

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

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BRIEFING ON THE MITIGATION OF BEYOND DESIGN BASIS EVENTS

(MBDBE) RULEMAKING

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PUBLIC MEETING

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THURSDAY

JULY 9, 2015

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ROCKVILLE, MARYLAND

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The Commission met in the Commissioners' Hearing Room  
at the Nuclear Regulatory Commission, One White Flint North, 11545  
Rockville Pike, at 9:00 a.m., Stephen Burns, Chairman, presiding.

COMMISSION MEMBERS:

STEPHEN G. BURNS, Chairman

JEFF BARAN, Commissioner

WILLIAM C. OSTENDORFF, Commissioner

KRISTIN L. SVINICKI, Commissioner

NRC STAFF PRESENT:

MARGARET DOANE, General Counsel

ANNETTE VIETTI-COOK, Secretariat

ERIC BOWMAN, NRR

BILL DEAN, NRR

MIKE JOHNSON, RPP

JOHN MONNINGER, NRO

TIMOTHY REED, NRR

ALSO PRESENT:

STUART LEWIS, Electric Power Research Institute

DAVID LOCHBAUM, Union of Concerned Scientists

ANTHONY PIETRANGELO, Nuclear Energy Institute

JACK STRINGFELLOW, Pressurized Water Reactor Owners Group

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

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9:02 a.m.

CHAIRMAN BURNS: Well again welcome, just so you can hear me now. The purpose of today's meeting is to discuss the proposed rulemaking package and associated guidance for the Mitigation of Beyond Design Basis Events rulemaking. This activity stems from the lesson learned from the Fukushima Dai-ichi accident in Japan in 2011.

As you may know, the Commission has the proposed rule before it as a voting matter, and today's discussions with aid in our deliberations on the issues presented in the paper, which is tagged SECY-15-0065, and which is publicly available on the NRC's external website.

We'll begin as I said again with presentations from an external panel, which includes Tony Pietrangelo, senior vice president and chief nuclear officer at the Nuclear Energy Institute; Stuart Lewis, a program manager with the Electric Power Research Institute; Jack Stringfellow, chairman of the Pressurized Water Reactors Owners Group; and David Lochbaum, a director of the Nuclear Safety Project at the Union of Concerned Scientists.

Following the external panel, we'll take a brief break and then hear from the staff. I think we all look forward to your presentations and the discussion that will ensue, and before I begin, do any of my colleagues have anything to say?

(No response.)

CHAIRMAN BURNS: Okay, very good. Mr. Pietrangelo, would you please begin?

MR. PIETRANGELO: Thank you Mr. Chairman. Good

1 morning Commissioners. Let's go right to Slide 2 please. I do want to spend  
2 a little bit of time on the importance of this proposed rulemaking. From an  
3 industry perspective, we believe this is the centerpiece of the -- our U.S.  
4 response to Fukushima.

5 In many respects, establishing the regulatory framework for  
6 beyond design basis events actually implements Recommendation 1 from the  
7 Near Term Task Force report. This is setting the stage for what we do for  
8 beyond design basis events. It's very, very important for a number of  
9 reasons.

10 It also integrates the mitigating strategies that were  
11 implemented under the Order, with the re-evaluated hazards that were  
12 requested under the 10 C.F.R. 50.54(f) letter in 2012. I want to stress this is  
13 not a codification of the mitigating strategies order. This is fundamentally  
14 different from that in the following respects.

15 When the mitigating strategies order was implemented, there  
16 were assumptions made on the loss of all AC power and loss to the ultimate  
17 heat sink that provides a cooling source for three particular functions: core  
18 cooling, spent fuel pool cooling and containment integrity.

19 When we look at the mitigating strategies assessment that the  
20 proposed rule is calling for, that integrates those reevaluated hazards, that's  
21 not the starting point for these evaluations. We are starting with the entire  
22 plant with a real hazard or real information, and we didn't have -- not with  
23 where we started on the mitigating strategies where there were no  
24 assumptions regarding what hazard got you there.

25 We didn't know what got you in that condition. We assumed  
26 the worst case with loss of all AC power and loss of ultimate heat sink. So

1 these are different approaches, and in that respect this rule complements  
2 those orders and integrates those reevaluated hazards into these strategies.

3 So it's very, very important that we understand the difference  
4 between the approaches. Also, a key difference here is that this rulemaking  
5 will differentiate what we do for design basis events, as opposed to beyond  
6 design events. Without this rulemaking or without the guidance that goes  
7 with it, I think we will just repeat what we've been doing for the last 40 years  
8 with respect to design basis events, treating them in exactly the same manner.

9 This has to be treated differently. These are very low  
10 probability but potentially high consequence events. They need to be treated  
11 differently in the regulatory framework. This rulemaking provides that piece  
12 of the regulatory framework.

13 And finally and perhaps most importantly, we're improving the  
14 safety margin of every plant by providing an additional layer of protection, with  
15 not only portable onsite equipment but portable equipment that we can get to  
16 any site within 24 hours of the onsite of the event.

17 So we think safety's been enhanced. As we stated at the April  
18 30th briefing, we had a bias for action in implementing the mitigating  
19 strategies. I think there's elements of this particular rulemaking that we will  
20 be implementing before the rule is final, okay, throughout 2016.

21 So my point here is that whatever goes out in the proposed  
22 rule, we are kind of betting on the come that that's going to be what the final  
23 rule is close to looking like, okay, because we want to do this right once, okay.  
24 We want to make sure we answer the bell on this particular issue, and so what  
25 goes into the proposed rule is very, very important.

26 Next slide, please. Given the importance of this, we think it's

1 necessary to try to keep this as simple as possible. We're really trying to  
2 provide diverse means for the three key safety functions that I mentioned.  
3 This has to be risk-informed performance based approach, and by that I mean  
4 the sites are different, the designs at the sites are different, and the external  
5 hazards that these sites are subject to are different.

6 We are developing guidance in NEI 12-06, which was the  
7 implementation guidance for mitigating strategies, on how to take the  
8 reevaluated hazards for flooding in Appendix G and for seismic in Appendix H,  
9 and do the assessment with the approach that I stated before, on taking the  
10 hazard information and bouncing that off of the mitigating strategies  
11 assessment.

12 But the performance-based part of this is show me how you do  
13 the three key safety functions with either permanent plant equipment or  
14 portable equipment. At the end of the day, that's the bar that has to be met.  
15 We need a widespread understanding of this rule going forward?

16 It does provide assurance for the key safety functions. It  
17 maintains that clear differentiation between design basis and beyond design  
18 basis, and we all need to understand that going forward.

19 Next slide please. Implementation dates. Thus far, the  
20 industry's met its commitments on the initial orders and requests for  
21 information. As I just talked about, there's a spectrum of responses that  
22 when you take the reevaluated hazard and assess the mitigating strategies at  
23 any given site, the results are going to be different.

24 So in the implementation of the rule that calls for many of these  
25 assessments, you can't just bet that we're going to have the perfect scenario,  
26 that the design basis will encompass the -- a reevaluated hazard. There will

1 be a lot of different results.

2 In fact, the initial work we've done shows there might be up to  
3 five categories of difference in responses to the reevaluated hazards, and  
4 what a licensee may have to do.

5 So we have to provide ample time to perform these activities  
6 with realistic assumptions about how long not only that it takes the industry or  
7 the licensee to perform the assessment, but also for the staff to review and  
8 approve the portions that we need to go forward with any particular revisions  
9 at the sites.

10 We talked, I think, at the last Commission briefing about the  
11 hand off, and the relay race nature of this. That's not going away. That's  
12 what this rule, I think, puts in place, is a lot of series of activities that gets us to  
13 the finish line.

14 And finally, we don't want to seek -- have to seek a lot of  
15 exemptions to dates that are established without being tied to some actions.  
16 I think that undermines the credibility of the whole process when we need  
17 exemption requests for extensions on the deadlines that are provided. If we  
18 build in that flexibility in the rule, I think our credibility is better off across the  
19 board.

20 Next slide, please. We went you a letter on severe accident  
21 management guidelines earlier this year. A little history. There was an  
22 industry initiative approved in 1994 that put SAMGs in place. I think as we've  
23 said previously, the argument here is not about whether we're going to have  
24 SAMGs or not. We've had them, we're enhancing them and we will have  
25 them in the future and we will maintain them.

26 We note that the temporary instruction inspection that was

1 conducted in 2011 didn't find any significant issues. Everybody had SAMGs.  
2 Could they have been maintained better? Yes. We have measures in place  
3 now through what the owners groups are doing with the CNOs on the NSIAC  
4 are doing, and INPO's follow-up activities that we believe will shore up that  
5 response.

6 Our main concern is the precedent set by using overriding the  
7 quantitative factors that were presented in the regulatory analysis for the  
8 imposition of SAMGs in the rule. What was presented in the analysis was  
9 insufficient to impose a requirement, and qualitative factors, namely defense  
10 indepth was used as the rationale.

11 We don't think that's the way that was intended to be used,  
12 when relevant quantitative factors suggest otherwise. We're prepared to  
13 provide docketed commitments to SAMGs, both their having them,  
14 maintaining them, training on them, etcetera. We'll have report-outs to the  
15 NSIAC, again INPO follow-up evaluation, and the NRC can periodically  
16 inspect them if they want to.

17 That was done in 2011. There's no reason it can't be done  
18 again. So from our perspective, SAMGs does not belong in this rulemaking.

19 Next slide, please. As well as new plant design requirements.  
20 Really, the requirement that showed up in the proposed rule, there was no  
21 public interaction on this piece of the proposed rulemaking. This imposes  
22 new design basis requirements. They are not beyond design basis  
23 requirements.

24 These are the same hazards that we are -- for new plants that  
25 we're using on the current plants. But for the new plants, these will not be  
26 beyond design basis. So there's a confusing nature when you're establishing



1 the regulatory framework for beyond design basis events. But for new plants,  
2 it will be what their design basis actually is, and again, that complicates and  
3 confuses the intent of this proposed rule.

4 It was noted in the reg analysis that this is a lot like the aircraft  
5 impact and the revisions to the rule that were made. This is not like aircraft  
6 impact. Here, the threat is not specified. There are no design parameters  
7 about what the hazard will be, and there's no work done on showing in a  
8 quantitative nature what the risk reduction would be. So there's really an  
9 unknown risk reduction benefit.

10 So again, I think we're -- we do not believe this should be  
11 included in the proposed rule.

12 Last slide on conclusions. We think the timing's right for this  
13 rulemaking. We expect the proposed rule to be out before the end of the  
14 year, and the final rule to the Commission by the end of next year.

15 We do know a lot more now from what we've learned in all our  
16 different analyses and implementation of the 2012 orders and requests for  
17 information, such that we can now bring this all together and have a better  
18 understanding of what we need to do to complete the response.

19 And the time that we spend on implementation next year will  
20 also help us better inform the implementation dates that go into the final rule.  
21 So this is a challenging effort on everyone's part, and a lot of work on  
22 everyone's part. But we believe it does provide the right oversight and  
23 processes to resolve the remaining issues that make up the Fukushima  
24 response. Thank you for your time.

25 CHAIRMAN BURNS: Mr. Lewis.

26 MR. LEWIS: Thank you, Mr. Chairman, and thanks for this

1 opportunity to talk about the -- EPRI's technical basis report, and the role it  
2 played in developing the original severe accident management guidelines,  
3 and especially the updated guidelines that are being developed and  
4 implemented right now since the Fukushima accident.

5 Go to the next slide, please. Just by way of very brief  
6 background, to make sure we're all on the same page, the severe accident  
7 management guidelines, the SAMGs, are a set of actions that would come  
8 into play after the onset of core damage. So it's a point at which you typically  
9 transition from the emergency operating procedures to another set of  
10 guidelines that are a bit more flexible than the procedures and handle a wide  
11 range of accident conditions.

12 So these are strategies more than step by step procedures.  
13 Traditionally, the original SAMGs and the current set have relied on existing  
14 equipment. Plants didn't install much in the way of new equipment to  
15 implement the SAMGs, and used existing instrumentation or combinations of  
16 instrumentation readings to understand the trends in the accident, the general  
17 nature sufficiently to know what actions to take.

18 Next slide, please. The SAMGs are different from other  
19 procedures, and also in the fact that clearly they're used more heavily by the  
20 emergency response organization, the technical support center, to advise the  
21 control room staff, rather than the control room staff taking step by step  
22 actions called for by their procedures.

23 In terms of how the SAMGs came about originally, Tony  
24 mentioned this was an industry initiative back in the early 1990's. EPRI  
25 developed at that time what was called the technical basis report, that  
26 provides the technical foundation for accident management.

1           The information in that report was then used by the various  
2 owners groups. At that time, there were four different owners groups for the  
3 flow reactor vendors. There are now two, one for PWRs and one for BWRs.

4           They developed a generic set of guidance that was then  
5 translated into plant-specific guidance, the owners groups working with each  
6 individual utility to identify how the generic guidance would be implemented at  
7 a particular plant.

8           So I'm going to focus on the first step in this process, the  
9 technical basis report. The next slide, please.

10           Just to give you a little more perspective on where the SAMGs  
11 fit into the overall context for procedures in a nuclear power plant, you can see  
12 there's a spectrum of procedures from the normal operating procedures at the  
13 bottom, the procedures that guide plant startup and shutdown, the day-to-day  
14 operations of the plant, up through progressively more significant procedures,  
15 depending on the challenges the operators are facing.

16           The SAMGs again are distinguished primarily because they're  
17 not specifically procedures. They are guidelines, again because it's  
18 important to understand the nature of the accident that the operators are  
19 facing, and to have the flexibility to respond to a variety of conditions.

20           They do interface with other procedures, supporting  
21 procedures. Once the strategy is selected, the operators do have specific  
22 procedures that tell them how to align a system or accomplish a particular  
23 action. They also interface with the FLEX guidelines.           Although  
24 is designed primarily to prevent core damage, in fact, some of the capabilities  
25 can be used to respond if an accident proceeds to the point at which there is  
26 severe core damage.

1                   The next slide, please. With respect to the update that we  
2 performed, the technical basis report, primarily our intent was to address the  
3 insights that were gained early on from the Fukushima accidents, to  
4 incorporate those insights into the technical basis report and support  
5 enhancing the SAMGs.

6                   Along the way, we did review the information that had been  
7 collected over the 20 years or so since the last technical basis report was  
8 prepared, to see what if anything needed to be reflected.

9                   It's not that that information had been ignored through that  
10 period, but the research and analysis that had been performed through the  
11 90's and up to 2011 produced incremental insights into severe accident  
12 behavior, but nothing that really compelled taking a fundamental look at the  
13 technical basis report and making a major update.

14                   The Fukushima accident certainly highlighted some things that  
15 we thought were worth capturing and feeding into the SAMG process.  
16 Through this 20 year period or so, although the technical basis report itself  
17 was not updated, the owners groups did maintain the SAMGs and the utilities  
18 made updates from time to time. So it's not like there was a static process  
19 throughout that period.

20                   We began updating the technical basis report in the summer of  
21 2011. We formed a team to look at existing guidance and to start evaluating  
22 what we already knew about the accidents at Fukushima and Dai-ichi, and we  
23 completed that process in the summer of 2012. In order for the owners  
24 groups to be able to make their updates in a really timely manner, we  
25 interacted throughout that process, so that they could understand what we  
26 were proposing in terms of additions to the technical basis report, and how

1 that might affect the existing SAMGs.

2 So when the updated technical basis report was published in  
3 the fall of 2012, the owners groups had already made pretty extensive use of  
4 the information that we put out. They didn't have to wait for the report to know  
5 where to begin updating their SAMGs, and they certainly did have much of the  
6 work done by the time we actually published the TBR.

7 Next slide, please. Just a quick note on the organization of  
8 the technical basis report. It's divided into two volumes. The first captures  
9 what are called candidate high level actions. So these describe the  
10 strategies that might be implemented in the SAMGs, that identify the  
11 objectives of each of the strategies.

12 They talked about where there can be issues, where there  
13 might be some downsides, depending on how the strategies were  
14 implemented and what might vary from the expected response in a severe  
15 accident. The second volume is about 900 pages that describe the physics  
16 of accident progression.

17 So there's a lot of information in there about various  
18 phenomena following severe accidents. So Volume 1 fed directly into the  
19 production of the SAMGs. Volume 2 provides a lot more background. It's  
20 used in training at various utilities and helps the people writing the SAMGs to  
21 understand why it is that they're describing the actions the way they are.

22 Go to the next slide, please. Just a few comments about what  
23 we put into the technical basis supporting particularly Volume 1. There were  
24 some cases where we added new Candidate High-Level Actions. For  
25 example, we added actions pertaining to cooling of fuel in the spent fuel pool.  
26 The original technical basis for it didn't address spent fuel pool cooling.

1 Neither did most of the original SAMGs that were in place.

2 And as you may recall from 2011, although it turned out not to  
3 be such an overriding issue, there was a lot of concern about what was going  
4 on, particularly in the spent fuel pool in Unit 4 at Dai-ichi. There were a  
5 number of other new Candidate High-Level Actions that were added, and all  
6 the existing actions were revisited, to see what might need to be done to  
7 enhance the guidance we provided.

8 In terms of the more general aspects of what we incorporated,  
9 we addressed the implications for external events, which really hadn't been  
10 discussed in the original TBR. It's not that what you do to manage a severe  
11 accident is different if you have an external event. But it may be that you  
12 have different implications in terms of what equipment is still available.

13 There are other aspects that were important, but in the interest  
14 of time I'll go to the next slide please. So Volume 2 has a much extensively  
15 revised set of discussions of severe accident phenomena, again originally  
16 reflecting insights from the early days after the Fukushima accident. For  
17 example, there's an extensive discussion that's been added to address  
18 injection of steam water or other less than ideal sources of water into the  
19 reactor vessel or in the containment building.

20 But we describe a lot of the phenomena that were relevant to  
21 the accident, and the implications for those phenomena as we've learned from  
22 the accident. Can we go to the final slide?

23 I think it's particularly important to note that when we went  
24 into the really detailed review of the technical basis report, we were pleased to  
25 see that the guidance that was in there was still valid. We didn't find anything  
26 in the original TBR that provided inappropriate or incorrect technical bases for

1 addressing severe accidents.

2 We certainly were able to enhance a lot of the discussion, and  
3 to address actions that hadn't been discussed in the original TBR. We  
4 worked very closely with both owners groups, to ensure that they knew what  
5 was going into the new TBR, so they could use that information in a timely  
6 manner.

7 And I will say that I think it will far shorter than 20 years before  
8 we update the TBR again. I expect that when we are able to go in and get  
9 real information from the state of the cores and reactor vessels and  
10 containments, that Dai-ichi will have a lot of information we'll expect to reflect  
11 in a new TBR. Thank you very much.

12 CHAIRMAN BURNS: Thank you. Mr. Stringfellow.

13 MR. STRINGFELLOW: Thank you very much, Mr. Chairman.  
14 Thank you. Thank you very much, Mr. Chairman. In addition to the  
15 Pressurized Water Reactor Owners Group, I'm also here representing the  
16 activities of the Boiling Water Reactor Owners Group with respect to severe  
17 accident guidance as well.

18 Could I have the next slide, please? The two owners groups  
19 have -- work side by side in the area of developing severe accident guidance.  
20 We work side by side in the -- particularly in the area of emergency response.  
21 We provided our members with recommended changes to the emergency  
22 operating procedures, FLEX support guidelines and severe accident  
23 guidance.

24 This has been a hallmark effort in terms of coordination  
25 between the two owners groups and NEI and EPRI, and given that we -- this is  
26 going to be a living document and we're going to continue incorporate lessons

1 learned, we expect to continue that level of coordination within the industry.

2 Next slide, please. As Mr. Lewis has already mentioned, both  
3 owners groups were heavily involved in the EPRI technical basis report  
4 update. The key thing I want to mention about that is that between the BWR  
5 OG and the PWR OG, we represent every operating reactor in the United  
6 States, and many of the operating reactors in the -- in Europe and Asia as  
7 well.

8 So we're able to bring a broad base of operating experience  
9 and lessons learned to this activity. We recognize that we will -- this was  
10 going to be -- as I said, it's going to be a learning process. We're going to  
11 continue to incorporate lessons learned, and we're committed, I want to  
12 emphasize. We're committed to maintaining these documents as we learn  
13 more from the event at Fukushima and operating experience from the  
14 implementation of this enhanced guidance.

15 Next slide, please. With respect to the Pressurized Water  
16 Reactor Owners Group, our activities for SAMGs have consisted of two  
17 phases. Within the pressurized water reactor fleet, there are three sets of  
18 severe accident guidance, NSSS-specific sets of severe accident guidance.

19 So Phase 1 consisted of taking the lessons learned from the  
20 Fukushima event and provide -- and using the EPRI technical basis report,  
21 providing additional guidance to our members regarding spent fuel pool  
22 cooling, ex-containment hydrogen, use of raw water and containment leak  
23 behavior.

24 And in particular instrumentation. We incorporated guidance  
25 into the severe accident guidance document to assist our members in  
26 validating instrumentation indications using available alternative information.



1                   Next slide, please. Phase 2 of the program takes a page from  
2 the Boiling Water Reactor Owners Group. We recognized that it would be  
3 more efficient to combine the three NSSS-specific guidance documents into  
4 one enhanced generic guidance document.

5                   So we undertook to develop a common guidance document  
6 addressing, again addressing lessons learned from the implementation of the  
7 original SAMG programs, incorporating best practices from those three  
8 guidance documents, and of course continuing to monitor Fukushima lessons  
9 learned. All of the U.S. PWR sites have committed to implement the Phase 2  
10 update.

11                   Next slide, please. This is a graphic that shows our schedule  
12 of activities. The initial update was completed in January 2013. I'd just like  
13 to say that this pile of paper right here that I have my hand on is the combined  
14 enhanced guidance document that is currently under validation.

15                   If you'll look down, that is scheduled to be completed in  
16 September of this year, all right, and then we'll take the results of that  
17 validation, also incorporating that are from the Boiling Water Reactor Owners  
18 Group and their validation activities as well, and produce Rev 0 of this  
19 guidance document, and make that available to our members in January  
20 2016.

21                   Ultimately, we expect site-specific generic severe accident  
22 guidance implementation in July of 2018, and of course the maintenance of  
23 this document will be a continuing effort.

24                   Next slide, please. With respect to the BWR OG in similar  
25 fashion they in February 2013 produced an update to their severe accident  
26 guidance, that incorporated features such as the preservation of steam

1 generator reactor injection systems; anticipatory containment venting to  
2 remove decay heat and reduce suppression pool temperature; integration of  
3 portable equipment and their EOP and severe accident guideline steps;  
4 changes to reflect a reduced emphasis on containment flooding and guidance  
5 to preserve the wetwell vent as appropriate; and in similar fashion,  
6 instrumentation guidance that will allow them to validate indications using  
7 available alternative information.

8 Next slide, please. With respect to ongoing BWR OG  
9 activities, they will be working to resolve Revision 3 implementation topics  
10 identified by member utilities. Through their emergency procedure  
11 committee, both owners groups have procedure committees, and we attend  
12 their meetings and they attend our meetings, so we share information in that  
13 fashion.

14 There will also be developing severe accident water addition  
15 and severe accident water management strategies, to be incorporated into  
16 their severe accident guidance, with a planned issuance of Rev 4 of their  
17 severe accident guidance anticipated in 2017.

18 Next slide, please. For the BWR OG, their schedule -- the  
19 Order 109, in particular the Order 109 and other FLEX implementation  
20 lessons approved interim actions is anticipated this year with the issuance of  
21 Rev 4 of their severe accident guidance anticipated in 2017, with ultimate  
22 implementation approximately 2021.

23 Next slide, please. So in conclusion, I'd just like to  
24 reemphasize that both owners groups are going to continue to work together  
25 closely in this area. We're going to remain thoroughly coordinated with NEI  
26 and EPRI. This will enable us to incorporate insights from each other's

1 SAMG validation exercises, as well as other lessons learned.

2 Our activities have supported the mitigating beyond design  
3 basis event rulemaking. We have -- we developed the NEI 1401 guidance  
4 document that was submitted to the staff. We also held two workshops last  
5 year for the benefit of the staff, in an effort to walk the staff through how the  
6 severe accident guidance would be implemented using a scenario as an  
7 example, and finally both owners groups, and I really want to emphasize this  
8 in closing, both owners groups are thoroughly committed and maintain strong  
9 ownership of the severe accident guidance.

10 We're committed to a rigorous process of maintaining this  
11 guidance, and the incorporation of lessons learned and operating experience  
12 in the future. Thank you very much.

13 CHAIRMAN BURNS: Thank you. Mr. Lochbaum.

14 MR. LOCHBAUM: Good morning. We appreciate this  
15 opportunity to share our views on this subject. Next slide please, Slide 2.  
16 The question we seek to answer today is not whether the proposed  
17 rulemaking language is adequate or not. The question we attempt to answer  
18 is whether the proposed rulemaking package is ready to go out for public  
19 comment.

20 Next slide, please. First and foremost, we're not implying that  
21 there are only three positives in the proposed rulemaking package. Instead,  
22 we're highlighting three especially good aspects of the package. Extending  
23 the normal comment period to 75 days helps stakeholders review and  
24 comment on an awful lot of information.

25 Next slide, please. This proposed rulemaking largely codifies  
26 requirements previously imposed by orders. It follows the process used by

1 the NRC to compel security upgrades following 9/11. This process is unfair  
2 to stakeholders. Opportunities to comment on upgraded requirements  
3 should be provided before they are imposed, not afterwards.

4 Next slide, please. Figure ES-1 from the NRC staff's  
5 regulatory analysis illustrates that stakeholders are about to get a chance to  
6 comment on pre-existing requirements not likely subject to very much change.

7 Next slide, please. The NRC bypassed rulemaking in these  
8 cases to fast track measures it felt necessary. Instead of denying  
9 stakeholders due process and making a mockery out of the Administrative  
10 Procedures Act, the NRC should figure out how to conduct expedited  
11 rulemaking.

12 The NRC's expedited rulemaking process seems tailor made  
13 for such applications, yet it was not applied. The NRC must figure out how to  
14 apply it for urgently needed upgrades in the future.

15 Next slide, please. Many trees gave their lives to make the  
16 reams of paper used by the NRC staff, chronicling its way from the Near-Term  
17 Task Force recommendations through the prioritizing SECY paper, through  
18 the March 2012 orders, through the draft guidance documents and so on,  
19 leading up to the proposed rulemaking. SECY 1565 with its enclosures alone  
20 totals 446 pages. There are lots and lots of pieces to this puzzle.

21 Next slide, please. It's a huge burden on stakeholders to find  
22 all these pieces and put them together to see the full picture. Stakeholders  
23 need the full picture if they're to provide meaningful and constructive  
24 comments on the proposed rulemaking language, yea or nay.

25 The NRC staff should develop a plain English brochure,  
26 something like NUREG-1649 for the reactor oversight process, for inclusion in

1 the proposed rulemaking package, that explains that full picture.

2 Next slide, please. The NRC staff merely assumes that all  
3 information needed to be known will be fully and reliably known during every  
4 conceivable beyond design basis event. After Three Mile Island, the NRC  
5 ordered water level and hydrogen/oxygen concentration instrumentation to be  
6 installed to fill information gaps.

7 After Brown's Ferry partial scram, the NRC mandated that  
8 scram discharge header level instruments be installed to fill information gaps.  
9 After LaSalle's power oscillations, the NRC required instruments to be  
10 installed to fill information gaps. After Fukushima, the NRC ordered spent  
11 fuel pool level instruments to be installed to fill information gaps.

12 Next slide, please. The Commission should direct the staff to  
13 research information needs during beyond design basis events, and the  
14 related dependence of SAMGs on reliable instrumentation to be successful.  
15 The research would transform the assertion into reality, likely with a few  
16 adjustments and additions along the way.

17 There are almost certainly other information gaps that need to  
18 be closed. Safety dictates that the NRC seek to close them proactively,  
19 rather than waiting for more events to reveal the remaining gaps.

20 Next slide, please. The NRC has put considerable effort  
21 gathering a very fine proposed rulemaking package, because stakeholders  
22 have not put in as many hours to date, and lacked the time needed to create a  
23 retrospective. The package would benefit greatly from a concise plain  
24 English brochure explaining the problems and the solutions being proposed in  
25 the rulemaking package.

26 And Research should examine whether key instruments

1 providing reliable indications under extreme environmental conditions that  
2 may occur will occur during beyond design basis events. Thank you.

3 CHAIRMAN BURNS: Thanks. I was -- thanks Dave. Well  
4 thank you all for your presentations. Let's begin the questioning this morning.  
5 Tony, a couple of questions.

6 Obviously, I mean one, the issue has had a lot of discussion on  
7 the severe accident mitigation guidelines or SAMGs as they're known this  
8 morning, and that in terms of at least a preliminary issue and in terms of an  
9 anticipatory comments, I would say on a proposed rule if it went out in this  
10 form is the area, that it may garner much -- much of the discussion.

11 But again, if you -- I appreciate if you can elaborate again your  
12 view of the staff's qualitative arguments related to the defense in depth and  
13 supported imposition of SAMGs, and I know that, you know, there's a letter in  
14 from NEI with respect to that. But you could summarize that again and make  
15 sure I understand the position industry's taking with respect to that.

16 MR. PIETRANGELO: Yeah. That position was that there  
17 wasn't adequate quantitative analysis that was relevant to this issue to support  
18 imposition of a requirement. When I go into the regulatory analysis that the  
19 staff provided, they did some quantitative analysis, largely based on what was  
20 done for the containment protection and the release rulemaking.

21 They got a conservatively high estimate of frequency  
22 weighted individually and cancer fatality risk of approximately 7 times 10 to the  
23 minus 8th per reactor year, per reactor year. This was recognized as a  
24 conservative estimate, as the maximum possible risk that could be removed  
25 or reduced to regulatory action.

26 They go on to say on the reg analysis that the quantitative

1 metric for individual latent cancer fatality is approximately 2 times 10 to the  
2 minus 6 per reactor year, and that's well below a level that equates to 1/10th of  
3 one percent that's in the safety goal.

4 In addition, when they would use more realistic assumptions in  
5 the regulatory analysis that were more plant-specific, would push that  
6 potential risk benefit even lower by approximately 2 orders of magnitude. So  
7 this thing failed from a quantitative analysis that was performed to pass the  
8 backfit test, and failed miserably. It didn't even come close.

9 So to simply use qualitative factors based on defense indepth  
10 that I can inform emergency planning recommendations and help my  
11 management of the accident, I think largely on defense indepth principle I  
12 understand it. I just disagree with how it was applied in the regulatory  
13 analysis.

14 From our perspective, it sets a bad precedent for future  
15 regulatory analyses, when there's quantitative information that's relevant  
16 that's prevented that is that far away from being able to pass the requirement,  
17 and this is what I think former colleague Commissioner Magwood said when  
18 we were talking about vents in the first order back in 2012.

19 I mean you can use the defense indepth argument to  
20 practically justify anything if this is allowed to go through. So that's our  
21 concern here. It's not about SAMGs themselves. I think you can tell from  
22 the two presentations you got from Stuart and Jack that we put a lot of effort  
23 into SAMGs. We'll continue to look at SAMGs going forward; the staff can  
24 look at SAMGs going forward.

25 But from a precedent-setting perspective, this is not  
26 appropriate.

1                   CHAIRMAN BURNS: Okay, so I mean I hear there's -- and I  
2 appreciate and respect that this, is the philosophical, you know, underpinning  
3 for what you say. I guess one practical question is what is the additional  
4 burden if SAMGs were required by rule, versus being covered by a docketed  
5 regulatory requirement? Tell, the difference.

6                   MR. PIETRANGELO: You have to have an equal playing field  
7 when you do the cost-benefit analysis. You can say we've already  
8 implemented SAMGs, which we have. So therefore there's no further  
9 financial impact or cost impact, beyond maintenance of the SAMGs going  
10 forward.

11                   But that's not an equal playing field, then, for the cost-benefit  
12 test. If it's not required, okay, per for a rule, then you can't take credit for it in  
13 one space and on the benefit side say you're going to get this. So you have  
14 to look at the costs that were already put into this.

15                   You know, it's not as expensive as hardware obviously. So I  
16 think from a cost perspective, that's not the real test on this one. It's the  
17 principle.

18                   CHAIRMAN BURNS: Okay. If we decided not to impose a  
19 requirement to have and maintenance SAMGs, and of course we haven't even  
20 published a proposed rule so we, you know, this is anticipatory and again, is it  
21 -- my concern goes to this issue.

22                   Is it -- how would we integrate the SAMGs with the emergency  
23 operating procedures and other types of procedures? Is it possible to require  
24 the integration of those procedures, as SAMGs are outside of the -- outside of  
25 the rule, or having a footprint which is something other than the requirement in  
26 the rule?



1 MR. PIETRANGELO: Yeah. Our guidance will talk to the --  
2 to the integration of SAMGs with the rest of the suite of emergency planning  
3 documents. So I don't think that's an issue for us. We will integrate that in  
4 the response. So our guidance will call for that.

5 I also want to talk about the importance of docketed  
6 commitments. This is a regulatory footprint. We've been doing them for  
7 years. You can inspect them, and from a licensee perspective if you make  
8 a docketed commitment and say this is what I'm going to do and you don't do  
9 it, you undermine your own credibility with a regulatory, where I think -- which  
10 is far more significant than a minor violation on some other administrative  
11 thing.

12 So we take them seriously. There's a commitment  
13 management guideline that we developed in the 90's that the staff endorsed  
14 on how to review commitments.

15 So if we make any changes to the SAMGs, the staff will be  
16 notified. So there is a regulatory footprint in place to assure that severe  
17 accident management guidelines will be maintained, trained on and updated  
18 as required.

19 MR. LOCHBAUM: Mr. Chairman, could I just a little bit?

20 CHAIRMAN BURNS: Yeah.

21 MR. LOCHBAUM: It wouldn't be my preferential way to link  
22 these things together, but the one analog that might -- template that might  
23 work would be the groundwater, voluntary groundwater protection initiative  
24 that the industry undertook. In that one, there were some checks that the  
25 industry did with reporting back to the NRC, to ensure that that was -- even  
26 though that was a voluntary initiative, there were some checks and balances.

1 There was transparency, however you want to package it, that seemed to  
2 address those issues.

3 CHAIRMAN BURNS: Okay, thanks. That's an interesting  
4 comment. Let me talk -- the other issue sort of raised with respect to new  
5 plant design, and I'd appreciate if you could elaborate a little bit more on the  
6 statement that there's -- in effect, this injects a confusion into the intent of the  
7 proposed rule, and how it is fundamentally different than the aircraft impact  
8 rule.

9 MR. PIETRANGELO: Sure. This rule is about mitigating  
10 strategies or mitigating beyond design basis events for new plants. It's the  
11 same regulatory guidance that they're using for the design basis for new  
12 plants. So this has nothing to do with beyond design basis for new plant  
13 designers.

14 So there's some confusion in what this framework does. It's  
15 not a design basis rule. I think it's important, as I said in one of the initial  
16 slides, to differentiate very carefully between what one does for design basis  
17 events versus beyond design basis events. There's a significant difference in  
18 the risk profile of those, and we should treat them differently, commensurate  
19 with their risk significance.

20 So injecting design basis considerations for new plant designs  
21 under this rule, we believe, is inappropriate. It's fundamentally different from  
22 the aircraft impact rule because in that instance, you specified and it was, I  
23 believe Safeguards, what the size, speed, weight of the aircraft was that had  
24 hit a part of the plant. I think we did it in quadrants, okay.

25 There's nothing specified for this. It's basically back to square  
26 one with how are you going to enhance the coping duration, and how are you

1 going to minimize human interaction error. The current rule will make  
2 indefinite the coping duration. Now we're starting to put qualifiers on what  
3 kinds of coping duration. Is it based on human interaction or is it based on  
4 some design principle?

5 I think the last thing I'll say on this is that I think this is where we  
6 differ sometimes from our European counterparts and the response to  
7 Fukushima, is to think that we can design ourselves out of these beyond  
8 design basis events. On its face, it's a beyond design basis event.

9 How do you design for the unknown unknowns? I get trying to  
10 provide in the new design interaction points where you can plug portable  
11 equipment into the permanent design. That might make sense. But that's  
12 not what they're asking you to do in this instance, okay.

13 This is about trying to design for the unknown unknowns, and  
14 we believe there's a much more durable response to provide operators with  
15 additional tools in their tool box to respond to those potential conditions that no  
16 one can predict, right, and provide those three key safety functions.

17 CHAIRMAN BURNS: Okay, thanks. David, I just want to --  
18 obviously, you know, I think part of your -- or the way I look at your comments  
19 with respect to, you know, order versus rule, and some of this obvious. I think  
20 comments are sort of in retrospect.

21 In this circumstance, and this is probably more a hypothetical  
22 or maybe philosophical type question, or maybe it's a tactical question, is that  
23 how if going back, how would you see it doing differently proceeding by rule  
24 versus -- or because one of my concerns would be, and this is, you know,  
25 really I'm trying to think of this in terms of future.

26 One of the things of concern is when you have situations where

1           you feel that there is a need for some immediate safety response, how do you  
2           deal with that? Just if --

3                         MR. LOCHBAUM: I think in those cases, orders are the  
4           appropriate way, because they're the fastest way to get to the outcome that  
5           you want. I'm not sure. I think that process has been used, expanded to  
6           cover a lot of things that are just inconvenient or it's just easier.

7                         I don't think security -- security probably, but I don't think  
8           Fukushima did, because you're -- some of the orders have taken ten years to  
9           implement. Is there really an urgency if a decade is the response time to  
10          implement them?

11                        So I think the staff used the order process to keep the public  
12          out of the way, while it -- and now we're being invited in, after 98 percent of it's  
13          nailed down. I don't think that was the right way. I think the expedited  
14          rulemaking process, which might have delayed the initial implementation of  
15          some steps, the low-hanging fruit, it would have been worth the tradeoff, in our  
16          view, to include a wider perspective, more views, more stakeholders getting to  
17          probably a similar outcome.

18                        But you know, we had no shot at the apple. We got to watch  
19          you and the industry juggle. But we were out. That is not fair to  
20          stakeholders. So I think the expedited rulemaking -- when's the last time the  
21          staff used the expedited rulemaking process? Why not use it and see if it  
22          works, instead of this?

23                        CHAIRMAN BURNS: All right, thank you. Commissioner  
24          Svinicki.

25                        COMMISSIONER SVINICKI: Good morning, and thank you  
26          to each of you for being here today. I guess I'll beginning by following on the

1 exchange that the Chairman just had with Mr. Lochbaum.

2 I do observe, and I'm beginning to have quite an observation  
3 period of a number of years now of NRC. I do think that the staff is turning  
4 more readily to orders, and when you ask about that, often you're told well, it  
5 will allow us to put something in place quicker.

6 Without more, that's not a reason to do orders, simply because  
7 it is quicker. It does short-circuit a number of steps, and I think it's like any  
8 person or organization. If you do something enough, it becomes kind of a  
9 reflex. So I've been trying to be kind of vigilant and ask tough questions  
10 about that myself.

11 So I think it's important that we raise that today, and I also  
12 think, as I listened to the presentations, particularly from Mr. Pietrangelo and  
13 Mr. Lochbaum, this is an appropriate moment to pull back a little bit and think  
14 about the entirety of our response to the events in Japan, which as we  
15 watched them, the imagery was of course very disturbing, very emotional for  
16 many of us, to see that the natural events caused that kind of devastation.

17 As I remarked at our regulatory information conference this  
18 year, and I think what was exactly the four year anniversary of the Japanese  
19 earthquake and tsunami, I indicated that upon broad reflection, I'm very proud  
20 of our country's response, beginning I think with the early expressions from  
21 President Obama that sought to calm public fears and say that the United  
22 States was going to do, through the NRC, its independent regulator, a very  
23 structured look at any possible risks and put measures in place.

24 This draft proposed rule is the broadest expression, I think  
25 encompasses the broadest set of those actions, and it is a very impressive  
26 piece of work. I think that there's been tremendous participation. The staff

1 across the board has contributed a lot of different expertise.

2 It is kind of a manifestation of a lot of the work that was done to  
3 implement the order. But I agree that it is not a rigid codification of that order.  
4 So it needs to be looked at through its own paradigm, and I think we'll ask all  
5 those tough questions.

6 I do think it's unfortunate that there are a couple of issues that I  
7 think distract from perhaps and will be talked about and are important.  
8 SAMGs has been raised, the forward fit for new reactors. But I hope the staff  
9 at the end of the day can keep calibrated on how proud they should be of the  
10 broad accomplishment here, because those are just two elements, and I  
11 would argue that they are not the significant elements of the staff proposed  
12 rule, which as a whole is I think an embodiment of an extremely prudent and  
13 thoughtful regulatory response on the part of the United States to Fukushima.

14 As someone who visited many nuclear power plants, or at least  
15 a good number prior to the events in Japan, and visited three U.S. nuclear  
16 power plants as recently as last week, this our regulatory response through  
17 FLEX and mitigating strategies is real, it is visible, it is concrete, it is in place  
18 now or being put in place.

19 And, you know, so we didn't wait. We are catching up, you  
20 know, through a rulemaking now. That is simply how the system works. I've  
21 been rather outspoken about my deep concerns in what I consider to be kind  
22 of the contortional acrobatics of the regulatory analysis on the SAMG piece.

23 I don't see any point in revisiting that today. That will be  
24 fleshed out through the Commission's consideration of the draft proposed  
25 rule. I've also expressed my concerns on the forward fit piece. I think we're  
26 at least three steps out of process on that thing. It's not generally that a new

1 approach to something is first seen by the Commission in a draft proposed  
2 rule.

3 We have a process whereby the staff comes forward with  
4 policy options for us. We set a course and then it manifests three steps down  
5 the road in proposed rule language. So but again, I'll have a time to explore  
6 those concerns and look more deeply into that as the Commission deliberates  
7 what we have in front of us right now.

8 On the SAMG piece, I do think a little of that suffers from the  
9 term "voluntary industry commitment or program or initiative," because while  
10 accurate, those terms are certainly accurate when strung together in that way.  
11 It has much more heft than I think the term "voluntary industry initiative." Mr.  
12 Lochbaum mentioned the groundwater initiative.

13 Industry actions going back to the agency's last strategic  
14 rebaselining of its regulatory framework in 1996 I think it was, in  
15 Direction-Setting Issue 13, the Commission at that time did a wholesale  
16 reexamination of how the regulatory framework will always have some  
17 integration with industry activities, and if nothing else, inspection that we do is  
18 sampling, you know.

19 You will never resource a regulator in a way that they will look  
20 at every single action and every single initiative. So they do have a place.  
21 Industry initiatives have a place in every country's regulatory framework. We  
22 haven't looked at that systematically for -- well, next year it will be 20 years  
23 since we've looked at that in the United States.

24 But I think of necessity, things frequently have to reside  
25 principally on the industry side of the fence. So I would hate to see us -- there  
26 was a discussion with the chairman about principle. It's interesting to me. I

1 would never frame it to say well setting aside, you know, the principle, what's  
2 the difference between achieving it this way or that way.

3 The Advisory Committee on Reactor Safeguards spoke to that  
4 very specifically with SAMGs, and at least as a group of, you know, close to 15  
5 experts who have advised this Commission over the years, they said we think  
6 as important to doing something is how you do it.

7 So I agree with that statement, that the ACRS put forward  
8 about the basis for SAMGs, and I do think that's important. Would anyone  
9 from the industry like to talk about voluntary industry initiatives? How  
10 voluntary is it once 80 percent of the sites agree to do it? Does it feel terribly  
11 voluntary?

12 MR. PIETRANGELO: No, it doesn't.

13 COMMISSIONER SVINICKI: And it can be -- you mentioned  
14 a little bit about our ability to inspect. Is it not true that we can inspect and  
15 then mandate that you put our findings into your corrective action programs?  
16 Do I have that correct?

17 MR. PIETRANGELO: Well, a performance deficiency within  
18 the reactor oversight process is not necessarily against an NRC requirement.  
19 It can be against your own procedure or what you put in place and that you  
20 didn't do. So performance deficiencies can be evaluated under the current  
21 ROP.

22 But going back to industry initiatives, they started with the  
23 Nuclear Management Resources Council, which was a predecessor to the  
24 Nuclear Energy Institute. It is a vote of the chief nuclear officers of the  
25 industry. If 80 percent agree on the action, it is binding on all of the  
26 membership.



1 I would emphasize it's a commitment to each other and not to  
2 the NRC. If we docket that commitment, then it's a commitment to the NRC.  
3 But the initiative is intended not to supercede or replace or in lieu of regulatory  
4 requirements. We want the NRC to regulate when there's a regulatory basis  
5 that supports the requirement.

6 You should regulate it, not the industry should self-regulate it.  
7 These are more reserved for cases where there's a need on our part to devote  
8 resources and attention to an issue that's not going to be addressed in the  
9 regulatory process, from either an asset management, reliability or business  
10 perspective.

11 David noted the groundwater protection initiative. There  
12 wasn't a lot of safety element to that, but there was a -- there was a huge  
13 public perception issue over tritium in ground water, that went well beyond  
14 what the NRC requirements for that were, and we put the initiative in place.  
15 We think it's been very successful.

16 So we follow up on the initiative. We now use INPO on a  
17 much more follow-up mode for industry initiatives, to ensure that they get  
18 implemented appropriately. Again mentioning ground water, we're doing a  
19 second five year survey of the implementation of the ground water protection  
20 initiative, to make sure that everyone's still in line on that.

21 So we take them very seriously. They're our silver bullet.  
22 We don't have initiatives every year that we do. But when there's a real need,  
23 I think, to direct the attention and resources of the industry, that's going to  
24 require a resource commitment on the part of the membership, then we get  
25 the CNOs to vote, and that's a binding vote.

26 COMMISSIONER SVINICKI: Well, I've encountered that the

1 same people have confronted me with the same thing, based on some of the  
2 statements that I've made about my concerns on the regulatory analysis,  
3 which is the basis for the staff's inclusion of SAMGs in the draft proposed rule.

4 People said to me Commissioner Svinicki, why are you against  
5 SAMGs? I'm not against SAMGs. I think the greater peril lies for perhaps  
6 for our republic. This will sound very sanctimonious, but you know, just  
7 because something's beneficial doesn't mean that the government should be  
8 able to mandate that people do it.

9 And so I'm very supportive of SAMGs and they play a very  
10 important role. The greater peril lies in I think beginning to feel pressed. It's  
11 parallel to rush to orders when you really have time to do a rulemaking.  
12 Same thing is that if you just want to find something beneficial and then craft  
13 the answer that allows you to mandate it, you know, that maybe at the end of  
14 the day gives me more profound concerns.

15 I think that's what's behind the ACRS' statement of sometimes  
16 it's not what you do. As important as what you do is the basis for doing it and  
17 how you go about it. So I think all of this bears looking at really closely for its  
18 implications down the line.

19 We cannot simply have one-off kind of principles and  
20 philosophies day by day, because the staff needs some consistency of  
21 messaging from this Commission about what is adequate protection, about  
22 what is an appropriate use of qualitative factors in an SRM, and that takes  
23 calibration over time.

24 The Commission needs to send a consistent message about  
25 that. That's the only way for the staff to be able to carry out its important work  
26 efficiently. So I think one way or another, we're going to give the staff some

1 instruction on these matters as we vote on this proposed rule. So with that,  
2 thank you Mr. Chairman.

3 CHAIRMAN BURNS: Thank you. Commissioner  
4 Ostendorff.

5 COMMISSIONER OSTENDORFF: Thank you, Chairman.  
6 Thank you all for your presentations. Each of those I found very helpful. I'm  
7 going to start out by going to Mr. Pietrangelo's briefing, and just maybe make  
8 some comments on some things that you said, because this is a public  
9 meeting and it's one of the few opportunities the Commission has to share  
10 views.

11 I'm going to share a few views here, and then I'm going to  
12 follow up with a question. There's three points I latched onto in Mr.  
13 Pietrangelo's presentation. One was the rule is not a codification of the  
14 orders from three years ago, and while Commissioner Svinicki had been  
15 involved in this from day one, going back to Fukushima, we've had long-term  
16 continuity on watching this.

17 I can recall Senator Carper, before a Senate Environment and  
18 Public Works Committee oversight hearing on Fukushima, there's been at  
19 least two occasions late 2011-early 2012, asking the Commission for their  
20 thoughts on some of the highest priority items to deal with, and I think most of  
21 us talk about reevaluation of seismic hazards, flooding hazards, station  
22 blackout and we'll focus on the station blackout just for a moment.

23 So I go back to November 2011 and look at the station blackout  
24 priority as a Tier 1 item, to look at the Advanced Notice of Proposed  
25 Rulemaking direction to Marty Virgilio at that time in his position, as  
26 predecessor to Mike Johnson. I see that the scope of this rule, as David

1 Lochbaum has noted, is much bigger, has expanded significantly from the  
2 original origins of station blackout issues.

3 So it looks to me, having watched the evolution, that it is a  
4 complex rule Dave, and I agree with your comments that it's maybe hard for  
5 some people to understand. So I appreciate the clear language brochure  
6 piece that you've provided today. But I think it's a much more encompassing  
7 rule and much broader-scoped, and covers a lot more safety items that were  
8 envisioned almost four years ago.

9 So that's the first point. I appreciate Tony making that. The  
10 second one is your commentary on the performance-based approach,  
11 site-specific nature, and I think I mentioned this in a previous Commission  
12 meeting earlier this spring, maybe in May. I was at Monticello back in the  
13 third week of April of this year, and Monticello for flooding had built a 40-foot  
14 bin wall to provide protection against high levels of the Mississippi River right  
15 at their site boundary.

16 I heard from Mike Johnson and staff in the last few weeks that  
17 perhaps that bin wall was not required, because of reduced flood level threats  
18 at Monticello from the Army Corps of Engineers. I see this as a success  
19 story, in that we've taken the site-specific lessons learned and the in situ data  
20 for flooding, but there's an extrapolation to other parts of this rule emphasizing  
21 the performance-based, risk-informed, site-specific nature in a good way.

22 I think this is part of the complexity that Mr. Lochbaum has  
23 referenced, is it is very complex. I go back to -- I know some of my  
24 colleagues are very patient as I tell sea stories, but it frames a lot of my  
25 perspectives. When I was captain of a 688 submarine 20 years ago, there  
26 were 55 submarines the same design.

1                   We didn't have site-specific flooding analyses; the ocean was  
2                   the ocean. We didn't have site-specific steam line rupture response,  
3                   because the SXG reactor plant was the SXG plant, and it was all the same.  
4                   That's not the case we face with commercial nuclear power plants. So the  
5                   site-specific nature is extremely important.

6                   A third point is that we know a lot more today, and this is what  
7                   Tony has said, and again, looking at the evolution and the growth of this rule in  
8                   a very constructive way, and I applaud the NRC staff for having thoughtfully  
9                   recommended to the Commission how might we merge some of the  
10                  emergency preparedness, emergency response, multi-site or multi-unit  
11                  source issues into one rule.

12                  I think that's absolutely the right call, albeit it is more complex  
13                  and maybe a little more difficult to understand. But I am very complimentary  
14                  of our staff in that respect.

15                  So along with Commissioner Svinicki, while we may have  
16                  some points in our boats, and I'm not going to discuss my boat today, but on  
17                  the SAMG piece, qualitative factor discussion, the new reactor piece and  
18                  other aspects, that should not obscure the broader picture, the broader  
19                  commentary that this is a very positive development for the NRC and for the  
20                  industry, and I think for all American citizens. That's a very responsible  
21                  approach to dealing with a tough set of issues.

22                  So now I ask a question, and I'll direct it to Mr. Pietrangelo, but  
23                  I'll ask others to comment if they care to. In the spirit of the we know a lot  
24                  more now and a lot has been required in the seismic flooding, spent fuel pool  
25                  level instrumentation, mitigation beyond design basis and then the proposed  
26                  rulemaking etcetera. In the spirit of looking at what else is there left to be

1 done that would add safety significance, that would add safety value to  
2 existing commercial nuclear power plant safety, and I'm using the Tier 3  
3 Fukushima action items as a reference point, what else from the industry  
4 standpoint, from the UCS standpoint, needs to be done?

5 Because quite frankly, I think that we've done a lot, and I'm  
6 questioning what is the safety value if some of these things have not been  
7 finished?

8 (Simultaneous speaking.)

9 MR. PIETRANGELO: Thank you. If I look at it  
10 macroscopically, we always thought the bulk of the safety benefit associated  
11 with the Near-Term Task Force recommendations was tied up with the Tier 1  
12 activity. So we think -- and in particular the mitigating strategies piece of that.

13 So I think we've gotten the major piece of the safety benefit out.  
14 I think the rest is more residual risk items. While this rulemaking again will  
15 put those safety benefits in place, I don't think they necessarily by themselves  
16 obviate the rest of the Tier 3 activities, unless you looked at it from the whole  
17 piece of the pie.

18 I think from our perspective, we do need to look at the  
19 remaining Tier 2 activity, which is the high winds for the external hazards.  
20 There's some, I think there's some Tier 3 recommendations that already have  
21 been dispositioned, and others that could be dispositioned today. I'm not  
22 going to go into the specifics, but there are a few that I think could be  
23 dispositioned now.

24 But the last thing, on the codification and what was done, I am  
25 very sympathetic to David's remarks on process, and I totally agree. I think  
26 it's in line with my keep it simple slide, that the plain English version of this

1 should accompany the proposed rule.

2 But there was a lot of public interaction in the staff's and the  
3 NRC's defense, I think, before the orders went out and before the request for  
4 information went out. As I recall, there was, you know, 90 days of Near-Term  
5 Task Force deliberation. Then the staff and the public and us got a chance to  
6 weigh in on the recommendations in the report, and then I think the  
7 Commission ultimately decided after a lot of those interactions what was Tier  
8 1, 2 and 3, what kind of Order, and then 50.54(f) letters, etcetera.

9 So while that's not a substitute per se for a more open or  
10 expedited rulemaking, I think there was an effort made to try to get input from  
11 all parties, and I'm sure Tim Reed will tell you later that in putting the proposed  
12 rulemaking package together, there were umpteen public meetings on  
13 different pieces of that and I know they put out drafts available for comment,  
14 even just made them available to the public before the formal package went to  
15 the Commission.

16 So I think given what transpired in 2011, the agency's response  
17 has been very responsive, I believe, and I think the industry has been too.  
18 When three cores are damaged, I think it's -- it may be easy to not pay  
19 attention to process. I think you did the right balance, though, in terms of  
20 what had to be done in the near term and what could take a longer period of  
21 time.

22 COMMISSIONER OSTENDORFF: Thank you. We're going  
23 to give you a chance here Dave. Stuart or Jack, comments on remaining  
24 safety significance for things that have not been decided by the Commission,  
25 Tier 3?

26 MR. LEWIS: I don't know that I'm in the best position to

1 comment on those things that we haven't done a technical evaluation of. I  
2 would -- I'm glad that Tony mentioned high winds, because from our looking at  
3 where we need to provide better methods and better guidance to address  
4 possible risks, that's one area where we think much work remains to be done.

5 And given that there's been so much done over the last 20 or  
6 30 years to reduce many sources of risk, things like high winds may stick up  
7 above some of the other remaining risks on a relative basis, not as a really  
8 important absolute contribution. So that's one that I might highlight as well.

9 COMMISSIONER OSTENDORFF: Okay, okay.

10 MR. STRINGFELLOW: And I have nothing additional.  
11 Thank you.

12 COMMISSIONER OSTENDORFF: Okay. David.

13 MR. LOCHBAUM: I only have two things. One, I agree with  
14 your presenter earlier about the need to look at instrumentation and perhaps  
15 the reliability of the SAMGs on instrumentation. I think there's still some work  
16 to be done there. I don't think it is equal value to what's being done. But I  
17 still think there's some things there that need to be looked at and some  
18 instrumentation that we probably need to enhance or increase the reliability of.

19 The other areas even further out of the box or even further  
20 maybe not even you can see the box, but I think from a policy level, it would be  
21 good for the federal government to look at how do you incentive safety  
22 upgrades? New directive designs, you could build some of this in, maybe not  
23 everything. I agree with Tony remarks about it's hard to -- the unknown  
24 unknown is hard to design for.

25 But if a vendor could do that, right now there's no incentive for  
26 providing a reactor that's even safer beyond the NRC's regulations. There's



1 no incentive for anybody to come up with SAMGs that are better than anybody  
2 else's, because it just costs you money. It doesn't save you anything.

3 So if the federal government in terms of reduced reliability  
4 insurance, expanded capabilities to recognize that you're safer in these areas,  
5 that would allow vendors and owners to come up with ways that are beyond  
6 the NRC's requirements, that do have safety value and do result in a benefit to  
7 their bottom line. Right now, we don't have that, and I think that's an obstacle  
8 to safety upgrades.

9 COMMISSIONER OSTENDORFF: Okay, thank you. Stu, I  
10 want to ask you one question in the time remaining. On your Slide 9, you talk  
11 about the technical basis report and elude to some potential future learning  
12 from forensics of Fukushima. Is there anything that comes to your mind as a  
13 particular key area that we have not closed the loop on from Fukushima that  
14 you expect to learn from?

15 MR. LEWIS: Well, I think some of it may be of more interest  
16 to some of us who spend a lot of time on severe accident analysis. But we  
17 really do want to understand how if in fact the reactor vessels, for example,  
18 are penetrated as we believe is the case at least in Unit 1. What does that  
19 look like? Is there anything that could have been done differently to preserve  
20 the integrity of the vessel and keep the core, even after it was severely  
21 damaged, in the reactor vessel, beyond what we currently do?

22 So there are things like that, like how the containments  
23 responded and where there were really significant leaks. We've addressed  
24 some of that information already, but I think there may be some new insights  
25 we'll gain when we can do a better job of physically inspecting those kinds of  
26 things.

1                   Again, it's going to be an incremental improvement in our  
2 knowledge, I believe, and there's only so much you can do when you get to a  
3 certain point to prevent those things anyway. But the more we understand,  
4 the better we can do to prepare people to deal with these things in the future.

5                   COMMISSIONER OSTENDORFF: Thank you. Thank you,  
6 Chairman.

7                   CHAIRMAN BURNS: Thank you. Commissioner Baran.

8                   COMMISSIONER BARAN: Thanks again to all of you for  
9 being here. We appreciate it. Tony, I want to start by asking about the  
10 relationship between the FLEX support guidelines and the SAMGs. If there  
11 was a severe accident that required the use of the FLEX equipment, how likely  
12 is it that a plant would be using the SAMGs along with the FLEX support  
13 guidelines in response to such an event?

14                  MR. PIETRANGELO: I think that FLEX gives an additional  
15 tool from the tool box for SAMGs. Part of the revision, I believe, to the  
16 owners group and plant-specific SAMGs look at the broad expansion of  
17 available options that FLEX provides in severe accident management space.  
18 So there's a communication between those two guidelines.

19                  COMMISSIONER BARAN: Okay. So if we're doing this  
20 right there is -- there's kind of an integration there. There's a synergy  
21 between the FLEX equipment and the FLEX support guidelines and the  
22 SAMGs?

23                  MR. PIETRANGELO: As well as the other permanent plant  
24 EOPs and EDMGs and so forth. So I think again, what FLEX did was provide  
25 another suite of options, a diverse means for the key safety functions that the  
26 SAMGs, and I think Stuart did a good job of explaining the nature of these

1 and what they're attempting to do. So yeah, there's a communication between  
2 those.

3 COMMISSIONER BARAN: Okay, and so the Commission  
4 has -- is requiring the FLEX equipment as a matter of adequate protection for  
5 public health and safety. Given the relationship between the FLEX  
6 equipment, the FLEX support guidelines and the SAMGs, why shouldn't the  
7 Commission also require SAMGs?

8 MR. PIETRANGELO: Because SAMGs are for beyond  
9 adequate protection and beyond protecting the core. You've already got core  
10 damage. I think adequate protection and the way that mitigating strategies  
11 order was put together, was about preventing core damage. I think  
12 historically that's how it's been used, although it's up to the Commission to  
13 decide. That's your purview, okay. SAMGs goes beyond protection and  
14 into a core damage state.

15 COMMISSIONER BARAN: Let me ask you this. So this  
16 touches a little bit on a question the Chairman asked you earlier. What would  
17 the proposed rule require for SAMGs, beyond what the industry is doing now  
18 or preparing to do?

19 MR. PIETRANGELO: Nothing.

20 COMMISSIONER BARAN: Nothing. So there's no  
21 question here of added burden from requiring SAMGs. It's a question of  
22 precedential concern.

23 MR. PIETRANGELO: Principle, correct.

24 COMMISSIONER BARAN: And this follows up a little bit on  
25 a comment you just made, but then so I understand there's the -- you've  
26 expressed a concern about the quantitative analysis here. What's the

1 argument against the Commission determining that it's required for adequate  
2 protection, the SAMGs?

3 MR. PIETRANGELO: Well, if you look at the quantitative  
4 work that was done by the staff and compare it to what other risk insights you  
5 have for adequate protection things, you'll see a big gap. This is like four  
6 orders of magnitude lower in risk.

7 COMMISSIONER BARAN: What about spent fuel  
8 instrumentation?

9 MR. PIETRANGELO: Equally so. You didn't do that on  
10 adequate protection.

11 COMMISSIONER BARAN: Fair point. Given that everyone  
12 agrees that SAMGs are valuable, and that they improve safety margins,  
13 shouldn't the NRC staff be able to both inspect those measures, but also take  
14 enforcement actions if there's a problem discovered?

15 MR. PIETRANGELO: Yes.

16 COMMISSIONER BARAN: And so that just kind of brings  
17 us, I think, to the question of what kind of commitment is the industry  
18 proposing to make on SAMGs?

19 MR. PIETRANGELO: To not only have them but to maintain  
20 them and train on them. I've never encountered an instance, and Chuck will,  
21 because I think we've had some discussions over the years on enforcement  
22 basis, the staff lacking enforcement basis on anything that we do in the plant.  
23 There's always a way.

24 Whether we violate our own procedures that we put in place,  
25 whether they were per requirement or not, there's potential violations that the  
26 reactor oversight process looks at performance deficiencies, and they don't

1 have to be driven by regulatory requirements.

2 COMMISSIONER BARAN: So from your point of view, even  
3 in the absence of regulatory requirement, the NRC staff inspectors could  
4 enforce the failure to maintain adequately SAMGs?

5 MR. PIETRANGELO: If you make a docketed -- if one  
6 makes a docketed commitment, okay, and you do not follow that commitment,  
7 I'm positive there's enforcement basis to take against the licensee on that  
8 finding, let alone the reduction in credibility that licensee will have going  
9 forward, which they guard mightily.

10 MR. LOCHBAUM: Could I?

11 COMMISSIONER BARAN: Please David.

12 MR. LOCHBAUM: I've got a letter from the NRC that says  
13 commitments are not enforceable. So we being UCS, Greenpeace and  
14 NIRS submitted a petition to make all the commitment into enforceable things,  
15 and that was denied by the staff.

16 So it appears that commitments, despite -- I've got a letter  
17 from the NRC saying they're not enforceable and attempted to make them  
18 enforceable and it was denied. So in our view, if I can trust the NRC, they're  
19 not enforceable.

20 COMMISSIONER BARAN: What do you think about that  
21 Tony?

22 MR. PIETRANGELO: I think that they're enforceable.

23 COMMISSIONER BARAN: I meant Dave's specific  
24 comment. I mean as a -- I think ask a general matter in talking to staff, folks  
25 would feel it's pretty tough to enforce something that isn't a regulatory  
26 requirement.

1 MR. PIETRANGELO: When you docket a commitment  
2 under oath and affirmation and don't follow through on it, there will be an  
3 enforcement basis for the action taken, I guarantee you.

4 COMMISSIONER BARAN: And in the 90's when you all  
5 made the commitment to implement, develop, maintain SAMGs, was there a  
6 docketed commitment there or not?

7 MR. PIETRANGELO: No. In fact, that's a good point,  
8 Commissioner. I think we've learned that simply having them is not enough,  
9 and this, I think, does bring up the treatment of the B5B equipment that was  
10 put in place after 9/11, and this rule takes care of that issue in terms of the  
11 treatment of such equipment.

12 There are programmatic requirements to maintain, update,  
13 etcetera. We'll have those in place for SAMGs. I think these guys went over  
14 that in great detail, and we will follow up on them. So it's not -- the  
15 commitment was to have them. I think the new commitment would be not  
16 only to have them but to keep them current and to train on them.

17 COMMISSIONER BARAN: And you know, I guess one -- I  
18 suspect and we can explore this more on the next panel, that one of the  
19 motivating factors for potentially proposing to require SAMGs was that the  
20 staff's view, when they conducted inspections of the SAMGs post-Fukushima,  
21 was that they I think took issue a little bit with your point, that no significant  
22 issues were identified during those inspections.

23 I know, you know, as I look back at the Near-Term Task Force  
24 report, and they of course had a discussion of SAMGs, and the task force view  
25 was as follows: "The results of the inspection under the SAMG temporary  
26 instruction reinforced the value of making SAMGs a requirement. The

1 inspectors observed inconsistent implementation of SAMGs, and attributed it  
2 to the voluntary nature of this initiative." So I think maybe that is the basis for  
3 --

4 (Simultaneous speaking.)

5 MR. PIETRANGELO: What I based my statement on was  
6 the same report you read from, but I'll read from a different part of it. "While  
7 individually none of these observations posed a significant safety issue, they  
8 indicate that while the SAMG procedures are available at every site, there  
9 appears to be an inconsistent implementation in some aspects of this  
10 program."

11 So I don't think it was a -- it's broken at all. Everybody had  
12 SAMGs. Could they be maintained better? Yes. I think you could find that  
13 with things required by regulation too, if you went out and looked. So again,  
14 there's no debate about having the SAMGs, updating the SAMGs, maintaining  
15 them, training on them.

16 For us, it's about the principle in the regulatory analysis that's  
17 established in this, and I think things like the new plant requirement that got in  
18 there are what scares us, when that's not done properly.

19 COMMISSIONER BARAN: Well let me ask this, because  
20 this is really taking a step back and asking the kind of broader process  
21 question, since there has been a lot of focus on process today. So we're at  
22 the stage now of considering a proposed rule, a draft proposed rule.

23 MR. PIETRANGELO: Right.

24 COMMISSIONER BARAN: And the Commission will be  
25 voting on whether or not we should or what the proposed rule should look like  
26 that we take public comment on. Obviously there are a range of views on

1 SAMGs, whether they should be required or not required, and whether that  
2 commitments are adequate without a requirement, whether the analysis done,  
3 the regulatory analysis are adequate.

4 There are all these questions surrounding that, and what we  
5 need to decide at this stage is should the public have an opportunity to  
6 comment on a proposal to require SAMGs? What is the argument against  
7 inviting the public to comment on whether we should require SAMGs?

8 We're not requiring it at this stage. We're just asking what do  
9 you think? Should we require them?

10 MR. PIETRANGELO: Certainly you could use the rulemaking  
11 package as a forum to do just that, and I suspect that might be what the  
12 Commission ends up deciding. On other elements of this though, I think that  
13 -- and it's the other 99 percent of the rulemaking, we're implementing now in  
14 many respects.

15 That's why I said earlier that we try to get alignment through our  
16 guidance documents and endorsement by the agency on the actions we're  
17 going to take, so that we're in compliance with the rule whenever it's finalized.  
18 And on this case, you could invite public comment. It's been out there before  
19 on SAMGs.

20 It's not going to change the quantitative work done in the  
21 regulatory analysis is my point, okay. If the staff presents a different  
22 quantitative analysis that at least gets you the marginal, where qualitative  
23 factors I think legitimately could be brought in to decide a difference that's on  
24 the kind of threshold, fine. At least that's consistent with the process as we  
25 see it.

26 But in this case, when you're that far below what you needed to



1 do to impose the backfit, it was inappropriate to cite qualitative factors. That's  
2 not going to change with public comments. It could change if additional  
3 regulatory analysis was performed by the staff or somebody else.

4 COMMISSIONER BARAN: The staff is proposing that, you  
5 know -- as drafted, the proposed rule would seek specifically comment on the  
6 regulatory analysis for SAMGs. So I don't want to reach any conclusions  
7 about what those comments may or may not include. Dave, just to close out,  
8 what's your view about whether the Commission should allow the public to  
9 comment on a possible requirement of SAMGs?

10 MR. LOCHBAUM: I think without any question, I think it's a  
11 valid point, for not just the public, but all stakeholders to comment yea or nay,  
12 and to be honest, UCS hasn't formed their own opinion. It's not black and  
13 white. There are some downsides to requiring SAMGs, and we want to work  
14 through those on our own before we think it --

15 Whether it's in there or not, we should have the opportunity to  
16 say it should be in there, and we're not yet at the determination of whether that  
17 should or should not be part of the final rule. But to answer your question  
18 more directly, I think it's ready to go out for the external stakeholder vote or  
19 comment.

20 COMMISSIONER BARAN: Okay, great. Thank you.

21 CHAIRMAN BURNS: I think Commissioner Svinicki.

22 COMMISSIONER SVINICKI: I just -- Commissioner Baran  
23 raises a really intriguing point, and I just wanted to add one dimension from my  
24 role in looking at a draft proposed rule in my time on the Commission. The  
25 way I answer the question, which is different than the public involvement  
26 question you posed; but for me, until it's decided that the Commission should

1 have no role in shaping the proposed rule before it goes out for comment.

2 So the question would be if we don't shape the proposal, why  
3 do we even look at it at all? But the question for me is no matter the public  
4 comment, if I find that the proposed provision is so flawed for some other  
5 reason that it cannot be -- nothing that is brought to light in public comment  
6 can rehabilitate my inability to support that when the final comes before me,  
7 that would for me be a basis why I would say well, I would propose to not have  
8 that in the proposed rule when it goes out.

9 So it's a different -- it's different than the question you asked,  
10 but I just -- it's a very, very intriguing point of well, maybe it would illuminate  
11 something. But that's generally in my vote saying, you know, I would vote to  
12 strike this particular provision before it even goes out for public comment.  
13 That is generally the basis of why I would do that. Thank you, Mr. Chairman.

14 CHAIRMAN BURNS: Commissioner Ostendorff.

15 COMMISSIONER OSTENDORFF: I feel compelled to add to  
16 that comment, because my philosophy in voting has been at the proposed rule  
17 stage, to put out the best product that represents the thoughts of the  
18 Commission.

19 CHAIRMAN BURNS: Commissioner Baran, anything else?

20 COMMISSIONER BARAN: No.

21 CHAIRMAN BURNS: All right. We'll thank again the panel  
22 for your presentations as we proceed through the process of consideration of  
23 this staff's proposal, and we'll take a break. Let's try to get back about 25 of  
24 11:00, and then we'll hear from the staff panel. Thanks very much.

25 (Whereupon, the above-entitled matter went off the record at  
26 10:27 a.m. and resumed at 10:34 a.m.)

1 (Whereupon, the above-entitled matter went off the record at  
2 10:27 a.m. and resumed at 10:34 a.m.)

3 CHAIRMAN BURNS: Well, I'll rejoin the discussion, and we'll  
4 start with our -- and have our staff panel now and Mike Johnson, Deputy  
5 Executive Director for Reactor and Preparedness Programs and the  
6 Fukushima Steering Committee Chairman. We'll let you start, Mike, and you  
7 can introduce the panel and the staff presentations. Thanks.

8 MR. JOHNSON: Thank you and good morning, Chairman  
9 and Commissioners. We are pleased to be here today to discuss the staff's  
10 efforts on developing the proposed rule for mitigating beyond design basis  
11 events. This proposed rule is an important regulatory action, and it is one of  
12 the Tier 1 post-Fukushima activities that we briefed the Commission on in  
13 April of this year. And we are pleased to report that we are on schedule with  
14 this proposed rulemaking.

15 As has been discussed, the proposed rule would integrate and  
16 make generically applicable a significant number of ongoing actions  
17 undertaken by the agency in the aftermath of the Fukushima Daiichi event.  
18 In preparing the proposed rule, I do want to note that we benefited, I would say  
19 benefited greatly actually, from our experiences in implementing the mitigating  
20 strategies order and other actions.

21 And we have continued our practice of, as was pointed out in  
22 the first panel, conducting numerous formal and informal interactions to  
23 engage stakeholders, including the ACRS, the industry, and the public, over  
24 2,000 meetings by our count, many more perhaps, and we will continue to  
25 seek feedback from all stakeholders during the proposed rules public  
26 comment period.

1                   We are, as was also pointed out in the first panel, already  
2 realizing safety benefits from implementation of these mitigating strategies  
3 order and the other actions that have been undertaken to address lessons  
4 learned. And I want to acknowledge the actions of the staff engaged in the  
5 post-Fukushima initiatives, including this proposed rulemaking, for their  
6 continued dedication and technical competence and hard work that has  
7 enabled us to make the progress that we have enjoyed to date.

8                   The proposed rule, from our perspective, is consistent with the  
9 cumulative effects of regulation process changes approved by the  
10 Commission. We'll talk more about that in the presentation. And it includes  
11 a thorough regulatory analysis consistent with the NRC's up-to-date  
12 standards.

13                   Our current schedule is to have the final rule package,  
14 including the supporting guidance, available to the Commission in December  
15 2016. Of course, that would be after issuance of the proposed rule for  
16 comment, full consideration of whatever comments we receive during that  
17 period, and changes, as appropriate, based on those comments.

18                   The schedule for this rulemaking is aggressive, but that  
19 schedule is also consistent with this rule and this priority as a Tier 1 action.

20                   Next slide, please. Slide 2.

21                   Today, several staff from the NRC will discuss various aspects  
22 of the proposed rulemaking package. They are Bill Dean and Tim Reed and  
23 Eric Bowman from the Office of Nuclear Reactor Regulation, and John  
24 Monninger from the Office of New Reactors. And so now I will turn it to Bill to  
25 begin the presentation.

26                   MR. DEAN: So thanks, Mike. Chairman, Commissioners,

1 it's a pleasure to be with you here this morning to talk about what we were  
2 calling the mitigating beyond design basis event rulemaking, but after this  
3 morning's discussion I think we are going to change it to the SAMGs  
4 rulemaking.

5 So next slide, please.

6 Before I talk about this graphic, I do want to recognize the  
7 tremendous effort of a number of people, some of whom are represented by  
8 the panelists in the Offices of New Reactor Regulation and New  
9 Regulatory -- NRR and NRO, but also a lot of support from the Office of  
10 General Counsel, Office of Research, and Nuclear Security and Incident  
11 Response.

12 It truly is a collective effort to get to this very tremendous  
13 milestone and, as many of the Commissioners have recognized in their  
14 remarks today, quite I think a monumental event for this agency and for this  
15 country.

16 As Mike mentioned, the proposal has been a significant  
17 undertaking, considering its scope. Along the way, we have looked at ways  
18 to be more efficient, and in doing so we have identified activities that should be  
19 combined, and we are careful to balance the desire for efficiency with the  
20 amount of consolidation that was practical.

21 In the graphic that is on this slide, on Slide 3, the staff views  
22 this proposed rule as addressing a substantial portion of the near-term task  
23 force recommendations, and that is reflected in the box on the left-most side of  
24 this slide. We also combined two rulemaking efforts and aligned the rule with  
25 current implementation of ongoing Fukushima regulatory actions as shown in  
26 the top center box on this slide.

1           The two rulemakings that were combined were the station  
2           blackout mitigation strategies rulemaking and the onsite emergency response  
3           capabilities rulemaking. The Commission approved this consolidation in its  
4           response to SECY-14-0046. The result of this effort is a coherent set of  
5           proposed requirements that we believe will also enable informed stakeholder  
6           feedback.

7           As noted in the center yellow box, the proposed rule also  
8           makes generically applicable two orders that were issued on March 12, 2012.  
9           Those orders are the mitigating strategies order, EA-12-049, and the spent  
10          fuel pool level instrumentation order, EA-12-051, which are currently being  
11          implemented by the nuclear industry.

12          Most notably, the mitigation strategies order is being broadly  
13          implemented as a site-wide response to a beyond design basis external  
14          event. It results in greater demands on staffing, communications, and  
15          command and control, and it is supported by requirements for training and  
16          drills. And, as a result, ongoing implementation order EA-12-049 results in a  
17          significant portion of the proposed rule being addressed, and is one reason  
18          the integration of the two ongoing rulemaking efforts made sense and was  
19          achievable.

20          The box in the lower part of the slide contains several items  
21          that reflect areas that were not part of the orders but are near-term task  
22          force-related issues. The Commission requested information from licensees  
23          in accordance with 10 CFR 50.54(f) regarding the capabilities of their staffing  
24          and communications to address a beyond design basis event that impacts an  
25          entire reactor site.

26          Those capabilities align very well with the mitigation strategies

1 that are contained in this proposed rule. In addition, aspects of the enhanced  
2 onsite emergency response capabilities associated with drills and training  
3 also align well with the mitigation strategies and are contained in the proposed  
4 rule.

5 In COMSECY 14-0037, the staff proposed approaches to  
6 address reasonable protection of mitigating strategies equipment from the  
7 reevaluated hazards determined under Recommendation 2.1 of the near-term  
8 task force report. Accordingly, the proposed rule contains a provision to  
9 address the reevaluated hazards.

10 And another ongoing regulatory action addressed in the  
11 proposed rule is the upgrade to source term assessment capabilities. This  
12 will be discussed in more detail by Tim, but implementation of this action by  
13 the industry has been largely completed at this time.

14 Finally, as described in the box to the right, this proposed  
15 rulemaking also addresses a number of petitions for rulemaking that were  
16 submitted in the aftermath of the events of Fukushima.

17 Although this proposed rule has a large scope, as reflected in  
18 the package we provided you, which I think was about "yay" high paperwork,  
19 we believe it is coherent and comprehensive. The staff also considered the  
20 recent direction on the use of qualitative factors and regulatory analyses and  
21 backfit analyses provided by the Commission in March of this year in their  
22 SRM on SECY 14-0087.

23 The staff ensured that the backfit analyses provided a  
24 complete set of information with respect to both quantitative and qualitative  
25 factors for the Commission's consideration and ultimate decision on the  
26 appropriate weight to place on those factors.

1                   With that objective in mind, we believe that we have provided  
2                   the information necessary to support the Commission's decision, and which I  
3                   believe appropriately considers the direction provided to us in your SRM.

4                   I would also like to reinforce a comment that Mike made in his  
5                   opening remarks, and that you also emphasized, Commissioner Svinicki.  
6                   The majority of the proposed rulemaking scope is currently being  
7                   implemented by the nuclear industry. So as a result, we are already realizing  
8                   many of the additional safety gains on operating reactors that have been  
9                   identified through insights from the Fukushima event.

10                  Next slide, please.

11                  As I mentioned earlier, this proposed rule also contains new  
12                  requirements. First and foremost, the proposed rule includes new  
13                  requirements for severe accident management guidelines, otherwise known  
14                  as SAMGs, as part of an overall integrated response capability. These  
15                  guidelines are already in place as voluntary initiatives, and industry has done  
16                  considerable work to update their SAMGs to reflect lessons learned from  
17                  Fukushima, as was discussed in the earlier panel.

18                  We will discuss our rationale within the context of the backfit  
19                  criteria in 10 CFR 50.109 for proposing a requirement for SAMGs, as opposed  
20                  to a continued voluntary industry initiative.

21                  Secondly, the proposed rule includes new requirements for a  
22                  multi-source term assessment capability. The industry is currently  
23                  implementing the necessary upgrades to their source term assessment  
24                  capabilities and are almost complete. So the focus of our presentation will be  
25                  on our rationale for establishing this as a requirement within the context of the  
26                  backfit criteria.



1                   Finally, the proposed rule includes new requirements for future  
2 reactor designs. These new requirements are constructed to be forward fit,  
3 and, therefore, we believe they do not constitute backfits. We also believe  
4 that these unique provisions for future reactor designs are consistent with the  
5 Commission policy on new and advanced reactors, and John will elaborate on  
6 this part of the proposed rule in his presentation.

7                   So now I would like to turn the presentation over to one of the  
8 major architects of this rulemaking, Tim Reed, to provide you with more  
9 specific information on the proposed rule. Tim?

10                   MR. REED: Thanks, Bill. Chairman, Commissioners, I'm  
11 Tim Reed. My plan today is to provide a brief overview of the proposed rule.  
12 I will focus on the two more important portions of it, that being proposed  
13 50.155, and then our proposed changes and additions to Appendix E to Part  
14 50. And then, following that, I will have a discussion on the SAMGs and the  
15 supporting backfit justification.

16                   So starting with the proposed 50.155, it begins with an  
17 applicability paragraph. As noted on the slide, really, there we are trying to  
18 accomplish two major things -- ensure that the proposed revisions apply to  
19 only power reactor licensees and applicants and not to others as noted. So,  
20 for example, it does not apply to research and test reactors or non-power  
21 reactors, and it does not apply to independent spent fuel storage installations,  
22 notably.

23                   Second objective, really, we are trying to accomplish here is to  
24 denote one of these provisions would no longer apply, and it would no longer  
25 apply as you enter into the decommissioning process. So there you will find  
26 we tried to build in provisions that allow these to be removed as you proceed

1 through that, and those aligned with the recent Commission decisions on  
2 decommissioning.

3 So moving to the next bullet on this slide, that's where we move  
4 to paragraph B. And this is our integrated response capability requirements.  
5 And as noted on this slide, our entire rulemaking really did center on  
6 integrated response capability. This is where we began when we put this  
7 rulemaking together.

8 And at a high level, really, what we are trying to achieve here is  
9 to put in place a framework that enables a more seamless response  
10 capability, and using basically three guideline sets that are all in place and  
11 available with the symptom-based EOPs. And I said with -- and it's  
12 underlined on the slide, with, and that's important because one of the things  
13 we are not -- we do not want to do is impact any of the regulatory infrastructure  
14 that supports the EOPs. So that's one of the intents of what we are trying to  
15 accomplish here.

16 So the three guideline sets themselves -- in fact, it was  
17 mentioned a little bit this morning, especially with regard to SAMGs, they are a  
18 little different than the step-by-step procedures. They are strategies and  
19 guidance and, as such, they have a level of flexibility that is necessary when  
20 you are addressing design basis events. You need to adapt these to  
21 whatever conditions develop.

22 And so that makes them a little different than a step-by-step  
23 type of procedure. They were developed in different times for different  
24 purposes. This is true. And, as such, they do have to consider the extreme  
25 events. They, obviously, have taken mitigation actions in the facility. You  
26 have to be concerned about the events effects.

1           So those activities sometimes make it seem like apples and  
2 oranges and that we can't do this integration, but in fact we can. They are  
3 fundamentally function-based. And that function-based approach to these  
4 guidelines aligns very well with the function-based approach to the EOPs, and  
5 that's why we can achieve this integration.

6           So just to talk through each of the three guideline sets a little  
7 bit, the first guideline set, as you're well aware, it is a FLEX support guidelines  
8 implementing order, EA-12-049. It is, of course, to address mitigation of  
9 beyond design basis external events.

10           The second guideline set that we would include is what is  
11 commonly referred to as extensive damage mitigation guidelines, or EDMGs.  
12 Those implement the provisions that are currently in 50.54(hh)(2). Those of  
13 course went into place following the events of 9/11. They are to address the  
14 loss of large areas of the plant due to explosions and fires. We would  
15 propose moving that into this paragraph as (b)(2).

16           And, finally, the third set is the severe accident and  
17 management guidelines, or SAMGs. Those of course are implemented at  
18 the onset of core damage. They are also in place right now, as you have  
19 heard this morning, but they differ of course in a very important way from the  
20 other two. They are not currently required by order or rule, of course.

21           So then we would support that integration with a staffing  
22 requirement and a command a control provision. Clearly, if you are going to  
23 mitigate something that is as extensive as a beyond design basis external  
24 event that affects the entire facility, entire site, you need obviously a sufficient  
25 level of staff to implement the mitigation strategies, and then a command and  
26 control structure to direct the staff to take those actions. So you will find that

1 is -- that is part of paragraph B, so that is the centerpiece.

2 So if you go to the last bullet on this slide, then, we go to  
3 basically -- that's really -- paragraph C, that's where we have our equipment  
4 requirements that support this integrated response capability. And it is worth  
5 noting they only come from two sources. They come from the two orders,  
6 EA-12-049, in which case that's C1, C2, and C3, the equipment requirements  
7 coming from that order; and C4 are the level instrumentation requirements  
8 that come from the spent fuel pool order, EA-12-051.

9 That supports making those orders generically applicable, and  
10 they also directly support the integrated response.

11 So next slide, please.

12 I'm going to jump past this. As you're walking through 50.155,  
13 you come to (d). John Monninger is here to talk about that. Those are new  
14 design features for new reactor designs. I'm going to go to the next three  
15 paragraphs in 50.155, E, F, and G.

16 So if you look here, you see training, drills, and change control.  
17 Those are E, F, and G, and I grouped these together for the simple reason that  
18 these are really all regulatory assurance requirements. They are put in place  
19 really to provide an initial and a continuing level of assurance that this  
20 integrated response capability is there. Okay?

21 So when you think about regulatory assurance, I think it's  
22 important to then think about balance, or the level of assurance that should be  
23 applied. And, clearly, in our regulations what we try to do is apply an  
24 approach level of assurance given safety significance. So we were mindful  
25 of risk. We were mindful of the fact this is a beyond design basis application.  
26 So we tried to have the correct balance, and hopefully you agree we have

1 achieved that. So I will walk through it and try to make note of that balance as  
2 we go through.

3 So to go to the training requirement first, this is straight up  
4 basically just a requirement to have the licensee's staff trained and qualified to  
5 perform the duties required under the integrated response capability. And in  
6 this regard, licensees can use all applicable and available training, and there  
7 is quite a bit substantially, particularly after EA-12-049 is done and completed.

8 But, in fact, it may not be entirely complete. For example,  
9 there is -- we would expect SAMG training not to be completely in place right  
10 now. So what is not in place, we directed that follow the systems approach to  
11 training, and the idea there is to ensure that a proper balance is achieved and  
12 a good -- and, in fact, good training is put in place.

13 So to give an example, I wouldn't want the licensee's staff, who  
14 has, say, EOP training and also has SAMG training, I don't want to  
15 inordinately displace the EOP training with SAMG training. I want the  
16 balance correct. So that is the idea in using a systems approach to training.

17 The next provision, then, going to the next paragraph is drills or  
18 exercises. Here the minimum requirement is a drill, and now, of course,  
19 licensees have the flexibility to do as part or in conjunction with exercises  
20 clearly, but the minimum is a drill.

21 And what we are trying to achieve here is to have a  
22 demonstration on an initial and continuing basis again that you can transition  
23 to and use one or more of the strategies in each of these guideline sets. So  
24 that is the idea.

25 And so it's drill, and then we also set it at an eight-year  
26 calendar frequency. And we think those two set the right balance for this

1 application beyond design basis.

2 And, finally, going to F, then our -- or G, excuse me, that the  
3 change control provisions. There are no effective change control provisions  
4 in place that would govern the kinds of changes the licensees may wish to  
5 make in implementing these provisions. We noted that, and so what we tried  
6 to do is put together something that would get the job done with a minimum  
7 amount of impact.

8 And so clearly you want to maintain configuration management  
9 over these capabilities, and you also clearly want to assure compliance with  
10 the provisions. So that was what we were trying to achieve. We think we  
11 have something that does that. Eric will talk here in a moment about our  
12 efforts to complete the guidance and have all that feedback, lessons learned,  
13 and alternatives built into the supporting guidance.

14 Licensees then can use that as the information set to try to  
15 judge whether changes they may want to make are acceptable, because,  
16 clearly, if you're following endorsed guidance that assures compliance, that  
17 change would be acceptable. So that's the practical way you'd go about  
18 doing that.

19 So next slide, please.

20 This moves me to paragraph H, and this is where normally we  
21 have our implementation, or I think of it as really compliance requirements, if  
22 you will. We have -- if you note there, we established a four-year period for  
23 compliance with the rule, and it's unless otherwise specified, because there is  
24 a more demanding compliance statement in 50.155(c)(2), as I will get to in a  
25 minute.

26 Now, that four-year period was established focusing on current

1 licensees and what we viewed to be a reasonable period of time  
2 giving -- taking what you heard this morning, an extraordinary amount of work  
3 and outstanding work, in SAMGs space, and taking that and making that  
4 plant-specific, first of all, and then obviously meeting our proposed  
5 requirements.

6 So four years does seem reasonable, okay, and also you've  
7 got to recognize that these same resources are very likely working mitigation  
8 strategies right now. So we thought that was a reasonable period of time.  
9 Of course, if we hear feedback on CRR process, we will make adjustments as  
10 appropriate.

11 I said to full compliance, and that is important. If you go to  
12 50.155(c)(2), you will find there, in terms of reasonable protection of the FLEX  
13 equipment, that is the equipment that is mitigating beyond design basis  
14 external events when you have another compliance date and that's two years.  
15 Okay?

16 So this is a challenge for those licensees who have seismic  
17 and flooding reevaluate hazard information that exceeds the current external  
18 event design basis. And they have to address that information in terms of  
19 reasonable protection of this equipment, and it could have impacts. Okay?

20 So it could range, in our view, from something that could be  
21 mitigation strategies changes, maybe new strategies, small modifications, or  
22 even large modifications. I think Tony mentioned this morning it could even  
23 go into five bins, for example. That's the kind of feedback that is good to  
24 know.

25 So we understand that's a challenge. We are actively  
26 soliciting feedback on that to try to further inform that and maybe build some

1 flexibility into the rule while still maintaining an expedited approach to the rule.  
2 And I think it's worth noting that unfortunately we are not in an optimal position  
3 on guidance at this point in time, but we would prefer -- and Eric will talk about  
4 this in a moment also -- we would prefer to have a complete set of NEI  
5 guidance, including Appendix H for seismic information, and to endorse and  
6 review that. We don't have that, so we are building in on our side DG-1301.  
7 So I think we are following our DG -- or CRR process, and we can hit the mark  
8 at the final rule stage.

9 I will just mention a couple other schedule requirements, in  
10 terms of we are thinking schedule. There are schedules associated with  
11 drills and exercises. I just mentioned the eight-year calendar frequency.  
12 Okay? And there is also schedules associated with the staffing and  
13 communications applications in Section 7, Appendix E.

14 And that brings me to the next slide, so I want to go to the next  
15 slide.

16 And I'm going to apologize, I went way too fast going through  
17 50.155. We will probably be staying here all day and do that. There is a lot  
18 in there. And I'm going to go to the second part of my presentation and talk  
19 about Appendix E.

20 Here I am just going to focus on the two more significant  
21 aspects of our changes to Appendix E, that being our proposal to update, or  
22 upgrade if you will, the source term assessment and monitoring capabilities  
23 there. And then, secondly, our efforts to make generically applicable the  
24 staffing and communications requirements.

25 First, I think in terms of the multi-source term we are proposing  
26 to amend the existing regulations that require licensees to have the means,



1 including supporting equipment, to determine the magnitude and assess the  
2 impact of radiological releases from multiple source terms.

3 Right now, the language is not explicit. It is in fact  
4 implemented as a single source term. So what we are being is being more  
5 explicit to reflect the fact that beyond design basis external events, the  
6 most -- are probably the most likely way today to get the core damage and  
7 implement EP that would in fact affect all units, all source terms. And so this  
8 is upgrading that capability to reflect that.

9 These provisions -- this is another good example, Bill  
10 mentioned earlier, are going into place right now. In fact, I believe by next  
11 month -- into this month, July, it may be in fact complete. Certainly, by the  
12 effective date of the rule, this will be in place. So this is another safety  
13 enhancement happening now.

14 It is, in our view, a new imposition. It's a new backfit. So we  
15 addressed it as part of our backfitting justification, and you can find that. And  
16 our proposal is that it fits really within the adequate protection basis of EP, and  
17 its entire original intent is to upgrade this capability to reflect what in fact can  
18 happen from the wide range of accidents that EP focuses on, in fact affect  
19 more than one source term. So that is our backfit supporting justification for  
20 that.

21 Then, moving to the second part that I want to talk about in  
22 Appendix E, and that's the staffing and communications capabilities. And  
23 here, this is a great example where it came out of a request for information the  
24 same day as the order. We joined these two together. They were done in  
25 conjunction with the order implementation, because it's staffing for mitigating a  
26 beyond design basis external event, and its communications onsite and offsite

1 to support those activities.

2 So that became really part of the order implementation, and  
3 that is how that has been done. So this is another example where this will  
4 also be done by the effective date of the rule. So another great safety  
5 enhancement happening now.

6 Next slide, please.

7 So this is probably the most interesting slide. This is SAMGs.  
8 And I will just walk through basically our thoughts on the SAMGs here. So  
9 starting, first of all, with the regulatory impetus for why we are talking about  
10 SAMGs today. It was mentioned this morning a little bit. This began with a  
11 Temporary Instruction, 2515/184, that was done in 2011 at the request of the  
12 Near Term Task Force to look at the voluntary initiative and understand its  
13 status.

14 That inspection found inconsistencies associated with licensee  
15 implementation, maintenance and training for SAMGs, and this has resulted in  
16 the NTFF concluding that SAMG should be part of an integrated response,  
17 and that having this program within such a regulatory framework could  
18 substantially improve the effectiveness of SAMGs and address the  
19 inconsistencies.

20 Now, SAMGs, as I think you heard this morning, a lot of great  
21 information on that was developed in the '80s, late '80s, and into the '90s.  
22 They were addressed as -- developed as a means to extend the capabilities of  
23 the emergency operating procedures past the point of core damage. Great  
24 work was done then by the industry in terms of EPRI, the Owners Groups, the  
25 vendors, and the NRC was actively involved throughout the entire process.

26 By the end of -- basically, by December 1998, SAMGs were

1 real. There were guidelines essentially in place at all facilities. That, in the  
2 NRC's mind, met the objectives set forth for SAMGs in SECY-89-0012. And  
3 so we -- it went into place, and this is important, as an industry initiative  
4 without regulatory requirements ever being imposed, and with full cognizance  
5 of the Commission.

6 And so one of the things I tried to do was provide that history.  
7 I think that's a very important piece of information for your deliberations,  
8 because there was a lot of thought given to that at that time. If we are  
9 changing course now, I think we should be aware of that information.

10 Now, the more important perhaps information was the  
11 quantitative and qualitative insights that we also provided. And here, really,  
12 the spirit -- I think Bill mentioned it -- was to try to provide a complete set of  
13 information. The idea is it's your call, your decision, and you place the weight  
14 as appropriate. So that was -- that is the spirit in which it is done.

15 Starting with the quantitative risk insights, unfortunately, we did  
16 not have a PRA, in fact, with a measure of SAMG benefits. In fact, I think it  
17 would take a number of PRAs, and certainly something a little more expansive  
18 than some of the PRAs we have available to us today. I think more core  
19 damage sequences would have to be in the PRAs, for example.

20 So it would have been, in our view, a pretty large undertaking.  
21 As a practical matter, we simply couldn't do it in our schedule, so we did want  
22 to risk-inform this. We thought that was very important. We looked around  
23 for what was available. Fortunately, I think the containment protection and  
24 release reduction work is a very good set of information that supports our  
25 efforts to risk-inform this. And we found it good for several reasons.

26 First, the CPRR work is looking at whether actions -- in that

1 case, severe accident water addition to management, as I'm sure you're well  
2 aware, taken after core damage, and that is when SAMGs are the manual  
3 control set, and they have their benefit. So that's why this makes sense,  
4 whether those actions can achieve enough of a safety enhancement that they  
5 meet the 5109(a)(3) substantial additional protection standard.

6 So that is important, and they do that in view of looking at what  
7 is the available risk. Okay? Is there enough risk there to remove? And  
8 that's another very important aspect of that work, and we like that.

9 They also modeled the Fukushima mitigation strategies, and  
10 that is important because that drives down the core damage frequency. It  
11 takes risk off the table, if you will, and makes it even more challenging to  
12 achieve that substantial additional protection. And also, they include the  
13 effects of our regulations, so they include the effects of the EP, which is -- also  
14 makes it more challenging to achieve the substantial safety enhancement.

15 We fully understood that they were limited and we were  
16 challenged as such. We knew they were limited because they -- first of all,  
17 they were never intended to measure SAMGs. We understood that from the  
18 get go. It was limited in terms of this was only Mark 1 and Mark 2 designs,  
19 clearly. I have mentioned they don't look at all of the core damage  
20 sequences, so they weren't complete.

21 So we were challenged by ACRS on that. We also took a look  
22 at the state-of-the-art reactor consequence analysis. Now, that is one PWR,  
23 one BWR, but we looked at it for -- to see what that could do in terms of  
24 informing our risk insights.

25 And if we look at the -- really, our risk, what we have concluded  
26 from the two of these, I think we can conclude, first and foremost, and most

1 importantly, that from a safety perspective, the risk that nuclear power poses  
2 to the public health and safety today in the United States is very, very low.  
3 And that's a great safety story, of course. In fact, it appears to be well below  
4 the quantitative health objectives of the Commission's safety goal policy. So  
5 that is a great safety story.

6 And now in terms of what we -- when I look at it now and think  
7 about it, if we were to try to complete that PRA -- in other words, try to do a  
8 number of PRAs and extending everything -- do I think or do we think we  
9 would measure something substantial? Our conclusion was probably it  
10 would be a measured, quantified, small benefit. And so that's why we  
11 thought that it was reasonable to provide that risk insight to you as part of this  
12 backfitting justification, even recognizing the limitations of the work. So that's  
13 why we provided it to you.

14 So we then tried to look at the qualitative arguments or  
15 qualitative factors, if you will, to support that backfit analysis. And here we  
16 focused primarily on the relationship of the SAMGs to I think two key and  
17 undisputable portions of our regulatory approach -- containment and EP,  
18 emergency preparedness. So I wanted to stay in line with that.

19 And so, first of all, the relationship of SAMGs to containment.  
20 SAMGs, as was mentioned this morning, when you have core damage, you  
21 transition to SAMGs. They are the command and control guidelines set at  
22 that point of the accident mitigation.

23 They are used, as I'm sure you understand now, as a means to  
24 provide a lot of great information to decisionmakers in terms of how best to  
25 use all of their resources, equipment, humans, everything you have at your  
26 disposal at that time to mitigate the accident.

1                   Clearly, one of the best things you have, hopefully, is your  
2                   containment. And so that will be basically the guideline that is making  
3                   maximum and best use of the containment itself in terms of mitigating  
4                   radiological releases, hopefully stopping them, but certainly minimizing them.

5                   So this is a very direct link between the SAMGs and the  
6                   containment, and that was, we thought, a very strong qualitative argument, if  
7                   you will.

8                   Secondly, another part of this argument was that there is more  
9                   of an indirect link to the actions of the emergency -- of the onsite emergency  
10                  response organization. It was taking onsite and offsite protective actions.

11                  In this regard, SAMGs can in fact enable better information to  
12                  be available to understand the progression of the accident, for example,  
13                  where the core damage is, whether the fission product barriers have failed or  
14                  about to fail, like containment, for example, and that could be useful  
15                  supplemental information to that organization trying to take protective actions.

16                  Now, I said "indirect" because I think those actions would be  
17                  primarily informed by the immediate activities to assess and monitor the  
18                  source terms that I just spoke to that we think we ought to upgrade to  
19                  multi-source terms. So I think there is a link there, I think it's valid, but I don't  
20                  think it's anywhere near as strong as the containment and SAMGs language.

21                  So as I'm sure you're well aware, our proposal is that we  
22                  concluded that a combination of a small quantitative risk-benefit, that if we  
23                  were to complete it, we think it would still be small. And in conjunction with  
24                  this qualitative factors argument, which is a close tie between SAMGs and the  
25                  containment, could be viewed to meet the substantial additional protection  
26                  criteria under 51.09(a)(3). I think that's the matter at hand here.

1                   So now from the very beginning I think we fully understood that  
2                   the Commission could decide not to change course, and so we just  
3                   constructed this, and I committed to construct it such that I could remove it.  
4                   We can remove it, and so I'd just let you know that if you direct now or direct  
5                   later we can remove it. It's a lot more substantive than I thought it was going  
6                   to be, but we can do it.

7                   Also, I think it's important we -- we have certainly recognized  
8                   the offer or recent proposal from the NEI that was provided at the ACRS full  
9                   committee in April to upgrade or improve, if you will, the voluntary initiative.  
10                  They mentioned in their May letter. It was also mentioned this morning.  
11                  That is certainly interestingly.

12                  One of the things we would offer if, in fact, we do pursue that  
13                  approach is that we ought to consider whether the reactor oversight process  
14                  should be part of it. In other words, what would be the check on it. And that  
15                  also came up today, this morning, too, so we think that would be an important  
16                  part of that.

17                  So that completes my discussion of the SAMGs and my  
18                  presentation. I will now turn it to John Monninger, and he will discuss the  
19                  provision I jumped over, 155(d).

20                  MR. MONNINGER: Thanks, Tim. Good morning, Chairman  
21                  and Commissioners. I'm John Monninger. I'm the Director of the Division of  
22                  Safety Systems and Risk Assessment in NRC's Office of New Reactors.

23                  My presentation will cover the proposed approach for new  
24                  reactors, the basis for that proposed approach, and the unique opportunities  
25                  that the staff views that exist with new reactors.

26                  Broadly speaking, the proposed requirements that Tim went

1 through fully cover both operating reactors and new reactors. The specific  
2 requirements are applied to new reactors based upon the type of application.  
3 Some of the requirements apply to design certification applications; others  
4 apply to combined licenses.

5 In addition, the proposed requirements include a provision that  
6 would impact the design of new reactors, that provision being paragraph D.  
7 And that paragraph D is the focus of my discussion today, and paragraph D is  
8 what we believe to view -- to represent the unique opportunities for the  
9 reactors.

10 Over the past three years, the staff has gained considerable  
11 experience with reviewing mitigating strategies for new reactors. As a result  
12 of that experience, and as discussed in a briefing to the Commission on the  
13 new reactor business line in September 2014, the staff has been reevaluating  
14 the approach for mitigating strategies for new reactors and how to best apply  
15 that approach consistent with the Commission's policy for advanced reactors,  
16 which was recently revised in 2008.

17 That policy established some fundamental approaches to  
18 nuclear safety based upon decades of experience in reactor design and  
19 operation. I will briefly discuss three of those approaches. The first being  
20 providing enhanced margins of safety and simplified means to accomplish  
21 safety functions. Second being extending time constants to allow more time  
22 for diagnosis and management before reaching safety system challenges.  
23 And, third, simplifying systems to reduce required operator actions and  
24 facilitate operator comprehension.

25 The staff concludes that these approaches should apply to how  
26 the mitigating strategies safety functions are met for new reactors. The staff



1 has used these approaches in the past in developing requirements for new  
2 reactors. For example, the staff followed this approach in the aircraft impact  
3 assessment rulemaking which was issued in 2009.

4 In the end, the staff will ensure that the same safety functions  
5 are met for both operating reactors and new reactors. However, the manner  
6 in which those safety functions are met could be different.

7 Next slide, please.

8 The design stage of new reactors presents unique  
9 opportunities to address mitigating strategies, for example, practical and  
10 reasonable design changes such as increasing the capacity of water storage  
11 tanks, increasing the capacity of DC power supplies, installing different types  
12 of reactor coolant pump seals, or providing enhanced cooling for rooms is  
13 relatively straightforward and cost effective during the design stage of the new  
14 reactor when compared against similar changes to an operating reactor.

15 Considering the NRC's adequate protection determination  
16 requiring mitigating strategies, in addition, the Commission's advanced  
17 reactors policy out there, and the opportunities that exist during the design  
18 stage, the staff developed paragraph D of the proposed rule. This paragraph  
19 would require design features that enhance coping durations and minimize  
20 reliance on human actions to maintain or restore core cooling, containment,  
21 and spent fuel pool cooling.

22 These safety functions for new reactors are the same safety  
23 functions for operating reactors. The difference for new reactors is the focus  
24 on design features to prolong achievement of the safety function during the  
25 initial phase of mitigation. The staff believes this can reasonably be  
26 achieved, and that such an approach provides significant safety and

1 operational benefits.

2           Whereas operating reactors have an initial phase on the order  
3 of four to eight hours using installed systems, the staff believes it is readily  
4 achievable for new reactors to have an initial phase on the order of 24 hours  
5 using installed systems with reduced reliance on operator actions.

6           In responding to complex and unknown events, the staff  
7 believes that providing operators with additional time to diagnose, plan, and  
8 respond is beneficial, especially as an event is unfolding. As such, the staff  
9 developed guidance for a potentially acceptable timeframe for the initial  
10 transition and final phases and the equipment used during those phases.

11           Next slide, please.

12           As I previously mentioned, the proposed requirements in  
13 paragraph D are focused on the design stage of new reactors, such as design  
14 certification applications. As such, the proposed requirements would not  
15 impact existing certified designs, for example, the AP-1000 and the ESBWR.

16           In a similar manner, they also -- the requirement would also not  
17 impact existing combined licenses, for example, the Vogtle site, Summer, and  
18 Fermi.

19           Currently, there are no requirements for new reactors to  
20 address the NRC's post-Fukushima regulatory positions. As a result, and as  
21 discussed in SECY-12-0025, the staff has been reviewing new reactor  
22 applications to assure that they address the Commission approved  
23 Fukushima actions prior to certification or licensing. And, in fact, we are  
24 doing it in parallel with the licensing.

25           In the Commission paper supporting the proposed rule, the  
26 staff discussed pursuing a parallel path where we would engage now with

1 applicants for design certifications to address the intent of paragraph D as part  
2 of the licensing process. This would occur in parallel with the 50.155  
3 rulemaking process.

4 As I mentioned, we are currently using a parallel path for other  
5 of the Fukushima approved recommendations, such as spent fuel pool  
6 instrumentation. In the event a design certification application was complete  
7 and proceeded to rulemaking, prior to finalization of 50.155, the staff would  
8 address the issue on the design-specific certification rulemaking.

9 For the past six months, the staff discussed in our normal  
10 interactions with applicants the provisions -- the proposed provisions within  
11 paragraph D. Earlier this month we had a stakeholder outreach meeting to  
12 more fully discuss the proposed requirement in the guidance. The meeting  
13 was productive and provided a good opportunity to exchange views.

14 In general, the nuclear industry does not support paragraph D,  
15 nor the supporting basis. They view it as being duplicative to other parts of  
16 50.155, as not holistically addressing the Commission's policy for advanced  
17 reactors, and that the basis for it underestimated the cost.

18 During the meeting, the staff was able to clarify several areas  
19 of concern. The staff believes that the potential impacts of paragraph D run  
20 from essentially no impact to a minimal impact, given the overall scope of the  
21 new reactor design. For passive reactor designs, our experience with the  
22 AP-1000 and the ESBWR leads us to believe that there would be essentially  
23 no impact in addressing paragraph D if it was to apply to those designs.

24 For new reactors that rely more upon active safety systems,  
25 there could be more impact in terms of pursuing practical and reasonable  
26 design changes such as the sizing and capacity of already proposed systems

1 to ensure that their mission time was extended.

2 Similar to other aspects of the rule, and consistent with NRC's  
3 values, the staff -- the development of paragraph D benefited considerably  
4 from the diverse views of the NRC staff. I note that a staff member filed a  
5 non-concurrence on the proposed rule, in particular paragraph D. The  
6 individual believed that the proposed provision to paragraph D was not  
7 necessary.

8 The NRC provided an opportunity for the individual to address  
9 the NRC's Japan Lessons Learned Steering Committee and the NRC's  
10 Advisory Committee on Reactor Safeguards to further understand the  
11 concerns. In addition, various senior members -- in addition, various senior  
12 managers within the agency met with individuals to understand those  
13 concerns.

14 After fully considering the view, the staff concluded that  
15 paragraph D should remain within the proposal for the Commission's  
16 consideration and decision.

17 This concludes my remarks, and I will turn the presentation  
18 over to Eric for a discussion of the guidance.

19 MR. BOWMAN: Thank you, John.  
20 Good morning, Chairman, Commissioners. My colleagues have presented  
21 you with a great deal of information on the development of the proposed  
22 requirements in the rulemaking. I am here to discuss how we are interacting  
23 with industry and external stakeholders to implement the safety gains under  
24 the current existing orders, and how we would be interacting to implement the  
25 safety gains under the rule.

26 This is an important complement to the information they have

1 provided you for use in your consideration of the proposed rulemaking.

2 Next slide, please. Oh, wait. That's the right slide.

3 Accompanying the proposed rule when it is published in the  
4 Federal Register for public comment will be three draft regulatory guides.  
5 These guides and the supporting industry guidance documents represent the  
6 synthesis of input from a wide variety of internal and external stakeholders  
7 gained through numerous public meetings, the lessons learned through the  
8 implementation of the orders that Bill and Tim discussed, and the  
9 consideration of the innovative alternative approaches that our licensees  
10 proposed to meet the requirements of the orders.

11 Our ability to include these lessons learned in the guidance is a  
12 direct result of the Commission having extended the due date for the delivery  
13 of the proposed rule package. That extension allowed us to come closer to  
14 resolution on several of the items, in particular the appropriate treatment of the  
15 reevaluated hazards under the proposed rule.

16 The first of the guides that would be published with the  
17 proposed rule is Draft Guide 1301, the flexible mitigation strategies for beyond  
18 design basis events. That guide would endorse the NEI document that Tony  
19 Pietrangelo mentioned, NEI-1206, which provided guidance for meeting the  
20 requirements of the mitigating strategies order.

21 We worked with industry and other external stakeholders  
22 extensively throughout 2011 and 2012 to develop the original version of  
23 NEI-1206. After a series of public meetings and use of notice and comment  
24 in the Federal Register, we endorsed the use of NEI-1206 for the order in our  
25 Interim Staff Guidance document JLD ISG 2012-001.

26 I would note that we got comments from a number of

1 stakeholders, and about two-thirds of the comments that we received resulted  
2 in changes to that Interim Staff Guidance document before we published the  
3 final guidance document. There were 54 individual comments that we  
4 considered.

5 As I mentioned earlier, the revision to NEI-1206 and the  
6 publication of Draft Guide 1301 are being made to reflect what we learned in  
7 implementing the order, and the purpose of Draft Guide 1301 will be to  
8 simplify the change process for the mitigating strategies by including  
9 documentation of alternative approaches that licensees have proposed and  
10 we have found acceptable for meeting the order requirements.

11 There are a few additional appendices that are being added to  
12 NEI-1206 in order to address portions of the proposed rule. Those are the  
13 appendices for the treatment of the reevaluated hazards with Appendix Golf  
14 being added to address the -- or reevaluate the flooding hazard, with  
15 Appendix Hotel being added to address the reevaluated seismic hazard.

16 Additionally, Draft Guide 1301 includes the guidance for the  
17 new reactor design features that John discussed as Appendix A to the draft  
18 guide.

19 Next slide, please.

20 As I mentioned, Appendix Golf for NEI-1206 is to address the  
21 reevaluated flooding hazard, and Appendix Hotel is to address the  
22 reevaluated seismic hazard. We've got a fairly complete version of Appendix  
23 Golf and have scheduled a meeting next week to discuss it with external  
24 stakeholders. Appendix Hotel is still under consideration and under  
25 development by industry, and we will continue to hold public meetings on that.

26 In order to allow for a full public comment during the comment

1 period, we have added a portion to Draft Guide 1301 on high-level areas that  
2 would need to be addressed by licensees in addressing the seismic  
3 reevaluations.

4 These appendices are intended to provide guidance for  
5 licensees on how to evaluate the strategies that are developed for the  
6 mitigating strategies order, to confirm that those strategies will work for the  
7 reevaluated hazards, or to identify what they will need to change in order to  
8 make strategies that will work in the context of the reevaluated hazards.

9 Of particular note is the inclusion in the NEI-1206 appendices  
10 of the targeted hazard mitigation strategies. Those represent what we  
11 discussed in COMSECY 14-0037 as Recommendation 2 as targeted or  
12 scenario-specific mitigating strategies, possibly including unconventional  
13 measures to prevent fuel damage in reactor cores or spent fuel pools.

14 In addition, the new appendices to NEI-1206 include what they  
15 have termed "alternative mitigating strategies" which is a hybrid approach that  
16 Tony mentioned, relying on a combination of the mitigating strategies,  
17 equipment, and the installed safety-related structures, systems, and  
18 components that would be protected to the reevaluated hazard in order to  
19 mitigate the effects of that hazard.

20 As I said before, the purpose of Draft Guide 1301 is providing  
21 guidance for compliance with the proposed rule. Consequently, the final  
22 guide will not be published until we get to the final rule stage, which is currently  
23 scheduled for delivery to the Commission in December of 2016.

24 As you have heard from the external panel, the improvements  
25 are going on right now. And as you reaffirmed, it was always the intent of the  
26 mitigating strategies in response to the order to address the reevaluated

1 hazards under the 50.54(f) letters of 2012. All of our licensees recognize that  
2 fact as well, and they included a boilerplate statement in their integrated plans  
3 that were in response to the order. That statement said, "Flood and seismic  
4 reevaluations, pursuant to the 10 CFR 50.54(f) letter of March 12, 2012, are  
5 not complete, and, therefore, not assumed in the integrated plan."

6 As the reevaluations are complete, the appropriate issues will  
7 be entered into the corrective action system and addressed on a schedule  
8 commensurate with other licensing basis changes.

9 The guidance that is in NEI-1206 will assist the licensees in  
10 coming to closure on those corrective actions that they have added for the  
11 reevaluated hazards. And in order to provide a greater degree of regulatory  
12 certainty for the licensees, and for all external stakeholders, we plan on  
13 updating the interim staff guidance we issued in 2012 to reflect the  
14 acceptability of the appendices to NEI-1206 for that purpose.

15 Next slide, please.

16 The other two draft guides, Draft Guide 1317 and 1319,  
17 address the remaining portions of the proposed rule, and would endorse  
18 industry developed guidance as indicated on this slide. NEI-1202 and  
19 NEI-1201 were developed for the spent fuel pool instrumentation order, and  
20 the staffing and communications assessments under the 50.54(f) letter,  
21 respectively.

22 We are making no modifications in the draft guide to the  
23 previous endorsement of those documents, and those documents have not  
24 been changed since they were issued.

25 NEI-1306 is a new document that was developed by industry  
26 for guidance for training drills and exercises, command and control, and



1 multi-unit dose assessments. And, finally, NEI-1401 provides the guidance  
2 on the integration of mitigating strategies, the previously developed extensive  
3 damage and mitigating guidelines, and severe accident management  
4 guidelines with the existing emergency operating procedures.

5 It also includes some guidance on the development and  
6 implementation of the severe accident management guidelines themselves,  
7 as well as some additional guidance on command and control structures for  
8 use with the severe accident management guidelines.

9 That concludes my presentation, and I will turn the mic back  
10 over to Mike.

11 MR. JOHNSON: Thank you, Eric. And so, as you've heard  
12 today, the proposed rule does represent a culmination of several years of  
13 effort on the part of the staff, with extensive outreach and engagement of  
14 external stakeholders and internal stakeholders.

15 The proposed rule has been crafted to solicit targeted  
16 feedback during the public comment period, and it will be issued with draft  
17 implementation guidelines that will help with that in accordance with the CER.

18 We have talked extensively about what the purpose of the rule  
19 is. I won't go further in that. We are realizing additional safety benefits as a  
20 result of actions that have already been taken, and the point has been well  
21 made, and I think I just want to reemphasize that.

22 We discussed the requirements in the rule. We believe that  
23 we provided a comprehensive and transparent rationale for those  
24 requirements in the materials in the rule, and the materials that support it,  
25 within the context of the backfit criteria, but also with sensitivity to the direction  
26 that we received from the Commission with respect to how we should

1 consider, for example, qualitative factors.

2 We believe the proposed rule will fully enable informed  
3 stakeholder feedback and will support the staff's efforts to produce a high  
4 quality final rule.

5 That completes our presentation, and we look forward to  
6 addressing your questions.

7 CHAIRMAN BURNS: Thanks, Mike. And, again, I will start  
8 off. Just, again, I appreciate the presentation by the staff, and certainly the  
9 work that has gone into this effort in response to the Fukushima Daiichi  
10 accident.

11 As you know, I was here at the time as General Counsel. We  
12 initiated some of these -- or many of these efforts and try to assist then, assist  
13 two of my fellow Commissioners who were on the panel then, as they worked  
14 through the initial responses.

15 And, again, as some of my colleagues have acknowledged, the  
16 substantial work that has gone in by the staff and by the industry and by the  
17 thoughtfulness of our other stakeholders, like Dave Lochbaum, in terms of  
18 thinking through some of the challenges that we saw and how we meet them  
19 and how we incorporate them into -- as appropriate, into regulatory guidance,  
20 into regulatory requirements, and into the regulatory framework, whether it be  
21 for the current operating fleet or as we think of potential for new reactors.

22 One of the things, another perhaps philosophical issue in terms  
23 of hearing some of the discussion, a lot of -- I think a lot of the discussion  
24 which has been healthy does bear on the question of, how does an agency  
25 proceed? What is the best way of agencies proceeding? And we have  
26 touched on a number of issues in terms of how, between -- for example, the

1 question that we face in the SAMG area, the question of reliance on industry  
2 initiatives, how those are incorporated, how we look at those from a regulatory  
3 perspective. And I think that's an important question.

4 One of the other questions -- and this comes to -- I actually took  
5 a law school course, not on NRC, but on the Food and Drug Administration,  
6 with respect to the implementation of requirements and the questions of, for  
7 example, implementation by rule versus order.

8 And it is interesting -- it is an interesting development, I know  
9 one we struggle with. And, you know, for example, this is an area in which  
10 we have gone forward first by order, looking back, or taking more perspective  
11 and now looking at areas in terms of implementation by rule. In another area,  
12 for example, recently I think the cyber area on fuel facilities, if I've got that one  
13 right, the Commission decided this is now the approach -- we ought to be  
14 focused on the order going forward.

15 For those -- the audience, and it may be mainly my colleagues  
16 in the General Counsel's office who appreciate this more than anything, but  
17 the choice of order -- there is a case called the Securities and Exchange  
18 Commission v. Chenery. It was issued about 75 years ago, within the first  
19 couple of years of the Administrative Procedure Act being enacted by the  
20 Congress, and in the Chenery case the Supreme Court says that essentially  
21 the choice of rule versus order is essentially to the discretion of the agency.

22 Both orders and rules, we have procedures that conform to the  
23 Administrative Procedure Act that -- and we have certainly done that in the  
24 issuance of the orders here. And, certainly, as we promulgate rules, we  
25 conform to them.

26 I think one of the I think strengths of the agency has been, quite

1 frankly, that we go beyond -- as I say, we go beyond the near minimum  
2 requirements of the APA, and that is part of -- reflected in the engagement,  
3 both that was noted with respect to the orders, the development of the orders.  
4 That is those -- that sort of public engagement on that was beyond what the  
5 minimum requirements are.

6 Even here, in a sense, we could be arguing that this is a final  
7 rule discussion. It isn't. I say that somewhat facetiously, but the additional  
8 discussions we have in terms of development of this rule, as to whether we  
9 should issue it in proposed form, then get the more formalized comment.  
10 That is something that goes beyond the mere minimums of the APA.

11 And I think, again -- and I will leave it here -- a couple of articles  
12 that -- in the recent literature, and in some of the law journals I looked at, is  
13 almost that one of the critiques of administrative agencies these days is  
14 almost regulation by insinuation, if you will. And that is not desiring to  
15 proceed with the rulemaking -- the formalities of imposing regulatory  
16 requirements through rule, through the processes.

17 But I think that's something -- you know, it's challenging in  
18 terms of the timeframe and all it takes us to do that, but it is certainly  
19 something that we have been willing to do. I think the Commission facing the  
20 cumulative effects, and over the years the backfit rule, the requirements even  
21 on things like generic letters, in terms of discipline in the process, speak well  
22 to the agency and the processes.

23 With that, I will ask a couple of questions about the proposed  
24 rule itself. I want to touch on a couple of things that -- touch a little bit on the  
25 ACRS's comments. I think one of them with respect to new reactors -- and I  
26 think maybe, John, you're in the best position to answer this -- they sort of

1 withheld judgment until they see the reg guide.

2 MR. MONNINGER: Right.

3 CHAIRMAN BURNS: Is there any comments from the staff  
4 with respect to that?

5 MR. MONNINGER: So, yes. We had probably five or six  
6 different briefings for the ACRS. At the time that they wrote the letter, the  
7 only thing that they had seen was our draft proposed rule language. They  
8 had not seen the guidance document. Subsequent to that, in June, we have  
9 met with the ACRS on the guidance. So they have not written a letter. We,  
10 you know --

11 CHAIRMAN BURNS: So that -- I think what you're saying is  
12 that there will be an additional engagement with them --

13 MR. MONNINGER: Yes.

14 CHAIRMAN BURNS: -- as we go through the process. And  
15 if we come to the point, you know, depending on the content of the rule, you  
16 know, or a possible proposed final rule, there would be further engagement  
17 with them on that aspect.

18 MR. MONNINGER: Yes, sir.

19 CHAIRMAN BURNS: Okay. The other thing that they talked  
20 about was in terms of integration of fire protection procedures. And I think  
21 when I read the -- I think the letter back from the EDO essentially spoke to is  
22 that this is -- and I'm going to paraphrase it quickly, but that this is in a sense  
23 something we are really going to look at a Tier 3. Can you elaborate more on  
24 what the staff's rationale is in response to the ACRS comment?

25 MR. BOWMAN: We had addressed this in SECY-12-0025  
26 when we had initially -- that's how we reported to the Commission what we did

1 when we initially received the recommendation from the ACRS in 2011. I  
2 believe it was an ACRS review of the SECY-11-0093 of the NTTF report that  
3 recommended also integrating with fire response procedures.

4 We established a discipline process to consider additional  
5 recommendations, looking to things like is there a nexus to the events that  
6 happened at Fukushima Daiichi, and the potential safety significance of the  
7 event. And what wound up happening is we took the recommendation for the  
8 integration of the fire response procedures and binned it in with the completion  
9 of the look at the NTTF Recommendation Number 3, which was further  
10 research on seismically induced fire and flooding.

11 In this last NTTF letter, they also included flooding response  
12 procedures in the scope of their recommendation. We went back and we  
13 have added that to the response to NTTF Recommendation 3 as well. And  
14 given the schedule constraints of the rule, and the difference between the  
15 motivation for the integration of the additional response procedures with the  
16 emergency response capability we are looking at now, we feel that it still  
17 should remain a future work item.

18 CHAIRMAN BURNS: Okay. Thanks. Again, I'll ask one  
19 SAMG question and defer to my colleagues on any others. But if SAMGs  
20 were not required by the Rule, how would staff's oversight change? Would  
21 we still -- and how would it affect this integration with other Rules?

22 MR. DEAN: So --

23 CHAIRMAN BURNS: With other procedures, I didn't mean  
24 Rules.

25 MR. DEAN: Right. So the -- one of the major effects of  
26 requiring this in the Rule would be the ability to treat it in a regulatory manner.

1           There was a discussion in the earlier panel about  
2           enforceability/non-enforceability and Margie can probably provide a view on  
3           this as well. But if it's not a requirement or a regulation issued by the NRC,  
4           it's not enforceable.

5                         That doesn't mean in the reactor oversight process. If there  
6           was a commitment that was made by the licensee and if there was a standard  
7           that was identified, industry standard that they committed to through some  
8           NSIAC 80 percent vote that we couldn't find a performance deficiency.  
9           Right? So within reactor oversight process you could probably create a  
10          finding, but it would not have an enforceable nature to it.

11                        I will say that after the TI that was done, we didn't issue  
12          violations. Licensees put the issues that were found into their corrective  
13          action programs and have made progress and, to be honest with you, I'm not  
14          sure, I'd have to check with the regions to find out what the status is of the  
15          corrective actions.

16                        My guess is at this point, most if not all of the licensees have  
17          addressed all the issues out of the TI. But again, we did not issue violations  
18          or had not findings as a result of that. It was basically our observations out of  
19          the TI.

20                        CHAIRMAN BURNS: But these -- the SAMGs are outside the  
21          scope of what it used to be, as I recall, Section or Chapter 6 of the tech specs  
22          where you are required to adopt procedures, et cetera, et cetera. So they're  
23          not --

24                        MR. JOHNSON: They're not current --

25                        CHAIRMAN BURNS: -- Chapter 6 --

26                        MR. JOHNSON: They're not currently required in that way.

1 So, and Bill's right about enforceability. We could not compel -- licensees  
2 have done a wonderful job in implementing the ROP and, I'll just say in  
3 general, addressing performance deficiencies. I'll just make that statement.

4 But we always understood in the ROP that if we were looking at  
5 something that was not a requirement and a licensee decided they would not,  
6 absent a backfit on part of the agency clearance specific backfit, absent that if  
7 they decided they didn't want to do it, we would have to take action. The  
8 burden would be on us to take that action. So that's the difference between a  
9 commitment or a voluntary initiative and what is required by regulation for the  
10 requirements.

11 CHAIRMAN BURNS: Okay. Thank you. Commissioner  
12 Svinicki?

13 COMMISSIONER SVINICKI: Well, thank you for your  
14 presentations. And again, I want to acknowledge the tremendous amount of  
15 staff endeavor that has gone into the package that's in front of us and all that  
16 formed the foundation for the development of this work product.

17 I find an interesting comment on Page 67 of the draft regulatory  
18 analysis. It states after Fukushima, the NRC mind set changed. And I  
19 respect that every NRC employee has kind of had their own experiences since  
20 Fukushima, but I don't share that observation.

21 I know that the Near-Term Task Force, through  
22 Recommendation 1 advocated for a fundamental rethinking of a number of  
23 issues. But when I think about it as a decision maker on my side of the table,  
24 my observation is not we took the learnings of Fukushima, we prioritized  
25 actions, but at bottom, the Commission departed from the Near-Term Task  
26 Force by stating, we're going to use the regulatory framework we have to



1 process these priority actions. And we've done that.

2 And by my commentary at the Regulatory Information  
3 Conference and before the first panel today, I think I've communicated clearly  
4 that I think we arrived at a very solid response for the United States through  
5 that regulatory framework. So I just want to say I respect other people's  
6 views, but I don't share that observation at all. As a matter of fact, I might  
7 completely see the opposite that has occurred. So, I wanted to note that.

8 I appreciate, Mr. Bowman, that you made a comment that our  
9 ability to include lessons learned in the guidance is the direct result of the  
10 Commission having extended the schedule for the staff's delivery of the  
11 Proposed Rule. We don't very often get a thank you for those extensions, so  
12 I do appreciate it.

13 I tell this story perhaps a bit too often, but in our first  
14 Commission meeting after the events in Fukushima, Mr. Bill Borchardt was  
15 our EDO at the time. And I asked him, I said, after Three Mile Island, the  
16 experience in this country was that a number of actions over time were viewed  
17 as not helpful and a number of regulatory actions that were imposed and they  
18 were rolled back.

19 I said, why should I be confident that NRC will not find itself in  
20 that circumstance with Fukushima actions? And his answer was a good one.  
21 He said, we're not going to encounter that because we are going to take the  
22 time to do the analysis and provide a thoughtful response and we're going to  
23 take the time to get it right. And if we're not sure about something, we're  
24 going to take the time to become sure before we put it in place.

25 And so I think that is reflective of the Commission where  
26 justified we have wanted to grant you the time to do that right. But I

1 appreciate your explicit acknowledgment of it because we've been criticized  
2 for being dilatory. So I think it's great that you put that out there that it's  
3 important that we've taken the time to be thoughtful. And I'm all for that.

4 Mr. Reed, as you were talking, I thought of a funny story. I  
5 hope I didn't smile. But you covered a lot of information really quickly and  
6 then you acknowledged how quickly you went. It'll be interesting for the  
7 transcriber to -- they'll have to kind of back up a lot.

8 But the funny story was that our Chinese colleagues were kind  
9 enough to offer me an opportunity to visit one of the AP1000 construction  
10 sites. I'm embarrassed and it is embarrassing that I don't remember whether  
11 this story happened at Sanmen or Haiyang, doesn't matter because it's not  
12 relevant to the story which of the sites it was.

13 But I arrived and I was on the walking tour of the construction  
14 site and the individual walking me, the Chinese colleague walking me through,  
15 was walking so fast and he kept walking faster and faster and I'm trying to  
16 keep up with him and I'm getting a little out of breath. He seems to be getting  
17 a little out of breath. And at some point in a stairwell or a corridor, he turned  
18 to me and I wasn't sure, I think we had a translator separately, so I wasn't even  
19 sure he spoke English, but he turned to me and he goes, you walk so fast.  
20 Like I was making him. And I was desperately trying to keep up with him.

21 So I thought that, that was hilarious because I was stressing  
22 him out because -- but that can happen. So we give you limited time and  
23 then I criticize you for talking fast. That's why this story is funny to me  
24 because whose fault is that, really? But I want to thank you.

25 So getting serious for a minute, I want to thank you. You  
26 emphasized a number of times in the backfit issue and on the SAMGs that you

1 just wanted to have a transparent discussion. And I've met with any number  
2 of NRC staff and said, it's unfortunate when we get into the Commission's  
3 approval or disapproval of something and that has to be viewed as somebody  
4 was right and somebody was wrong. I don't see it that way.

5 I see that NRC's technical experts have a role, but the  
6 Commission has a different role. And the weighting of factors and the ability  
7 to say, at my level we set expectations for you, the Congress, our elected  
8 officials, set expectations for the people on this side of the table. And they  
9 want us to balance factors and consider and weight factors perhaps  
10 differently. And so what I've said to staff is, I'm obligated to consider things  
11 that it would be inappropriate for you to make -- sway your decision one way or  
12 another.

13 So this giving decision makers enough of a transparent  
14 understanding so that they will decide is the first and highest objective. And  
15 thank you for doing that. Don't sell me something. Just lay it out for me.  
16 And then I will not only decide, I will be criticized for my decision and I will  
17 defend it. But you've equipped me with the knowledge to do it.

18 Now, that being said, I found the particular analysis, which I  
19 think was mostly by your hand here, I found it really refreshing. Because if I  
20 used a strong word, I would say I noted a little bit of almost ambivalence  
21 about -- so you've laid it all out and kind of allowed us to decide. But  
22 Chairman -- or he was Commissioner Jaczko at the time, we were having a  
23 lively discussion at one point before the Commission, was the possible  
24 reinstatement of the construction permit for Bellefonte. And he  
25 included -- so we had a number of discussions about it. Again, he was not  
26 Chairman at the time, he was a commissioner, this was 2008 or 2009 or

1 something like that.

2 But he used a really colorful word picture and framing and  
3 his -- we differed on this. But I always remembered it because I thought, boy,  
4 once he put it that way, at least I understood where he was coming from.  
5 Which is kind of what we're talking about here. But he said, there is a  
6 difference between having a standard or laying your standard on the ground  
7 and carrying your requirement over it and making it so easy.

8 And I wonder if you just as a practitioner, not -- I know you're  
9 getting waves of hostility from your office director and others, so forget that  
10 they are sitting there. But as a practitioner of this group -- how long have you  
11 worked at NRC?

12 MR. REED: It's been since '89.

13 COMMISSIONER SVINICKI: Okay.

14 MR. REED: And then nine years before --

15 COMMISSIONER SVINICKI: So you've been doing this for a  
16 while. Do you think that it's not reasonable for me to worry about that notion  
17 of if you can wait and say it's an enhancement to safety and then I know  
18 you've drawn a more nuanced connection to containment and to EP decision  
19 making and things like that. But I might posit to you that there's an awful lot of  
20 stuff that we could draw that same connection.

21 And although, I actually think Mr. Lochbaum had a wonderfully  
22 honestly framing of this issue, he said, maybe the United States needs to think  
23 about how it is that you could incentivize, although I hate that word because  
24 it's turning a noun into a verb, but you could incentivize escalating safety  
25 standards. And I think no matter the sector of the economy, I think regulators  
26 and policy makers struggle with this.

1                   But the one thing that regulators need to have is a deep  
2 reverence for the law. And within the four corners of the Atomic Energy Act, I  
3 don't find a tolerance for continually escalated safety enhancements beyond  
4 what is needed for reasonable assurance of adequate protection.

5                   And so I know it's a struggle for us, but I do think there's  
6 significance in lowering your standards so far that you lay it on the ground and  
7 lift the analysis over the top of it. And I discerned from the very even-handed  
8 way that you laid this out, that you at least think it's not crazy to worry about  
9 that. Is it crazy to worry about that?

10                  MR. REED: Well, I think the spirit was that obviously the weight  
11 on different parts of this thing is not our call. And so I wanted to try to be as  
12 objective and complete as possible and enable you to do that. That's your  
13 job, not our job. And so that's really what the whole thought process was.

14                  And I tried to be, again, just complete and honest and provide it  
15 to you and let you do your job. And so that's exactly -- in fact, I told that to  
16 people who work on rule makings, all my rule makings, that any issue or  
17 policy, that's really what our job is. To provide the entire picture to you and let  
18 you make that decision. It's not our call.

19                  COMMISSIONER SVINICKI: Well, and I appreciate that and  
20 on that point in my remaining time, I'm going to pivot to the forward fit for new  
21 reactors. I think it's flawed fundamentally on that point. And the  
22 non-concur -- and by the way, I want to express, again, it takes a lot of  
23 courage to non-concur and file a differing view. Regardless of whether I  
24 agree or disagree, I have a deep admiration for all the NRC employees who  
25 participate in that process and want to thank the individual who non-concurred  
26 here for providing a contribution to this process.

1                   But at bottom, I find resonance with the concerns expressed by  
2                   the non-concur, because that individual has laid out that we need to have that  
3                   kind of laying out of systematic policy options and allow the Commission to  
4                   decide -- for the staff to say, well, the Commission has a Policy Statement  
5                   that, hey we look favorably on X, Y, and Z, and then the next time the  
6                   Commission sees that, you've plunked that in the form of -- you've air dropped  
7                   it as a mandatory requirement in a draft proposed rule.

8                   That's not the process that we follow here. And I feel that the  
9                   non-concur -- I interpret the non-concur as advocating for that process.  
10                  Whether or not it's a good idea, this shouldn't be the first time the Commission  
11                  sees it is you've manifested it in a proposed rule requirement. So I have that  
12                  heartburn. I think there was a way to examine this forward fit issue. I don't  
13                  think this was the mechanism through which it should have been done  
14                  and -- I'm over my time. Thank you.

15                  CHAIRMAN BURNS: Thank you. Commissioner Ostendorff?

16                  COMMISSIONER OSTENDORFF: Thank you all for your  
17                  presentations. And I'll repeat something I said at the first panel that I think is  
18                  a really good news story with this Proposed Rule. That though there may be  
19                  certain aspects, I might have a different view on it than the staff, I would say  
20                  that overall I think it represents a herculean effort in a very positive way. Yes,  
21                  it is complex, but necessarily so to address complex issues. And so I want to  
22                  thank the entire staff.

23                  I want to single out Mike Johnson, your leadership of the Japan  
24                  Lessons Learned Steering Committee here the last three years. Because I  
25                  think that this has been a marathon. And you had a lot of support and people  
26                  at the table and people here behind you and people who are not here at this

1 meeting. But I think from a regulatory standpoint, I'm very proud of the work  
2 that you and your team have performed here. So thank you for doing that,  
3 Mike.

4 This paper also as a Proposed Rule presents, I think, for the  
5 Commission a great opportunity to take a holistic, reflective view on what's  
6 happened the last four years. At least, that's how I'm treating it. And so,  
7 while I'll look at the individual aspects of this Proposed Rule and will come to  
8 some voting decision here in the coming days, I would also note that it's  
9 helpful for me to sit back and say, okay, what have we done since Near-Term  
10 Task Force report came out? What have we learned about Fukushima?  
11 Have we achieved the safety benefit that we are going to achieve from the Tier  
12 1 action items? Which I think we have and will continue to do so.

13 But also, there's other add-ons that have occurred over the last  
14 few years that I think we need to bring this to closure. And so my interest  
15 will -- quite frankly, and I've discussed this with Mike in periodics, I want to  
16 see -- let's bring these remaining outstanding issues, primarily Tier 3, but  
17 maybe some Tier 2, to closure. And I wanted just to give, Mike, you a chance  
18 to address your thoughts on how to move forward to a disposition on  
19 remaining items.

20 MR. JOHNSON: Thanks, Commissioner. We have in fact a  
21 shared interest in terms of trying to move forward to Tier 2 and Tier 3 items.  
22 NRR, the JLD, Jack Davis, working with the rest of the team, have developed  
23 a plan to look at the remaining Tier 2, Tier 3 items in the context of what are  
24 the items that remain that could be subsumed in activities that have already  
25 been done?

26 What are the actions that are Tier 2, Tier 3 potentially, that are

1           obviated -- the need for which is obviated based on safety benefit already  
2           achieved? And then what remains that we need to continue to do a little bit  
3           more work on? We're working through that process.

4                         We will get a chance to see that. Bill's senior management  
5           team will get a chance to see that. The Steering Committee will get a chance  
6           to see that. And we'll owe you -- provide to you, the Commission, in the  
7           October time frame, a laying out of what that plan is going forward. Again,  
8           our motivation being, let's get the rest of these activities behind us in a way  
9           that doesn't divert our focus from the Tier 1 items.

10                        COMMISSIONER OSTENDORFF: Thank you. I want to  
11           provide for the purpose of this public meeting just a personal individual  
12           commissioner views on one item in Tier 3, because I think this will be -- I think  
13           an example sometimes helps provide a context. And I want to give you an  
14           example.

15                        So I'm reading from the update on Tier 3 activities provided in  
16           SECY-15-059 dated April 9, 2015. And I'm reading from Pages 5 and 6.  
17           And the subject of this is basis of emergency planning zone size and  
18           pre-staging potassium iodide beyond ten miles. And there's a couple of  
19           sentences here that I found very interesting and very helpful to me as a  
20           commissioner. And I think the staff's updates to the Commission have been  
21           extremely helpful to all of us and I thank you for that.

22                        But I wanted to comment specifically on the emergency  
23           planning zone, potassium iodide aspect. And this is on the bottom of Page 5,  
24           "NRC staff remains confident that the emergency preparedness programs in  
25           support of nuclear power plants provide an adequate level of protection of the  
26           public health and safety and that appropriate protective actions can and will be



1 taken in the event of a radiological event. This includes evacuations and the  
2 use of potassium iodide. Available information studies from the Fukushima  
3 accident have not changed the staff's position. Emphasis added."

4 Next page, I'm skipping some of the first paragraph. I'm not  
5 cherry-picking here from my standpoint, but I want to for the sake of brevity.  
6 "On December 25, 2014, the Japanese Investigation Committee and the  
7 Fukushima Health Survey released results on external radiation exposure,  
8 dose estimates, and thyroid doses using survey information from over  
9 531,000 affected people in the Fukushima prefecture. The dose estimates  
10 do not appear to call the EPZ or KI approach of the NRC into question."

11 So I'm reading a selected portion of that, but I think it's  
12 representative of the overall theme. We've got the really good information  
13 from the staff. Using this as one example, I think, individual commissioner  
14 perspective, we need to bring these issues to closure if we can. There's a lot  
15 of stuff out, there's a lot of churn.

16 We could continue research projects for the next ten or 20  
17 years in some of these areas. That would not be helpful to anybody. We  
18 need to bring this to closure and focus our efforts on ensuring that these  
19 efforts from the regulatory standpoint are properly implemented by industry.  
20 So that's just my personal view.

21 Bill, I want to mention, I'm not going to have time to go through  
22 all this, but I'll just thank you for the recent paper you sent to the Commission  
23 on the implementation plan for flooding plan and evaluations. I know that's  
24 been a very difficult task. It's taken longer than anybody anticipated. But  
25 also in the spirit of Commissioner Svinicki's earlier comments, we need to get  
26 this done right the first time. And so if it's taken us a little bit longer to get it

1 done, so be it.

2 I think there's a success story there and I want to thank you and  
3 the NRR and NRO teams for your efforts in bringing that to what I think is a  
4 good place. And there's a lot of work to be done.

5 I wanted to turn briefly and ask Tim and Eric a question. Dave  
6 Lochbaum had some thoughtful comments in his presentation the first panel  
7 about public engagement. There was a comment made that, I think I'm  
8 quoting correctly, stakeholders lacked meaningful input to the requirements.  
9 I had a chance to talk to Mr. Lochbaum at the break very briefly. I value  
10 highly Dave's input and his thoughtfulness that he brings to these meetings. I  
11 wanted to see if you had any comment on that first panel comment.

12 MR. REED: I do. I do appreciate that discussion on orders  
13 versus rules. I understand that. In terms of openness though, I think it's the  
14 most open process certainly I've ever been involved with. And there's been  
15 an extraordinarily large number of meetings and in particular on the  
16 implementation guidance as we're going through. It's been, like I said,  
17 nothing like I've ever experienced before. Very open, very transparent. A  
18 lot of CER aspects built into it all the way.

19 COMMISSIONER OSTENDORFF: Eric?

20 MR. BOWMAN: The one thing I'd add is that we took what I  
21 believe to be the unprecedented step of engaging the public on what the  
22 Order should look like before we issued the Order. So we engaged with the  
23 public before that.

24 And I was a little taken aback by Mr. Lochbaum's statement  
25 that they had no input into the orders or the guidance because we had a  
26 number of comments from Dr. Lyman that did affect what the interim staff

1 guidance for the Mitigating Strategies Order said. So, I think that we have  
2 tried to strike the right balance of public engagement with the safety  
3 significance and the need to get the requirements out there and achieve the  
4 safety benefits.

5 COMMISSIONER OSTENDORFF: I would encourage you to  
6 just have a sidebar discussion with Mr. Lochbaum. I think he has some  
7 perspectives there that would be helpful. And this is not one of those where  
8 somebody's right, somebody's wrong. It's there's different perspectives that  
9 are brought to bear and so I think that discussion would be helpful going  
10 forward.

11 MR. JOHNSON: We'll do that, Commissioner. And in fact, I  
12 was just going to -- I think Tim and Eric gave a great answer to a very good  
13 question. It's an area that we continue to focus on. I think, actually, we're  
14 probably one of leaders in government in terms of our openness and our  
15 outreach to external stakeholders. We can obviously continue to work on  
16 that issue.

17 We'll be particularly interested as we go forward on the  
18 Proposed Rule in whatever form the Commission approves in. But also,  
19 we've got some other actions that are coming before you that we were  
20 particularly interested in external stakeholder input on. So we'll continue to  
21 do what we try to do in that area.

22 COMMISSIONER OSTENDORFF: Thank you. My last  
23 question, I'll go to John. I want to follow-up a little bit in the same topical area  
24 as Commissioner Svinicki on the new reactor piece. And I was a little  
25 surprised by seeing this Proposed Rule. I'm just being candid. And fully  
26 aware of the Advanced Reactor Policy Statement from 2008. Was there

1 consideration given by the staff to propose a review of that separate and  
2 distinct from the mitigation or beyond design basis of that rule making?  
3 Especially these issues on design of new reactors?

4 MR. MONNINGER: So I may have been misinterpreting. You  
5 said, consideration of the staff to redo the Policy Statement?

6 COMMISSIONER OSTENDORFF: Well, just I share  
7 Commissioner Svinicki's concern that -- I was surprised that this came up in  
8 this beyond design basis of that rule making. And so I'm just curious as to  
9 what the process was the staff utilized to determine, okay we have this  
10 Advanced Policy Statement that now you're -- the proposal is to ---

11 MR. MONNINGER: Yes.

12 COMMISSIONER OSTENDORFF: -- take a significant action  
13 in the context of --

14 MR. MONNINGER: Yes.

15 COMMISSIONER OSTENDORFF: -- a different Rule.

16 MR. MONNINGER: So, fundamentally, I think the staff looks at  
17 the Rule as accomplishing the same safety function for both new reactors and  
18 operating reactors. So the safety standard is the same for both new reactors  
19 and operating reactors. The issue comes down to, how do you accomplish  
20 that function?

21 And what had happened in the issuance of the Order and the  
22 development of the guidance, it is very operating reactor centric, the  
23 development of the guidance. There is nothing unique with regards to that  
24 guidance as to why that guidance then has to be applied to new reactors.

25 When the guidance is developed, it reflects limitations that are  
26 inherent with operating reactors. You can only make reasonable

1 enhancements to operating reactors because walls exist, rooms exist,  
2 systems exist. So it's in that context that coping strategies are developed.

3 For new reactors, you do not have those same limitations. So  
4 do you want to use the same approach or is there potentially different  
5 approaches you want to use? I think what's important is the Phase One  
6 Response for operating reactors relies upon installed systems. And they are  
7 trying to prolong those installed systems as long as possible. So that shows  
8 the value in using installed systems and the level of knowledge and  
9 day-to-day familiarity that operators have of those systems. So then the  
10 question comes for new reactors, do you want to apply the same approach --

11 COMMISSIONER OSTENDORFF: Just for the sake of time, let  
12 me cut you off on that.

13 MR. MONNINGER: Yes.

14 COMMISSIONER OSTENDORFF: But did you -- did the team  
15 discuss a different approach to approach the Commission by looking at a  
16 modification to the Advanced Reactor Policy Statement? Because it just  
17 seems --

18 MR. MONNINGER: Yes. No, we did not do that.

19 COMMISSIONER OSTENDORFF: That's my real question.  
20 I'm sorry I didn't --

21 MR. MONNINGER: Oh, I'm sorry.

22 COMMISSIONER OSTENDORFF: -- articulate it very clearly.

23 MR. JOHNSON: And the answer is no. But John was getting  
24 to the answer or actually said the answer. We didn't start with the Policy  
25 Statement. We started with the fact that installed equipment had a lot of  
26 trouble at Fukushima.

1 COMMISSIONER OSTENDORFF: Right.

2 MR. JOHNSON: We had a set of installed equipment at  
3 operating plants. We asked ourselves then, what do you need? So portable  
4 equipment, equipment from offsite for operating plants.

5 But it also occurred to us that with designs that are being  
6 developed, that why does it make sense to continue to build batteries that  
7 have a limited coping ability if you can do a little bit more to better address this  
8 hazard that exists, that was exposed at Fukushima? And so it was very  
9 germane in our minds and it was very much focused on the safety issue.  
10 And, oh by the way, it's consistent with the Policy. That's how we  
11 approached it.

12 COMMISSIONER OSTENDORFF: Okay. Thank you both. I  
13 appreciate it.

14 CHAIRMAN BURNS: Commissioner Baran?

15 COMMISSIONER BARAN: Thanks. I want to join my  
16 colleagues by thanking all of you and the rest of the staff for your hard work on  
17 this very important draft Proposed Rule. I actually think it's a testament to the  
18 quality of your work that the questions you're getting are largely focused on  
19 just a couple of key provisions. And so I'm going to focus my questions on a  
20 couple of key provisions.

21 In the 1990's, as we discussed in the first panel, all operating  
22 reactor licensees voluntarily committed to update, maintain, and train on the  
23 SAMGs. And 15 years later, following the accident at Fukushima, NRC  
24 inspected those volunteer initiatives. That was before my time on the  
25 Commission, so my staff and I, we dug into the actual findings. And from my  
26 point of view at least, the results were not reassuring.

1                   In Region 1, inspectors found that SAMG triggers at one site  
2                   had not been revised since initial issuance in 1998. Even though they were  
3                   directly impacted by license basis changes over the years, such as power  
4                   uprights. Inspectors, therefore, concluded that the SAMGs were not  
5                   maintained at that site.

6                   At another site, this one in Region 2, eight of the 33 emergency  
7                   response organization members were not qualified on SAMGs. And two of  
8                   the four site emergency directors didn't have any SAMG training. In Region  
9                   3, one site had not fully implemented the initial owner's group SAMGs from the  
10                  1990's or any of the subsequent revisions. Inspectors also found that no  
11                  exercise or drill had been conducted at the site since 1998 and ongoing  
12                  training on SAMGs did not exist at that site.

13                  So, Mike or Bill, based on this history, if NRC doesn't require  
14                  SAMGs, can we be confident that they will be maintained and effective at  
15                  every plant in this country in the event that they're needed?

16                  MR. DEAN: So my simple answer would be no, but with a  
17                  caveat. It really, in my mind, as somebody that has some foundation in  
18                  inspection activities, that if it isn't something that the NRC is going to look at,  
19                  the likelihood that it's going to lose focus. Right?

20                  And that was an issue that was actually raised to the  
21                  Commission when we had the dialogue on Recommendation 1. There was a  
22                  big part in there about voluntary initiatives and what should the treatment of  
23                  voluntary initiatives be. So absent, I think, an appropriate regulatory  
24                  framework that allows us to continue to focus on a particular area that we feel  
25                  is important, I think it makes it difficult to provide absolute assurance that  
26                  they're going to be maintained.

1 COMMISSIONER BARAN: What do you think Mike?

2 MR. JOHNSON: And I just -- I'm going to say some things that  
3 have already been said, but I just can't stop myself since you asked the  
4 question. I think Bill's right and it's not -- we've heard a very balanced  
5 discussion I think about SAMGs in the context of will they be maintained. I  
6 think the industry has done good work, even as we all learned about SAMGs.

7 Incidentally, TEPCO had SAMGs on the day of March 11 when  
8 the accident happened. It turns out there were problems with those SAMGs  
9 and the staff couldn't implement those SAMGs given the conditions they had.  
10 But they had SAMGs and to the extent they could use those, it benefitted  
11 them.

12 We all learned the importance of SAMGs and we've made  
13 changes to improve their importance or improve their usefulness as we go  
14 forward. It's because we see they're important and it's because we recognize  
15 what can happen if you have an accident and you don't have the ability to deal  
16 with, make decisions about what should happen in the plant post-severe  
17 accident, it's because of that, that we want a fair amount of assurance that  
18 plants will have them, they'll be trained on them, that they'll be maintained.

19 That's the discussion that we're having. Nobody disagrees.  
20 All the lesson learns report talk about the importance of SAMGs and the  
21 importance of their training, so on and so forth.

22 COMMISSIONER BARAN: If the NRC doesn't require SAMGs  
23 and a plant chooses not to implement them or not to keep them up to date,  
24 what recourse would the agency have?

25 MR. DEAN: I partially addressed this I think in an earlier remark  
26 relative to, for example, if it's a committed to initiative, so like the groundwater



1 initiative that Mr. Pietrangelo talked about earlier, where you have a vote by  
2 the membership and 80 percent say, yea verily this will be a requirement we're  
3 going to impose upon ourselves, and a licensee that provides us something  
4 that commits to that on the docket, we can certainly have a finding in the  
5 reactor oversight process that would say, they fail.

6 But to compel them to do something is what Mike was saying  
7 earlier. We would have to -- the burden would be on us then to develop some  
8 backfit analysis, site specific backfit, that would compel them to have to  
9 impose whatever the requirements were.

10 COMMISSIONER BARAN: So as a practical matter, we  
11 wouldn't be able to enforce -- in the absence of a regulatory requirement, we  
12 can't enforce?

13 MR. JOHNSON: Correct.

14 COMMISSIONER BARAN: I know ACRS recommended that  
15 SAMGs be implemented on a voluntary -- as a voluntary initiative. How  
16 would that proposed approach differ from the current voluntary commitments  
17 that licensees have made on SAMGs? Would it? Is there any difference  
18 between what the ACRS is imagining and the status quo?

19 MR. JOHNSON: So, Tim, you guys will really need to help me  
20 with this. But I'll start it off. I think what the ACRS had in mind was each  
21 licensee writing in on the docket a commitment to the standard. In this case  
22 NEI-1401 as it relates to SAMGs. I think that's what they had in mind.

23 And then, the rest of the approach from their perspective would  
24 be, again, that we would have some eyes on it through the oversight process.  
25 So we don't have a plant specific commitment today on SAMGs and we don't  
26 have oversight. We did at TI-184, but -- so those are sort of the differences I

1 guess.

2 COMMISSIONER BARAN: Do you want to add something?

3 MR. REED: Yes. I think, and I was obviously at the ACRS  
4 meeting there, that the proposal from industry was really going down the path  
5 of making it -- matching up to voluntary initiative with our proposal and making  
6 it basically the same thing. And I think that's what the ACRS was thinking. If  
7 it becomes basically the same elements in our Proposed Rule, then isn't that  
8 achieving the same regulatory end-state? So I think that's important to have  
9 that context.

10 COMMISSIONER BARAN: Mike or Bill or if somebody else  
11 wants to chime in. I mean, this is a little bit of a continuation of a question I  
12 asked from the first panel. But given that we know that the voluntary  
13 approach didn't result in fully updated and maintained SAMGs, how could we  
14 require flex equipment as a matter of adequate protection and then not require  
15 the guidelines necessary to ensure the effective use of that equipment in  
16 certain severe accidents? Why would that make sense?

17 MR. DEAN: Well, I think on one level -- I mean, I heard Mr.  
18 Pietrangelo's response where he said, well, the flex equipment is intended to  
19 prevent core damage. SAMGs are procedures that would come into play or  
20 guidelines that would come into play after core damage occur. But that being  
21 said, you would still be relying upon I would assume in a core damage  
22 situation, the flex equipment and there would be aspects of the SAMGs  
23 guidelines that would be directed towards the flex equipment.

24 I even -- personally, I draw more of a parallelism to the fact that  
25 we've required in 50.54(hh)(2) the extensive damage mitigation guidelines.  
26 That's required by the Rule to have those for a large fire explosion on the site.

1 I see a lot of parallelism there in terms of we've required them to have  
2 procedures, the EDMGs, the guidelines for that rare and unusual, beyond  
3 design basis event.

4 So I see a lot of parallelism here in terms of for other things that  
5 could cause beyond design basis events, wouldn't we want to have a  
6 requirement for the procedures that would dictate how a licensee would  
7 pursue recovery in response?

8 MR. JOHNSON: And may I also just -- the other item that I think  
9 guided us a little bit or at least provided a context for us -- and it is true that  
10 when the Commission decided to issue the Mitigating Strategies Order, it was  
11 an adequate protection and so of course you would -- those flex strategies  
12 have to be -- would be a part of that requirement.

13 But we were thinking also, when we moved to hardened  
14 containment vents for Mark 1 and Mark 2 containments and then making them  
15 severe accident capable, then the Commission decided that to add on to this  
16 adequate protection requirement for hardened containment vents to make  
17 them severe accident capable a requirement that they be capable of  
18 performing their function post-severe accident.

19 So in our minds, the Commission had already taken the step.  
20 There are already strategies. There are actions going on, on a schedule to  
21 make those vents be capable in a severe accident environment for Mark 1 and  
22 Mark 2 in a limited, narrow scope.

23 I think I can say that the Commission's already requiring for  
24 them SAMGs, if you will. In the severe accident guidelines or procedures to  
25 be able to make sure that they can operate. So we were -- in our minds, we  
26 weren't leaping forward, leaping to a different space with respect to requiring

1 severe accident management guidelines. It was very consistent with where  
2 we've been marching, if you will, given what, again, the accident, the learnings  
3 about that accident told us about what needs to happen to ensure safety, add  
4 defense in depth, those kinds of things.

5 COMMISSIONER BARAN: I'm over on time, but I'm going to  
6 ask just a couple follow-up questions to close us out. During last month's  
7 Commission meeting with the ACRS, I asked about the site specific benefits of  
8 SAMGs and the limited quantitative analysis in this area. And Sherman  
9 Stuttgart indicated that SAMGs may very well be a case where the staff  
10 doesn't currently have the tools to do a full quantitative analysis. Do you  
11 agree with that? Do you lack the tools you would need to do a full --

12 MR. REED: Yes. I certainly agree with that. In fact, I tried to  
13 bring it up during my presentation about as a practical matter, what it would  
14 have taken for us to develop that. So, yes, I certainly agree with that.

15 COMMISSIONER BARAN: Well, I'm holding right here the  
16 SRM on qualitative factors. And it says, use qualitative factors when  
17 quantitative analyses are not possible or practical due to lack of  
18 methodologies or data. And I think I can quote you, Tim. I think you said, as  
19 a practical matter, you simply couldn't do it. Is that right? Quantitative  
20 analysis --

21 MR. REED: I think I probably did say that.

22 COMMISSIONER BARAN: I wrote it down. So this would  
23 appear to be a situation where the use of qualitative factors is warranted.  
24 Just briefly, because I know I'm over, when you all looked at qualitative  
25 factors, did you -- you mentioned that when you look at it quantitatively, you  
26 think there's a small safety benefit.

1                   If you were able to do all the quantitative analysis you'd like to  
2                   be able to do, that's what do you think the outcome would be. As I read the  
3                   Proposed Rule and the regulatory analysis, you found that when you applied  
4                   qualitative factors as well, that there was a substantial safety benefit. Is that  
5                   right?

6                   MR. JOHNSON: Yes.

7                   COMMISSIONER BARAN: Requiring SAMGs would produce  
8                   a substantial safety benefit?

9                   MR. JOHNSON: Yes.

10                  COMMISSIONER BARAN: And we heard on the first panel  
11                  that, that would yield a substantial safety benefit. It would yield essentially no  
12                  burden to industry. Is that right? That's what we heard from NEI. That  
13                  because of what they're doing, there's no burden.

14                  MR. JOHNSON: Yes. So just to -- yes, Commissioner, I don't  
15                  disagree with anything you said. As we step through, Fred Schofer in the  
16                  room, step through, with his team, step through every aspect, each of the  
17                  attributes, some of which are quantitative and we quantify them to the extent  
18                  that we could, some of which are, incidentally, qualitative.

19                  But we stepped through every one of those attributes, including  
20                  the attribute of other considerations, looking at the area of defense in depth,  
21                  which could not be quantified, and it was a sum collection of all of those things  
22                  that we offer up for the decision maker. And that's all we did. We did that,  
23                  we -- based on the insights of that, we offer all of that up.

24                  And we'll go where the Commission takes us with respect to  
25                  that. But I think the way in which we approached it, including the use of  
26                  qualitative factors, is consistent with the direction provided by the Commission

1 to the staff in the SRO.

2 COMMISSIONER BARAN: And so you've done some real  
3 work to justify including this in a proposed rule to get public comment?

4 MR. JOHNSON: Yes.

5 COMMISSIONER BARAN: Okay. Well, I thank my  
6 colleagues for their indulgence. I went a little bit over there. And I'm done.  
7 Thank you.

8 CHAIRMAN BURNS: Okay. Commissioner Svinicki?

9 COMMISSIONER SVINICKI: Just quickly, in listening to the  
10 engagement between Commissioner Ostendorff and John and Mike on the  
11 forward fit new reactor provision. I just want to make the following  
12 observation. When Mike said the staff framed it say why does it make sense  
13 not to require more of a reactor where walls aren't poured and rooms don't  
14 exist yet?

15 I don't frame the question that way. I frame it as a first  
16 principle, what do my authorities allow me to compel or require based on the  
17 kind of analysis that I'm required to do? So it's a little bit different framing.

18 And then I would put forward to you that there is a difference  
19 between a Policy Statement that encourages the simplified systems to reduce  
20 required operator actions and a regulatory requirement that requires the  
21 minimization of those actions. And I think there are steps in getting from one  
22 to the other that we skipped in this case. So, thank you, Mr. Chairman.

23 CHAIRMAN BURNS: Commissioner Baran?

24 COMMISSIONER BARAN: I don't have any questions.

25 CHAIRMAN BURNS: Okay. All right. Well, again, thank you  
26 for the presentations from all our first panel and the staff panel today. The

1 Proposed Rule we'll take under advisement. I know the Commission is  
2 already thinking hard on it in terms of some of its content.

3 It represents, again, a significant effort from our evaluation and  
4 thinking of the lessons learned from the Fukushima Daiichi accident. And it's  
5 important we continue through and as we do it, continue the dialogue with  
6 various stakeholders who have an interest in this Rule as we go forward.  
7 And again, appreciate the informative presentations. And with that, we stand  
8 adjourned.

9 (Whereupon, the above-entitled matter went off the record at  
10 12:16 p.m.)

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