft SER --

MEMBER BLEY: You know, the next time we bring in an APWR --

CHAIRMAN STETKAR: Yes, that would be -- -- plan, you know, sort of the July-ish time frame, whatever the schedule works out.

MEMBER BLEY: Matte of fact, when we have a committee briefing, a full committee briefing on this project, I think it would be appropriate to devote some time to this.

CHAIRMAN STETKAR: Okay. We'll try to think about that. That probably makes a lot more sense, because it would have a little more substance and relevance perhaps.

Mr. Brown?

MEMBER BROWN: To the least -- get back on my chair on risk-informed non-deterministic. I'm not necessarily -- again what's being proposed, it's the reasonable -- seems like a reasonable approach. The only big concern I have is kind of the one-size-fits-all, 30-day backstop. There are some -- and I just didn't go through every possible system that they may not may not have, but that's -- the 30 days is a long time. For some things it may be appropriate and for some other things it maybe should be shorter.

And I don't -- is the 30 days -- is that in NEI 06-09? And that seems like an arbitrary time

to say that's the big backstop number for everything. So for a four-train reactor protection and one train's out, I'm not sure I like the 30 days hanging out there. For a gas turbine generator, for certain things, which is another system that you don't have to have necessarily, maybe that's probably okay. So I was a little nervous -- not nervous, but I just didn't care for the 30-day, one-size-fits-all backstop day.

The second piece was on address the need for another Subcommittee meeting, and I'm not particular sure we need that. We ought to let it develop and then assess. If we have to we could always do one.

I found useful instead of having to go through everything the paper that identified what changes were made. So it was fairly easy to take your paper that you wrote and say, hey, this is what we're doing to modify 06-09 and 04-10 and then put those. Because it was only five or six pages of stuff, it was fairly easy to do. That would be useful if you make more changes because you can see the changes in the context of the whole thing as opposed to trying to fight your way through the whole document.

So other than that, I would like to see somebody assess the 30-day issue as to why a one-size-fits-all. That's the one open item, that I don't care for all systems. Again, I didn't go through every item that they had bracketed, so I have no idea whether it's even a concern.

CHAIRMAN STETKAR: Thanks. The sense that I have; and I don't know if anybody else wants to add anything, that 30-day, I think I'd keep an open mind about that. The staff is conducting these tabletop exercises to challenge a variety of risk-informed applications in the context of new reactors. And they're running different proposed applications. Big emphasis on 4b. Some on 5b. Some on, you know, other applications.

The results, the numerical results from those tabletop exercises, recognizing they're kind of snapshots of, you know, a few people's ideas of what might be useful to examine, are investigating whether or not this process could result in conditions that would significantly challenge those safety margins, the kind of thing I was talking about. And the 30-day backstop kicks in in many cases in that context. So part of I think that process will look at that 30-day value and see what

sort of margin protection is provided by that 30-day, you know, as you characterize it, one-size-fits-all.

That process is continuing. We're going to have a Subcommittee briefing on the second set of tabletop exercises in February, I believe. No, March, early March. There's a SECY paper that's coming out on that in March/April time frame of next year. So you might want to -- it's under the PRA Subcommittee. You may want to sit in on that. It's just a warning. You want to argue about PRA, come and sit on the meetings and listen to it.

MEMBER BROWN: The point is the NEI could have addressed it from the standpoint, you know, a backstop should be assessed, but should be no longer than, but you should look at each system that you decide to go that way. That's all.

CHAIRMAN STETKAR: Yes, and that's probably -- you know, there, too, it was -- the document was published, you know, some number of years ago.

MEMBER BROWN: It was three, four years ago, something like that, I don't know, and updated.

CHAIRMAN STETKAR: Five, six, seven, you know, depending on how long it took.

Bob?

MR. TJADER: This is Bob Tjader again. On the 30 days, No. 1, it is somewhat arbitrary in that 30 days was in essence the longest completion time that there was in the standard in general at that time. And in addition, 30 days provided adequate time for the licensee to come in and request a Notice of Enforcement Discretion if they wanted to extend it beyond 30 days.

Keep in mind that the risk-informed completion time is calculated to an incremental core damage probability of 10 to the minus 5th or an incremental large early release probability of 10 to the minus 6th. It is the time to reach that threshold. Okay? So that is in essence the margin, or whatever, that we're allowed to consume, or whatever.

So if you're going to get to those thresholds at a risk-informed completion time less than 30 days, then you're still within what is acceptable in NEI 06-09. If your calculation permits your completion time to go to 120 days or beyond, or whatever, you can go no longer than 30 days. So 30 days backstop is in essence for those systems conservative. For US-APWR, the new reactor

design, 30 days is extraordinarily conservative. In fact, more often than not it's going to be 30 days, which is what their completion time extended will be because of the four-train design and the fact that they have the redundancy they have. We've seen that.

The reason South Texas is the first existing operating plant to come in for risk-informed completion times is because they're a three-train plant and they have two-train tech specs. And this is their way of taking advantage of the fact that they're a three-train design. And South Texas -- in fact, many of their systems, if they go into it and they then -- of course it's configuration-dependent. If you have multiple systems out; you know, what I'm saying is off, you know, then you're likely to have an actual risk-informed completion time less than 30 days. But South Texas, when they have let's say single systems that are out and they're in a risk-informed completion time, more often than not South Texas is going to have that 30-day backstop. So that 30 days is conservative. So if it's a one-size-fits-all, it for the most part is a very conservative fit-all, particularly for US-APWR.

CHAIRMAN STETKAR: Thank you.

MR. WOODLAN: Can I make one more comment --

CHAIRMAN STETKAR: Sure.

MR. WOODLAN: -- kind of as background? You mentioned about why we did this right away instead of waiting; and I may to be blame for that. I felt it was the right thing to do and I basically wanted it in place from day one so that we did all our training and our procedure development with this in mind.

I can tell you; and I don't know if they'll follow through with it, I've had more than one, actually several other, licensing managers come up to me and say I'm really glad you're doing this because as soon as I get my COL, I plan on filing a license amendment to do the same thing. They don't want to potentially delay their COL, so they chose not to do it up front. We took the risk because we -- like I say, I wanted to have it in place. And I'm glad I did, because I think it brought the issue to the forefront earlier on. If we'd have waited until COLs actually started to get issued, we'd be two years, three years behind where we are right now.

MEMBER SHACK: Arguing over risk metrics for awhile longer, yes.

MR. WOODLAN: That's right. That's right. So it turned out to be probably a good thing. So it's not just; someone mentioned this, you know, we're just doing this for a single plant. I don't think that's the case. We're just the first. I think there's a line up behind us that's going to be doing it pretty soon.

MEMBER SHACK: No, you're the only plant that's going to do it as in the COL. I mean, the others are going to have to wait --

MR. WOODLAN: At least the first group. There maybe I think future plants once it becomes successful and there's a path, they'll probably do it right up front. I would if I was them.

CHAIRMAN STETKAR: Well, it all depends on, you know, expediency --

MR. WOODLAN: Exactly.

CHAIRMAN STETKAR: -- following the RCOLA, basically.

MR. WOODLAN: That's all I have.

CHAIRMAN STETKAR: Thanks, Don. Anything else from anyone?

(No response.)

CHAIRMAN STETKAR: With that, I'd like to again thank everybody.

MS. MROWCA: Dr. Stetkar?

CHAIRMAN STETKAR: I'm sorry.

MS. MROWCA: I just have two things that you brought up during the meeting, and I don't know what format you want them answered in.

You asked about peer review guidance and what it addresses, like asymmetry of systems. And then the other one was, let's see -- I have it written down, but how do you want us to address those, or do you not?

CHAIRMAN STETKAR: When you come back.

MS. MROWCA: So we'll capture these last two things.

CHAIRMAN STETKAR: This is not a formal -- the way we keep track of these things is we have what we call a tickler file. It's not an action item list. It is not a formal thing. It's just something because none of us can remember things more than about five minutes. If we have it written down, we will ask you about it again. So next time we see you folks on this topic, make sure that you can answer us about it. We won't forget. But it's not a -- we don't want -- the message is we don't

want formal response. We don't do any of that stuff.

MR. HAMZEHEE: It's only formal when you put in your letter.

CHAIRMAN STETKAR: Only formal thing is when we're in our letter. That's right.

MEMBER BROWN: We haven't been consistent across all projects.

CHAIRMAN STETKAR: We have not been consistent across all projects. We won't talk about the other projects on the record in this forum. And we are adjourned.

(Whereupon, the meeting was adjourned at 4:16 p.m.)