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NITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

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ADVISORY COMMITTEE ON REACTOR SAFEGUARDS

(ACRS)

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FUKUSHIMA SUBCOMMITTEE

+ + + + +

THURSDAY

MARCH 19, 2015

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ROCKVILLE, MARYLAND

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The Subcommittee met at the Nuclear
Regulatory Commission, Two White Flint North, Room
T2B1, 11545 Rockville Pike, at 1:00 p.m., Stephen
Schultz, Chairman, presiding.

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1 COMMITTEE MEMBERS :

2 STEPHEN P. SCHULTZ, Chairman

3 RON BALLINGER, Member

4 SANJOY BANERJEE, Member

5 DENNIS C. BLEY, Member

6 CHARLES H. BROWN, JR. Member

7 MICHAEL CORRADINI, Member*

8 DANA A. POWERS, Member

9 JOY REMPE, Member

10 PETER RICCARDELLA, Member *

11 MICHAEL T. RYAN, Member

12 GORDON R. SKILLMAN, Member

13 JOHN W. STETKAR, Member

14

15 ACRS CONSULTANT :

16 WILLIAM SHACK

17

18 DESIGNATED FEDERAL OFFICIAL :

19 MICHAEL SNODDERLY

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ALSO PRESENT:

CLINTON ASHLEY, NRC

ERIC BOWMAN, NRC

DAVID DESAULNIERS, NRC

BRYAN FORD, NEI

ED LYMAN, Union of Concerned Scientists *

ANDREW MALLER, NEI*

JOHN MCKIRGAN, NRC

JOHN MONNINGER, NRC

ABI MOHSENI, NRC

TIM REED, NRC

GEORGE TARTAL, NRC

WILLIAM WEBSTER, Dominion

BILL WILLIAMSON, AGA* *

DAVID YOUNG, NEI

*Present via telephone

A G E N D A

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P R O C E E D I N G S

1:00 p.m.

1
2
3 CHAIR SCHULTZ: Good afternoon. This
4 meeting will now come to order. This is a meeting of
5 the Advisory Committee on Reactor Safeguards,
6 Subcommittee on Fukushima.

7 I'm Stephen Schultz, Chairman of the
8 Subcommittee. Members in attendance today are Dick
9 Skillman, Dennis Bley, John Stetkar, Mike Ryan, Ron
10 Ballinger, Charlie Brown, and Joy Rempe. Pete
11 Riccardella is attending on the telephone today, and
12 there may be other Members that will join us later.
13 We also have former ACRS Chairman, Dr. Bill Shack in
14 attendance today participating as our consultant on
15 this matter.

16 The purpose of today's meeting is to review
17 the Draft Proposed Rule for Mitigation of
18 Beyond-Design-Basis Events and the associated
19 supporting documents and guidance prepared by the
20 Staff. We have had several meetings with the Staff on
21 this topic and look forward to discussions on their
22 progress and the results and products that they're
23 going to present today.

24 This meeting is open to the public. It's
25 being conducted in accordance with the provisions of

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1 the Federal Advisory Committee Act. Rules for the
2 conduct of and participation in this meeting have been
3 published in the Federal Register as part of the notice
4 for this meeting.

5 The Subcommittee intends to gather
6 information, analyze relevant issues and facts, and
7 formulate proposed positions and actions, as
8 appropriate, for deliberation by the Full Committee.

9 Mr. Michael Snodderly is the Designated
10 Federal Official for this meeting.

11 A transcript of the meeting is being kept
12 and will be made available, as stated in the Federal
13 Register Notice. Therefore, we request that
14 participants in this meeting use the microphones
15 located throughout the meeting room when addressing the
16 Subcommittee. All participants should first identify
17 themselves and speak with sufficient clarity and volume
18 so that they may be readily heard.

19 We have received no written comments or
20 specific requests for time to make oral statements from
21 members of the public regarding today's meeting. I
22 understand that there are individuals on the bridge
23 line today who are listening in on today's proceedings.
24 To effectively coordinate their participation in this
25 meeting we will be placing the incoming bridge line on

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1 mute so that those individuals may listen in. At the
2 appropriate time later in the meeting we will provide
3 the opportunity for public comments from the bridge
4 line and for members of the public in attendance.

5 I'd like to remind us all to turn off our
6 cell phones and communication devices so there's no
7 interruption during the meeting.

8 We'll now proceed with the meeting, and I'd
9 like to call upon Aby Mohseni of the Office of NRR to
10 open the presentations today. Aby.

11 MR. MOHSENI: Thank you very much, Dr.
12 Schultz, and good afternoon. My name is Aby Mohseni,
13 and I am the Deputy Director of the Division of Policy
14 and Rulemaking in the Office of Nuclear Reactor
15 Regulation.

16 Today we will discuss the Proposed
17 Mitigation of Beyond-Design-Basis Rulemaking. We are
18 here today to engage with the ACRS Fukushima
19 Subcommittee in support of your review of the Proposed
20 MBDBE Rulemaking package. We are seeking ACRS
21 endorsement for issuance of the proposed rule package
22 for public comment. The ACRS Full Committee will meet
23 on April 9th on this same topic.

24 In terms of ACRS support for issuance of
25 the proposed MBDBE rulemaking, our view is that the

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1 proposed rule needs to be sufficient to support
2 informed external feedback such that the NRC using that
3 feedback can produce a good final product.

4 Accordingly, you will find that this
5 proposed rule package seeks external feedback on a
6 number of issues for which the NRC expects such a
7 feedback to be key in reaching a final decision. And,
8 of course, we will always find that external
9 stakeholder's feedback improves our rulemaking, and we
10 certainly expect that to occur again for the proposed
11 MBDBE rulemaking.

12 To support this presentation, I have
13 several members of NRR and from NRO. Tim Reed from our
14 Staff will be leading the discussion of the proposed
15 rulemaking. Tim will focus on the proposed rule
16 language. Supporting Tim as the Lead Technical Expert
17 in mitigation strategies is Eric Bowman from the
18 Japanese Lessons Learned Division. Eric will focus on
19 the supporting draft regulatory guidance. From NRO we
20 have Clint Ashley who will also support the discussion
21 of the draft regulatory guidance; the portions of 13-01
22 that would be applicable to new reactors.

23 We also NRO support at the side table.
24 George Tartal will support Tim with regards to the
25 aspects of the proposed rule language that apply to new

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1 reactors. There are other members from the Mitigation
2 of Beyond-Design-Basis Events Rulemaking Working Group
3 in attendance to support questions from the Committee.

4 We last met with the Subcommittee on
5 November 21, 2014, followed by a Full Committee meeting
6 in December 2014. And since that time, there have been
7 a few changes to the rule language, but in large measure
8 the language has not changed substantially. Our plan
9 today is to walk through the proposed language
10 reasonably quickly and note where the language has
11 changed. Our intent is to provide the maximum time to
12 the ACRS Subcommittee to discuss the parts of this
13 package that ACRS has not seen to date with the focus
14 being on the draft guidance.

15 We want to thank the ACRS for its
16 flexibility and patience in supporting the Staff with
17 our efforts to provide the materials for the Committee.
18 As the ACRS knows, we are on an aggressive schedule,
19 and we are doing quite a bit in parallel that would
20 normally occur in series.

21 This rulemaking has been a collaborative
22 effort with several offices, as rulemakings always are,
23 but in this case the Japanese Lessons Learned Division
24 in NRR has been a major player as this rulemaking is
25 addressing many post-Fukushima regulatory actions the

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1 JLLD is currently addressing. I will now turn it over
2 to Tim.

3 MR. REED: Thanks, Aby. I'm Tim Reed. As Aby
4 just mentioned, I'm the Lead Project Manager for the
5 Mitigation of Beyond-Design-Basis Events Proposed
6 Rulemaking, and I'll walk through the language and give
7 the ACRS an opportunity to walk through to feel free
8 to question, provide questions, comments, whatever you
9 want; and, of course, any time you want.

10 My intent was to focus on the areas that
11 I think are substantively new but you, of course, can
12 stop me wherever you want. You have at your disposal
13 a lot more information than we previously provided;
14 namely, the Statement of Considerations that supports
15 this language, as well as all the supporting analyses,
16 Draft Reg Guides, what have you. So, with that
17 information it may, in fact, generate a lot more
18 comments and interactions regardless of whether you've
19 seen that language before.

20 So with that, I'll go to the background
21 slide. There's really nothing new in terms of the
22 background that you haven't heard before, but I think
23 it always goes B- it's a good thing to let stakeholders
24 who are listening into this, maybe haven't heard this
25 before; what this rulemaking is about, how it came to

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1 be. It's quite a large rulemaking in terms of its scope,
2 and it has effectively the consolidation of two
3 rulemakings, as this Committee is certainly well aware,
4 the Station Blackout Mitigation Strategies rulemaking,
5 and the Onsite Emergency Response Capabilities
6 rulemaking. Those were combined into what we're calling
7 the Mitigation of Beyond-Design-Basis Events
8 rulemaking, and it goes to addressing a fairly large
9 number of Near-Term Task Force recommendations, and you
10 see the list there. Essentially, all of 4, 7, and 8,
11 as well as 9.1, 9.2., 9.3.

12 You've seen this list before. Basically,
13 these are elements that have been implemented as part
14 of the Mitigation Strategies Order, collectively with
15 that order. In addition, we're also cleaning up the ERDS
16 language to effectively align with what is in place now,
17 so it doesn't refer to any technology.

18 And before I go a whole lot further again,
19 this is for folks who may not have been involved with
20 this to date. It's always important to mention that in
21 terms of safety, the orders B- most importantly, the
22 Mitigation Strategies order issued on March 12th of
23 2012 has been out there for quite a long time, and it's
24 being implemented right now. I think if folks didn't
25 know that they would say what is this? You know, here

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1 we are in March of 2015; this event is from four years
2 ago, but the fact is the Agency, the industry has been
3 working very hard, obviously; a huge amount of changes
4 going on, and Lessons Learned from Fukushima,
5 mitigation strategies, and other post-Fukushima
6 regulatory activities that you see there.

7 And as Aby mentioned, many of these are
8 coming into this rulemaking. We're making those
9 generically applicable; although, we plan to, or we
10 proposed to make those generically applicable in the
11 Code of Federal Regulations.

12 So, in addition to this, I would also
13 mention that because of B- there's actually six
14 potentially for rulemakings that also did address it
15 as part of this rulemaking effort, and that's because
16 those six petitions relied solely on the Near-Term Task
17 Force report, and in each case those Near-Term Task
18 Force recommendations are being addressed in this
19 rulemaking, so it logically follows that this
20 rulemaking will also address those petitions. So, it's
21 quite a large effort that's scoped in, and I think it's
22 important just to remind everybody of the scope of the
23 rulemaking.

24 MEMBER STETKAR: Before you get to the
25 B- into the language of the rule, I've got a few issues

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1 with the Statements of Considerations, because I hadn't
2 read through those before. I'm not even sure we had them
3 before.

4 First comment is that there is a woefully
5 misleading statement regarding ACRS, and it's in the
6 Scope of Proposed SAMG Requirements. It happens to be
7 on page B- it's in a footnote. It happens to be on page
8 28, at least in my copy. Just to read it on the record,
9 the discussion says, "As part of the NRC's efforts to
10 develop the backfitting justification for imposition
11 of SAMG requirements, it sought to make use of any
12 applicable quantified risk information that might help
13 to inform the justification.

14 In this regarding, the NRC looked at its
15 recent technical analysis work performed in support of
16 the containment protection and release reduction CPRR
17 Rulemaking Regulatory Basis." And there's a footnote,
18 and the footnote says, "The technical" B- there's a
19 word missing, "was presented to the ACRS Subcommittee
20 on August 22nd, 2014," and there's an ADAMS reference,
21 "And November 19th, 2014," and an ADAMS reference.

22 If I'm a member of the public reading this,
23 the implication I get is that the ACRS endorsed that.
24 (A) The ACRS did not endorse it. It was presented to
25 a Subcommittee. And (B) the Subcommittee had tremendous

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1 problems with that technical analysis. Please remove
2 that footnote, period. I'm now speaking as the Chairman
3 of the ACRS, not a member. That is a completely
4 misleading reference to ACRS.

5 MR. REED: Okay.

6 MEMBER STETKAR: I've got real problems
7 with the way you refer to those technical analyses for
8 the CPRR as evidence that SAMGs don't improve risk. You
9 explicitly make those statements. Now, those analyses
10 were done to look at the net risk-benefit to public
11 health and safety of installing a filter on a hardened
12 vent for boiling water reactors with Mark 1 and Mark
13 2 containments. They did not evaluate the effectiveness
14 of SAMG actions. They only looked at the effectiveness
15 of that filter; and, yet, you draw a conclusion that
16 says based on that analysis, it looks like, you know,
17 SAMGs won't really affect plant safety. But then you
18 go on and say well, we have other qualitative reasons
19 of doing this, and things like that.

20 I have no problems with the qualitative
21 stuff, but to point to that limited, and in my opinion
22 very flawed technical analysis to say that that B- the
23 NRC can draw a conclusion that SAMGs in total for any
24 plant in the country, for any set of accidents do not
25 improve risk, is B- this is now my personal opinion,

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1 not as Chairman of the ACRS, misleading at best. Okay?

2 And the third place where you're
3 misleading is when you discuss the rationale for not
4 including what you call firefighting procedures or
5 firefighting strategies and procedures under the scope
6 of the procedures that's included in this integration.
7 And you're very careful to talk about these as
8 firefighting strategies and procedures, and the
9 rationale looks at fire brigade actions and things like
10 that.

11 You say that this was discussed with the
12 ACRS during the regulatory basis development. Indeed,
13 it was discussed with us. We recommended that the fire
14 response procedures, which are not firefighting
15 procedures, they don't tell you how to put a fire out.
16 They do tell you about things like oh, disconnecting
17 power supplies to a large fraction of your plant,
18 sending operators out to do local things in the plant
19 that they wouldn't normally do, abandoning the main
20 control room. Those operational aspects of those
21 procedures are what our concerns were, not how one might
22 go mobilize the fire brigade to go put water or gas on
23 a fire.

24 Indeed, we have actual operating
25 experience that shows people can get confused when

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1 they're in both the EOPs and the fire response
2 procedures simultaneously. And, indeed, that confusion
3 can cause them to overlook things that are important
4 to plant safety because they're focusing, perhaps, more
5 on the fire response procedure rather than on other
6 indications. So, I'd suggest that you may want to look
7 at the way that those procedures are characterized as
8 fire fighting procedures, and develop a better
9 rationale for why this procedure integration ought not
10 to include the fire response procedures, which are
11 different. I'm done. I don't know if you want to
12 respond. Those are the three things that I B-

13 MR. REED: Well, we'll certainly touched
14 upon the SAMG B-

15 MEMBER STETKAR: B- had reading through
16 B-

17 MR. REED: B- stuff some more later. And we
18 can B- I'm sure we'll revisit that. I can give you the
19 thoughts, anyway.

20 MEMBER STETKAR: Yes.

21 MR. REED: And then we can talk about that,
22 and I don't know if you want to talk B- if anyone B-

23 MEMBER STETKAR: That's strictly from the
24 Statement of Discussions because, you know, you never
25 said that reflected B-

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1 MR. REED: Yes, and that's B-

2 MEMBER STETKAR: B- the rule language.

3 That's why I wanted to B-

4 MR. REED: Well, we can address that
5 throughout, or however you want to do it.

6 CHAIR SCHULTZ: No, I think we should wait
7 on that B-

8 MR. REED: Okay.

9 CHAIR SCHULTZ: B- because I think it's
10 worthy of further discussion B-

11 MR. REED: Absolutely.

12 CHAIR SCHULTZ: B- a broader discussion
13 than this.

14 MR. REED: Absolutely. Appreciate that.
15 So, can we go to the next slide where we actually get
16 into the substance of this?

17 MEMBER STETKAR: Yes.

18 MR. REED: All right, sir. Okay. So, the way
19 the rule is structured is first, in Paragraph A we have
20 an applicability paragraph there. Again, as the
21 Committee should be aware, this applies to power
22 reactors both operating, as well as new applications.
23 And, in fact, we actually have decommissioning
24 provisions in here, so we've built in that so it applies
25 to whether you're in decommissioning or at power, as

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1 well as a new applicant. So, again, that's no change.
2 You'll see that we have, in fact, updated our
3 decommissioning provisions to reflect exactly what
4 we've been doing here recently, as you'll see in a
5 second.

6 This Committee was B- we were provided
7 B- I think November 21st is the right date for the
8 Subcommittee meeting. We did discuss new design
9 features requirements at that Committee. Those have
10 changed slightly. We have a slide on that, on Slide 7.
11 And at that point, I think we'll wait B- we can wait,
12 if you will. George Tartal in NRO can address that slide
13 B- that issue on Slide 7, but I just simply note that
14 in November we had an assessment feature, if you will,
15 in those design feature requirements, and now it's
16 simply, basically, about design features and building
17 that into the design of your facility for new reactor
18 designs such that you enhance scoping capability and
19 lessen reliance on human action. So, again, that will
20 be addressed. We have a slide on that, on Slide 7.

21 The decommissioning provisions actually
22 just reflect what we've recently done for Oconee and
23 San Onofre 2 and 3, Vermont Yankee, and Crystal River,
24 so it looks like a lot, but it's actually completely
25 status quo there, is what we've done. It reflects how

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1 we've been treating mitigation strategies when the
2 licensee goes into decommissioning, how we're
3 relieving those requirements. So, the idea here is
4 simply B- it's good rulemaking practice. I'm trying to
5 build into the rule decommissioning provisions to
6 helpfully facilitate that process of decommissioning.
7 I'm sure this Committee is well aware, this is a issue
8 of pretty high importance right now to the Commission,
9 so this is really building that in. So, again, it's
10 fairly similar, you know.

11 Once the fuel is removed from the reactor
12 and goes to the spent fuel pool, obviously, it doesn't
13 make sense to apply the mitigation strategies and
14 guidelines that apply to the reactor source term, so
15 what you do is remove anything doing with core cooling
16 for the reactor, of course, or primary reactor
17 containment. And your focus goes to the spent fuel pool.
18 And then whatever period of time is needed to basically
19 conclude that your decay heat in your spent fuel pool
20 is low enough that your boil off happened long enough
21 giving you plenty of time to take out action. Then you
22 can basically now remove the remaining
23 Beyond-Design-Basis External-type mitigation
24 strategies and it leaves you with the so called B5B or
25 50.54(hh) (2) mitigation strategies. And those are now,

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1 as you'll recall, they are now what would be proposed
2 155(b)(2). And that's because the nature of those
3 events involve kinetic energy being added to the spent
4 fuel pool, and that's why those stay in place until the
5 fuel is completely removed from the spent fuel pool.

6 Again, if you look through the SAMG
7 considerations you'll see that discussion there. This
8 is in alignment with what we've been recently doing.
9 We're not carving any new territory here. This is trying
10 to reflect that and do basically good rulemaking in
11 terms of decommissioning.

12 CHAIR SCHULTZ: In that regard, Tim, in
13 terms of the decay heat once it's sufficiently low in
14 the spent fuel pool, in the section there's discussion
15 related to one reactor, a specific reactor that has been
16 shut down for a very long time. And it wasn't clear to
17 me whether you were trying to incorporate into the rule
18 provisions for that one particular reactor, or whether
19 you were using that as an example.

20 MR. BOWMAN: What we're doing, Dr. Schultz,
21 with that one B- this is Eric Bowman. I'm the Staff Lead
22 for the B5B requirements, as well as the Special Advisor
23 for Japan Lessons Learned Division. That particular
24 facility is a decommissioned reactor. It's the only one
25 with fuel remaining in the spent fuel pool.

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1 In 2005, we looked at the risk that was
2 presented by the spent fuel that's remaining in that
3 pool and concluded that it was sufficiently low
4 remaining decay heat that the B5B requirements would
5 not need to be imposed on that particular facility.

6 CHAIR SCHULTZ: That particular reactor.

7 MR. BOWMAN: Well, spent fuel pool to be
8 precise.

9 CHAIR SCHULTZ: Okay.

10 MR. BOWMAN: Not the reactor, but the pool.

11 CHAIR SCHULTZ: Right.

12 MR. BOWMAN: The reactor would have been
13 out of the question, anyway, because it had already
14 decommissioned. We haven't got any information to show
15 any change, any substantial safety benefit that would
16 be accrued by imposing requirements on that licensee.

17 The counter is true for the remaining
18 reactors that have entered decommissioning. They had
19 as operating licensees the requirements imposed upon
20 them to develop and implement the strategies for their
21 spent fuel pools, and we concluded in the Power Reactor
22 Security Rulemaking in 2009 that those requirements
23 should remain in place until the fuel is removed from
24 the pools. So, we've constructed the wording of the
25 decommissioning provisions to carry that forward as we

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1 move the B5B provisions, if you will, the 50.54(hh) (2)
2 provisions from Section 50.54 to Section 50.155.

3 CHAIR SCHULTZ: That clarifies the
4 distinction for me. Thank you.

5 MR. REED: Is there any other questions
6 before we move on with this? Okay. Then we come to
7 Paragraph B which I kind of view as the central piece
8 to this entire proposed rulemaking. And this goes to
9 the integrated response capability that we would
10 require, develop and implement, maintain integrated
11 response capability. It's this and the next slide run
12 through this paragraph the way it's structured in the
13 proposed requirements therein.

14 They're again substantially the same. It
15 starts off with, of course, the mitigation strategies
16 for Beyond-Design-Basis external events, what's known
17 in the industry as FLEX. That's the first set of
18 guidelines there. The second set of guidelines as we
19 just mentioned are the extensive B- what are most
20 commonly called the Extensive Damage Mitigation
21 Guidelines. Those would be there, obviously, as we move
22 50.54(hh) (2) in those rule. Again, this is a loss large
23 area due to explosions and fires. Then we have the only
24 set in this paragraph that are not currently
25 requirements. These are the Severe Accident Management

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1 Guidelines. Those, of course, go into place when you
2 have the onset of core damage.

3 Those, as the Committee is well aware, are
4 currently voluntary industry initiatives. This
5 proposed requirement, we are proposing to the
6 Commission that those would be requirements. They would
7 be restricted to the guidelines. It's intentionally
8 designed to be the least amount of requirements for this
9 set of guidelines that we think is necessary.

10 So, those are three guideline sets. That
11 would be integrated with the currently existing
12 symptom-based EOPs. We've structured the rule
13 B- that's on the next slide. Before I go to it, I'll
14 hold for a second, but we've structured it
15 intentionally such that we don't go back and revisit
16 the work from the 1980s, so we say these are structured
17 with the EOPs. The intention is to leave the EOP work
18 in place and not touch that. So, what we're trying to
19 do is take these strategies and guidelines that were
20 developed over different times and different places for
21 different events and basically work those into
22 something that becomes a lot more seamless in terms of
23 an integrated capability. And it looks B- really, I
24 think it's going in place largely in place, I mean, so
25 this is really B- if you think about it, the FLEX

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1 strategies are being implemented right now connected
2 into the EOPs, the Station Blackout EOP. The Extensive
3 Damage Mitigation Guidelines are in place.

4 The SAMGs are voluntary B- are in place,
5 but voluntary, but there are links, and so this would
6 really formalize that and make sure it's done, and a
7 complete and thorough job. So, that's the idea of this
8 integrated response capability.

9 This is basically the same as we presented
10 back in 2014. We haven't made any substantive changes
11 here since that B-

12 CHAIR SCHULTZ: I wanted to just clarify
13 that for the record, Tim, that what you have on the
14 slide, revised or unchanged B-

15 MR. REED: Yes.

16 CHAIR SCHULTZ: B- that you're talking
17 about what the Committee has heard previously.

18 MR. REED: That's correct.

19 CHAIR SCHULTZ: Not what this rule is
20 doing.

21 MR. REED: Yes, right.

22 CHAIR SCHULTZ: The proposed rule is doing.
23 So, as you've described here in detail these are, in
24 fact, all changes that are being proposed with the rule.

25 MR. REED: Oh, absolutely. Sorry, it's

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1 B- yes, this is entirely focused on the Committee and
2 trying to get you B- hopefully, help you focus
3 attention on the new stuff.

4 CHAIR SCHULTZ: Right.

5 MR. REED: That was the intent.

6 MR. BOWMAN: The one thing I would suggest
7 clarifying B- this is Eric Bowman, again. The
8 50.54(hh) (2) movement from its current location to this
9 particular section isn't going to be a change in the
10 strategies, the B5B strategies that have already been
11 in place, licensed, and reviewed. So, that will not be
12 a substantive change. Otherwise, the statement you made
13 about what the meaning of the unchanged is exactly
14 correct.

15 CHAIR SCHULTZ: The statement at the
16 bottom, "No additional equipment requirements for
17 SAMGs."

18 MR. REED: Yes. The structures, as we get
19 into it we can talk about this, and I'm sure we will
20 based on the comments so far. The way we've structured
21 the SAMG requirement is in light of what I think are
22 B- I think our Work Group thinks are very informative
23 risk information. And based on, in light of that what
24 we tried to do is address what we've B- with a problem
25 that was identified.

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1 The problem that was identified
2 post-Fukushima from the TI that showed that there was
3 a range of conditions out there. When we went out and
4 looked at what licensees had in place for the SAMGs,
5 between people who have updated and kept those SAMGs
6 basically up to date and were in great shape, to folks
7 that put something in place in say 1998 and just
8 basically did not do a whole heck of a lot with them
9 since then, so there's a range there. So, the concern
10 was hey, these things aren't necessarily being
11 maintained. They don't necessarily reflect the generic
12 work by the industry and updating SAMGs over time,
13 certainly couldn't reflect the most recent work here.
14 And wouldn't necessarily be in alignment with the
15 configuration of the facility and wouldn't reflect the
16 new capabilities going in place under the Mitigation
17 Strategies Order. So, that's the problem, if you will,
18 and so putting requirements on SAMGs, the way we've
19 structured it would certainly solve that problem. And
20 that was what we were going after.

21 Now, in terms of going further than that,
22 you know, in terms of saying should the Staff review
23 and approve SAMGs on a generic basis or on a
24 plant-specific basis, we backed off of that. And I'm
25 sure you've read that. And the idea is that we don't

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1 think that's necessary, and level of regulatory
2 assurance for this thing B- for this area. We think we
3 can do this with inspection. And it basically would be
4 a high-level inspection to make sure licensees have
5 SAMGs, that they're in place, they're in Configuration
6 Management, they reflect new equipment, they're
7 updated in accordance with the generic Owners Groups
8 program, and new EPRI basis documents, the great work
9 that's been done here in the last couple of years, and
10 so that's the intent.

11 Of course, when I talked about SAMG
12 requirements, I think it's in the backfit analysis.
13 You'll see there's a footnote, and what I'm really
14 saying there is that all the regulatory assurance, that
15 in fact goes to that. And that includes drills that
16 extend into core damage, that includes the change
17 control that would apply to SAMGs, that includes
18 training for SAMGs, so it's not B- it is the guideline
19 set, but it's all the assurance requirements that
20 support the guideline set so that you have sufficient
21 assurance that, in fact, SAMGs are in place, and there's
22 reasonable expectation that they can be implemented.
23 But that's what we thought B- our view was B- our view
24 is what is appropriate given what we understand to be
25 the risk benefit from that.

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1 Now, obviously, we think they're
2 beneficial from a qualitative standpoint. I think there
3 are very strong defense-in-depth arguments. Okay? But
4 in terms of what I've extracted, I know Dr. Stetkar
5 disagrees on this, but B-

6 MEMBER STETKAR: What I would ask is, has
7 the Staff B- I mean, the thing you refer to B-

8 MR. REED: Yes.

9 MEMBER STETKAR: B- is not a valid study of
10 the effectiveness of SAMGs.

11 MR. REED: Yes, it wasn't B- that's
12 correct.

13 MEMBER STETKAR: Has the Staff actually
14 tried to look at the effectiveness of SAMGs B-

15 MR. REED: Yes, I think B-

16 MEMBER STETKAR: B- in a quantitative
17 sense across pressurized water reactors, different
18 plant designs?

19 MR. REED: Yes, I think B- I tried to B-

20 MEMBER STETKAR: Not, you know, early
21 fatalities and cancer risk just because you can't
22 quantify anything else?

23 MR. REED: Yes, I fully understand that
24 wasn't directed to SAMGs. That's absolutely the truth.
25 What I tried to do is be risk-informed by that

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1 information, okay, the best I can. And what I'm trying
2 to B- what we're trying to do with that information is
3 understand what could be the benefit for SAMGs using
4 that, so it's certainly a stretch.

5 MEMBER STETKAR: Give you a different
6 perspective from B- and I've been cautioned about not
7 doing this, but I'll try to do it once. I've worked on
8 risk assessments in Europe that are full scope Level
9 2 risk assessments that, indeed, have shown substantial
10 risk benefit from severe accident management guidance
11 to save the containment. Can't tell you about them
12 because they're, you know, proprietary work that I
13 worked on, so I know there's quantifiable benefit.

14 I doubt that the NRC has looked at that
15 because the NRC does not have models or quantitative
16 ability to look at those deltas. You typically don't
17 have SPAR models that have detailed Level 2, and you
18 certainly have not quantified Level 2-type human
19 reliability. You didn't even do it in the thing you
20 referred to. I won't call it a risk assessment. So,
21 developing a blanket B- saying I looked at that thing
22 B- in Europe when we looked at, for example, the
23 benefits of filters versus non-filtered vents on a
24 boiling water reactor 30 years ago, it was clear that
25 the filter didn't buy you any improvement in terms of

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1 offsite health benefit, and people have known that for
2 a long time. But that's not SAMGs, that's not an
3 inference that I can say having SAMGs or not having
4 SAMGs will have an effect on reducing risk to the health
5 and safety of the public. And that's my real problem
6 with referring to that particular study and saying
7 well, we gained all of these tremendous insights from
8 that thing to say well, SAMGs are likely not to have
9 much benefit, because I can show you a study B- I can't.
10 Unfortunately, I can't show you the studies, but
11 studies have been done to show that they do.

12 MR. REED: Well, I'm certainly not aware of
13 that.

14 MEMBER STETKAR: It leaves people the wrong
15 B- the problem is it leaves people the wrong impression
16 because it says well, the NRC did some sort of risk
17 assessment work, and the conclusion B- and it's recent.
18 It's not stuff that's 30 years old. And the conclusion
19 from that is oh, there's likely not much quantitative
20 benefit, but we can develop a lot of qualitative
21 arguments which, by the way, are all very good.

22 MR. REED: Appreciate, at least B-

23 MEMBER STETKAR: The qualitative arguments
24 are all very good, but to explicitly say that we don't
25 have any B- you may not have any quantitative evidence.

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1 MR. REED: I mean, I was trying to
2 extrapolate that, and you can B- I stand accused.

3 CHAIR SCHULTZ: Well, let me pile on a
4 little bit.

5 MR. REED: Okay.

6 CHAIR SCHULTZ: Because I do believe that
7 the discussions associated with the reasons why the
8 SAMGs are of safety benefit, those discussion B- that
9 discussion is very good. I do get stuck when I see that
10 the rationale for moving forward with this portion of
11 the proposed rule is that B- the rationale is that we're
12 using qualitative factors, or qualitative rationale.

13 I think it should be quantifiable. I think
14 it's clear that if you have a facility of these types,
15 and you have the need for Severe Accident Management
16 Guidelines, and you instill them into the operation of
17 the facility, that there is a quantitative benefit.

18 Let me say it differently. The inability,
19 perhaps, for us not to be able to quantify at this time
20 does not mean that all you have left is qualitative.

21 MR. REED: I guess B-

22 CHAIR SCHULTZ: It's just a matter of
23 expression, but it de-emphasizes the advantage and the
24 benefit of the SAMGs, and all of this integrated
25 response capability, and its benefit and need to move

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1 forward with the rule. Otherwise, you begin to lose the
2 argument B-

3 MR. REED: I think B-

4 CHAIR SCHULTZ: B- that this is an
5 important B-

6 MR. REED: Part of the problem is I think
7 in backfit space, and not necessarily in showing a
8 change in benefit. I'm showing either adequate
9 protection, which is a very large change, or a
10 substantial B- you know, so I think in purely backfit,
11 so that may be part of the problem.

12 MEMBER STETKAR: No. Yes, I understand.

13 CHAIR SCHULTZ: Yes.

14 MEMBER STETKAR: I understand that
15 constraint. And quantitatively in the context of U.S.
16 backfit numerics, it's been a while since I looked at
17 the study. I honestly don't know B-

18 MR. REED: Yes, and I B-

19 MEMBER STETKAR: B- whether you trip over
20 B- on the other hand, I am absolutely confident that
21 you can show more benefit than was shown from that CPRR
22 little study.

23 MR. REED: Yes, I would agree with that,
24 too. I think you could show more if you did something
25 explicitly for SAMGs. Okay? But I'm thinking in my mind,

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1 and I didn't provide it in this one, but in the last
2 presentation B- and I didn't want to provide it here.
3 I didn't want to get into a lot B- because I knew B- I
4 think is some sensitivity some of this information
5 because I was at that briefing, Dr. Stetkar, but I was
6 thinking about the more bounding number there, that was
7 a full magnitude below the QHOs, if you recall. And,
8 to me, that's B- you know, when you're 10 times below
9 at a bounding level for a very B- for a type design that
10 is amenable to actions after core damage, and there's
11 lots you can do with the Mark 1 and Mark 2 there. To
12 me, that is pretty good information that tells me that
13 what I believe is B- everybody kind of expects that
14 B- severe accident risk is very low. It's low as a
15 function of all our regulations that drive core damage
16 down, and it's low as a result of EP moving people out
17 of harm's way. I mean, that shouldn't be surprising,
18 but what was surprising to me was it was that low. And
19 that's why in the backfit space I'm thinking I don't
20 B- even if you spent the time and money to do it, I don't
21 think we can make the level, if you will, show we can
22 impose by quantitative measures.

23 MEMBER STETKAR: Don't hang up, though, on
24 that one particular plant design, and the one
25 particular issue for that one particular plant design.

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1 How much benefit do you get from piping an alternate
2 cooling water supply to the containment fan coolers
3 from a non-safety grade source of water to save the
4 containment? That's a SAMG. I've seen it done. How much
5 do you get from piping fire water into the containment
6 spray system? That's a SAMG. I know plants that have
7 hooked it up, and I've seen the credit that you can get
8 for that.

9 They have it in pressurized water reactors
10 and they are not focused on this particular one issue
11 for a boiling water reactor with a Mark 1 or Mark 2
12 containment. And that's the broader context of SAMGs.

13 MR. REED: Yes, I hear you. I mean, I'm not
14 sure if I'm communicating well, but in each case if I'm
15 going to get a lot of benefit for the circumstances,
16 I think you're going to find that there's a power
17 reactor there with a lot of risk there. For whatever
18 reason, internal, external, probably external risk
19 that there's substantial risk such that when I do that
20 SAMG, I get a big benefit. So, yes, there would be a
21 range across the board of different B- every plant is
22 going to have a different risk, but for there to be a
23 substantial change in severe accident risk, I think,
24 you know, there's got to be some risk there.

25 And the first thing I would ask the people

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1 is if, in fact, you get to the point where you show
2 SAMGs, let's say whatever plant it is, you show SAMGs
3 get a very big return, I'm going to say let's come to
4 a full stop. How did you get to that sequence? Is it
5 better to stop upstream and address the issue before
6 it goes to core damage, if you follow what I'm saying.

7 MEMBER STETKAR: It's a difference in
8 perspective. Will it drop below some magic absolute
9 number, or will it drop the risk by a factor of 100?

10 MR. REED: Yes.

11 MEMBER STETKAR: A factor of 100, not
12 necessarily less than, you know, 1E to the minus 5 large
13 release frequency.

14 MR. REED: Exactly.

15 MEMBER STETKAR: But gain a factor of 100
16 on perhaps a lower value than that.

17 MR. REED: Yes.

18 MEMBER STETKAR: But a factor of 100, to me,
19 is kind of important from a risk perspective.

20 MEMBER BLEY: And the point you just made,
21 Tim, if we put B- for any given defined scenario, you
22 can prevent it. You can come up with something. I agree
23 with you. But putting all your eggs in the prevention
24 basket doesn't cover you for the case where you didn't
25 think of the scenario.

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1 MR. REED: Yes, that's defense-in-depth,
2 and I like that argument B-

3 CHAIR SCHULTZ: And that's the qualitative
4 stuff brings out that point.

5 MR. REED: Yes, I agree 100 percent.
6 There's value to that, and if the Committee has ever
7 looked through the SAMGs and looked at EPRI Technical
8 Basis document, if you glance through that, there's an
9 enormous amount of great information in there. I think
10 it's very valuable, so I do think there's a lot of value
11 in it. Absolutely.

12 MEMBER BLEY: And to that issue of what
13 we've forgotten, when we had the floods a couple of
14 years ago and started looking hard at the risk from
15 floods, I think nobody had calculated it at the levels
16 that you probably calculate it now.

17 MR. REED: Yes, I agree with that, too. I
18 think sometimes we think we know more than we really
19 do. There's more uncertainty, perhaps. Yes, I agree
20 with that, also. I think I had those thoughts in there,
21 too, so I'm aligned with it qualitatively. I'm just
22 trying to address Dr. Stetkar's issues on how I was
23 informed, or our team was informed by the risk. We think
24 we really were informed enough.

25 MEMBER BLEY: Your argument about where the

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1 level of risk is compared to B- is one thing, but I
2 really agree with John on the idea of extrapolating
3 anything from that one study to apply across B-

4 MR. REED: Yes, I know B-

5 MEMBER BLEY: B- the range of the SAMGs,
6 just doesn't work.

7 MR. REED: I know. I was B- you know, I
8 think it was Dr. Corradini, one of our previous meetings
9 B-

10 MEMBER BLEY: He came up with it?

11 MR. REED: Well, he was the one, hey, how
12 come you aren't doing risk B- I haven't heard B- and
13 he's beating on me. And I said well, you know, I'm going
14 to try to find risk information everywhere I can find
15 it. And I thought the B- I think the folks in Research
16 did a great job in that technical basis for CPRR. I'm
17 sorry, I really do think they did a great job, and that's
18 why I was looking at it. I think it is informative, and
19 there's a lot B- it tells you a lot about doing things
20 after core damage, and whether there's any risk benefit
21 to be gained. Certainly, there's benefits, but are they
22 at the level that you can backfit and impose it? I don't
23 believe you're going to get there personally as a
24 backfit B- from a backfit standard in the U.S. I do
25 understand there would be benefits, I agree, but it's

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1 a tough standard to hit the backfit mark, in my personal
2 opinion. Anyway.

3 CHAIR SCHULTZ: But here's another
4 perspective. If you look at that evaluation and you see
5 the difference between the goals and the risk shown,
6 one way one might look at that would be to say I can
7 B- there's plenty of margin, and I can buy into that.
8 But I can buy into that only if I have an integrated
9 response capability that falls along these lines,
10 because those are the elements that, in fact, are being
11 brought forward to the Mark 1s, Mark 2s with that
12 overall evaluation and approach. There's a lot of work
13 that's being done, we'll hear about it tomorrow morning
14 B-

15 MR. REED: Yes.

16 CHAIR SCHULTZ: B- with regard to B-

17 MR. REED: Absolutely.

18 CHAIR SCHULTZ: B- response to events.

19 MR. REED: Yes.

20 CHAIR SCHULTZ: And the need for that in
21 order for the argument to hold, perhaps. And I don't
22 mean you B- everyone wouldn't need that for the
23 argument, but I would propose that this is extremely
24 helpful to demonstrate that were this in place, I can
25 buy into it. I can see that the delta is there, and it's

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1 very, very beneficial to move in this direction.

2 MR. REED: Also, I would be remiss if I
3 didn't mention that B- I do tend to forget this because
4 I think of it as no SAMGs and SAMGs, and that's the
5 delta; where, in fact, there are SAMGs. And the delta
6 about this requirement is simply updating those SAMGs.
7 As I mentioned, some folks they really update, others
8 that may be a switch, and so the delta in terms of that
9 impact is fairly small, I believe. I think you could
10 probably take somebody who has a 1998 SAMG that's been
11 sitting on the shelf, and you probably wouldn't be too
12 bad given their most recent experience with mitigation
13 strategies and their understanding of how to do that.
14 They have a much more mitigation strategy mind set,
15 clearly, and if you take even something that was out
16 of date, I believe they'd have a really good chance.

17 Now, I think it's much better the work the
18 industry has recently done, it's great stuff, and I
19 would like to see it updated, no doubt. And they're
20 working that way, so I do think there's benefits. But
21 we've got to keep in mind that these things are in place
22 at every facility. They're just voluntary, and what
23 we're trying to do is make them mandatory. So, that goes
24 to this backfit again.

25 I'm a backfit mind set in rulemaking.

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1 That's the way I'm thinking, so that's why I thought
2 B- I'm trying to inform the Commission. I'm trying to
3 be as honest and objective across the board. I mean,
4 the fact is, is that it's the Commission's decision here
5 on how much weight you're going to give to qualitative
6 factors. I mean, that's a recent SRM, and I understand
7 that. For them to make that informed decision, I think
8 they have to have all the best information, again.
9 That's the spirit I'm trying to provide, so B-

10 MEMBER STETKAR: Tim, my point is that the
11 information that you throw in their face as
12 quantitative information is rather, in my opinion, bad
13 information. It's misleading.

14 MR. REED: I should probably characterize
15 it a little better. I think I B-

16 MEMBER STETKAR: And that's the danger of
17 spending B-

18 MR. REED: Yes.

19 MEMBER STETKAR: B- kind of a page focusing
20 them on this recent study that's been done, and look
21 at the insights that we can from it, and from
22 quantitative B-

23 MR. REED: Yes, I B-

24 MEMBER STETKAR: B- we can't make the case,
25 because it's not true.

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1 MR. REED: It B-

2 MEMBER STETKAR: It's true that you can't
3 make the case B-

4 MR. REED: That's what I meant.

5 MEMBER STETKAR: B- but using that study as
6 evidence B-

7 (Simultaneous speech)

8 MEMBER STETKAR: B- you can't
9 quantitatively justify it.

10 MR. REED: Certainly want to characterize
11 that information correctly, but I want to be informed
12 by it. So, I mean, to the extent you can help with that,
13 I do appreciate it. I mean, so B- because I think it's
14 great information to try to use, but I understand we've
15 got to be careful how we do that.

16 MEMBER STETKAR: Right. I think very
17 careful with sensitivity.

18 MR. REED: Yes, okay.

19 MEMBER STETKAR: Just to try to demonstrate
20 that there is quantitative evidence and that you've
21 relied on it to some extent.

22 MR. REED: Yes.

23 MEMBER STETKAR: And I think B-

24 MEMBER CORRADINI: Can I ask a question?

25 CHAIR SCHULTZ: Yes. I was just informed

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1 that you wanted to ask a question. Go right ahead.

2 MEMBER CORRADINI: So, Tim said I was
3 beating him up, so here's my chance. So, Tim, I don't
4 understand the last phrase in your viewgraph where no
5 additional equipment requirement. And that B- and I
6 want you to explain that, and also from the context that
7 the way you described the process, NRC Staff is going
8 to make sure there are SAMGs, that they're up to date,
9 that they're being trained on, but it's going to make
10 no comment on the technical content of them, and review
11 them for, I don't know, the evolution of the technical
12 content. Am I misunderstanding?

13 MEMBER REMPE: Could I even ask a little bit
14 differently, because you said they were going to review
15 them for the reasonableness, or adequacy for reasonable
16 implementation successfully. At least you said
17 something like that a few minutes ago. Right? And so
18 how would a Staffer do that without some sort of
19 quantitative analysis? I mean, what's your vision on
20 how you're going to implement this?

21 MR. REED: Well, first let me talk a little
22 bit to Dr. Corradini's, and I'll try to get to you both
23 at one time.

24 MEMBER BALLINGER: I've got one after that.

25 MR. REED: Okay, fine.

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1 (Simultaneous speech)

2 MR. REED: Well, no, this is the central
3 question I think in this rulemaking, so this makes a
4 lot of sense. But, you know, if I B- if you follow where
5 I'm going with this, if I don't think there's a lot of
6 quantitative risk benefit, okay, there is benefit, but
7 not a lot. I do want the requirements in place to
8 basically make sure there things are in the
9 Configuration Management Program, and maintained up to
10 date. That was the problem.

11 What I don't want to do is sink a lot of
12 attention and resources from the NRC into reviewing at
13 any level and then getting into exchanges back and
14 forth, and industry taking their resources and sinking
15 it at a generic level, or even a plant-specific level
16 because those resources would not be doing something
17 else that, in my view, would be much B-

18 MEMBER BALLINGER: Looking at equipment?

19 MR. REED: No, I mean in terms of reviewing,
20 looking at strategies, looking at equipment for the
21 strategies, looking at the B- basically going through
22 and reviewing the SAMG information. I think that would
23 take an awful lot of focus and resources away from
24 activities that I think would be vastly more important
25 for plant safety. That's my concern.

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1 MEMBER CORRADINI: So, let me ask it more
2 bluntly. So, you're saying that there's going to be a
3 frequency of a box check, but not any frequency of a
4 content check.

5 MR. REED: I don't think that B- I think
6 that's not too far off. I mean, basically, what B- I
7 mean, I wouldn't, obviously, put it that way, but what
8 we're suggesting here, you could see the inspection
9 ideas that we have here, is to make sure that the
10 guideline set is in place, is within Configuration
11 Management, reflects the new set of equipment and quite
12 a bit of additional capability for mitigation that's
13 going in place because of the Mitigation Strategies
14 Order, and reflects the new generic industry efforts
15 to update the SAMGs. That's an awful lot of good stuff,
16 and if that happens, I think we have addressed the
17 issues that were identified in the TI. So, that's B- if
18 that's the box check, Dr. Corradini, that's what we are
19 intending to do. But not delve into the individual
20 strategies and reviewing them, or looking at whether
21 the primary means, alternate means, or uncertainties
22 of instruments, the range of instruments, or everything
23 else as you walk through all the different
24 phenomenology you could see in these different core
25 damage sequences are the appropriate way to do it.

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1 That's a large, giant effort that you could go on for
2 years, and that's B- I don't want to take our resources,
3 the licensee's resources and go down that rabbit hole.

4 MEMBER CORRADINI: Okay. All right.

5 MR. REED: Is that B-

6 MEMBER CORRADINI: You've clarified it. I
7 may not agree with it, but you clarified it.

8 MR. REED: Okay, that's B- understand.

9 MEMBER REMPE: Then is it worthwhile having
10 that if they have these SAMGs, and they're trained to
11 rely on certain instruments, as you brought up, and the
12 instrument is not good for those conditions. I mean,
13 what's the benefit?

14 MR. REED: I probably don't have my SAMG
15 person here yet in the room. They'll be here shortly,
16 but basically, the SAMGs have that philosophy built
17 into them, you know, in terms of primary means to B- you
18 know, if you've looked at them B-

19 MEMBER REMPE: They're working on that to
20 even improve it at this time, too.

21 MR. REED: Yes, absolutely. Absolutely.

22 MEMBER REMPE: But if there's not any
23 regulatory exchange or review B-

24 MR. REED: That's right.

25 MEMBER REMPE: B- I'm not sure if it's

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1 going to be a worthwhile endeavor.

2 MR. REED: No doubt I'm trusting the
3 industry experts, and I'm not going to B- and the NRC
4 is not going in and basically checking that work, at
5 least not officially.

6 MEMBER REMPE: Well, I B-

7 MR. REED: I would say I'm probably not
8 being fully fair to the efforts of the NRC because, you
9 know, back in the '90s, some of you folks might have
10 been around when the Staff did look at the SAMGs, and
11 I had quite a bit of interaction with the industry up
12 until 1998 in establishing the voluntary initiative.
13 And we have, in fact B- we've had a public meeting, a
14 two-day public meeting back B- I'm thinking it was in
15 March, somewhere in 2014, maybe it was a little later
16 month where we've interacted with them. And, in fact,
17 we've got access through the e-Portal. We have been
18 looking at the SAMGs, so if it sounds like we don't have
19 any idea, that wouldn't be proper. But what I'm saying
20 is, when I say review, an official review where somebody
21 sends and ends in official review. And that's a
22 different animal, you know. What we've done, I wouldn't
23 characterize that as review. I think we've used words
24 like "look," and, you know, that's a soft word, but I
25 won't want to over sell what we've done, but we have

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1 B- we're definitely familiar with it. We have
2 interacted with industry, we've interacted recently,
3 so that's the level at this point of what we've done.

4 MEMBER REMPE: Historically, you did at the
5 beginning and it was deemed a voluntary effort, and then
6 after B-

7 MR. REED: That's right.

8 MEMBER REMPE: B- Fukushima you went back
9 and said well, the voluntary effort didn't work so well,
10 and here we are again. Well, we'll do a checkbox review
11 to keep it from being something that's not really going
12 to be useful in the end-run if you don't have more of
13 an exchange, and an ongoing exchange at some level. I
14 realize it's a severe accident and not deemed to be that
15 frequent of an event, but it's just B- I'm wondering
16 if something more concrete needs to be established.

17 MEMBER CORRADINI: So, can I try a
18 different way of saying it, Tim? I understand where NRC
19 can only interact with the owner-operators, the
20 licensees in a formal manner, but I think in this
21 regard, if you have a no- good, very bad day, you want
22 to be ready for it by having the regulator in
23 conversation with the licensee so that they're on the
24 same page as to what the content is of these. So, to
25 the extent that the Agency has people in conversation

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1 with the licensees on this on an ongoing basis, I think
2 it can only be beneficial. And I think these B- as John
3 started off the conversation, on a relative basis,
4 these are quite beneficial.

5 CHAIR SCHULTZ: Thank you, Mike. Charlie,
6 you're next in queue.

7 MEMBER BROWN: Okay. Equipment. On B- I
8 guess at an ANS meeting recently, one of your staff
9 presented a B- some conclusions where it demonstrated
10 for accidents monitoring instrumentation, that that
11 was needed to further hardened reactor and containment,
12 and spent fuel pool monitoring to better withstand
13 severe accident conditions. That was presented B- one
14 of your staff members did that.

15 So, I said okay, that's consistent with
16 some of our past discussions and the meetings relative
17 to severe accident monitoring. Then I looked at the FRN
18 and said, okay, the NRC proposes to have requirements
19 for licensee B- this is on page 67, for licensee
20 equipment, including instrumentation that is relied
21 upon for use in the proposed mitigation strategies and
22 guidelines.

23 You page down to page 69, when you finish
24 all your discussion, it says, "As a result, we
25 determined that conditions to which the

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1 instrumentation would be relied on would be exposed,
2 do not include the progression of sequence of events
3 to damage the fuel." You've determined that it should
4 not be necessary for the instrumentation to be designed
5 for use in the mitigating strategies and guidelines
6 conditions, in the first paragraph. But, instead, it
7 would be necessary that the design and associated
8 function requirements B- functional performance be
9 sufficient to meet the demands of those strategies.
10 Well, that was a little loose, couldn't figure out what
11 that said.

12 Then I looked at your other document that
13 you provided us that said -- that's the being supported
14 -- to support the meeting with ACRS today and not to
15 solicit external feedback, where said, "The proposed
16 SAMGs would not include new instrumentation
17 requirements." You go through a discussion and then you
18 conclude that, "The Staff concludes the NRC and
19 licensee requirements efforts and resources are
20 focusing on designing severe accident instrumentation.
21 Attention could be significantly diverted from more
22 important safety issues."

23 I'm trying to figure out where you're going
24 with this. Is it the conclusion -- there have been a
25 number of past meetings where we've discussed and it

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1 has been kind of understood that you would look at or
2 assess it, and it seems to me what you've said is no,
3 there's no severe B- other than the fuel pool B- the
4 spent fuel pool level instrumentation, that looks like
5 everything else is off the board and everybody would
6 just be relying on the standard built in equipment, so
7 I'm not quite sure where you're going with these
8 statements from one to the other. First a little bit
9 of an endorsement, then the presentation to the ANS,
10 then diverting attention from other more important
11 safety issues is such that no instrumentation is
12 required.

13 MR. REED: I guess all I can B- and, Eric,
14 I think some levels on mitigation strategy stuff, but
15 I can give you the perspective on SAMGs. The SAMGs
16 approach is basically in terms of equipment and
17 instrumentation. It's going to be, I'll tell you, the
18 status quo. In other words, you make use of everything
19 you have in the facility, wherever the pedigree of that
20 is. It's Reg Guide 1.197.

21 (Off microphone comment)

22 MR. REED: Yes, I probably did. And what you
23 do is, given that you're basically looking, and you
24 recognize that's going to only last for so long, and
25 then no matter what it is you do, whether you get the

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1 super duper instrument or whatever, depending on where
2 that is, it's going to fail. And what you're really
3 looking at now is hey, what's my primary means, what's
4 my backup means, what my alternative means are, what
5 are my calculational methods for determining it, and
6 that's what the SAMGs do.

7 So, the question I would have is, given
8 that's the philosophy the SAMGs are built on, what would
9 be the difference if you changed out an instrument to
10 make it more capable of say severe accident conditions
11 beyond what it would be for Reg Guide 197, whatever,
12 I think Rev. 3, whatever it is that people have actually
13 monitoring instrumentation for. How much better would
14 it be? And would it extend you look into a severe
15 accident by minutes, hours, anything at all? Would
16 that, in fact, then end up changing any of the actions
17 that are taken in terms of mitigation? Would it still
18 be add water, add water, add water, or would it, in fact,
19 be a real change in what can we do in mitigation?

20 And then you roll that back up to finally
21 why I started. How important are SAMGs in their entirety
22 for public health and safety? I don't think in terms
23 of backfit space and absolute change they're a very
24 large change. They are beneficial. You know, obviously,
25 you've seen my arguments. Okay? And when I look at how

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1 the overall changes in terms of safety, and then I drive
2 it down and I look at okay, I'm going to start thinking
3 about equipment, enrichments, and different
4 strategies, and maybe making it better, how much better
5 am I making it? And how much does that matter B-

6 MEMBER BROWN: How do I know if I'm adding
7 water that I'm doing any good? I mean, not if you're
8 going out a hole that you're not aware of, it's never
9 getting to where you want it to go, and the temperatures
10 just keep going up.

11 MR. REED: How will you know with better
12 instruments?

13 MEMBER BROWN: You'll know the temperature
14 keeps going up until you've exceeded B-

15 (Simultaneous speech)

16 MEMBER BROWN: B- up to 2,000 degrees.
17 Well, then you know you've got a bigger problem.

18 MEMBER REMPE: And it's real important to
19 know where it fails.

20 MR. REED: So, you extended the time in a
21 sequence.

22 MEMBER BROWN: Well, no, you've extended
23 the information you have relative to how severe the
24 problem is now because you know the water is not getting
25 there. I mean, I just have a little bit of qualms with

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1 that thought B- pressure B- let me see, temperature,
2 pretty important. Okay? And you can put pretty hardened
3 sensors in place, and you can get that information out,
4 okay, under pretty nasty getting them out of the plant
5 where you can read them. You can also get some types
6 of level out if you work out B-depending on the reactor
7 type we're talking about that is pretty blacksmith
8 technology approach to doing business, and maybe the
9 temperature is the best one. But if you don't know
10 whether the water is doing anything or not, what the
11 hell good is it to put the water in? You pump the whole
12 Atlantic Ocean or the Pacific, whatever it is, it's not
13 cooling anything, doesn't do any good.

14 MR. REED: You're going to B- the Committee
15 is going to hear this a lot because I do this B- I always
16 say bring your backfit justification. I'm thinking in
17 backfit space, so when you say you want to do something
18 different with equipment or instrumentation, then I say
19 okay, show me the benefit for that, and let's see if
20 you could show substantial additional protection or
21 adequate protection. I don't think you can. And if you
22 can, then we'll talk about the costs both direct and
23 indirect that justify B-

24 MEMBER BROWN: I would argue that it brings
25 in the thought or the concept of alternate B- if you

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1 know your water is not doing any good, I better do
2 something else.

3 MR. REED: Okay.

4 MEMBER BROWN: You know you have to go do
5 something else.

6 MR. REED: Right.

7 MEMBER BROWN: You may not exactly know,
8 but what's the knowledge worth?

9 MR. REED: That's B-

10 MEMBER BROWN: Do you want to continue to
11 have the whole thing melting down like a little volcano
12 and lava flowing out the side B-

13 MEMBER BLEY: Not much today, but today you
14 have an accident it'll be really B-

15 MEMBER BROWN: Right. I've got a
16 fundamental disagreement on some very basic. And I'm
17 not talking about extensive B-

18 MR. REED: I understand what you're saying.

19 MEMBER BROWN: B- high-level digital, you
20 have flat screen displays, you know, the hardened
21 B- that's baloney.

22 MR. REED: I understand the spirit of what
23 you're saying.

24 MEMBER BROWN: Look at a temperature sensor
25 with hard wire coming out and a guy reads with a meter

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1 somewhere 200 feet away.

2 MEMBER POWERS: The trouble, Charlie, is
3 that if you've got conditions that will damage a ceramic
4 fuel then you've got conditions that will destroy any
5 thermocouple known to man.

6 MEMBER BROWN: I don't B- once you B- I
7 don't know. If your fuel is already broken and stuff
8 is coming out of it, you've got heat. It can get pretty
9 hot.

10 MEMBER REMPE: So put your thermocouple on
11 the bottom of the vessel and you'll know it's heating
12 up, and that something real hot is on the inner surface
13 of the vessel, and you might think of an alternate
14 strategy.

15 MEMBER BROWN: I just think it B-

16 MEMBER REMPE: It's where you put that
17 thermocouple.

18 MEMBER POWERS: If you're going to talk
19 about thermocouples located away from the fuel, we've
20 got lots of them.

21 MEMBER REMPE: But what's their operating
22 envelope, 350 C?

23 MEMBER POWERS: You can make them anything
24 you want to.

25 MEMBER REMPE: Well, that's the issue, is

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1 think about where you B-

2 MEMBER BROWN: The ones today are using
3 conventional B- getting the information out to B-

4 (Simultaneous speech)

5 MEMBER POWERS: B- things like that.

6 MEMBER BROWN: I mean, nobody is putting
7 any thought into the way you would do this in order to
8 have a better idea of what the temperatures are on the
9 inside of the reactor vessel.

10 MEMBER POWERS: And you're simply never
11 going to get there. If you're talking about
12 temperatures that are away from the reactor, the
13 inverse calculation is ill-posed, and it's more likely
14 to mislead you than anything I can think of. The answer
15 is always water, water, and water.

16 MEMBER BROWN: If you don't know whether
17 the water is doing you any good, then what good is it?

18 MEMBER POWERS: It is extremely difficult
19 to come up with a way that the water isn't any good.

20 MEMBER BROWN: I don't know, but there seem
21 to be a lot of questions floating around at the
22 beginning B-

23 MEMBER POWERS: Yes, you could hypothesize
24 all kinds of strange conditions B-

25 MEMBER BROWN: That doesn't seem like it's

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1 an unknown unknown type of operation B-

2 MEMBER POWERS: The answer at Fukushima was
3 add water.

4 MEMBER BROWN: And we still don't know
5 whether any good initially.

6 MEMBER POWERS: The answer was B- yes, we
7 know that not adding water was really bad. We know that
8 one for an absolute for sure fact.

9 MEMBER BROWN: Well, this back and forth is
10 not going to resolve this particular issue, but I did
11 want to bring it out that this B- I personally do not
12 agree, even though my compatriot B-

13 MR. BOWMAN: To answer the first part of
14 your question, though, the discussion in the Statement
15 of Considerations on the limitations of the equipment,
16 including instrumentation is limited to the discussion
17 in the proposed Section 50.155(b)(1) for equipment
18 supporting the mitigating strategies portion. I'm
19 sorry, (c)(1) for the equipment supporting the
20 mitigating strategies portion of (b)(1) which is
21 limited to pre-core damage. So, for its use to meet the
22 functional requirements before core damage there is no
23 need for the equipment or the instrumentation to be
24 capable of surviving post-core damage.

25 MEMBER BROWN: Where does the severe

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1 accident monitoring thought process get factored? I
2 guess I missed that when I was reading this.

3 MR. BOWMAN: There's an exclusion of a
4 separate equipment requirement for post-core damage,
5 and that's discussed, in part, in the draft SECY paper
6 where we made the statement. That's that separate page.

7 MEMBER CORRADINI: So, can I ask a
8 question?

9 MEMBER BROWN: To the Commission B- for the
10 Commission.

11 MEMBER BROWN: Hold on, Mike.

12 MEMBER CORRADINI: Sorry, Charlie.

13 MEMBER BROWN: Well, that's where you do
14 state B- you do talk about severe accident monitoring.

15 MR. BOWMAN: Yes. There was B-

16 (Simultaneous speech)

17 MEMBER BROWN: B- not going to do anything.

18 MR. BOWMAN: We are not doing anything in
19 this context in this rulemaking. There remains a Tier
20 3 action item post-Fukushima to look at the value that
21 post-severe accident monitoring equipment would
22 provide and come to a conclusion as to whether or not
23 that would provide a substantial safety benefit. I
24 think part of B-

25 MEMBER BROWN: The patient could be dead by

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1 the time we get to that one.

2 MR. BOWMAN: B- the problem that we've got,
3 and we may not have communicated it well enough, it's
4 not that we are pointing to the quantified results of
5 the CPRR information and saying it doesn't meet it. What
6 we're saying is we don't have quantified information
7 that meets the substantial safety benefit criteria at
8 this point.

9 MEMBER BROWN: I guess B- I understand what
10 you're saying. I just B- I have a little bit of
11 difficulty because I can't stick a quantitative, highly
12 quantitative in this very unknown type situation that
13 I'm just effectively going to B- I don't want to use
14 the word "ignore," reject, not consider it at this time,
15 maybe forever.

16 MR. BOWMAN: We have to consider the value
17 it would add to have the severe accident capable
18 instrumentation in the context of the existence of
19 other things like computational aids that can give us
20 information that would influence our decisions on what
21 courses of actions we've got to be taking.

22 MEMBER CORRADINI: So, you really don't
23 want to rely on a computer when I could measure
24 something. You're not saying that, are you?

25 MEMBER BROWN: That is exactly what he

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1 said.

2 MR. BOWMAN: You would measure it. If you
3 can't measure something, you would use whatever means
4 you have available to aid you in B-

5 MEMBER REMPE: I'm aware that industry has
6 these calculational aids, but what I was B- I haven't
7 B- I thought heard you say is we're just going to check
8 the box, but now it almost sounds like well, yes, we
9 are going to look at what they are proposing. And if
10 the first sensor goes and we B- you know, they should
11 define boundaries for when that sensor goes and what
12 the alternative methods are at that time. Are you going
13 to have some interaction with the regulator reviewing
14 what industry is proposing? Are you just going to say
15 yes, they've got B- they say they have calculational
16 aids, they have alternate sensors, and we check the box
17 and go on. How much B- that's what I'm wondering, are
18 you going to get into the details, or are you just going
19 to let them do whatever?

20 MR. REED: Well, first of all, presuming
21 the Commission does agree with the qualitative
22 arguments and thinks that SAMGs should be imposed. I
23 don't know if that's a given at all.

24 MEMBER REMPE: Right.

25 MR. REED: Then I think then it depends on,

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1 of course, their direction to us. Now, we are
2 B- obviously, we're familiar with the SAMGs, and that's
3 different than being reviewed, as I mentioned, so we
4 are familiar. You do understand that, but I don't think
5 we would B- if it's me, I'm speculating now, but those
6 special requirements are pretty high-level, and unless
7 I saw something that was egregious, I mean, in terms
8 of some licensee's SAMGs were, you know, on the face
9 of it not even potentially executable. Okay? I mean,
10 it would have to be something where it doesn't make the
11 black-letter of the B- you know, what our rule says,
12 you know, in terms of what SAMGs do. It's a pretty tough
13 B- a pretty high standard. So, I wouldn't be going B- at
14 least the way I see it right now, I wouldn't be going
15 into individual sequences and looking at the different
16 means of instruments and what have you. I wouldn't be
17 going down to that level.

18 I think to go down to that level, in other
19 words, to check the work that industry has done over
20 the last 20 plus years would, obviously, have a lot of
21 NRC resources and back and forth. So, right now it's
22 saying yes, we've looked at it. We know it's there, but
23 we're not reviewing and approving.

24 MR. BOWMAN: I think one potential example
25 is something that would be plainly wrong with an

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1 implementation of a severe accident management
2 guideline set for a licensee if their SAMGs did not
3 reflect the plant as built, and as maintained, or the
4 equipment that was available and that they should be
5 proposing to rely on. Then we would say there is a
6 problem, an issue of concern, and we would process it
7 through our normal inspection processes in the Reactor
8 Oversight Process for dispositioning.

9 MR. REED: Because I think if you read
10 through that, one of the things I think it B- I think
11 it was in this package, could have been in a previous
12 version about the qualitative arguments, SAMGs, I
13 think, are very valuable and they became a lot more
14 valuable because of the much increased mitigation
15 capabilities that are going into place now.

16 Now, those are designed to be pre-core
17 damage, but let's face it, this stuff would B- you use
18 everything and anything you can post-core damage, and
19 it's likely they would be very useful post-core damage.
20 So, for example, if a licensee didn't reflect that in
21 their SAMGs, that to me would be a clear case where no,
22 this is not making it.

23 MEMBER CORRADINI: May I ask a question at
24 this point, Steve?

25 CHAIR SCHULTZ: Yes, go ahead, Mike.

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1 MEMBER CORRADINI: So, maybe we should wait
2 until industry comes up and ask them the question of
3 content, and the questions might be what is the minimum
4 set of instrumentation although outside of their EQ
5 range, that they look at so that they get a feeling for
6 how, God forbid, an event like this occurs, how it's
7 progressing in terms of water addition, or where I might
8 retreat to put the water?

9 Also, the next question for industry is,
10 what is the frequency in which they do training so they
11 do it appropriately, but not overwhelm the operators
12 with training that is of low probability compared to
13 other things need to train? I assume the industry has
14 answers to these things.

15 CHAIR SCHULTZ: I agree, Mike. That would
16 be a good approach to take, especially with regard to
17 this afternoon, and we'll give the industry some time
18 to think about that before they come up. But that is
19 a way in which what we've just discussed, I think what
20 Eric was getting to with regard to measurement versus
21 calculation. Those are the elements that had gone into
22 the development of the SAMGs.

23 DR. SHACK: Just thinking about it, I mean,
24 it seems to me one of the problems with the SAMGs has
25 not been so much that the guidelines have been poor o

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1 badly thought out. The question is whether they've
2 really been implemented, people have been trained on
3 them.

4 In your view, would the inspection under
5 the ROP go some ways towards solving that problem that
6 we're sure that people B- are they being implemented
7 and people are being trained?

8 MR. BOWMAN: Well, the things we saw in the
9 temporary instruction inspection, I think it was 184,
10 I don't remember exactly what the number was, that was
11 done post-Fukushima, was some licensees did not include
12 the SAMGs in their Configuration Management Programs,
13 so there were some issues that were found with the
14 currently B- the then existing SAMGs reflecting B-

15 DR. SHACK: No, I realize there were
16 problems found. The question is, is your proposal going
17 to fix that? It should.

18 MR. REED: That's exactly what it's going
19 towards. In other words, it would B- sure, you update
20 them, you maintain them updated over time, that you've
21 done the sufficient training that, you know, you can
22 expect that they could actually implement them. Those
23 are the kind of issues that were found in the TI, and
24 so that's what we're trying to do. That would address
25 that. That's the level we're going to to solve the

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1 problem. That's how we tried to construct it.

2 CHAIR SCHULTZ: I would hope so, otherwise,
3 there's no reason to move forward and make them
4 mandatory, not voluntary.

5 MR. BOWMAN: Absolutely.

6 CHAIR SCHULTZ: That, in fact, this
7 approach would fix the problems that have been
8 identified from 1998 until now, whenever they occur.

9 MR. BOWMAN: The other B-

10 CHAIR SCHULTZ: I'm not saying there are
11 lots of problems out there, but there are certainly
12 some.

13 MR. BOWMAN: The other thing I would point
14 out to be completely open is that the content of the
15 SAMGs has changed since they were first implemented.
16 One of the major changes was the inclusion of damage
17 to fuel in a spent fuel pool. That wasn't covered under
18 the prior version of the SAMGs before the Fukushima
19 event.

20 MR. REED: In fact, I think there are five
21 candidate high-level accidents. I don't see Ed in the
22 room, Ed Fuller did look at the Technical Basis Document
23 in detail and those are all lessons learned from
24 Fukushima, like hydrogen build-up mitigation, the use
25 of raw water. There's a few others, too.

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1 CHAIR SCHULTZ: Well, this is something we
2 can hear in the industry presentation later today.

3 MR. REED: Any more questions on this
4 slide?

5 DR. SHACK: One further comment. I mean, in
6 terms of the fence B- I agree that you probably can't
7 do this under a backfit. You know, that B- I haven't
8 done the calc but I'd be very surprised. But as a
9 defense-in-depth measure, I certainly don't see the
10 difference between the EDMGs and the SAMGs. And the
11 defense-in-depth capability I get from one to the
12 other, seems to me an inconsistent treatment. I would,
13 you know B-

14 MR. BOWMAN: All I can say in response to
15 that is that the requirement for the EDMGs was proposed
16 B-

17 DR. SHACK: Was under a different B-

18 MR. BOWMAN: B- as the adequate protection
19 exemption for exception from the Backfit Rule. So, it
20 did go through the backfit process. It was a policy
21 decision that was made. It's been carried forward B-

22 DR. SHACK: It seemed to me on a qualitative
23 basis if you're looking for defense-in-depth, I can at
24 least make a strong case for SAMGs as a contribution
25 to the defense-in-depth as I can EDMGs.

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1 MR. REED: I would personally agree with
2 you, Dr. Shack. I think there's a stronger case for
3 SAMGs, but that's just my personal opinion. So, I do
4 think there's a lot of value, too, but Eric is
5 absolutely right that the EDMGs stem from B5B B-

6 DR. SHACK: It's a different world, yes, I
7 agree. But, again, I do want to think that B- you know,
8 it's important to solve the problem that we're really
9 seeing with the SAMGs, which is implementation and
10 training, not so much the proposing things that are
11 technically unsatisfactory.

12 CHAIR SCHULTZ: But you're proposing to
13 move it forward in that way.

14 MR. REED: Yes.

15 CHAIR SCHULTZ: The defense-in-depth
16 argument.

17 MR. REED: Yes, absolutely.

18 MR. BOWMAN: Well, a defense-in-depth
19 argument that uses the cost justified substantial
20 safety benefit exception to the Backfit Rule based on
21 qualitative factors, presenting the qualitative
22 factors to the Commission so that they can make the
23 decision on whether or not they believe it is, indeed,
24 cost justified substantial safety benefit.

25 MR. REED: And I do B- and when I say that,

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1 I do say I understand that the work does not reflect
2 specific all the benefits for SAMGs in risk space, so
3 I understand that. I know that's not exactly what
4 B- scratch Dr. Stetkar's itch here, but I do understand
5 that, that there's more benefit. And I'm suggesting
6 that there's enough that we could make the substantial
7 list from that standpoint. So, yes, sir, we are
8 proposing to the Commission to B- for them to go forth
9 with this as a requirement.

10 MR. BOWMAN: At least as a proposed B-

11 MR. REED: Yes, a proposed requirement.

12 MR. BOWMAN: So we can fully inform and
13 develop a final recommendation.

14 CHAIR SCHULTZ: Yes, it's a Commission
15 decision.

16 MR. BOWMAN: Yes.

17 MR. REED: Is there anything else on Slide
18 4? We won't have to do the later slide on SAMGs by the
19 time I get there.

20 (Off the record comments)

21 MR. REED: So, Slide 5 is just a
22 continuation of Paragraph B. And I had mentioned that
23 the three different guideline says they're integrated
24 with EOPs and it's structured intentionally that way
25 to leave in place the work from the 1980s that put in

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1 place the symptom-based EOPs after TMI. We're not going
2 to revisit that. That work is fully acceptable.

3 And then given you have this integrated
4 capability. Of course, you need to support that with
5 sufficient command and control, and staffing. And this
6 stems from the fact that, you know, at least one of these
7 guideline sets the mitigation strategies for
8 Beyond-Design-Basis External Events, FLEX is, in fact,
9 for a site-wide Beyond-Design-Basis Event. That's a
10 severe challenge to the site. Obviously, it's a command
11 and control challenge. It also involves all site
12 assistance, so for an indefinite capability
13 maintaining core cooling, spent fuel pool cooling and
14 containment capability, so that's the demand, ultimate
15 demand that's placed on this integrated capability.
16 And, obviously, that places demands on your command and
17 control, your staffing, and your communications.
18 You'll see the Paragraph B-4 and 5 there, I believe is
19 the references. Again, that hasn't changed. That's been
20 substantially the same as it was in November.

21 Slide 6. I was thinking that we were going
22 to get to Slide 6 before we got into any real
23 interaction, so that shows how much I know. But Slide
24 6 are the equipment requirements, and these have
25 changed. And, namely B- and I have the exact

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1 requirements up there on the slide. The part of it that
2 changed, of course, was the reasonable protection of
3 the mitigation strategies equipment under proposed
4 155(c)(2).

5 Of course, just before we get to that,
6 these are the parts of the rule, the equipment
7 requirements we're calling them, that would make
8 generically applicable the equipment requirements from
9 EA-12-049, and that's in (c)(1), (2), and (3). And then
10 the requirements for the level instrumentation from the
11 spent fuel pool in Order EA-12-051 as 155(c)(4).

12 And there you see basic B- this was,
13 obviously, you will recall back in November a lot of
14 discussion. It was on COMSECY 14-0037, and we are still
15 awaiting the Commission's direction on this. And, of
16 course, we'll be aligned with that direction. It goes
17 without saying.

18 We think this is B- what we've seen so far,
19 this is in alignment. I'll be very frank, there's some
20 B- I mean, as we're going through this concurrence
21 process, I think we've mentioned it in the beginning.
22 This is a lot happening in parallel, and you're getting
23 B- you're becoming part of the rulemaking concurrence
24 process. Welcome to the party. But, you know, in this
25 case we're getting feedback, and the concern is, is that

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1 can we actually implement that provision by the
2 effective date of the rule? There's a lot of moving
3 parts there on what the licensee can do. They may, in
4 fact, be getting information from another entity, and
5 then giving it to us, us doing our assessment, so we're
6 looking at that, and maybe we'll probably ask for some
7 stakeholder feedback on that. We're thinking about any
8 question to that, and maybe building in flexibility as
9 part of our CR process to make sure that the
10 implementation can be done appropriately.

11 Again, we've got to B- we inform that by
12 the Commission direction, so the Commission direction
13 in the SRM will rule the day, and we need to comply with
14 that. But, nonetheless, that's an ongoing issue. That
15 is different. You see that provision up there. I'll come
16 to a full stop if the Committee wants to comment on that
17 aspect of the change in the language. Okay. So, I that's
18 where I thought the discussion was, and there's none.

19 (Off the record comment)

20 MR. REED: The training requirements,
21 those are unchanged. In fact, it's actually B- Dr.
22 Corradini kind of mentioned a little bit earlier, kind
23 of our concept here. What we're trying to do is salvage
24 training requirements that enable a licensee to make
25 use of everything they have available to them right now

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1 that's usable, and there's quite a bit of training
2 that's in place that would work for this integrated
3 response capability. Training that goes to from the
4 EOPs, from mitigation strategies order, any EP
5 training. There's a lot of B- even fire protection
6 training could be applicable. All that training can be
7 used. We're trying to B- you've read the Statement of
8 Considerations there. We're trying to enable licensees
9 to make maximal use of what they have. But to the extent
10 they don't have any training, then we're talking about,
11 you know, a systems approach to training there. So,
12 we've written the Statement of Considerations to try
13 to get that thought across. Hopefully, that makes
14 sense.

15 It's clearly designed to, basically,
16 establish a minimum training requirement to not focus
17 too much attention on SAMGs to the exclusion of say EOPs
18 or other training, for example, so it's with that kind
19 of mind set.

20 Again, that is basically the same training
21 requirements that were in place. There's no change.
22 You've got the Statement of Considerations there with
23 you so, hopefully, that makes sense of that
24 requirement. Yes, sir?

25 MEMBER BLEY: For the plants that have

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1 chosen, should they enter the SAMGs to transfer control
2 of the plant to the TSC, will there be anything
3 specifically addressing any kind of training that would
4 apply to whoever is in charge of the TSC?

5 MR. REED: I think exact B- that would be,
6 I think, the most substantive part of the training. In
7 other words, the TSC personnel, their understanding of
8 the content of the SAMGs, that switch over from the
9 control room to the TSC. I think that is where most of
10 the training would be focused. Certainly, they're
11 probably very B- in some cases, very familiar, perhaps
12 not. We mentioned the TI results, so that's where I
13 think most of the training would go.

14 Now, you should also understand, although
15 we have drills, in my view, drills and training are very
16 similar, there's a lot of overlap, so we have also
17 drills in this rule that would be a test, you know, a
18 demonstration of whether you can do these transitions,
19 so that's another check on it. But, yes, I do think
20 that's where the SAMGs training would be focused, at
21 least in my view. I don't know if I B-

22 MR. BOWMAN: What I would add is that the
23 training requirement is written as a broad high-level
24 requirement. It's in 155, Subparagraph E, and in the
25 draft guidance, I believe it's in NEI 13-06 that we're

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1 looking at B- we're considering endorsing, is sets of
2 guidance for training for the ultimate decision maker
3 or the Emergency Director, whatever the chosen name for
4 that person is, whether or not that person is within
5 the control room or in the TSC, or wherever they'd be
6 located.

7 MEMBER BLEY: I guess that always B- I hang
8 up on this idea of transferring the control, it's
9 B- even if you're very senior and experienced, if
10 you're not licensed and refreshing routinely, you don't
11 know the guts of the plant on the way B- in the way that
12 licensed folks do. And I guess we'll have to wait and
13 see how this would be implemented to make sure that
14 we're covered in that regard.

15 MR. BOWMAN: Well, in any case, if you view
16 command and control as a bundle of rights and functions,
17 in order to implement direction on what would be going
18 on in the plant, if they transfer command and control
19 to the TSC, what would happen is the TSC would provide
20 direction to the main control room, and from there the
21 licensed operators would direct what happens in the
22 plant.

23 MEMBER BLEY: I guess that's kind of B-

24 MR. BOWMAN: So, there is a real functionC-

25 MEMBER BLEY: B- of the model I've always

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1 thought of, and that it would be advice. We hear more
2 and more that no, in fact, they'll be driving the plant
3 from the TSC, at some plants. And it's another venue,
4 not commercial nuclear plants, I recall reading many
5 incident reports in facilities that have a similar
6 structure, and quite often you'd see the senior guy come
7 in and say this is going bad, I'm taking over, without
8 being fully informed of the details of what was going
9 on right now in the plant. And the first couple of
10 decisions would if not wreck the plant, put it in a lot
11 worse situation than it was in. And that's the thing
12 I keep worrying about with this concept.

13 The way you described it, I have no worry,
14 send them recommendations and the guys who really are
15 aware would say wait a minute, you might not want us
16 to do that for these reasons. Keep it at that and just
17 watch how this progresses.

18 MR. REED: Okay, so we're on Slide 7. George
19 Tartal from NRO will present Slide 7.

20 MR. TARTAL: Good afternoon. Thanks, Tim.
21 I'm George Tartal with the Office of New Reactors. I'm
22 going to talk to Slide 7 here on the new reactor design
23 requirements.

24 CHAIR SCHULTZ: George, just move up to the
25 microphone a little more. Thank you.

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1 MR. TARTAL: Is that better?

2 CHAIR SCHULTZ: Yes.

3 MR. TARTAL: Okay, good. Again, this is
4 talking about Slide 7, the new reactor design
5 requirements. We briefed the Committee on this in
6 November. The concept is not substantially changed from
7 what we briefed the Committee on last time.

8 Again, the applicability statements that
9 this feature, or sorry, this provision would apply to
10 applicants for new reactors and the key here is
11 applicants, that this being a forward fit requirement.
12 That's the way that we discussed with the Committee last
13 time, it being forward fit. It applies when the key
14 safety functions, that is core cooling, containment,
15 and spent fuel pool cooling capabilities are being
16 proposed to the NRC for review and approval, and we want
17 this requirement to apply as early as possible in the
18 design process.

19 It still applies to applicants for designs
20 for construction permits, operating licenses, design
21 certifications, standard design approvals, combined
22 licenses, and manufacturing licenses. That concept
23 hasn't changed.

24 What has changed on this particular
25 provisions is, as we went through the backfit analysis,

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1 we found two situations that would either be a backfit
2 or inconsistent with issue finality provisions in Part
3 52. The first of those is the requirement used to say
4 that it applied to applicants that referenced a design
5 with a previous approval. For example, a combined
6 license applicant referencing a certified design. We
7 removed that applicability statement from Paragraph
8 A.4 because that would essentially be inconsistent with
9 the issue finality given to the design certification.

10 And then the other situation that we
11 revised in A.4 is applying to applicants for design
12 certification renewals. Again, under the issue
13 finality provisions of Part 52 that would have been a
14 violation of the issue finality afforded to the design
15 certification once it's certified, so we had to remove
16 that provision from A.4, as well.

17 MEMBER CORRADINI: So, can you give me an
18 example of each so it's clear?

19 MR. TARTAL: I did give you B-

20 MEMBER CORRADINI: Or clearer?

21 MR. TARTAL: Right, okay. So, let's give
22 you an example of a combined license applicant such as
23 Levy that's referenced in the AP1000 design. All right?
24 This rule provision would not apply to a plant like Levy
25 because they already have B- sorry, they're

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1 referencing a certified design in their applications,
2 so they would not need to comply with the requirements
3 of Paragraph D in that situation.

4 Another example would be B- you wanted
5 another example on DC, so let's say the AP1000 design
6 that Westinghouse came in for a renewal. We would not
7 be able to impose this provision on Westinghouse in that
8 case because they're already afforded issue finality
9 in this area.

10 MEMBER CORRADINI: But they still conform
11 to the current plant rules.

12 MR. TARTAL: Yes. They're still subject to
13 the rules and regulations that were in effect at the
14 time the design was originally certified.

15 MEMBER CORRADINI: And all the associated
16 rules that we just spoke about.

17 MR. TARTAL: You're talking about the other
18 provisions that the other Staff are talking about now
19 in this meeting?

20 MEMBER CORRADINI: Yes.

21 MR. TARTAL: No, those provisions apply to
22 B- oh, I'm sorry, yes, for the combined license
23 applicant in the first situation, yes, those provisions
24 would apply to the combined license applicant, not to
25 the design certification renewal applicant.

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1 MR. BOWMAN: As far as the applicability
2 goes for the remainder of the requirements in
3 Paragraphs B, C, E, F, and G, those are all applicable;
4 being subject to Paragraph D as an applicant for a new
5 reactor plant design would not result in an exemption
6 from any of the other requirements of the section as
7 a whole.

8 MEMBER CORRADINI: The reason I'm asking
9 the question, just so I B- maybe I'm misunderstanding.
10 So, just you can tell me to wait, but you're about to
11 go to the second part of that slide where the bullet
12 is, "Longer time constant, sufficient
13 instrumentation." I'm trying to understand what
14 sufficient instrumentation means for a new plant that
15 it isn't meant for in a current B- do you understand
16 where I'm going?

17 MR. TARTAL: I'm not sure what that has to
18 do with the applicability. Can you help me with that?

19 MEMBER CORRADINI: Well, I B- so, is there
20 going to be an additional requirement of
21 instrumentation on a new plant that is being required
22 on a current plant? That's where I'm going.

23 MR. TARTAL: Yes, this is a forward fit
24 requirement, so the idea of having the longer time
25 constant, sufficient instrumentation; actually,

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1 you're reading from the Commission's Advanced Reactor
2 Policy Statement, but specifically to the requirement
3 in Paragraph D, that's the second sub-bullet under new
4 reactor design requirements.

5 MEMBER CORRADINI: Right. So, my question
6 is going B- I now am going to require additional
7 instrumentation for these advanced plants under
8 adverse conditions. So, what's the design basis for the
9 adverse conditions? I'm struggling. On one hand, we're
10 arguing that we don't know what they are, or there's
11 not risk-significance to them. On the other hand, we're
12 asking the new plants to design to something, and I
13 don't understand what they're designing to.

14 MEMBER BROWN: I don't think that's B- I'm
15 not sure I understand that question, but I thought I
16 just heard that no B- there's no advanced
17 instrumentation in severe accident for anything, new
18 reactors, old reactors B-

19 MEMBER REMPE: Well, actually B-

20 MEMBER BROWN: B- backfit reactors.

21 MEMBER REMPE: For the AP1000 there's not
22 a good B- maybe I'm misunderstanding, but I don't think
23 that there's a firm process in place. But for these new
24 plants that B- the AP1000 B-

25 MEMBER BROWN: Do you mean the SMRs, or are

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1 you B-

2 MEMBER REMPE: No, the AP1000. They
3 actually did an analysis that considered some
4 scenarios, identified some sensors and said they had
5 to be surviving that for a certain time, and the staff,
6 and it was an agreement type of thing. It wasn't a fixed
7 process that they had to follow, but they said yes,
8 that's good. Is my B- am I correctly interpreting what
9 I read from it's like FSAR or something.

10 MR. MCKIRGAN: So, if I could B- this is
11 John McKirgan from the New Reactor Staff. Under Part
12 52, I think the analysis you're talking about is the
13 severe accident analysis where they look at the most
14 likely severe accident scenarios and describe features
15 that would address those scenarios, so that is part of
16 a certified design.

17 MEMBER REMPE: Right. So, that's part
18 B- and the reason they do that is because of the
19 Commission's Advanced Reactor Policy Statement that
20 said they had to do that. The existing plants just look
21 at design basis events.

22 MR. MCKIRGAN: At a very high level, I'll
23 agree with that.

24 MEMBER REMPE: Okay.

25 (Simultaneous speech)

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1 MR. McKIRGAN: But I think in concept,
2 that's a fair statement. Dr. Corradini, could I ask you
3 to rephrase your question for me a little bit?

4 MEMBER CORRADINI: Well, I'm listening
5 because I'm probably misinterpreting, so your
6 explanation is helping me. So, I'm trying to understand
7 the nuances of an AP1000 versus an APR1400.

8 MR. McKIRGAN: Okay.

9 MEMBER CORRADINI: So, let's say the
10 APR1400 which is going to come in under certification,
11 you're going to look at it, and somebody wants to build
12 one in the States. How is their B- since they're not
13 certified yet, how are they going to be treated, and
14 any different than the AP1000?

15 MR. McKIRGAN: So, let me see if I can say
16 that simply. We're looking for B-

17 MEMBER CORRADINI: Please do.

18 MR. McKIRGAN: We're looking for design
19 features so we want to address this rule to those
20 applicants who have not yet finalized their designs.
21 So, in the case of the AP1000 where there is a certified
22 design and construction is going on, we feel those
23 design B- that has achieved a level of design finality
24 that we want to not become a backfit issue, so we're
25 looking to forward fit these. So, we're only looking

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1 for those applicants that have not yet achieved
2 certification. So, if the Commission were to proceed
3 with this, then these provisions would apply to the
4 APR1400 which was accepted for review.

5 MEMBER CORRADINI: Okay, and now that
6 B- okay, so I B- then I did interpret it correctly. So,
7 my next question is, what is the basis of the adverse
8 conditions you would add instrumentation or improve the
9 design of the instrumentation? I'm struggling with the
10 words.

11 MR. BOWMAN: Right. If I could interject,
12 this is Eric Bowman, Dr. Corradini. On the slide what
13 you see at the bottom is a quote of two portions of the
14 Advanced Reactor Policy Statement, and the first one
15 includes the phrase "sufficient instrumentation," and
16 goes on further about the instrumentation.

17 There is no language that's being proposed
18 in 50.155 in the design features portion that addresses
19 instrumentation. The proposed guidance for new reactor
20 designers to use in meeting the Paragraph D
21 requirements or proposed requirements is contained in
22 Appendix A of Draft Guide 13-01, which a very
23 preliminary copy has been provided to the Committee.
24 And there is no additional instrumentation requirement
25 contained within that appendix, so I would say that the

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1 sufficient instrumentation would be included in the
2 design if it's considered by an applicant to be a design
3 feature that enhances coping durations and minimizes
4 the reliance on human actions, or if it's required in
5 order to follow the Advanced Reactor Policy Statement.
6 It wouldn't be a B-

7 (Simultaneous speech)

8 MEMBER CORRADINI: So, what I'm hearing you
9 say is there really is no B- I did not read Appendix
10 A, but I am pulling it up now. But the guidance in
11 Appendix A is a bit qualitative.

12 MR. McKIRGAN: Yes, and I think we'll talk
13 about that more in a moment.

14 MEMBER CORRADINI: Okay, fine. Then I'll
15 wait.

16 MR. McKIRGAN: But, Dr. Corradini, if I
17 could also remind you, so there are no additional
18 instrumentation requirements in this provision under
19 this rule, but I would not want you to forget the other
20 provisions in Part 52 and the severe accident analysis
21 that goes into design certifications where they do
22 consider the most likely severe accidents and talk
23 about the features to mitigate those. So, the
24 instrumentation B- there is a greater level of
25 consideration in that area, and we can talk more about

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1 that perhaps at another meeting. But I think that's what
2 Dr. Rempe had read, and that does apply to the design
3 certification applicants independent of the rulemaking
4 package that is before the Committee right now.

5 MEMBER CORRADINI: Okay, thank you very
6 much. That helps. Thank you.

7 MEMBER STETKAR: Let me try something else
8 to get away from the instruments and focus on the second
9 sub-bullet under the intent there. "Simplified safety
10 systems that where possible reduce required operator
11 actions." And I won't mention any existing designs, but
12 let's presume that we have a design, been certified
13 where under a loss of all AC power the operators must
14 de-energize everything in the control room and relocate
15 to a remote shutdown area that has much less
16 instrumentation and indications available. And that's
17 a certified design, that's already been accepted. And
18 we have a new design that comes in, Design X for
19 certification, that proposes that same strategy. Would
20 that new design be held to a different standard because
21 the determination could be made that that's not
22 simplified and it doesn't reduce the need for operator
23 actions? Is that part of this intent?

24 MR. McKIRGAN: You said a lot there, and I
25 don't know that I caught it all.

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1 MEMBER STETKAR: Okay.

2 MR. McKIRGAN: I mean, certainly the intent
3 here is to B- for the new applicants to come in with
4 these enhancements. Obviously, this provision does not
5 apply to the certified designs.

6 MEMBER STETKAR: Right.

7 MR. McKIRGAN: So, I missed when you B-

8 MEMBER STETKAR: Well, but what I was
9 asking, given the fact that we've accepted a design
10 where it employs that strategy, de-energize everything
11 in the control room to preserve battery life and
12 relocate to some other place in the plant where you do
13 things from that location. But if a new applicant came
14 in now that proposed that same strategy for an extended
15 loss of AC power, would that applicant be held to higher
16 scrutiny because it could be judged that they are not
17 minimizing, in fact, they're increasing the need for
18 operator actions?

19 MR. McKIRGAN: And this B- so, yes, this is
20 where the guidance comes in, because as you can see,
21 this is a very high-level language in the requirement,
22 in the regulation. And then the guidance is what's
23 providing one acceptable means to meet that
24 requirement. It's very difficult when you start to get
25 into speculation about what B-

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1 MEMBER STETKAR: I'm just trying to
2 understand, you know, what different philosophical
3 criteria are going to B- I tend to provide specific
4 examples, but to try to understand the different
5 philosophy that might be applied to a new design
6 certification applicant coming in tomorrow compared to
7 one that's already been accepted.

8 MR. McKIRGAN: And I think that is captured
9 in Appendix A to the Draft Guide.

10 MEMBER STETKAR: Okay.

11 MR. McKIRGAN: And I think if you haven't
12 had an opportunity B-

13 MEMBER STETKAR: I have not had an
14 opportunity to read that, so I will.

15 MR. McKIRGAN: So, that B- and, again,
16 that's a Reg Guide, that's not the requirement, but it
17 is one acceptable means. And, again, as Tim started the
18 discussion, the major focus here is to get this out for
19 stakeholder feedback, to have the dialogue.

20 MEMBER STETKAR: Okay, thanks.

21 MR. REED: Any further questions for George
22 on Slide 7? All right.

23 Slide 8, then we'll go to Paragraph F and
24 G of the proposed rule. And as I note there at the top,
25 this is basic B- it is the same as what was presented

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1 back in November, so just to remind folks, those are
2 provide the drills and/or exercise requirements and
3 change control is Paragraph G. The drills, of course,
4 include an initial drill that would show use and
5 transitions between the various guideline sets. Then
6 there's a follow-on periodicity of every eight years
7 to show continued capability of that B- those
8 transitions and use of the integrated capability of
9 these multiple sets of guidelines.

10 It is rather complex. It's B- you know, in
11 fact, you'll find if you go back into the questions,
12 we actually have a question focusing on this issue in
13 terms of the structure of the periodicity, if you will,
14 of the drills, and to ask for stakeholder feedback as
15 to whether that aligns well with the EP drills. They
16 also have, essentially, an eight-year period type of
17 periodicity to them because the intent here is to enable
18 flexibility to licensees to most efficiently address
19 these kinds of drills and exercise requirements. And
20 if necessary B- if they can in one fell swoop in terms
21 of combining drills and exercises, so that was the
22 intent.

23 So, this has been B- is basically
24 unchanged. It is, in fact, entirely unchanged since
25 November, but again we have an additional question

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1 there to understand from external stakeholders whether
2 there's any need to change this, or improve it, and to
3 align it better with other EP exercises.

4 MEMBER POWERS: Is the eight-year
5 periodicity of the drill the product of deep thought?

6 MR. BOWMAN: The deep thought that went
7 into it was an attempt to align with the existing
8 periodicity for the EP exercise program, and the
9 Appendix E inclusion of the drilling on the B5B
10 strategies. One of the other things we're doing is
11 removing the B5B strategy demonstration from the EP
12 exercise program and moving it over to the requirements
13 here for the Paragraph F drills or exercises in order
14 to provide more flexibility to licensees on whether to
15 do a separate drill for that, or include it in the
16 emergency preparedness exercise.

17 MEMBER POWERS: It did not include anything
18 about the ability of human beings to retain experience?
19 I can think of nothing that happened eight years ago
20 that I can even recall, so B-

21 MR. BOWMAN: I have nights like that, too.

22 MEMBER POWERS: My entire life is like
23 that.

24 MR. REED: Actually, Dave Desaulniers is
25 C-I think he's got perhaps something to say.

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1 MR. DESAULNIERS: Okay. As a member of the
2 working group, just to add B-

3 CHAIR SCHULTZ: Go ahead.

4 MR. DESAULNIERS: B- that you raise a good
5 question.

6 CHAIR SCHULTZ: For the record, just please
7 announce yourself.

8 MR. DESAULNIERS: David Desaulniers.

9 CHAIR SCHULTZ: Thank you.

10 MR. DESAULNIERS: Just keep in mind that
11 the eight-year periodicity is for drills, and while you
12 can look at those as training opportunities, you heard
13 earlier training is implemented in accordance with a
14 systems approach to training. Part of that system is
15 to look at the periodicity of the training, insuring
16 that it's sufficient. So, there shouldn't be training
17 ongoing outside the drill periodicity.

18 MEMBER BLEY: Are these drills that the
19 Staff would track closely, or is this just that they
20 need to do these drills, and perhaps could meet this
21 requirement by other drill requirements that they
22 already have in place for other organizations that
23 observe them?

24 MR. BOWMAN: The drills would be subject to
25 the Reactor Oversight process, viewing an ordinary

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1 drill, as is done for the fire response drills, and all
2 other drills.

3 MEMBER BLEY: The resident might submit B-

4 MR. BOWMAN: Exactly. That's the level of
5 oversight we would see for that.

6 CHAIR SCHULTZ: It's not a graded exercise.

7 MR. BOWMAN: Unless they incorporate it
8 into doing it at the same time as an emergency
9 preparedness exercise. And then we wouldn't be strictly
10 looking at these aspects of it as parts of the graded
11 portion. The EP exercise is graded for meeting
12 requirements as an EP exercise. We wouldn't extend the
13 grading to the SAMGs, for instance.

14 MR. REED: Okay. Let's go to the change
15 control portion on the bottom of this slide. That is
16 unchanged, too, and this is a B- as I think I spoke to
17 back in November, it's a very basic, nominal I'll call
18 it change control provision for Beyond-Design-Basis.
19 We recognize that the current change control provisions
20 that are in place, whether it's 50.59, 50.54(g), or
21 50.54(p) fire protection, whatever it is, those each
22 are B- I'll call these design-basis type change
23 controls, they focus on a certain regulatory area, and
24 we are fully B- we understood that in large measure I'll
25 say those were "blind" to a Beyond-Design-Basis type

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1 situation, so the idea here is to have a change control
2 that looks at the Beyond-Design-Basis aspects of this
3 regulation and its implementation, and that a licensee
4 would nominally have to look at changes to the facility,
5 understand those changes, include that they continue
6 to comply with the requirements and document that and
7 maintain it, so that's the idea.

8 Then, of course, if you look in the
9 regulation you'll find that we also indicate that you
10 need to apply your currently existing change control
11 provisions because as I think the Committee is probably
12 fully aware just from the discussions of the
13 modifications went in place from the Mitigation
14 Strategies Order, it's very easy for these
15 modifications to touch on multiple areas. Touch and,
16 in fact, impact safety-related systems, structures,
17 and components, that clearly brings in 50.59. Brought
18 fire protection equipment that will bring into play
19 fire protection change control. It can go into EP, it
20 can go into security, so depending on what the change
21 to the facility is, it can affect multiple different
22 regulatory areas, which each have their own change
23 control provision. So, it is B- now, this is a very
24 complex situation, and what we're trying to do is
25 address the Beyond-Design-Basis, insure people

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1 continue to do what they have to in the other change
2 control provisions so they don't offset anything to do
3 with the licensing basis there. So, that's the intent.

4 I do understand that in a previous life
5 having to do change control and doing this kind of
6 thing, there are lots of opportunities going back and
7 forth where this can be very complex, and one change
8 control provision could stop another or create some
9 interface issues, and we probably need to sort that out.
10 And, hopefully, we'll get great stakeholder input on
11 any kind of disconnects like that. For example, if
12 you're in Beyond-Design-Basis space and you want to go
13 and take a B- say open a security door because that
14 makes sense for mitigation, maybe your security
15 50.54(p) or something else stops you from doing that,
16 or it may appear to stop you from doing that. So, those
17 are the kind of interface issues we want to sort through
18 and make sure that they're not stopping us from doing
19 what we need to do, and that we can implement these
20 Beyond-Design-Basis requirements.

21 So, all that's kind of built into this, and
22 I look forward to getting a good set of feedback on this.
23 It does not, unlike any other change control provision
24 in place, have a threshold criteria, and I'm talking
25 about, if you're familiar with 50.59, there are eight

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1 such criteria. And, typically, the other ones have I'll
2 call it a reduction of effectiveness criteria. There's
3 no such criteria that says hey, if you cross this line,
4 you come to NRC for prior review and approval. It simply
5 indicates hey, you must continue to comply with the
6 regulations. You must reach that conclusion, and you
7 must basically maintain that documentation there so we
8 can come and look at that later.

9 That's not a great deal of flexibility on
10 the part to the licensee, and I understand that, so it's
11 an area where we're seeking external stakeholder input.
12 You can see that in one of our stakeholder questions
13 to say whether there's a better way of doing it, or
14 there's been an improved way to do it under what we're
15 suggesting here. That's all exactly the same as it was
16 previously.

17 CHAIR SCHULTZ: Tim, did you ask for
18 stakeholder feedback on the frequency of the drills?

19 MR. REED: Yes, we did. We, actually B- we
20 just added B- I think we might have added it. I don't
21 know if you have it, if we added it after it went to
22 you or not. I can't keep track of the changes going on
23 but, yes, it was looking at the frequency of these
24 drills versus the frequency of your EP exercises. (A)
25 How does that match up? Is there B- you know, does that

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1 work together, is there a way of doing it better? That's
2 the kind of question that we're looking at, so we do
3 have one on that, also.

4 CHAIR SCHULTZ: Thank you.

5 MR. REED: Any other questions on this
6 slide? Appendix E, these also remain unchanged. As
7 you'll recall, these are the B- what I refer to as the
8 onsite B- enhanced onsite emergency response
9 capability type requirements. They are located in
10 Appendix E to 10 CFR Part 50 either directly in the
11 current part, existing parts of Appendix E, or as a new
12 Section 7 which contains the staffing and
13 communications capability requirements.

14 Then in addition, of course, we also have
15 made basically what I view as a cleanup to the ERDS
16 requirements in Appendix E that reflect what is already
17 in place in terms of not referring to any kind of
18 technology there. So, we're fixing that part of the
19 regulation as part of this, also. But this goes to the
20 B- what I call the multi-source-term requirements, and
21 also the equipment to support those B- doing those
22 assessments.

23 Right now, it would be B- if you go and look
24 at this, would require licensees to be able to do
25 multiple source-terms, even a single unit would have

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1 to be able to handle releases from the reactor and the
2 spent fuel pool at the same time, and through multiple
3 points. Of course, multiple units, multi-units it's a
4 more complex situation, so that's building this
5 capability into Appendix E.

6 This is something that was being done
7 post-Fukushima by the industry. We expect that as a
8 result, though it is a backfit, is in fact done and
9 should be of very little or no impact, so that's going
10 into Appendix E. And the staffing and communications
11 requirements here reflect the 50.54(f) request for
12 information of March 12th, 2012 where we requested
13 licensees to basically do an analysis of their staffing
14 for a Beyond-Design-Basis type event that affects the
15 entire site. They, in fact, are responding to that, so
16 that's ongoing. Again, this would simply reflect that
17 staff requirement, and also those communications
18 capability part of that response or that RFI. And that,
19 again, this reflects that request for information, so
20 that's building that into Appendix E.

21 So, that's Appendix E. That is unchanged.
22 The application requirements saying those are
23 basically unchanged. I think there is some B- and this
24 is what I call the content of applications. There's a
25 lot of regulation if you go and look in there in Part

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1 50 and Part 52 about if you want to come in with a new
2 reactor application under either process, Part 50 and
3 Part 52. So, there have been some changes George Tartal
4 was mentioning before, we made some changes now about
5 forward fitting basically design requirements. So, for
6 example, 52.59 was a certification of a current
7 B- renewal of a certification for a current certified
8 design. That's not there, but that's now been changed
9 to reflect what George just said earlier in terms of
10 the new design requirements on new designs forward
11 fitted. So, otherwise, those application B- content of
12 application requirements reflect exactly, I believe,
13 unchanged from what was in what you saw in November.

14 The implementation now, if you go back to
15 November and you look at that, we basically gave you
16 kind of a high-level list of items that in our view would
17 kind of drive the issue in terms of how much time do
18 we have to give licensees to implement this once this
19 regulation goes final, and you hit you effective date.
20 How much time are folks going to need? And we tried to
21 list a couple of items, areas there where we think there
22 would be kind of pacing, what would be the
23 implementation period.

24 Now you'll see in there it's essentially
25 a B- it's marked to two refueling outages, and we

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1 actually have a question on this because we recognize
2 that it may not make sense to tie implementation of this
3 rule to refueling outages, but the proposed rule as
4 written right now would basically say you'd have to
5 implement it two refueling outages following the
6 effective date of the rule; basically, when you're
7 coming from startup and withdrawing rods. So, it made
8 sense to make that four years or something else, and
9 we have the question, stakeholder question on that.
10 And, of course, we'll pursue that as part of our CER
11 process as we get to the final rule, we see where we
12 are, we see what licensees have on their plates. We'll
13 revisit this and see if we've got it right.

14 And I'll just reflect back to an earlier
15 slide where I mention we may have some challenges with
16 implementing 155(c)(2), that would be another aspect
17 of this we have to be mindful of to see whether that
18 implementation is appropriate. We may need to build
19 some flexibility or some criteria into the
20 implementation of that provision, again, mindful of the
21 fact that we have to get a Draft SRM from the Commission
22 on COMSECY-14-0037. And we're obviously going to comply
23 with that regardless, so that's a driver on that. So,
24 implementation now you do see the language there as
25 opposed to a high-level set of bullets that you saw in

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1 November. So, I'll come to full stop and see if folks
2 have any questions on this.

3 Okay, backfit considerations. This will be
4 the first time we've had a discussion on backfit today.
5 Huh? That was supposed to be a joke. So, this is B- this
6 slide was I think identical to what I provided before.
7 And I don't think it's really worthwhile going through
8 it with basically all the backfit discussion we've had
9 today.

10 We've developed the proposed rule such
11 that if the Commission, in fact, does not agree with
12 the Staff and our qualitative basis for imposing SAMGs,
13 that we can, in fact, adjust the regulation. And we
14 definitely can do, and so we're ready to do that if
15 that's the direction we get. So, that's the first thing.
16 I've committed to the Commission back in B- was in SECY
17 paper B- one of the updates to Fukushima from 2014, I
18 think, that I would do that, so we can do that. And,
19 if necessary, we will do that.

20 But in large measure, most of the
21 requirements in this rulemaking are going into place
22 right now. In large measure, they're being imposed
23 under orders, most of them. The vast majority are being
24 imposed as a result of implementation of EA 12-049, the
25 Mitigation Strategies Order. But we also reflect the

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1 spent fuel pool level, as EA-12-051 said. That's
2 already in, those are in place, those are not backfits
3 as a result because they've already been imposed.

4 The rest of this, you'll see some
5 discussion of other areas where technically they would
6 be backfits. I mentioned just now recently the
7 multi-source-term requirement. That would be a
8 backfit. It's a new requirement, but in fact licensees
9 are implementing it voluntary, so that's a new
10 requirement without impact, as far as we understand at
11 this point.

12 SAMGs and everything that support SAMGs,
13 as I mentioned earlier, are backfits. And, of course,
14 we've had quite a bit of discussion on whether we have
15 a good valid basis on that. And I have a next slide on
16 that coming up, and we can B- if you want hold it, or
17 we can have some more discussion this slide.

18 And we mentioned earlier that we have new
19 reactor requirements, and that's in, of course, 155(d).
20 And those are forward fitting, and that's why they're
21 not an issue for us in backfit, you know, since it's
22 really about implementing a new reactor policy and
23 trying to implement the Commission's ideas there, what
24 the Staff believes those are, so we've got that
25 discussion.

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1 And, in fact, additionally, what I view as
2 simply cleaning up the ERDS requirements to reflect
3 what is in place now, and remove references. There's
4 a reference right now in there about NRC replacing a
5 modem. Nobody uses that any more, so it's an opportunity
6 to clean up the requirements for ERDS. I'll come to a
7 stop, and if you want to we can talk about backfit here,
8 or we can go to the next slide and talk about the backfit
9 again, if you want.

10 CHAIR SCHULTZ: Let's stop for a moment and
11 ask if there's questions on this slide.

12 MR. REED: Okay.

13 MEMBER REMPE: A long time ago when they did
14 the Advanced Reactor Policy Statement, what was C-- it
15 was before I was on ACRS, and what was the Commission's
16 motivation for imposing more requirements for severe
17 accident instrumentation on the new reactors versus the
18 existing fleet?

19 MR. McKIRGAN: If I could begin, this is
20 John McKirgan. The Policy Statement does not impose any
21 requirements, so it was intended to provide an
22 opportunity for the vendors to voluntarily provide
23 these features, but it does not impose requirements.

24 MEMBER REMPE: Westinghouse did not have to
25 do that analysis, and that's why it's a fuzzy thing with

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1 the Staff interacting with them on it.

2 MR. McKIRGAN: Let me see if I can say it
3 correctly, and someone from the audience can correct
4 me if I'm wrong. But I believe it's a concept of
5 application requirement, so there's a requirement that
6 they have to provide information in the application on
7 those things. And there is, of course, the Policy
8 Statement from the Commission, so the Staff in
9 conducting our reviews looks at those things and
10 considers them. Of course, the vendors first have been
11 mindful of the Policy Statement and the content of
12 application requirements, and have provided these
13 features. So, it's a combination of the voluntary input
14 provided by the vendors and then the guidance that's
15 used by the Staff during the review that gets us B-

16 MEMBER REMPE: Never any discussion well,
17 the Commission decided, you know, we think this is just
18 needed for adequate protection, for example?

19 MR. McKIRGAN: I don't have that
20 background. I could not answer that.

21 MEMBER POWERS: I'm not sure what your
22 question is, Joy?

23 MEMBER REMPE: Well, it seems to be the new
24 reactors have gone ahead and looked at severe accidents
25 and the instrumentation survivability for whatever

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1 reason, and I'm just wondering B-

2 MEMBER POWERS: Required to because
3 they're required to have a PRA. They're required B-

4 MEMBER REMPE: They have a PRA, yes. But
5 they look at instrumentation, too.

6 MR. MONNINGER: So, if you may allow, this
7 is John Monninger of the Staff. I'm the Director of
8 Division of Safety Systems and Risk Analysis from the
9 Office of New Reactors. You know, the first question
10 was with regard to the Advanced Reactor Policy
11 Statement, and the original timing of that was very
12 closely aligned also with the Severe Accident Policy
13 Statement, which came post-TMI, and the Commission's
14 expectations for new reactors, or advanced reactors to
15 have high levels of safety, and particularly higher
16 levels of severe accident safety performance.

17 We can talk about the AP1000, the AP600,
18 the ABWR, the System 80+. Back in 1990, the Staff
19 proposed various policy positions to the Commission.
20 One of those policy positions was something called
21 Equipment Survivability, and out of that policy
22 position the Staff did impose those requirements on
23 applicants for both equipment and for instrumentation,
24 for instrumentation post-severe accident, prior to
25 severe accident and post, so we looked at various

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1 profiles. The Staff did MELCOR calculations, the
2 applicants did a series of MAPP calculations to come
3 up with quasi bounding profiles for the equipment, and
4 we spec'd out, or the applicant spec'd out equipment
5 within the design certifications for both the
6 prevention and mitigation of severe accident, and also
7 the instrumentation necessary for that. So, that's B-

8 MEMBER REMPE: Okay, that helps a whole
9 lot. And what I'm not hearing you say is why, was it
10 deemed that's needed for adequate protection?

11 MR. MONNINGER: So, in those days we B- for
12 the good or for the bad, we developed what we called
13 Policy Positions. We didn't say whether they were for
14 adequate protection, they weren't necessarily
15 substantial safety enhancements. There was, you know,
16 a lot of qualitative discussions in there, but there
17 was no type of backfit discussion done at that time.
18 It was the positions, there as probably, you know, 10,
19 15, 25 of them that were generated over five years or
20 so, and they were intended to meet the Commission's
21 expectations for the Severe Accident Policy Statement
22 for closure of severe accidents, and also the
23 Commission's expectations within the Advanced Reactor
24 Policy Statement, but wasn't an explicit analysis
25 against the Backfit Rule in those times.

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1 Subsequently, many of those provisions
2 were codified within Part 52. You know, I don't have
3 the exact accounting for which ones did roll up into
4 Part 52, and which ones didn't, there were issues with
5 direct containment heating, steam explosions, the
6 equipment survivability, hydrogen control, all those
7 types of issues. And that's where the instrumentation
8 for new reactors or advanced reactors comes in.

9 MEMBER REMPE: Thank you very much.

10 MR. REED: I was just add, too B- you
11 mentioned the Severe Accident Policy Statement. If you
12 go to Appendix A of the Draft Reg Analysis you'll see
13 I walk through a little bit of the history on SAMGs,
14 and I do have some quotes out of the Severe Accident
15 Policy Statement from 1985. And you'll see the
16 Commission at that time concluded that severe accident
17 risk was not an undue risk to public health and safety.
18 Of course, then they hedged and said, of course, if you
19 identify any kind of vulnerabilities we would address
20 those under backfit, and as you folks probably are well
21 aware, along later in the decade came 88-20 that was
22 looking exactly at those IP and IPEEE, those
23 vulnerabilities. But, nonetheless, at that time they
24 had to conclude no undue risk to health and safety of
25 the public on the Severe Accident Policy Statement

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1 itself. So, these would be causing future reactors go
2 beyond that and to be much safer. I think the risk
3 results that they are, in fact, submitting would show
4 that they have achieved significant levels of safety
5 improvement for new reactors. So, just adding to what
6 John just said.

7 MEMBER REMPE: Thanks.

8 CHAIR SCHULTZ: Go ahead.

9 MR. REED: All right. So, let's go to SAMGs
10 where I sense there's -- the Committee is not in full
11 agreement with the justification. We started this thing
12 off talking about the quantitative analysis that I
13 B- or it was informed by quantitative information, and
14 also the qualitative basis I provided. It sounds like
15 folks have B- do like the qualitative arguments that
16 I provided there. I do B- you know, I boil this down
17 to it's a very simple argument because I think it's very
18 easy to relate SAMGs to the qualitative arguments in
19 terms of defense-in-depth. They are, in fact, the
20 B- I'll call it the command and control guideline set,
21 if you will, once you go past core damage. They're
22 informing the decisions that you make with containment,
23 or how you try to maintain containment under human
24 control, and containment is clearly one of the most
25 important defense-in-depth features in the facility in

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1 terms of fission product barriers. And they also do
2 inform or can inform any decisions made by the onsite
3 emergency response organization for protective actions
4 either on site or off site, so that goes to EP. And
5 that's another one of our fundamental foundational
6 defense-in-depth parts of our regulations.

7 So, you saw those arguments. I think
8 they're very good arguments from a qualitative
9 standpoint, but I'm mindful of the Commission's SRM
10 here recently, and unfortunately it came just a couple
11 of weeks B- about a week and a half ago, the early part
12 of this month on qualitative factors. So, I think, as
13 I mentioned earlier, it's up to the Commission to decide
14 the weight that they want to put on the qualitative
15 factors given what I think is B- I personally think,
16 I think the Working Group believes is really good risk
17 information to inform our decision, recognizing B- and
18 I think I've got to be a little more careful on how I
19 characterize it, as Dr. Stetkar discussed, and we
20 discussed earlier with the Committee. But I do think
21 there's a lot of value in looking at the information
22 coming out of the containment protection and release
23 reduction.

24 Again, as I mentioned earlier, I think that
25 analysis demonstrates what I think what you should

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1 expect, and which I think is a great story for safety,
2 that the 50 plus years of regulation and infrastructure
3 the AC and the NRC have put in place, have in fact driven
4 down severe accident risk to a very low level such that
5 when you do look at it and you try to quantify it, and
6 you try to show B- and you do show benefits. I mean,
7 even that work shows benefits, too. Whether that meets
8 our backfit criteria. I don't think it does, and I think
9 it strongly enough to suggest you won't get there.

10 Now, we can disagree on that, whether we
11 could go off and do a detailed look with a PRA or some
12 sort of risk analysis that looks at SAMGs more fully
13 and tries to get at their benefits quantitatively. I
14 think B- I bet that that would come out pretty much
15 around the same answer, and that's what I'm suggesting.
16 So, again, that was an effort to provide a full complete
17 story to the Commission, as I said, both sides of the
18 equation, everything I know about risk, everything I
19 know about the qualitative arguments that are very
20 strong for defense-in-depth, and let the Commission
21 make that decision.

22 I think personally, it's worth the
23 Commission to put that out for stakeholder feedback and
24 get the feedback from industry and external
25 stakeholders, but if the Commission wants to decide

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1 that no, it's B- you know, based on the recent decision
2 on qualitative factors they want to B- of course, I can,
3 in fact, adjust this regulation. It might take B- it
4 actually would probably take a little bit of time, a
5 couple of weeks, but we definitely can do that and
6 adjust to remove SAMG requirements, if that's the
7 direction. But this was B- I did have last time if you
8 recall a little bit more detail about the CPRR work.
9 I'm sensitive, I was sensitive to some of the issues
10 here already. I tried to remove that. In fact, I removed
11 the figure. You won't see that in here. That was in the
12 last presentation that came right from the CPRR with
13 the bounding number, if you guys recall. So, that's
14 B- I'll come to full stop. Let me just stop talking and
15 allow you guys to start talking, so how's that?

16 MEMBER SKILLMAN: Tim, second carat under
17 the first bullet, "Decisions Concerning Containment."
18 In that context is containment a noun or a verb?

19 MR. REED: I'm thinking of it as a noun. In
20 other words, I'm thinking B- I'm trying to make any
21 decision to keep that barrier under human control. I
22 don't want to lose the physical integrity of that
23 boundary because then I'm done. Right? So, that's
24 exactly how I think about it.

25 MEMBER SKILLMAN: Okay, so in that context

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1 it's containment integrity.

2 MR. REED: Yes, I think you could think of
3 that as B- and we B-

4 MEMBER SKILLMAN: Okay, let's B-

5 MR. REED: We've had that discussion.

6 MEMBER SKILLMAN: We're going to get into
7 it in 13-01 in a minute B-

8 MR. REED: Yes.

9 MEMBER SKILLMAN: B- because I want to
10 point out the inconsistencies throughout 13-01. So,
11 what I want to suggestion here is words matter, and
12 written words matter more.

13 MR. REED: Absolutely.

14 MEMBER SKILLMAN: And here, this is
15 containment integrity. I think somewhere in this
16 discussion you need to weave in containment integrity
17 and containment cooling, because while they are
18 considered one and the same, they are, in fact,
19 different. For example, containment integrity gets to
20 the liner, or the vessel, any vessel, whatever might
21 be used in the valve seals, what your last leak rate
22 test confirmed; whereas, containment cooling can get
23 into spray, boxcar fans, other activities that you
24 would B- or other functions that you would use to cool.
25 So, I think there needs to be clarity around this term.

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1 And, more importantly, as you did in 13-01, there are
2 12 or 13 different places where you used this term, and
3 sometimes you used the term containment integrity,
4 other times it's containment cooling, and it isn't
5 consistent. So, I want to just lob that now and we'll
6 talk about it a little more in 13-01.

7 MR. REED: We can certainly wait until
8 13-01, if you wish.

9 MEMBER SKILLMAN: 13-01 is fine. I think
10 that's the better place to talk about it.

11 MR. REED: Okay.

12 MEMBER SKILLMAN: But I think when you talk
13 about it, you better be specific as to containment
14 integrity, or containment cooling.

15 MR. REED: The good news is Eric is going
16 to present 13-01.

17 MEMBER SKILLMAN: Okay.

18 MR. BOWMAN: Well, I'm going to present
19 that we aren't really ready with 13-01 completely yet,
20 as we don't have a complete version of the underlying
21 proposed industry guidance. And we are also awaiting
22 the decision on the COMSECY-14-0037. I think we can talk
23 about the containment portions. The one thing I would
24 suggest, though, it's not just integrity or cooling,
25 the words that we used in the original Mitigating

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1 Strategies Order and the words that we're using in the
2 proposed rule are containment capabilities. And that
3 also encompasses for Mark 3, and estimates of
4 containments, the backup power for the hydrogen
5 igniters.

6 MR. REED: I think mass and energy. Yes,
7 there's a lot to it.

8 (Simultaneous speech)

9 MEMBER SKILLMAN: And there's one incident
10 in 13-01 where it is containment capabilities, so it
11 seems that there is an opportunity here for
12 clarification.

13 MR. REED: Oh, yes.

14 MEMBER SKILLMAN: Thank you.

15 MR. REED: No other problems with the SAMG
16 backfit?

17 CHAIR SCHULTZ: No. I guess, Tim, the only
18 comment I'd have is that going back and forth between
19 qualitative and quantitative, I would precede each of
20 the four bullets that you have there with the value of,
21 the way you did it at the bottom. I mean, each of those
22 has significant value.

23 MR. REED: Oh, yes. Sure.

24 CHAIR SCHULTZ: And the other piece of
25 this, although there's a great amount of detail

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1 associated with costs associated with performing this,
2 imposing the requirements, much has already been done.
3 And I didn't go through carefully and dissect that, but
4 things are moving B- things have moved forward, things
5 are moving forward, and so it's certainly B- well, I
6 think we're talking about codifying what is in place
7 and assuring that it stays in place, and it doesn't
8 drift the way some, only some have drifted in the past.

9 MR. REED: That's exactly what we're trying
10 to do. And when we did the analysis of cost, we tried
11 to B- the costs have been, I'll call sunk costs to date
12 were not costing that's going forward, which I think
13 is a fair way of doing it, too.

14 CHAIR SCHULTZ: It is the right way of doing
15 it, certainly.

16 MR. REED: And I do agree there's value in
17 them. And I personally think the value is largely in
18 maintaining the containment under human control. And
19 I think I made those arguments pretty clear, because
20 the containment is there for one reason, it's to contain
21 fission products, and fission products, when you have
22 fission products, you got core damage, and where are
23 you? You're in SAMG space, and so that to me is a direct
24 link, and I've said that many times before. So, it's
25 a pretty strong argument from the defense-in-depth

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1 standpoint.

2 CHAIR SCHULTZ: Any other comments before
3 we break? We have reached the time for a break, and after
4 the break we'll go into the discussions related to the
5 Draft Regulatory Guides. So that we go into that with
6 sufficient energy, I'll call a break until 3:35.

7 (Whereupon, the above-entitled matter
8 went off the record at 3:15 p.m., and resumed at 3:34
9 p.m.)

10 CHAIR SCHULTZ: I would like to bring the
11 meeting back in session and on the record. And we'll
12 proceed then with the discussion on the Draft
13 Regulatory Guidance. Eric Bowman, welcome.

14 MEMBER REMPE: Can I ask a question that's
15 kind of a holdover from earlier discussions this
16 afternoon?

17 CHAIR SCHULTZ: Go ahead, Joy.

18 MEMBER REMPE: We talked about the Severe
19 Accident Management Guidelines, and I know at one
20 point, Tim, you mentioned well, even if they use the
21 old one and properly trained on it, and implemented it,
22 it would be there. It's pretty good, but I read the Draft
23 SECY. It discusses that the BWR Owners Group and the
24 PWR Owners Group have new SAMGs, and it says the Staff
25 will not be reviewing them. And I guess I'd like to know

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1 have you looked at them, what's your thoughts, are they
2 sufficient or deficient? I mean, this is kind of
3 important. Again, why do this if you're not to have some
4 sort of oversight?

5 MR. REED: Sure. I can tell you what we have
6 done. And I tried B- I mentioned a little earlier we
7 had I think it was a one or two-day public meeting where
8 we interacted with the SAMG experts, some of which are
9 here. We also were granted access to an e-Portal which
10 we've looked at the SAMGs that are in existence in the
11 e-Portal, so we're familiar with that. We actually had
12 a member of our research staff, Ed Fuller, who is a SAMG
13 expert from back in the day also, he also looked at the
14 Technical Basis Document. I think I mentioned that the
15 Technical Basis Document from EPRI, if not 2012 version
16 update the 1992, added five candidate high-level
17 actions of lessons learned. I believe it's five. I might
18 be wrong, but I believe so. I'm checking my memory here.
19 Lessons learned from Fukushima, so we've done all that
20 work.

21 But that's different, and I want to make
22 sure, I don't want to over B- but that's different than
23 reviewing it. You know, that's having a lot of
24 familiarity with it. I think we used looking at it, you
25 know. I'm not even sure we can say audit, you know. Each

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1 of these words mean something to us, and if I'm going
2 to review that, then I need to have that submitted to
3 me. Then I need, I think, to have some sort of criteria
4 of what I would look and find acceptable. That works
5 us into a pretty structured format, and that's what I
6 was, you know, saying what we have not done to date,
7 and that's why we structured it admittedly with a light
8 regulatory footprint not to do that. You know,
9 basically that B- going back to this idea about hey,
10 do you have them? Are they in place? Are you keeping
11 them up to date? Not getting into the licensing up front
12 review and approval type process, so is that helpful?

13 MEMBER REMPE: Not totally, because B-

14 MR. REED: Okay.

15 MEMBER REMPE: B- you've B- I believe you
16 mentioned in your discussion, or someone did that well,
17 if it doesn't reflect the plant, we'll clearly say
18 that's not working. But what if you just don't think
19 it B- I mean, do you think they're adequate with what
20 you reviewed? I mean, the B-

21 MR. BOWMAN: What we're standing from is in
22 the 1990s we had a significant amount of interaction
23 with the EPRI and the parties that were developing the
24 basis for the Severe Accident Management Guidelines,
25 the Technical Basis Report, and looked at the Owners

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1 Groups guidelines, including modifications to it, and
2 concluded that they were good enough for us to forego
3 further regulatory action on the subject of the SAMGs,
4 and leave them as a voluntary industry initiative. We
5 would be building on that view of the Severe Accident
6 Management Guidelines, and we also have an outstanding
7 offer from the Owners Groups as a joint submittal from
8 the BWR Owners Groups and the Pressurized Water Owners
9 Group B- Pressurized Reactor Water B- Pressurized
10 Water Reactor Owners Group to submit any changes on a
11 future ongoing basis to the Severe Accident Guidelines
12 so that we could keep up to date on them and maintain
13 currency, and the assessment that they were adequate
14 to meet the needs. It would not be a licensing-type
15 review. That's where we are with it.

16 MEMBER REMPE: So, you do review them for
17 adequacy? And you B-

18 MR. BOWMAN: We have not taken that offer
19 up to date. It really depends on what happens with the
20 rulemaking, the treatment. We haven't completely
21 settled that. That will be further settled when we get
22 feedback from stakeholders, and it'll depend on, of
23 course, whether or not Severe Accident Management
24 Guidelines, in fact, become requirements, or what the
25 final disposition is.

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1 MEMBER REMPE: Okay, so depending on the
2 outcome, you have an offer from industry that you can
3 B- I don't know B- review is a bad word, maybe, I don't
4 know, but review them for adequacy, and if there's some
5 point of contention there can be follow-on discussions?

6 MR. BOWMAN: Yes. We have to remain mindful
7 that we cannot delegate to the Owners Groups the
8 authority to set what is acceptable legally to meet a
9 requirement. We can look at a public document such as
10 the Technical Basis Report, and judge whether or not
11 we think that it provides sufficient basis to develop
12 the Severe Accident Management Guidelines on a
13 licensee-specific basis. Those are some hurdles that
14 we haven't crossed yet.

15 MEMBER REMPE: Okay, thank you. And that
16 you, Steve.

17 CHAIR SCHULTZ: Thank you. Okay, Eric.

18 MR. BOWMAN: Okay. Draft Regulatory
19 Guidance. We've provided as part of the Draft Proposed
20 Rule package three Draft Regulatory Guides that would
21 propose to endorse a number of documents that were
22 developed by industry to provide guidance.

23 Rather than going in the order that they
24 are listed on the slide here, I'll just start out with
25 Draft Guide 1317, which is on the wide range spent fuel

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1 pool level instrumentation, because I think that'll be
2 the easiest one to cover with the Committee.

3 The proposed requirement in 155(c)(2) is
4 to make the orders, EA-12-051 generically applicable.
5 The way we've drafted that portion of the proposed rule
6 is a high-level requirement that lacks a lot of the
7 specificity that was in the order, itself. But we are
8 carrying forward the guidance that was provided by
9 industry for the order as endorsed by JLDISG 2012-02
10 with no changes. So, what you got for Draft Guide 1317
11 is really just that Interim Staff Guidance put into
12 regulatory guide format.

13 The second one to discuss, Draft Guide
14 1301, is the guide on the mitigating strategies
15 portion, the portion that would EA-12-049 generically
16 applicable. It also includes an Appendix A that
17 provides the guidance for new reactor designers to meet
18 the Paragraph D portion of 50.155. And then the third
19 one would be Draft Guide 1319, which deals with the
20 other aspects of the proposed rule.

21 The state of development for Draft Guide
22 1301, it's a very preliminary draft right now. We've
23 had several public meetings with industry and public
24 stakeholders on the subject of the revision to NEI
25 12-06. Currently, we have Draft Version C of Revision

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1 1. It's taking some feedback that we've provided and
2 it's B- the intention of the revision to NEI 12-06 is
3 to address lessons learned in the implementation of the
4 requirements of the Mitigating Strategies Order.

5 The other thing that is going to ultimately
6 be dealt with in Revision 1 to NEI 12-06 is the
7 reevaluated hazards under the 50.54(f) letter of March
8 12th, 2012. We're still awaiting the Commission's
9 guidance in the SRM on COMSECY 14-0037 in order to
10 proceed further on the development of guidance for how
11 that should be dealt with.

12 You've seen in the presentation earlier
13 and in the proposed rule language that we have proposed
14 at least as a starting point for seeking stakeholder
15 input on how the mitigating strategies should deal with
16 the reevaluated hazards. Once we get the SRM on that
17 COMSECY, we'll get further along with the discussions
18 with stakeholders, including the Industry Working
19 Group, on how to address the reevaluated hazards.

20 My understanding is that the Industry
21 Working Group is going to propose an Appendix G to add
22 to NEI 12-06 that will address the reevaluated flood
23 hazards, and potentially an Appendix H for reevaluated
24 seismic hazard.

25 So, what you've got is a B- you can think

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1 of it as a rough draft of what we would put out in Draft
2 Guide 1301 to seek public comment on the regulatory
3 guidance as it's developed to date. We intend to
4 finalize the Draft Guide to include guidance on the
5 reevaluated hazards, and clear up some of the
6 typographic errors, if you will, that Dr. Skillman
7 pointed out, so that we have a more complete product
8 when the proposed rule package is published. Right now
9 we're shooting for this summer as B- insuring that we
10 get the Draft Guide more fully developed. And we are,
11 of course, happy to come and interact with the Committee
12 again when we're further along in that development
13 process.

14 MEMBER SKILLMAN: Eric and I were off the
15 record when we sat and spoke for several minutes during
16 the break. I went through this Draft Guide very
17 thoroughly and there are about 13 instances where the
18 term core cooling containment and spent fuel cooling
19 is used, but not all 13 instances are the same.
20 Sometimes it's containment, sometimes it's containment
21 integrity, sometimes it's containment function,
22 sometimes it's containment cooling, so I pointed that
23 to Eric that that phrase should be used consistently
24 each time it's used in this guide for the record. Thank
25 you.

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1 MR. BOWMAN: Thank you for that. Are there
2 any other questions on the main body portion of Draft
3 Guide 1301?

4 MEMBER SKILLMAN: I do. I have one. It is
5 on page 3 of the Draft Guide. It is the second paragraph
6 from the bottom of the page, and this paragraph
7 communicates that the Commission-issued memorandum
8 which included requirements for mitigation strategies
9 as a license condition for Virgil Summer Stations 3 and
10 3. And my question is about what Vogtle 3 and 4?

11 MR. BOWMAN: Vogtle 3 and 4 were subject to
12 the Mitigating Strategies Order EA-12-049 because it
13 was issued contemporaneous with the issuance of their
14 combined license.

15 MEMBER SKILLMAN: So, it's a chronology
16 issue.

17 MR. BOWMAN: Yes. It's just Summer's Units
18 2 and 3 didn't receive their combined licenses prior
19 to the issuance of the Mitigating Strategies Order, and
20 they were issued license conditions along with a
21 combined license.

22 MEMBER SKILLMAN: Thank you.

23 MR. BOWMAN: If there are no other
24 questions, I'll have Clint Ashley from the Office of
25 New Reactors to discuss the content of Appendix A for

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1 Draft Guide 1301.

2 MR. ASHLEY: Thank you, Eric. Good
3 afternoon. I'm Clint Ashley. I'm from the Office of New
4 Reactors. I was a member of a team that was put together
5 to put this preliminary Draft Guidance for Applicants
6 for New Nuclear Power Plants, and there's other members
7 in the audience that if your questions get more
8 detailed, we can certainly draw on their expertise.

9 Draft Guide 1301, Appendix A contains
10 guidance that provides applicants for new nuclear power
11 plants with an acceptable method to meet the proposed
12 rule. This slide highlights guidance related to coping
13 duration and human actions, which are areas that are
14 not covered in NEI 12-06 for meeting the proposed rule,
15 as Eric just summarized.

16 So, to enhance coping durations, the
17 design features should increase the amount of time that
18 safety functions can be maintained early in an event
19 before there's a need to augment the plant with onsite
20 portable equipment, or possibly even transition from
21 plant equipment to onsite portable equipment. And we
22 believe that enhancing coping durations provides the
23 operators with the time to plan and implement the onsite
24 portable mitigation strategy for the longer term
25 coping. So, with respect to the initial coping phase,

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1 enhanced coping durations means coping with installed
2 plant equipment for at least 24 hours.

3 And we looked at this, we looked at the
4 existing designs, the AP1000, the ESBWR, and they had
5 coping durations, initial coping durations out to 72
6 hours. We looked at the Advanced Boiling Water Reactor,
7 it had initial coping duration out to 36 hours. We
8 looked at operating plants in general, and we saw some
9 initial coping durations that were on the order of five
10 to eight hours. Eric, please correct me if that's
11 B- it's a rough general idea about coping durations.

12 So, we also spoke with the Staff that had
13 been involved with the Fukushima activities, read the
14 Near-Term Task Force reports, and we came up with a
15 judgment that we felt that 24 hours would provide an
16 operator with ample time to implement the mitigation
17 strategy, keeping in line with this rule requirement
18 that says we need to have enhanced coping durations.
19 That's for the initial response phase.

20 Now, as far as the concept of enhanced
21 coping durations, we also applied that to the
22 transition phase, which is where you would B- at the
23 end of that transition phase you would bring in your
24 offsite equipment. So, we viewed that B- again, we
25 looked at the current certified designs and their

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1 capabilities, and so we came up with a judgment that
2 the coping for that transition phase if we want to bring
3 in that offsite equipment, we expect that to be at 72
4 hours. And that's consistent with the current fleet of
5 advanced reactor designs. Are there any questions on
6 the B- how we came up with the 24 hours and 72 hours?

7 Now, additionally, we also have this
8 feature for B- in the initial response phase, we permit
9 use of an installed AC power engineered alternative,
10 and we refer to that as supplemental AC. Again, that
11 has to be protected from external hazards such as the
12 flood and the seismic. The basis for the eight hours
13 was to be consistent with the recommendations in the
14 Near-Term Task Force report. And we believe that this
15 coping duration will, again, provide ample time for
16 operators to start in line the supplemental AC source.
17 It would be permanently installed, normally
18 disconnected from the electrical bus, designed such
19 that only minimal operator action would be needed to
20 put the system in service, and we would expect that it
21 would be diverse and independent source from the
22 emergency AC source.

23 With respect to human actions, you know,
24 the requirement to minimize reliance on human actions
25 we felt was consistent with the Advanced Reactor Policy

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1 Statement, and we modeled this after the Aircraft
2 Impact Assessment Rule. We believe that the benefit of
3 being able to cope with an extended loss of AC power
4 would reduce reliance on operator actions, was also
5 recognized by the Near-Term Task Force report based on
6 the results of insights from the Fukushima Daiichi
7 accident.

8 So, greater reliance on design features
9 that would include well thought out human-machine
10 interfaces, would reduce reliance on and simplify
11 manual actions necessary to restore key safety
12 functions. So further reducing reliance on human
13 actions would also reduce the potential for human
14 failures during stressful adverse conditions.

15 So, for the initial response phase which
16 is our focus with respect to design features, the
17 guidance is we would expect minimal operator actions
18 at limited and protected locations, and that all
19 necessary actions to monitor and coordinate the control
20 of the nuclear facility can be performed in the main
21 control room. However, we also recognize that if
22 there's an alternate station that contains equipment
23 specifically designed for that purposes, that it could
24 be also conducted from outside the control room.

25 MEMBER STETKAR: So, a design that requires

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1 that the operators completely de-energize the main
2 control room and shuffle off to another place that has
3 barely enough instrumentation available for them to
4 make sure they're adding some water is perfectly fine,
5 because that minimizes operator actions during a very
6 confusing situation.

7 MR. ASHLEY: The guidance doesn't preclude
8 geographically where the operators do command and
9 control, but I recognize that certainly if you were to
10 have to de-energize the control room to extend battery
11 life, that would be a more complicated action, and an
12 applicant would have to do sufficient technical
13 justification and provide that to the Staff in order
14 for them to make a judgment on that.

15 MEMBER STETKAR: Okay.

16 MR. ASHLEY: That's all I had for Appendix
17 A.

18 MR. BOWMAN: Okay, thanks, Clint. Draft
19 Guide 1319 is the final Draft Guide. In this guide we
20 consider three industry-developed guidance documents
21 to address the vast majority of the remaining
22 requirements that would be in place for 50.155.

23 The first of the industry documents, NEI
24 1201 should be familiar. It was the guidance document
25 that was endorsed for meeting the B- providing

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1 information in response to the RFI of March 12th, 2012
2 on the staffing assessment for response to a multi-unit
3 event on site, and also providing the information for
4 the communications assessments.

5 The other two guidance documents that
6 we're looking at, the industry ones, NEI 1306 and NEI
7 1401, NEI 1306 deals with the multi-unit dose
8 assessment, the types of training, drills, and
9 exercises, and the necessary facilities for emergency
10 preparedness for a multi-unit event.

11 NEI 1401 covers the command and control,
12 the integration of the different procedure sets, what
13 would be necessary to create an integrated response
14 capability of all the elements that are in 50.155. And
15 finally to provide some guidance on the development of
16 Severe Accident Management Guidelines.

17 It points back to the EPRI Technical Basis
18 Report for the Severe Accident Management Guidelines,
19 and does make mention of the Owners Groups guidelines.
20 We do include the we aren't endorsing secondary
21 references within the NEI document, so this is not
22 intended to be an endorsement of the Owners Group Severe
23 Accident Management Guidelines.

24 I'm not sure if you've had enough time to
25 look through the guidance documents, so we would, of

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1 course, be happy to come back and discuss them further
2 with you, as we'll have to do with Draft Guide 1301 once
3 that's finalized.

4 MR. REED: And, again, we mentioned a
5 little earlier the timing for the draft guidance is to
6 try to get it B- our process is to issue with the
7 proposed rule, so our estimate on that, of course, is
8 that have to reflect the Commission's deliberation on
9 this proposed rule. We have to take some guess at that,
10 get the SRM, fix the package and get it to the Federal
11 Register. And if you start working those numbers and
12 you be reasonable about it, I think something like maybe
13 July of next year, or this year, I guess, whatever year
14 we're in, 2015, would be about the estimated time that
15 the rule would probably be published, maybe even
16 August. So, with regard to the Draft Guidance and
17 filling in the holes, that would be the kind of time
18 frame I think that we have to finish what we have, have
19 complete Draft Guidance sufficient to get the
20 stakeholder feedback on the Draft Guidance to get to
21 the final guidance.

22 And then it's up to the Committee. I mean,
23 you guys B- this is, obviously, a very important issue.
24 You guys have engaged with us quite a bit but, you know,
25 in other rules, as you well know, you don't engage on

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1 Reg Guides until the Final Rule, so it's up to the
2 Committee whether you want to interact more with us
3 before that goes out, during the public comment period,
4 wait until the Final Rule. Your call. We're here to do
5 whatever it is that you wish in that regard, so that's
6 basically what Eric was suggesting. I think I actually
7 have that on the last slide, too.

8 MR. BOWMAN: I already switched to the last
9 slide.

10 MR. REED: You did, so recognize that
11 that's there. That's a hole right now, if you will, in
12 the Draft Guidance, and industry I think is probably
13 waiting for the Final SRM on COMSECY 14-0037. I know
14 that some work on some of these appendices are going
15 on, so we'll have to see how that sorts out.

16 CHAIR SCHULTZ: Are there any other pieces
17 with regard to 1301 where you're anticipating further
18 appendices, other elements that would, perhaps, be
19 included?

20 MR. BOWMAN: Those are the two major items.
21 The current version, the current draft version of NEI
22 12-06 includes an appendix on AP1000 design and how it
23 can meet the Mitigating Strategies requirements. There
24 had been an effort earlier to generalize that to new
25 reactor designs.

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1 And the other caution I would have is that
2 we don't have a final clean version of NEI 12-06, so
3 I can't tell you with certainty exactly what it's going
4 to look like, or whether or not we will have any further
5 clarifications or exceptions that we need to add to
6 13-01 until I see a final version. The version that this
7 was based on, this Version DG-1301 was based on was a
8 version that included redline strikeouts and comments
9 that still needed some cleaning up.

10 CHAIR SCHULTZ: That's helpful, thank you.

11 MR. BOWMAN: But I did want to give you a
12 sense of where we are currently with what we view as
13 appropriate guidance, what the state of affairs is
14 right now.

15 MR. REED: And that's part of my last slide,
16 the Staff's last slide here on status and path forward.
17 As I mentioned earlier, we are in office concurrence
18 right now. It's ongoing. I'm getting feedback from
19 offices. I'll certainly try to incorporate some of the
20 feedback that we've heard today, too. We need to get
21 this package after office concurrence up to the EDO on
22 the 16th of April, and it needs to go and it will go
23 to the Commission on April 30th. So, that's the
24 schedule. We're on that schedule right now. We intend
25 to meet it. As I mentioned, the Draft Guidance will go

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1 out with the Proposed Rule, and that I'm estimating in
2 the summer. And we're certainly here to, if you so wish,
3 we'll try to interact with you, the Committee, as you
4 wish on the Draft Guidance.

5 As you're well aware, the Full Committee
6 meeting is on April 9th on the proposed rule. That a
7 much shorter, one or two-hour meeting, but a lot of the
8 Committee Members, of course, are participating. And
9 then, of course, we'll meet with the Full Committee and
10 the Subcommittee, of course, during the final rule
11 process, so that's the path forward and the status.

12 CHAIR SCHULTZ: Other questions for the
13 Staff from members of the Subcommittee? Hearing none,
14 I'll thank you now for the work that you've done in
15 preparation, and stay in the room in case there are more
16 questions. We're going to turn to the industry
17 presentation, and for the audience it's just going to
18 be a short break while we change chairs. We're not
19 leaving the record.

20 (Off the record comments)

21 CHAIR SCHULTZ: At this point, I'd like to
22 recognize David Young from NEI.

23 MR. YOUNG: Thank you. Good afternoon. My
24 name is David Young, and I'm the Senior Project Manager
25 in the Emergency Preparedness Department at NEI. With

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1 me are Bryan Ford from Entergy, and Bill Webster from
2 Dominion. We appreciate the opportunity to provide
3 industry comments and observations on the draft
4 proposed Mitigation of Beyond-Design-Basis Events Rule
5 to this ACRS Subcommittee.

6 At this time, I'm going to turn it over now,
7 and I'll turn it over to Bryan to go ahead and get
8 started on delivering our comments in the presentation.

9 MR. FORD: Well, as David said, my name is
10 Bryan Ford with Entergy, and I'm going to provide you
11 some industry high-level comments on the rulemaking.
12 We look forward to providing more during the rest of
13 the process.

14 To start off with some overall positives,
15 we think the right topics in general are in the
16 rulemaking, and the rulemaking reflects the
17 significant amount of work that has been done between
18 the NRC and the industry since Fukushima. You know, it
19 does work to codify the existing order requirements and
20 commitments, and the responses to the 50.54(f) letter.

21 We appreciate the fact that the Staff
22 intends to support the use of the previously developed
23 and the still developing industry guidance. There is
24 still additional work needed on that. Specifically, if
25 the seismic moves into the rulemaking, we don't have

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1 guidance yet that supports that. And we do appreciate
2 the changes that have been made based upon previous
3 industry comments in the process.

4 Some areas that we think could use some
5 improvement. You know, the mitigation of
6 Beyond-Design-Basis Event capabilities needs to
7 address a spectrum of plant conditions that may be
8 caused by the different initiating events and the
9 resulting damage states. One thing that the current
10 proposed does is it basically requires that you assume
11 the ELAP condition and the loss of the heat sink even
12 when you're assessing the revised hazard response. We
13 think that in many of those cases you should be able
14 to use a alternate or targeted hazard mitigation
15 strategy that takes into account the actual state of
16 the plant. If the flood or whatever the event is doesn't
17 cause a loss of offsite power, then for that targeted
18 hazard strategy you shouldn't need to assess the
19 extended loss of AC power.

20 MEMBER SKILLMAN: Bryan, doesn't that take
21 the teeth out of the tiger?

22 MR. FORD: Well, we're really thinking
23 that, as we said before, that the current FLEX or 12-06
24 strategies were basically developed for an unknown set
25 of events, so instead of a known damage state, you're

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1 basically taking I'm going to assume a damage state and
2 develop strategies to address that damage state.

3 Once we move to the revised hazards, we
4 think that we have a better understanding of what the
5 effect has been on the plant of that event, and we think
6 taking that into account for building the strategy
7 specific for that event is the appropriate thing to do.

8 MR. YOUNG: For that reevaluated hazard.

9 MR. FORD: For that reevaluated hazard.
10 You'll see in a second, we still think we need to keep
11 the overall FLEX capabilities, whether it's for flood
12 or for whatever the hazards are, but when we're going
13 in and building a specific strategy for the reevaluated
14 hazard we think we should be able to consider what the
15 effects of that reevaluated hazard has been on the
16 plant.

17 MEMBER SKILLMAN: Well, supposing I say
18 okay, well, I really haven't lost all of the ultimate
19 heat sink, I've only lost 20 percent of it?

20 MR. FORD: You know, you would have to
21 evaluate how you can say that, and whether or not the
22 equipment is still available. You'd have to go through
23 the whole process to assure that the necessary
24 equipment is available for the hazard that you just
25 evaluated.

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1 MEMBER SKILLMAN: I didn't lose all my AC,
2 I only lost two of my three lines.

3 MR. YOUNG: But I think when you would look
4 at the strategies for that particular condition, then
5 you'd factor that into how you would build your
6 strategies.

7 MEMBER SKILLMAN: Now I have a custom
8 strategy.

9 MR. FORD: Yes, and we think in many cases
10 or in some cases for the reevaluated hazards plants are
11 going to need to build a specific strategy to deal with
12 the reevaluated hazard.

13 MR. YOUNG: There'll be information that we
14 will have now on the reevaluated hazard that would not
15 have been B- as Bryan said B- right, in this nebulous
16 damage state where everything is gone, that's the
17 underlying assumption, from the reevaluated hazards
18 you're going to have additional information that may
19 indicate that certain things are going to be available,
20 so you would have to have strategy sets that reflect
21 the availability of that equipment. In fact, an
22 installed power source, why wouldn't I use it?

23 MR. FORD: And on the other hand, it may
24 also say that other equipment isn't available that in
25 your primary FLEX strategy is, so you would need to take

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1 that into account and deal with it for the targeted
2 hazard.

3 MEMBER SKILLMAN: On the other hand, if I
4 just choose to not go through these permutations and
5 combinations and simply say I'm in ELAP, and I've lost
6 access to my normal heat sink, doesn't the path forward
7 become very, very clear; even though it's complicated,
8 it's very clear?

9 MR. FORD: I'm not sure about that
10 depending upon what the reevaluated hazard has done at
11 your plant. You know, depending upon how you got into
12 that ELAP state and, you know, we make certain
13 assumptions under the 12-06 current strategies on the
14 availability of equipment and what equipment is
15 available and what equipment isn't, and in the
16 reevaluated hazard that evaluated hazard may exceed
17 those assumptions. And as a result, you know, the plant
18 can be in a greatly different state potentially than
19 we assumed for the base FLEX flood or whatever it may
20 be event.

21 MEMBER SKILLMAN: I understand your
22 explanation. It just seems to me that by asserting this
23 might be the better way to go you have created what can
24 be an unending series of evaluations to try to figure
25 out where you should be. And it seems to me that that's

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1 not simplifying, that's complicating this issue.

2 MR. FORD: Well, hopefully, when we get to
3 the next slide B- I don't see that it complicates it
4 right yet, but we'll show you what our proposal is, and
5 we'll see.

6 MEMBER SKILLMAN: Thank you.

7 MR. FORD: One thing we do think, though,
8 is that the current proposal of including seismic into
9 this is inconsistent with the current seismic path
10 forward that we've been working on. Currently, the
11 seismic path forward that's being used is a risk-based
12 path where we're doing reviews of IPEEE information,
13 we're doing SPRAs. The flooding path in FLEX is of a
14 deterministic path forward. You know, you go and you
15 build a specific strategy for that. So, we currently
16 don't have any guidance that really goes towards
17 incorporating the reevaluated seismic hazard into
18 FLEX, and how you would do that. And we haven't started
19 developing that yet.

20 MEMBER STETKAR: Why haven't you?

21 MR. FORD: Because right now the industry
22 path is that we are doing this risk-based path of doing
23 SPRAs, and using the IPEEEs for the plants that could.

24 MEMBER STETKAR: I guess I didn't
25 understand that answer, but that's okay.

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1 MEMBER POWERS: I mean, is the difficulty
2 or the conundrum we have here that for seismic we have
3 some sort of probabilistic record that goes back a few
4 thousand years, but for floods, you know, maybe 100
5 years is all we have. Is that the conundrum?

6 MR. FORD: I think that is part of it. You
7 know, the stated current NRC position that I understand
8 is that they can't really assign probability numbers
9 to many of these flood events because of the amount of
10 information we have available. On the other hand, there
11 is numbers that are accepted for probability to seismic
12 events, and we're right now consistent with the
13 industry commitments for resolving the 50.54(f)
14 letter. We're off with the Tier 1 plants doing SPRAs
15 currently.

16 So, our suggestion is twofold. One, where
17 in the proposed rulemaking the reevaluated hazard was
18 added back in the equipment section, we don't think
19 that's necessarily the right place to add it because
20 where it was put really only applies to the portable
21 FLEX equipment, and there's a lot to these strategies
22 and making one of these strategies for one of the
23 hazards than just the qualification of the portable
24 equipment. So, we think the appropriate place would be
25 to bring it up into the (b)(1) section where it says

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1 you have to build a strategy or guideline that supports
2 that reevaluated hazard. And our view is that it doesn't
3 necessarily have to be directly connected to the
4 concurrent ELAP, but you need to do the current FLEX,
5 and then if you have a hazard that exceeds your current
6 FLEX, you also need to go evaluate that hazard for what
7 the appropriate strategy would be. And our current view
8 is that you would limit that to the reevaluated flood
9 hazard consistent with the industry commitments.

10 So along with that, we wouldn't put it back
11 in the equipment section. We're not really sure the
12 equipment section as a whole is really necessary for
13 the rule. It's more stuff that should be controlled by
14 guidance. There's always chances that when you try to
15 take a large body of guidance and sum it up in a couple
16 of sentences that you lose the subtleties of what makes
17 that work. But as a minimum, we think that this would
18 B- this section on incorporating the revised hazard
19 would be best up in the "You must build your strategy
20 to address it," and leaving up what is reasonable
21 protection and how you decide that reasonable
22 protection robustness into the guidance.

23 On the new plant requirement that was
24 discussed earlier, we don't necessarily think that
25 those requirements are necessary to be added in for new

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1 plants. That, one, the new plants are designed to the
2 higher review standards and design standards that are
3 identifying the revised hazards, so we're not sure that
4 those are necessary to be included in the rule.

5 Also, on SAMGs, we don't think using the
6 qualitative factors is in accordance with the
7 Commission direction given in the SECY, and so we think
8 that it would be more appropriate to achieve the
9 regulatory footprint that the Commission would like in
10 a different way. The industry has developed and is
11 committed to SAMGs, and we understand the goal is to
12 have a regulatory footprint to make sure we keep them
13 in the future, but we don't think that it seems that
14 the current method of justification is correct for
15 including them in the regulations.

16 MR. YOUNG: So, for example, if the basis
17 here of qualitative factors wasn't sufficient to get
18 it in the rules, then perhaps some sort of voluntary
19 industry docketed commitment might be a way of
20 establishing a footprint on it in the future. That
21 doesn't exist today. That may be one approach.

22 MEMBER REMPE: So, we have a voluntary
23 commitment. Isn't that what they had years ago, and then
24 they inspected after Fukushima and the voluntary
25 commitment wasn't kept up? So, what are you suggesting

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1 at this time?

2 MR. YOUNG: Well, it would be a B- kind of
3 the word we used yesterday in some of the discussions,
4 a more reinvigorated and more vigorous kind of
5 commitment that carries more B-

6 MEMBER REMPE: Unless it's a regulatory
7 commitment, I don't B-

8 (Simultaneous speech)

9 MR. YOUNG: If it was a licensing basis
10 commitment of that nature, and I don't want to go into
11 a whole lot of specifics here because we'd have to talk
12 it through with a lot of folks, but certainly more than
13 just sort of the voluntary initiative that was
14 characterized back when it was rolled out in the '90s.

15 MR. FORD: So, I guess our main point is
16 that we don't think that the current justification in
17 the rulemaking package using the qualitative factors
18 is sufficient to justify the imposition of the
19 requirements as a regulation. We do understand the
20 desire and need to have, you know, appropriately
21 maintained and controlled SAMGs, and we support that,
22 and we're willing to work on how the appropriate way
23 is to include it, but we don't think B-

24 MEMBER STETKAR: Bryan, let me ask, does
25 the industry have that broad-based quantitative

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1 justification to show that there isn't any benefit from
2 the SAMGs? Do you have all of those Level 2 PRAs that
3 you can show me how much B- how little benefit you get
4 from the SAMGs?

5 MR. FORD: No.

6 MEMBER STETKAR: Okay. Thank you.

7 MR. FORD: But to be clear, and this is as
8 a licensee for a long time, it's the NRC B- you know,
9 as the NRC has said in the past, there's a job for the
10 NRC, and a job for licensee.

11 MEMBER STETKAR: So, you can't quant B- you
12 can't tell me quantitatively that they're not
13 justified. The NRC can't tell me quantitatively that
14 they're not justified. You're telling me qualitatively
15 that you don't think they're justified.

16 MR. YOUNG: Well, no, I don't think that's
17 what we're saying.

18 MEMBER STETKAR: That's all I hear.

19 MR. YOUNG: You know, what we're saying is,
20 is the basis as currently written in the FRN doesn't
21 get you there. We don't think it gets you there, so there
22 was B-

23 MEMBER STETKAR: I'm asking do you have a
24 basis to disprove that?

25 MR. YOUNG: The Staff B-

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1 MEMBER STETKAR: Quantitative, we want the
2 quantitative basis B-

3 MR. YOUNG: The Staff itself said that
4 quantitatively they can't get there, so we're going to
5 use qualitative approach to make it over the hump, and
6 we're saying when you look at the SECY, it's like
7 B- we're not seeing the sufficient rationale there for
8 using qualitative factors. So, the solution is either
9 come up with more B- better quantitative rationale,
10 take some kind of administrative exception to backfit,
11 get a docketed commitment. I mean, there's other
12 approaches, so B-

13 MEMBER BLEY: Can I ask a B- you were here
14 for the Staff's presentation, and you've talked with
15 them on it. The way they're proposing to have oversight
16 of the SAMGs, at least to me seems a not very intrusive
17 way to do it. Do you have objections to the way they've
18 described how they would have that oversight, or are
19 you just objecting to the basis that they provided for
20 getting to that?

21 MR. FORD: The basis.

22 MR. YOUNG: Yes.

23 MR. FORD: The basis is the B-

24 MR. YOUNG: As I said, I don't think the
25 industry is objecting to maintaining and, you know, we

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1 just put out documents to upgrade the SAMGs.

2 MEMBER BLEY: Anything inspections?

3 MR. YOUNG: Yes, I mean, yes, I always
4 expected B-

5 MEMBER BLEY: So, on the practical level
6 you are not objecting to how they want to pursue the
7 SAMGs.

8 MR. YOUNG: It is the process that they're
9 using to get there.

10 CHAIR SCHULTZ: Has the industry evaluated
11 the costs that are provided for the implementation, the
12 SAMG implementation, the costs that are in the
13 evaluation? Are they reasonable?

14 MR. YOUNG: Yes. We've looked at some of the
15 numbers in the Reg analysis and, quite frankly, aren't
16 prepared to discuss those here today, but I think we
17 want to go back and take a very good look at the numbers
18 that are in the Reg analysis and maybe just do some
19 independent scrubbing to see if we come up with
20 something in the same ballpark. I just had some recent
21 experience in the EP Rule back in 2011, and I think some
22 of the numbers that were in that Reg analysis weren't
23 borne out in the subsequent cost of implementation, so
24 I would want to go back and take a pretty hard look this
25 time around going in on the front end and see if we can

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1 look at those estimated costs, and do they really
2 reflect all the B-

3 CHAIR SCHULTZ: Well, let me ask it
4 differently. The scope of what's described and costed
5 out, the scope of what is described there seems to be
6 what you say the industry would commit to with respect
7 to SAMGs, that portion of it, and then also an upgrade,
8 and making sure the Owners Groups and making the
9 improvements that we've discussed, as well as assuring
10 that everyone is committed to, and performing, and
11 doing, and sustaining, and exercising, excuse me,
12 demonstrating through drills. All of that is to be done,
13 is what you're saying, the industry sees value in that.

14 MR. YOUNG: We don't see any B- we don't
15 have any objection to the current proposed requirements
16 that are in the FRN.

17 CHAIR SCHULTZ: Okay.

18 MR. YOUNG: So, having SAMGs,
19 configuration control, maintaining them up to date,
20 drilling on them periodically, that's all B-

21 MEMBER BLEY: You want to not have it a
22 rule? I'm having a little trouble seeing what you're
23 presenting to us.

24 MR. YOUNG: I think B- again, in our
25 discussions, I guess, you know, the message B- you

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1 know, the point here in this presentation is to B- we're
2 not objecting to the requirements. We just think the
3 Staff needs to go back and take a look at the basis
4 provided in the FRN, and look at its consistency with
5 this SRM, and if they can't get through it through
6 anything other than qualitative measures, we ask that
7 they go back and think about another approach for
8 providing a basis for imposing the requirement.

9 MEMBER BALLINGER: So, what you're
10 objecting to is basically the administrative process?

11 MR. YOUNG: The imposition B- how the
12 requirement is imposed.

13 MEMBER BALLINGER: What is the downside?

14 MR. YOUNG: Well, because if you start to
15 use qualitative factors and defense-in-depth, that
16 becomes a slippery slope very quickly for everybody's
17 great idea.

18 MEMBER BALLINGER: Okay, so there's your
19 objection.

20 MR. YOUNG: You know, so everybody's got
21 great ideas, and I'm sure they all add defense-in-depth
22 at some point but, you know, the Commission said yes,
23 we want some kind of quantitative analysis. Right? I
24 mean, that's the expectation, so that's the concern.

25 CHAIR SCHULTZ: Do you have a way in which

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1 you would characterize the safety benefit of SAMGs, not
2 only the SAMGs, but what has been proposed, which is
3 that B- and the industry is doing, assuring that
4 there's integration, operating procedures on up to
5 response to severe accidents.

6 MR. YOUNG: I think in our conversations,
7 you know, we've all along in our conversations,
8 interactions with the Staff, and the last time we were
9 in front of the Subcommittee, the industry has
10 acknowledged that, you know, we are prepared to support
11 having some kind of regulatory oversight of severe
12 accident management because they certainly do add some
13 additional level of mitigation capabilities, you know,
14 for accidents and protection of the public. So, you
15 know, quantifying the B- and I'm hedging a little bit
16 because of the way you kind of phrased it, which almost
17 goes more to, you know, have I looked at some of rigorous
18 analysis? No, I haven't. But, I mean, qualitatively,
19 that's kind of what we said, is we support it, we think
20 there's value to having it, and we think some kind of
21 oversight of it is appropriate. And we're just
22 proposing here, not to make light of what you said, but
23 yes, it is more of an administrative kind of thing
24 because there some other precedent issues that could
25 come up.

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1 CHAIR SCHULTZ: It's a policy matter.

2 MR. YOUNG: As a policy matter.

3 MEMBER REMPE: So what regulatory
4 oversight process could be invoked that gives assurance
5 that the voluntary effort wouldn't dissipate? I mean,
6 you're saying I don't mind doing it, I don't want it
7 to be imposed this way, so give me an example of what
8 you'd suggest.

9 MR. YOUNG: Well, I'm certainly nowhere
10 near as knowledgeable as Mr. Reed but, you know, I don't
11 know what the ultimate mechanism might be to fit this.
12 All we're saying is that the basis currently in there
13 now just needs to be looked at, just go back and rethink
14 that. Is there some other basis that gets you there
15 without having to invoke qualitative requirements in
16 this instance because of the precedent issue, and how
17 this could get B-

18 MEMBER BLEY: And especially
19 defense-in-depth.

20 MR. YOUNG: And particularly B- I mean, is
21 there anything isn't defense-in-depth at some point.
22 I mean, you could almost make that argument for just
23 many, many things, so B-

24 MEMBER BALLINGER: So, your issue is the
25 use of qualitative arguments period, and that's to

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1 start the slippery slope, is what you're saying.

2 MR. YOUNG: Yes. In so many words, yes.

3 MEMBER BLEY: So if they say, went back and
4 looked at say some of the PRAs and then addressed some
5 of the events that we've heard, maybe not just
6 Fukushima, and said gee, there's uncertainty in how
7 likely some of these are, and attacked that uncertainty
8 basis, and from that showed there was a possibility of
9 a higher risk that might meet the Backfit Rule, that
10 would be more palatable.

11 MR. YOUNG: Well, clearly then you're in
12 accordance with the SECY. Right? Now, you've done a
13 quantitative set of analysis, and here's your results,
14 and this is what it shows, and you compare this B-

15 MEMBER BLEY: Maybe substantial judgment
16 involved in it, but it's a quantitative B-

17 MR. YOUNG: Well, it's a quantitative
18 assessment. Now, again, that's not to say that, you
19 know, we might have comments on that in public comment
20 period, and we could certainly talk about those at that
21 point, but certainly something like that would be more
22 of a path for getting a quantitative rationale.

23 MEMBER BLEY: From the way you've talked it
24 seems there's not an easy mechanism, or a previously
25 adopted mechanism to get these kind of requirements in

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1 place other than a rule. Is that right? You suggested
2 something but it had no stuff there, no substance there.

3 MR. FORD: We would have to sit down and
4 talk to the Staff over what the appropriate mechanism
5 is. The previous voluntary industry initiative that put
6 SAMGs in, I mean, as the Site Licensing Manager, that
7 is not as near and dear to my heart as I wrote a letter
8 that had a regulatory commitment in it that I track to
9 make sure that it's done. So, there may be other
10 mechanisms we could use that raises the B- at least the
11 perceived B-

12 MR. YOUNG: So, we could have some public
13 engagement that hopefully we come up with the right,
14 you know, the right form letter, for lack of a better
15 term, that has the right words in it, and that's the
16 commitment letters everybody sends in.

17 MEMBER BALLINGER: Well, let be clear
18 again. The objection is the qualitative factors, the
19 use of qualitative factors because you're concerned
20 C-now maybe I'm putting words in your mouth, of the
21 subjectivity that can creep into using qualitative
22 factors, the definition of qualitative factors.

23 MR. YOUNG: It's the use of qualitative
24 factors to B- as a substitute for not getting there
25 quantitatively, because if you look at what the SECY

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1 said, right, it's quantitative factors, and you can
2 inform the decision making with qualitative. But, you
3 know, we expect some sort of quantitative basis for this
4 information, and it's like well, they did the
5 quantitative measure, it's like no, we didn't get
6 there. Okay, so now we go over the hump by using
7 qualitative measures, and that just doesn't seem to be
8 the right B- I mean, so where does that stop? So, every
9 time I don't get them from quantitative measures, I'm
10 going to invoke qualitative measures? I mean B-

11 MEMBER BLEY: If you look at Reg Guide 1.174
12 B-

13 MR. YOUNG: Which I haven't.

14 MEMBER BLEY: B- which is used in a
15 different way, but that has you do risk calculations,
16 but also has you go through an integrated decision
17 process where you can bring things that may be
18 responsible for extensive uncertainty, or lacks of
19 knowledge into that decision process to jointly come
20 up with a basis for considering the impact of changes.
21 It's not quite what's written into the Backfit Rule or
22 that sort of thing, but it is a kind of process that
23 integrates strictly quantitative with a consideration
24 of factors that are difficult to quantify. That sort
25 of approach would smell better, or maybe not.

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1 MR. YOUNG: You know, I'm going to have to
2 plead ignorance. I have not read that.

3 MEMBER BLEY: Well, the other gentlemen
4 probably are not ignorant of B-

5 MR. WEBSTER: 1.174 is where we risk-inform
6 tech spec submittals.

7 MEMBER BLEY: Yes.

8 MR. WEBSTER: Again, as risk-informed the
9 quantitative numbers are B-

10 MEMBER BLEY: Are part of it, but also
11 there's an integrated B-

12 MR. WEBSTER: Right.

13 MEMBER BLEY: B- process to consider
14 things that you haven't yet figured out how to quantify
15 properly.

16 MR. FORD: And I don't know how well that
17 comports with the legal requirements, you know, in the
18 Backfit Rule for significant safety benefits. I haven't
19 thought of how that would connect to B-

20 MR. YOUNG: Yes. So, I mean, I don't think
21 necessarily we were going to solve the thing here, but
22 it was just to make this comment, and if we had to have
23 some subsequent engagement with the Staff to find out,
24 you know, hey, what is the best path forward for this,
25 happy to have that engagement and figure out what that

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1 right solution is.

2 MEMBER BLEY: I assume this conversation
3 has been going on with the Staff.

4 MR. YOUNG: We've had some recent
5 conversations.

6 MEMBER BLEY: So, it's fairly recent.

7 MR. YOUNG: Well, we just saw this last
8 week. Right?

9 MEMBER BLEY: Yes, but you kind of knew what
10 was coming, but go ahead.

11 CHAIR SCHULTZ: Yes, as this is the
12 Fukushima Subcommittee, I throw out some B- another
13 thought for a B- a thought exercise, and that is at
14 least to me when Fukushima happened, and the response
15 in the days just thereafter by the NRC, and by the
16 industry, and the United States seemed to at least rely
17 partly on the fact that our reactors were safe, and some
18 of that depended upon, I believe, the fact that we have
19 Severe Accident Management Guidelines, we have things
20 in place. We had a lot of work that we had done in terms
21 of safety, operator performance beyond just operating
22 the facilities, but going into elements associated with
23 severe accident response, and leading up to there. So,
24 that just tells me that, as you've said, this is an
25 important feature, and it does concern me that we can't

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1 quantifiably demonstrate that this is an important part
2 of what we do. We want to do it, and with some reasonable
3 oversight by the Staff, we're willing to proceed. I hope
4 we can find a way soon to make this happen.

5 I understand your point in terms of policy,
6 the slippery slope discussion.

7 (Simultaneous speech)

8 MR. YOUNG: Yes, I just want to stress
9 again, this isn't a question of pushing back on the
10 right regulatory footprint. That's not what B-

11 CHAIR SCHULTZ: In terms of decision
12 making, it seems as if we ought to be there but we're
13 not, decision making to move forward and figure a way
14 to set up the process.

15 MEMBER BLEY: I mean, the reason we all
16 think it's important, I think, is because despite what
17 we calculate events crop up every once in a while, maybe
18 every 20 years or further than that, that puts us into
19 a spot, but these would be really good to have. Then
20 we say well, our calculations are still okay because
21 we've done a better job on some of this than somebody
22 else has. But there are a few areas of uncertainty that
23 could affect this.

24 MR. YOUNG: Take the flip side though, too,
25 is that now we have FLEX in place, right, which we didn't

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1 have before, so there's that whole other barrier that's
2 in place now. I think that's obviously something to
3 reflect on when you start thinking about SAMGs.

4 MEMBER BLEY: Absolutely. And the
5 procedures for FLEX need to get integrated with all this
6 stuff.

7 MR. YOUNG: That's right.

8 DR. SHACK: Just going back for a second to
9 your reevaluated hazards, I mean, the orders were put
10 in place to deal with Beyond-Design-Basis accidents and
11 external events, and you've just stripped seismic out
12 of it. It just seems a little peculiar.

13 MR. FORD: Well, the orders had you build
14 a set of capabilities for Beyond-Design-Basis Events,
15 and within those there was constraints put upon how you
16 made the assumptions for designing those systems. You
17 know, in most cases something that was robust for your
18 current hazard was considered robust sufficiently to
19 use for the FLEX hazard. So, it was just one of those
20 constraints; otherwise, what would you have picked, you
21 know, something X, Y, or Z? So our current FLEX designs
22 have been built there.

23 Now, we did a B- I always forget the
24 acronym, ESEP evaluation for plants whose GRMS was
25 exceeding it in certain requirements to provide a level

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1 of confidence that FLEX could perform it beyond the
2 current design basis. You know, what we are really
3 pointing out is not that in the long run whether we make
4 FLEX support a reevaluated seismic hazard or not, at
5 least my way of looking at it, my real point was, one,
6 that's not what we're doing right now. We're off
7 spending millions of dollars doing SPRAs because that
8 was the path decided, and if you B- if we want to change
9 track, so far the industry has not committed to do this
10 other track for the revised seismic hazard, and you can
11 impose it, but then you need to evaluate that revised
12 track under the Backfit analysis.

13 MR. YOUNG: And have the guidance.

14 MR. FORD: And have the documents, and we
15 haven't yet put together the guidance on how to do that.
16 You know, as we found with flooding, it's not as simple
17 as, you know, just saying go use these new numbers and
18 make it work. So, what we're really pointing out is that
19 right now what's in this B- what's in the proposed
20 rulemaking for the area of the seismic reevaluated
21 hazard is not consistent with the current industry
22 commitments for resolving the 50.54(f) letter. And if
23 it's going to stay inconsistent with our commitments,
24 then it needs to be appropriately evaluated under
25 Backfit and the appropriate guidance put together.

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1 MEMBER RICCARDELLA: This is Pete
2 Riccardella. Could I make a comment?

3 CHAIR SCHULTZ: Yes, Pete, go ahead.

4 MEMBER RICCARDELLA: Yes. You know, I think
5 regarding the seismic assessment, I mean, it's one
6 thing when you have a bunch of existing equipment out
7 there that's been there for years and years, and now
8 you've got a new ground motion response spectra, and
9 the appropriate road to go is a seismic risk assessment,
10 but we're talking about new equipment that we're
11 putting in, or that's been put in very recently when
12 you had a pretty good idea what the new seismic criteria
13 were going to be. I can't understand why it wouldn't
14 be designed to the new seismic ground response spectra.

15 MR. WEBSTER: Well, one thing just B- you
16 know, the FLEX order was implemented before the GMRS
17 data was available to all sites, so it was B- we did
18 it. We started implementing the FLEX before that
19 information was available.

20 MR. YOUNG: Well, one thing, too B- let me
21 just throw out a lifeline here. So, we've got Andrew
22 Maller here from NEI who is heading up our interface
23 on the seismic stuff, so let Andrew speak here for a
24 minute on what he can share with this.

25 MR. MALLER: Thanks, David. So, I did just

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1 want to mention that we do have a number of activities
2 going on in response to the 50.54(f) letter. In large
3 part, a number of the plants are doing SPRAs that take
4 out to 2020 under the current schedule, so that's the
5 first phase of the 50.54(f) response. Phase 2 is where
6 the NRC will look at any potential design-basis changes
7 after that. So, what's unclear right now is where this
8 rulemaking fits into the overall schedule for closure
9 there.

10 We're trying to work that out. We don't
11 have the answers right now. It's not been at the top
12 of our list. We've had a number of Near-Term actions
13 that we've been working on that are also a part of the
14 50.54(f) response, including figuring out the scope for
15 high-frequency limit evaluations, about fuel pool
16 evaluations, finishing up the expedited approach that
17 Bryan mentioned, so there's a number of things going
18 on. We're trying to figure out how the overall strategy
19 for closure on 2.1 seismic relates to this rulemaking,
20 so the idea is, like we said, we're not trying to say
21 we don't think this ought to be a part of this
22 rulemaking. What we're saying is that it needs to be
23 a part of this rulemaking once we get the guidance put
24 together to support this, and we're not there yet. So,
25 one B- obviously, one possibility is to just put a pause

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1 on the rulemaking and wait for us to come up with the
2 guidance for seismic. Or the other concept would be to
3 pull out this part for now until we come up with that
4 working with the Staff, and then find the time to work
5 that in.

6 MR. YOUNG: So, your second option, you're
7 talking about like a placeholder, move forward with
8 this and then fill it in later. Is that B-

9 MR. MALLER: Yes, I think there's different
10 regulatory options in order to do that. Our point was
11 not that the rulemaking should not include seismic as
12 an external hazard, but the way it's set up right now,
13 it doesn't quite reflect the path that we're on, and
14 we don't have the guidance yet to support where we're
15 going to end up relative to mitigation strategies in
16 terms of seismic.

17 MEMBER STETKAR: Well, I thought the order
18 was a way to proceed ahead on the seismic event in a
19 restricted sense where you looked at the consequences
20 as being an ELAP and a loss of ultimate heat sink. I
21 would look at the seismic PRA as something above that,
22 that if we get new insights out of that, it could lead
23 to regulatory action above and beyond that. But this
24 was already considered as an adequate protection event
25 for the seismic in a broad kind of sense that you really

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1 weren't quite sure what the consequences were, but you
2 took a base case. And I don't see that that has to in
3 any way conflict with what's going on under 2.1. To me,
4 they're separate tracks, and you can proceed ahead with
5 this rule, which essentially just embodies the orders.
6 It's not really from that point of view, as the Staff
7 made the argument before, it's not imposing any new
8 requirements beyond what the orders did.

9 MR. FORD: And from our point of view, the
10 orders did have us build mitigating capabilities for
11 a seismic event, and instead of developing a new seismic
12 spectrum or GRMS to evaluate against, you use the
13 current design base B-

14 MEMBER STETKAR: Here's the problem, and
15 this will help Pete also. There are plants out there
16 who are taking installed equipment and taking credit
17 for it as part of their FLEX strategy and enhancing,
18 because it's not qualified right now to the existing
19 seismic earthquake, enhancing that equipment so it
20 meets the current seismic design basis. Those plants
21 know fully well that their reevaluated seismic hazard
22 will be far above their existing design basis. The
23 strategy is you build it, you enhance it to the existing
24 design basis, and then you say you can't justify further
25 enhancing it under a Backfit Rule. That's why we're

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1 having this discussion.

2 MEMBER RICCARDELLA: It seems to me that
3 the worst case would be that you've got this equipment
4 put into your original SSE, you've got the new GRMS.
5 The minimum you should have to do is a seismic risk
6 assessment, or seismic margins analysis of that new
7 equipment at least to show, you know, that it can
8 withstand the new hazard. Maybe you didn't design it,
9 just like you didn't design the original stuff, but
10 that's what your seismic risk assessment is doing, is
11 showing that you have sufficient margin.

12 MR. FORD: And we have done the ESEP that
13 evaluated installed equipment. It was a subset of
14 equipment to a higher seismic standard for those plants
15 it was applicable to show that they were robust beyond
16 their current design basis. But just one point of
17 clarification, every plant is using for their FLEX
18 strategies a fair amount of installed equipment. I
19 mean, if you're going to have a portable pump and
20 inject, you have to inject it into something, or you
21 have to have tank that it's getting water out of, so
22 everybody is using a fair amount of installed equipment
23 in these strategies, and you have to.

24 So, our point was right now for the
25 50.54(f) letter is out path for resolving, you know,

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1 any safety concerns associated with the revised spectra
2 has been depending upon your spectra, and whether you
3 had IPEEE that covered it, and all these other things,
4 has been a probabilistic approach in many cases. We have
5 not B-

6 MEMBER RICCARDELLA: So, as a minimum you
7 would do that on the newly installed FLEX equipment,
8 as well. Right?

9 MR. FORD: On the newly installed B- you
10 know, the B-

11 MEMBER STETKAR: Pete, it's not newly
12 installed equipment. It's stuff that is there B-

13 MEMBER RICCARDELLA: Well, somebody B-

14 MEMBER STETKAR: No, wait. The stuff of
15 concern is the existing pumps, and valves, and piping,
16 and tanks, and you know, that's already there in the
17 plant.

18 MEMBER RICCARDELLA: I understand that,
19 and the plan is to do a seismic risk assessment or a
20 margins assessment of that. But then there's additional
21 new stuff that they're putting in, and if they didn't
22 do that to the new ground motion, I'm assuming that they
23 will do a sort of risk assessment on that.

24 MR. FORD: Well, it would be included, as
25 necessary, into the SPRA risk assessment. I mean, if

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1 you ended up needing to credit that equipment to
2 appropriately characterize the risk for your plant,
3 then you would, but if it wasn't, you know, part of what
4 you needed to look at to appropriately bound the risk,
5 then you may not.

6 MR. YOUNG: Andrew, is there any other
7 clarity you can offer on that?

8 MR. MALLER: Well, I was just going to say,
9 I mean, obviously we did the expedited seismic
10 evaluation process where we looked at a subset of
11 equipment related to FLEX for an increased seismic
12 hazard beyond the design-basis and, you know, across
13 the fleet the results of that have been very positive
14 with very B- with the number of plants without any
15 modifications identified as a result of that. So, we've
16 demonstrated the seismic margin within the fleet.

17 There are some questions here popping up,
18 and I think that really gets to the point of why we don't
19 think we're ready to move forward with this in the
20 rulemaking, and we need to figure out what the guidance
21 looks like. So, I think it's this sort of dialogue that
22 really contributes to that point. We're just not there
23 yet. That's all the message is, is we're just not there
24 yet, and we need to work with the Staff to put it
25 together.

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1 MR. WEBSTER: Yes. And we definitely are
2 not saying that we don't think seismic should be
3 considered. We just think it's, like you said, we've
4 just go some more evaluations to do to determine what
5 the right safety improvement is, and what right
6 evaluations need to be done.

7 MEMBER REMPE: Before you leave this B- I'm
8 back on the Severe Accident Management Guidance, and
9 I think I heard you say we aren't opposed to regulatory
10 footprint, just the way that you've B- or the basis for
11 it. And there were specific items mentioned about
12 having configuration control, drilling them, et
13 cetera. For the et cetera, during the earlier
14 discussion, the Staff mentioned that industry had
15 offered that we B- they could do some sort of
16 collaborative review or something and, you know, to say
17 well, did you think of this, and you need to include
18 this, and is that your perception, too, that you don't
19 mind having B- they're not going to do a detailed
20 review. We heard the Staff say that, and also put it
21 in several documents, but what about interactions and
22 some sort of not a detailed official review, but some
23 sort of interchange and oversight that way?

24 MR. YOUNG: Right. So, what you're asking
25 that really involves the Owners Groups, and so I'm not

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1 an Owners Group representative, but let me if I can,
2 again, reach out to my lifeline here. So, Jack
3 Stringfellow, are you on?

4 CHAIR SCHULTZ: No, he would not be able to
5 talk. We can open the line.

6 MR. YOUNG: Okay. Just give me one moment
7 here. I just want to see if he's able to hop on. Jack
8 is the Chairman of the PWR OG, and was instrumental in
9 coming up with the proposal that Tim referred to earlier
10 with respect to how this material could be looked at
11 by the Staff on a periodic basis.

12 MEMBER REMPE: Oh, so there's some sort of
13 written proposal that has B-

14 MR. YOUNG: There is a joint letter that the
15 Owners Group sent in, the PWR/BWR Owners Group sent a
16 joint letter offering a process by which the Staff could
17 periodically look at updates to SAMG material. There
18 was, I want to call a comment period in line with what
19 Tim said earlier about it's not really a review, but
20 there's a period in which the Staff can review this,
21 provide some comments and feedback back if there's open
22 questions, have some dialogue, make sure there's a
23 clear understanding before it would go out to the
24 industry.

25 MEMBER REMPE: That would be actually good

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1 if we could see that letter, and then if he has some
2 comments about it.

3 CHAIR SCHULTZ: The line is open, we
4 believe, so just ask and see if he's available.

5 MR. YOUNG: Okay, thank you. Hey, Jack
6 Stringfellow, are you on the line? Anybody from the
7 PWROG?

8 CHAIR SCHULTZ: Not hearing any, we'll
9 close the line. He may be out there, we just don't know.

10 MR. YOUNG: That's right. Okay. I do feel,
11 again, I'm not B- I can't speak B-

12 CHAIR SCHULTZ: But B-

13 MR. YOUNG: I'm sorry, go ahead.

14 CHAIR SCHULTZ: But let's see what
15 information you might be able to provide to us.

16 MR. YOUNG: Well, again, that was a
17 summary. I don't want to get too much more into that
18 because I think that starts to get directly into their
19 business. But I have seen the letter, I do know the
20 letter was sent it, and again was jointly signed by both
21 the Chairpersons of their organizations, and it did
22 offer B- I believe that the term that was used in the
23 letter, in the offer letter was audit, is what they
24 called it.

25 CHAIR SCHULTZ: If it happens to be

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1 internal, we'll get it here.

2 MEMBER STETKAR: It was sent to the Staff?

3 MR. YOUNG: Absolutely, yes, yes. Yes, they
4 have it. And, in fact, the Owners Groups were attempting
5 to be responsive to a request that came up in the meeting
6 that Tim referred to back in May when we had that two-day
7 workshop on SAMGs. This was one of the questions that
8 the Staff asked for, and the Owners Groups were
9 responsive to it. So, it is a process where, you know,
10 I think the term they used in the letter was an audit.
11 But, again, providing this material in advance on an
12 electronic portal because it is, of course, you know,
13 proprietary information, but giving B- I believe from
14 memory, I think it was a 60-day review period to give
15 the Staff plenty of time to review it and take a look
16 at it, provide some comments or suggestions, or
17 questions, and then get those resolved before it was
18 sent out.

19 MEMBER REMPE: But getting those resolved
20 sounds like a nice phrase that I'd like to see that
21 letter.

22 MR. YOUNG: Yes, and I believe that's
23 clearly the intent. I mean, obviously, now if we thought
24 something was going to B- and here I am speaking for
25 them. I believe their intent was if it was something

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1 that was going to drag on for quite a period of time,
2 there was all kinds of other goods in the update
3 package, then what they would probably do is maybe take
4 that one element out, let's get all the other good stuff
5 out there, and then we would B-

6 MEMBER REMPE: That's a good letter to see,
7 so thank you.

8 MR. YOUNG: Okay.

9 CHAIR SCHULTZ: All right. We're ready for
10 Slide 7.

11 MR. FORD: Okay. Just a few other comments.
12 The new staffing and communication requirements that
13 were put into Appendix E, we don't think that they
14 should go in Appendix E. We think they should come up
15 into this new Part 50.155. We're concerned that putting
16 these back into Appendix E will cause some confusion
17 of the appropriate change controls, whether or not
18 they're part of the e-plans, and you apply the e-plan
19 change controls to them versus the change controls of
20 the section.

21 MR. YOUNG: And we appreciate the fact that
22 there's some language in there now to that extent, but
23 we just think that just the cleaner approach is just
24 to keep it with the rest of the rule. So, we just suggest
25 that everything be in 50.155. We think it's where it

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1 belongs.

2 MR. FORD: We also think on the change
3 control that there needs to be some more discussion,
4 maybe potentially some changes in the other sections.
5 We're concerned about the going forward interaction
6 between the normal design-base change controls and the
7 change controls in this section. You know, we agree that
8 you have to evaluate that in the appropriate areas it's
9 just making sure that the lines are clear for when you
10 just evaluate it against these Beyond-Design-Base
11 requirements versus you evaluate it against your fire
12 protection program requirements, or your security
13 plan, or whatever those normal design-base
14 requirements are.

15 MR. YOUNG: So, this was Tim's example
16 earlier in his presentation. So, if clearly in
17 design-basis space, you know, propping open security
18 doors, you know, not a thing you can do, but if I'm
19 evaluating a BDBE event, and it's clearly a BDBE event,
20 and that's the only time it's ever going to get used,
21 and the change control processes just somehow recognize
22 the acceptability of that propping that security door
23 open is okay in these conditions.

24 A couple of comments on the implementation
25 period. We would suggest using four years versus the

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1 two outage item. You know, what happens with the two
2 outage item all depending upon timing, some plants end
3 up getting a very short window, potentially, and if four
4 years is acceptable, then we think it would be
5 appropriate just to put that in so they'd have time to
6 implement.

7 And the last one is that we would request
8 that we be given a fair amount of time to comment on
9 this when it does come out. If we can get 120 days or
10 that time frame, we think that would make it much easier
11 for us to provide good comments, and would keep down
12 the need for us to submit a request for an extension.
13 And I think that is the end of the industry comments.

14 CHAIR SCHULTZ: All right. Any further
15 questions from the Committee to the industry with
16 regard to the presentation? Hearing none, the next
17 segment of the agenda is to ask for public comments,
18 so we'll go ahead and open the phone line. And while
19 the phone line is being opened, I'll ask if there are
20 any comments from individuals in the room, comments
21 that would be like to be made to the Committee? We're
22 seeing none here, so I'll wait for a moment to get the
23 signal that the line is open. The line is open as far
24 as we know, but for us to assure that we need someone
25 to say hello.

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1 MR. LYMAN: Hello, this is Ed Lyman from
2 UCS. Can you hear me?

3 CHAIR SCHULTZ: Yes, we can hear you, Ed.

4 MR. LYMAN: Okay, great.

5 CHAIR SCHULTZ: Please make a comment, if
6 you'd like to.

7 MR. LYMAN: Yes, I would. Thank you. I'm
8 sorry I can't be there in person today.

9 I have two comments. One is in response to
10 what we just heard from the industry. And I was actually
11 quite surprised to hear that they have a proposal which
12 is very similar to what UCS proposed back in 2012 when
13 the first Notice of Proposed Rulemaking for a Prolonged
14 SBO rule was put out.

15 CHAIR SCHULTZ: Ed, just a moment. You're
16 breaking up on this end, and it may be the system.

17 MR. LYMAN: Okay.

18 CHAIR SCHULTZ: But are you on a speaker
19 phone?

20 MR. LYMAN: Yes. Well, I'll try the
21 handset.

22 CHAIR SCHULTZ: Thank you very much.

23 MR. LYMAN: Is that better?

24 CHAIR SCHULTZ: We'll find out in a moment.
25 Thank you. Go ahead.

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1 MR. LYMAN: Okay. So, we submitted comments
2 back in July 2012 where we proposed that the success
3 path approach should be taken where you define the
4 series of external event scenarios and you carry them
5 through to their conclusion, and you determine how the
6 plant and the auxiliary or emergency equipment and the
7 personnel will respond. And then you carry that through
8 consistently. So that sounds like it's not too far from
9 the approach that the industry was just proposing,
10 which is a lot different from B- their argument was
11 always we just want to consider this artificial
12 boundary condition, some mysterious event causing an
13 ELAP and a loss of access to the ultimate heat sink,
14 and we don't know how that happened, and we're not going
15 to think about the ways in which it happened. We're just
16 going to focus on that. And we always thought that
17 seemed to be an artificial and unrealistic approach.
18 So, to the extent that approach can be integrated again
19 into this process, we'd welcome it, but we also point
20 out, as the industry did, that the B- what's sauce for
21 the goose might be sauce for the gander, and the
22 implications of that may go in a different direction
23 for some scenarios than what the industry was
24 anticipating, which was that things might be worse than
25 that artificial ELAP scenario. So, I think that's

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1 encouraging.

2 CHAIR SCHULTZ: Ed, was that a letter from
3 UCS to the Commission?

4 MR. LYMAN: Yes, it was a comment on the
5 Advanced Notice of Proposed Rulemaking.

6 CHAIR SCHULTZ: Yes.

7 MR. LYMAN: It was May 7th, 2012.

8 CHAIR SCHULTZ: Thank you.

9 MR. LYMAN: Now, on the question of SAMGs
10 and qualitative factors, first of all, I think there
11 B- I think the industry is misreading the SRM, because
12 the way I read it B- well, the way it B- what it says
13 is that you use quantitative methods to the extent
14 possible, but where they're not appropriate or
15 possible, then you can use qualitative measures. It's
16 not saying you can throw anything at the problem and
17 say it's defense-in-depth. I think in the case of SAMGs
18 there seems to be a large consensus from the Near-Term
19 Task Force to what I heard from the members of the
20 Committee that increasing the regulatory rigor of the
21 SAMGs would be a positive development, and a
22 significant increase in defense-in-depth, and that
23 it's not just, you know, throwing some arbitrary
24 measure at it and saying this is going to give us more
25 defense-in-depth. That seems to be singled out as a very

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1 significant policy shift, and to the extent we think
2 that should give considerable weight to going forward
3 with what the Task Force recommended, and that's making
4 SAMGs a rigorous, regulatory requirement that would
5 entail significant review of not just checking the
6 boxes, but insuring that it's actually a meaningful
7 and workable plan.

8 So, if you're not going to review the
9 details of the plan that thoroughly, then that's a more
10 performance-based approach, and then you need to
11 reflect that in enhanced exercises. And I don't know
12 if the exercise, the drill and exercise provisions in
13 this draft would be adequate to fully demonstrate that.
14 So, I don't think you can have B- you need one or the
15 other. Either you do a comprehensive sanity check on
16 the SAMGs, or you require the licensees to demonstrate
17 through performance testing that they'll work. So, I
18 think that is going to need to be beefed up. So, I think
19 that's all I have.

20 CHAIR SCHULTZ: Ed, this is Steve.

21 MR. LYMAN: Yes.

22 CHAIR SCHULTZ: Thank you very much for
23 your comments, and they did come through very clearly,
24 so thank you very much.

25 MR. LYMAN: I appreciate it.

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1 CHAIR SCHULTZ: Are there others on the
2 phone line that would like to make a comment? If so,
3 please identify yourself, and make your comment.

4 MR. WILLIAMSON: This is Bill Williamson
5 from TVA. I'm representing the BWROG and the PWROG.

6 CHAIR SCHULTZ: Yes, Bill.

7 MR. WILLIAMSON: Can you hear me?

8 CHAIR SCHULTZ: Yes. Please go ahead with
9 a comment. Thank you.

10 MR. WILLIAMSON: My only comment is that
11 both the Boiling Water Reactor Owners Group and the PWR
12 Owners Group are validating their SAMGs. We're doing
13 it with every means we have possible right now. For
14 example, the PWRs has scheduled a time to go to the three
15 different vendor's simulators and try them out and see
16 how they work. The BWROG is going through the actual
17 events that occurred at Fukushima Daiichi Units 1, 2,
18 and 3 and looking to see how the SAMGs and supporting
19 documents, TSGs would work through this. The Boilers
20 and the PWRs are communicating with each other on what
21 our findings are, and we expect to share this
22 information with one another. And I think we will find
23 some way to share it with the Staff, also.

24 MR. YOUNG: Bill, this is David Young. I
25 mean, clearly, you guys have already done a significant

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1 amount of work already, the stuff that Tim referred to
2 earlier. Right? So, these are just ongoing work
3 activities to further enhance or improve the SAMG
4 guidance. Is that a fair characterization?

5 MR. WILLIAMSON: David, that is a fair
6 characterization. That is correct.

7 MEMBER BLEY: Any other comments, Bill?

8 MR. WILLIAMSON: I guess I would just add
9 that one of the main focuses of what we're doing is to
10 look at instrument readings and figure out how to
11 validate them whether they're giving us a true
12 indication, or where they're indicating error. And
13 that's where a lot of our efforts have gone on, and are
14 going on currently, also.

15 CHAIR SCHULTZ: Thank you. Are there other
16 members of the public who like to make a comment for
17 the record? Please state your name and make a comment.
18 Hearing none, we'll B-

19 MEMBER REMPE: Before you do that, if Bill
20 is B-

21 CHAIR SCHULTZ: No. It is a public comment
22 period at this point. That's how we've announced it.
23 We'll go ahead and close the phone line.

24 MR. YOUNG: Thank you, Bill.

25 MR. WILLIAMSON: You're welcome.

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1 CHAIR SCHULTZ: All right. At this point
2 then, like to have comments by members of the Committee,
3 the Subcommittee. Joy, any closing comments?

4 MEMBER REMPE: Okay. I appreciated the
5 presentations from the Staff and their efforts, as well
6 as from industry today. The Staff during their
7 presentation did mention about the B- their
8 willingness to come back and communicate with us about
9 the Draft Guides in upcoming months, and I would like
10 to have put my vote in that I'd like to see that
11 interaction occur.

12 With respect to what industry presented,
13 definitely as I mentioned during the discussion, I'd
14 like to see this letter from the BWR and PWR Owners
15 Group. And then with respect to what Bill Williamson
16 said on the line, I would like to, again B- and I've
17 mentioned this to the Staff about B- or with the
18 industry about the interactions with the Staff and the
19 results of his audits. And he said well, we'd like to
20 find a way to communicate to the regulator. And, again,
21 those kind of details would I think provide more
22 confidence with respect to me on what was occurring.

23 Also, I really had wanted to ask but we're
24 not allowed to interact with the public commentators
25 about what B- I mean, I think Bill mentioned that they

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1 were just doing the Fukushima Daiichi event, but what
2 events in the PWR Owners Group evaluating just one event
3 for the instrumentation B-

4 MR. YOUNG: No, the Ownerships look at a
5 range of different events. I think Bill was just trying
6 to B- what he thought was the interest of this crowd
7 because of the nature of the mitigating design-basis
8 events rule of Fukushima, but I mean they regularly look
9 at OEs from a variety of different B-

10 MEMBER REMPE: But for the Severe Accident
11 Management Guidelines, and to validate the
12 instrumentation performance, are they looking at a
13 range of events?

14 MR. YOUNG: They look at a range of
15 conditions in the guidance for which alternate
16 indications, confirming indications, calculation
17 aids, trends. If you don't get an accurate reading,
18 what's the trend? Those kinds of tools are all talked
19 about in the Severe Accident Management Guidance from
20 both Owners Groups.

21 MEMBER REMPE: They are talked about but to
22 validate that they would survive, that's not in what
23 I've seen for Severe Accident Management Guidance. And
24 when they B- and feeling, knowing exactly when you can
25 and can't trust. And I believe there are some activities

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1 to do that. I wasn't sure of the B- I wanted it on the
2 record, so I'm glad you said although they're looking
3 at a range of events.

4 MR. YOUNG: Am I on the record?

5 MEMBER REMPE: Right, I'm glad to hear
6 that, but I'd like, again, if there were that exchange
7 in having that with some sort of discussion with the
8 regulator, it would make me feel better.

9 MR. YOUNG: So, let me say this, and maybe
10 this will help. What Tim referred to a little while back
11 was in May we had a two-day workshop, and I think
12 everybody B- it seemed like everybody and their mother
13 from the Staff was in this workshop. And day one was
14 the PWRs, and day two was the BWRs. And it was a full
15 day of going through soup to nuts, everything, all the
16 guidance, the calc aids, the tech support guidelines,
17 some of the basis information, and answering all those
18 questions. And the idea of this two-day workshop was,
19 if you will, try to baseline the Staff's knowledge on
20 where are we right now? What are all the improvements
21 that we've made since Fukushima, I should say the Owners
22 Groups, the Owners Groups have made there. And try to
23 get that information out there, and that understanding
24 out there. And then with the idea being that kind of
25 once we've baselined that, I believe their intent then

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1 is B- with this letter is to provide this ongoing look
2 periodically as other changes are made so that the Staff
3 is kept up to speed over time as to what the SAMGs are
4 doing, what they're trying to solve, you know, that kind
5 of thing. So, I believe that's the philosophy.

6 MEMBER REMPE: Okay. I think B- that's all
7 I have. Thank you.

8 CHAIR SCHULTZ: Okay. Charlie?

9 MEMBER BROWN: Nothing more.

10 MEMBER BALLINGER: Nothing more.

11 MEMBER RYAN: Thank you for the
12 presentations today. They were very informative. Thank
13 you very much.

14 MEMBER BLEY: Nothing more, thanks.

15 CHAIR SCHULTZ: Dana?

16 MEMBER POWERS: I continue to feel like we
17 are abandoning or degrading, at least, a drive to use
18 risk-information to structure the regulatory system.
19 And I'm getting the impression that we're doing things
20 in a fairly chaotic fashion through running the risk
21 of imposing inconsistent and divergent burdens on
22 industry here. And I think that's something we've got
23 to make sure does not happen. I think we have to work
24 scrupulously to make sure that does not happen, that
25 in a rush to show that we've done something, we don't

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1 end up with something that is burdensome and,
2 ultimately, degrades safety by the introduction of
3 complexity on the site, congestion on the site. And I
4 get very concerned about our operating force being
5 diverted into a focus, an unmerited focus on low-
6 probability events at the expense of things that will
7 happen on the plant. And the current set of
8 presentations just reinforced my concerns in this area.

9 CHAIR SCHULTZ: Dick?

10 MEMBER SKILLMAN: Thank you for the
11 information you've provided today. And I, too, as Dr.
12 Rempe mentioned, I would like to see these Draft Guides
13 another time. I think they will contain some meat that
14 is important to us. Thank you.

15 CHAIR SCHULTZ: Bill?

16 DR. SHACK: No, I think I've commented
17 enough.

18 CHAIR SCHULTZ: Members on the phone line,
19 Pete?

20 MEMBER RICCARDELLA: Yes, this is Pete. I
21 think personally the Committee needs to understand
22 better how the updated seismic hazards are going to be
23 addressed just by either through time or through a
24 risk-based B-

25 (Telephonic interference)

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1 MEMBER RICCARDELLA: That either would
2 work, we just need to understand it a little better.
3 I think it doesn't make any sense to put in a requirement
4 that would be highly vulnerable to theseC-

5 CHAIR SCHULTZ: Pete, you're breaking up,
6 if you're on a speaker. Are you?

7 MEMBER RICCARDELLA: Just hang on, I'll get
8 off it.

9 CHAIR SCHULTZ: Thank you.

10 MEMBER RICCARDELLA: Hello, is that
11 better?

12 CHAIR SCHULTZ: Much better.

13 MEMBER RICCARDELLA: Okay.

14 CHAIR SCHULTZ: Lesson learned.

15 MEMBER RICCARDELLA: Yes. I think the
16 Committee needs to understand how these updated seismic
17 hazards are going to be addressed with the FLEX
18 equipment.

19 CHAIR SCHULTZ: Okay. Is Mike Corradini on
20 the line, by any chance?

21 MEMBER CORRADINI: Yes, sir.

22 CHAIR SCHULTZ: Okay, Mike, would you like
23 to make a comment in closing?

24 MEMBER CORRADINI: Well, I think most
25 things have been said by the other members. To the

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1 extent, Steve, you've kind of captured all of this, I'
2 guess I'll just thank the Staff for bearing with us for
3 a long day of questions. I do think we should look at
4 the guidance so that it's very clear. I understand
5 Dana's concerns, so it strikes me that without looking
6 at the guidance to make sure it's consistent, and it's
7 understandable, some of Dana's concerns could occur.

8 And beyond the guidance, I think Pete's
9 point, and I think John made it, also, is how an upgraded
10 seismic hazard is going to be figured into dealing with
11 the equipment that has to be used either partially or
12 totally within the FLEX implementation. But that's it,
13 thank you.

14 CHAIR SCHULTZ: Thank you, Mike. I'd also
15 like to express my appreciation to the industry for the
16 presentation this afternoon for having brought a lot
17 to the table. And also to the Staff for their
18 discussions earlier. It was very helpful to the
19 Subcommittee to hear all of the presentations and hear
20 responses to our questions. It's been a very fruitful
21 afternoon.

22 So, I would close the formal meeting with
23 that. I do have an informal announcement because the
24 Fukushima Subcommittee does have a meeting tomorrow
25 morning. Yes, let me close the record.

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(Whereupon, the above-entitled matter
went off the record at 5:09 p.m.)

Mitigation of Beyond-Design-Basis Events (MBDBE) Proposed Rulemaking

Advisory Committee on Reactor Safeguards
Fukushima Subcommittee

March 19, 2015

Background

- Efficiency gains through consolidation
- Scope of proposed rulemaking as it relates to originating Near-Term Task Force (NTTF) recommendations:
 - All of recommendations 4, 7, and 8
 - All of 9.1, 9.2. and 9.3 – except long term Emergency Response Data System (ERDS)
 - 10.2 (command and control/decision maker qualifications) and 11.1 (delivery of equipment to site - phase 3 portion of Order EA-12-049)
 - Includes NTTF 9.4 (ERDS modernization)
- In terms of post-Fukushima regulatory actions already underway:
 - Makes generically-applicable Order EA-12-049 and Order EA-12-051
 - Addresses staffing and communications from NTTF 9.3 (10 CFR 50.54(f) request)
 - Addresses re-evaluated hazards from NTTF 2.1 (10 CFR 50.54(f) request)

Proposed Rule Language

Paragraph (a) - Applicability

- **Applicability**
 - Current operating reactors
 - New reactors
 - Decommissioning reactors
- **Requirements apply to both current and new reactor licensees and applicants**
 - Design features requirements in proposed § 50.155(d) are for new reactor plant designs, and are in addition to the remainder of the requirements **(revised)**
- **Decommissioning provisions: **(revised)****
 - Once fuel is permanently removed from the reactor - no reactor or primary containment requirements
 - Once decay heat is sufficiently low versus SFP heat up/boil off to provide ample time: then only remaining mitigation is § 50.155(b)(2)
 - Once irradiated fuel is removed from the spent fuel pool - all requirements cease

Proposed Rule Language

Paragraph (b) – Integrated Response

- Integrated Response Capability (unchanged)
 - Beyond-design-basis external event mitigation
 - Would make Order EA-12-049 generically applicable
 - Formerly referred to as SBOMS (industry’s “FLEX” program)
 - Extensive Damage Mitigation Guidelines (EDMGs)
 - Would move § 50.54(hh)(2) requirements to this rule
 - No substantive changes to requirements
 - Severe Accident Management Guidelines (SAMGs)
 - Currently voluntary industry initiative
 - Regulation would require SAMGs
 - Inspection under ROP only - no licensing review.
 - No additional equipment requirements

Proposed Rule Language

Paragraph (b) – Integrated Response

- Integrate with Emergency Operating Procedures(EOPs)
 - Structured to not impact previous regulatory efforts on EOPs

- Supporting staffing and command and control
 - Both staffing and command and control should be in place after Order EA-12-049 implementation
 - Recognizes challenge of a site-wide event that could lead to core damage and involve offsite assistance

Proposed Rule Language

Paragraph (c) – Equipment Requirements

Paragraph (e) – Training Requirements

- Equipment Requirements (**revised**)
 - Would make Order EA-12-049 equipment requirements generically applicable
 - Would make Order EA-12-051 spent fuel pool level instrumentation requirements generically applicable
 - § 50.155 (c)(2) revised to reflect COMSECY-14-0037:
 - Mitigation strategies equipment required by paragraph (b)(1) must be reasonably protected from the effects of natural phenomena that are the more severe of: (1) the design basis of the facility; or (2) the licensee’s reevaluated hazards, stemming from the March 12, 2012, NRC letter issued under § 50.54(f), as verified by the NRC’s assessment issued by [EFFECTIVE DATE OF THE RULE].
- Training (**unchanged**)
 - Training of personnel for activities not already addressed
 - Systems approach to training
 - Expect most training already addressed as part of EOPs and Order EA-12-049 implementation
 - New training should be in the SAMG area

Proposed Rule Language

Paragraph (d) – New Reactor Requirements

- New reactor design requirements (**revised**):
 - Only applies to applicants listed in paragraph § 50.155(a)(4)
 - Would require that design features be incorporated into new reactor plant designs that enhance coping durations and minimize reliance on human actions for an extended loss of all ac power concurrent with a loss of normal access to the ultimate heat sink
- Intent:
 - Require certain elements of the Commission’s advanced reactor policy statement for new reactor designs during ELAP/LUHS
 - “...longer time constants and sufficient instrumentation to allow for more diagnosis and management before reaching safety systems challenge or exposure of vital equipment to adverse conditions.”
 - “simplified safety systems that, where possible, reduce required operator actions”
 - Applicants would consider the effects of an ELAP/LUHS early in the design process and incorporate design features that provide enhanced capabilities to address these events

Proposed Rule Language

Paragraph (f) Drills and Exercises (Unchanged)

Paragraph (g) – Change Control (Unchanged)

- Drills provide assurance that guideline sets are integrated and can be used
 - Initial drill(s) to show use and transitions
 - Follow-on drill(s) to provide assurance of continuing capability
 - Complex drill schedule: Initial drill within 2 refueling outages (RFs) and follow-on in 8 calendar years
 - Current operating licensees/holder of combined license (COL) after 52.103(g) finding:
 - 1st drill within 2 RFs – after that 8 year period
 - Applicants for a part 50 operating license (OL) or holder of COL before 52.103(g) finding:
 - Demonstrate use and transitions – initial drill(s)
 - Subsequent drills - 8 year period
- MBDBE Change Control
 - Facility changes can impact multiple regulatory areas; all change controls must be applied
 - No threshold criterion; must comply with requirements

Proposed Rule Language

Appendix E, Application, Implementation

- New Appendix E requirements (**Unchanged**)
 - Multi-source term requirements are incorporated directly into current Appendix E
 - New Section VII requirement for staffing and communications
 - Technology-neutral ERDS
- Application requirements (**Unchanged**)
 - Applications for new reactors
- Implementation: Will use the Cumulative Effects of Regulation (CER) process (**Unchanged**)

Backfit Considerations

(Unchanged)

- The MBDBE rule has different supporting backfit bases:
 - Proposed rule requirements are severable
 - Order EA-12-049 and Order EA-12-051 requirements are not backfits (i.e., already imposed by orders)
 - All other requirements need justification under Part 50 backfitting provisions (operating reactors) and Part 52 issue finality provisions (new reactors) :
 - Items supporting Order EA-12-049 are technically backfits without impact
 - SAMGs and supporting requirements (drills and training that involve SAMGs)
 - Multi-source dose assessment (voluntarily implemented): Is a backfit but should not cause additional impact
 - New reactors requirements are designed to be “forward fitted”
 - Technology-neutral Emergency Response Data System (ERDS) remove technology reference, aligns with current practice, not a backfit

SAMGs Backfit (Unchanged)

- Qualitative basis for imposing SAMG requirements
 - Guideline set used by operators and decision-makers following onset of core damage
 - SAMGs support making optimal decisions concerning containment
 - SAMGs support informing the emergency response organization with regard to protective actions (e.g., fission product barrier integrity)
 - The value of SAMGs, pre-planned guidelines for best use of all available resources to mitigate the accident
- Quantitative basis informed by Containment Protection and Release Reduction effort

Draft Regulatory Guidance

- **DG-1301 “Flexible Mitigation Strategies for Beyond-Design-Basis Events”**
 - Current draft guidance would endorse NEI 12-06 rev. 1 with clarifications
 - NEI is revising NEI 12-06 rev. 0 (to produce rev. 1):
 - To reflect lessons-learned from implementation of Order EA-12-049
 - To address re-evaluated hazards
 - Includes guidance for new reactor designs to meet proposed § 50.155(d)
- **DG-1317 “Wide-Range Spent Fuel Pool Level Instrumentation”**
 - Would endorse NEI 12-02 (Previously endorsed for Order EA-12-051)
- **DG-1319 “Integrated Response Capabilities for Beyond-Design-Basis Events”**
 - Would endorse NEI 12-01 (Previously endorsed for RFI), NEI 13-06, and NEI 14-01

DG-1301

- Preliminary Draft
- NEI 12-06, Diverse and Flexible Coping Strategies (FLEX) Implementation Guide, Revision 1, Draft C, is basis
- Incorporates lessons learned in Order EA-12-049 implementation (alternative approaches, generic items, etc.)
- Work remaining includes:
 - Receipt of SRM-COMSECY-14-0037 to support development of NEI 12-06 Appendices for Seismic and Flooding Re-evaluations

DG-1301 Appendix A

(For New Reactor Designs)

- *Enhance coping durations*
 - Initially cope with installed SSCs at least 24 hours
 - After 8 hours, use of supplemental ac permissible
 - Then, cope at least 72 hours, using on-site equipment, before off-site resources are obtained

- *Minimize reliance on human actions*
 - Initially, minimal actions at limited and protected locations; monitoring, control, and coordination from the MCR or designed in location
 - Following the early phase, actions should be reasonable considering anticipated site conditions following the event

DG-1319

- NEI 12-01, “Guidelines for Assessing Beyond Design Basis Accident Response Staffing and Communications Capabilities”
 - Accident response staffing
 - Communications systems
- NEI 13-06, “Enhancement to Emergency Response Capabilities for Beyond Design Basis Events and Severe Accidents”
 - Multi-unit dose assessment
 - Training
 - Drills and exercises
 - EP facilities and equipment
- NEI 14-01, “Emergency Response Procedures and Guidelines for Beyond Design Basis Events and Severe Accidents”
 - SAMGs - No detailed review of Owners Group or plant-specific SAMGs
 - Command and control
 - Procedure integration

Status and Path Forward

- Proposed rule package is in concurrence:
 - Due to EDO on April 16, 2015 and Commission on April 30, 2015
 - Draft guidance should be issued with proposed rule in summer 2015
 - Recognize the ongoing work on DG-1301 and can meet with the ACRS prior to July or during public comment period if the Committee desires.
- Future ACRS interactions
 - Full committee – April 9, 2015 (proposed rule)
 - Full committee – TBD (final rule)

Industry Perspective on Draft Mitigating Beyond Design Basis (BDB) Events Rule

Bryan Ford

Senior Manager - Regulatory Assurance

Entergy Nuclear

March 19, 2015 • ACRS Meeting

MBDBE Rule - Positives

- Right topics addressed with “high-level” language
- Reflects the significant amount of industry work since Fukushima
 - Existing Order requirements and commitments
 - Responses to 50.54(f) letter of 3/12/12
- Staff intends to support use of industry-developed guidance – additional work needed
- Changes have been made based on previous industry comments

MBDBE Rule – Areas for Improvement

- Reevaluated Hazards
 - MBDBE capabilities need to address a spectrum of plant conditions caused by different initiating events (hazards) and resulting damage states
 - In some reevaluated hazard cases, AC power and/or ultimate heat sink may be available
 - Rule wording should accommodate Alternate/Targeted Hazard mitigation strategies
 - Affects “reasonable protection” and “containment”
 - Inconsistent with current seismic path forward

Reevaluated Hazards – (b)(1)

- Strategies and guidelines to mitigate beyond-design-basis external events from:
 - Natural phenomena that result in an extended loss of all ac power concurrent with a loss of normal access to the ultimate heat sink
 - The licensee's reevaluated flood hazards, stemming from the March 12, 2012, NRC letter issued under § 50.54(f), as verified by the NRC's assessment issued by [EFFECTIVE DATE OF THE RULE].

Reevaluated Hazards – (c)(2)

- The equipment relied on for the mitigation strategies required by paragraph (b)(1) of this section must be reasonably protected from the effects of natural phenomena. ~~that are the more severe of: (1) the design basis of the facility; or (2) the licensee's reevaluated hazards, stemming from the March 12, 2012, NRC letter issued under § 50.54(f), as verified by the NRC's assessment issued by [EFFECTIVE DATE OF THE RULE].~~

MBDBE Rule – Areas for Improvement

- Proposed § 52.79 and § 52.80
 - We do not believe that these requirements are necessary for new plants
 - Adequately addressed in current design review requirements (designed to higher standards)
- Use of qualitative factors to justify imposing SAMG requirements is not in accordance with Commission direction (SRM-SECY-14-0087)

MBDBE Rule – Areas for Improvement

- Emergency Response
 - Relocate the new staffing and communications requirements from Appendix E to new Part 50.155
- Change control
 - Other change processes should recognize the differences between design/licensing basis and BDB external events
 - What is not acceptable in one instance (design basis) may be acceptable in the other (BDB)

Other Comments

- Implementation should be specified in “years,” not 2nd outage restart
 - Recommend 4 years to minimize CER
- Given the scope and complexity of the proposed rule, the industry requests that the public comment period be initially established at the maximum possible duration
 - Obviate the need to request/process an extension