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U.S. NUCLEAR REGULATORY COMMISSION

WORK ORDER 64
BRIEFING ON THE JAPAN NEAR TERM TASK FORCE
REPORT
SHORT-TERM ACTIONS

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TRANSCRIPT OF PROCEEDINGS

Public Meeting

Before the U.S. Nuclear Regulatory Commission:

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Kristine L. Svinicki, Commissioner

George Apostolakis, Commissioner

William D. Magwood, IV, Commissioner

William C. Ostendorff, Commissioner

APPEARANCES

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Chairman, Industry Fukushima Response Steering
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Thomas Cochran, Consulting Senior Scientist, Nuclear
Program, Natural Resources Defense Council

Ed Lyman, Senior Staff Scientist
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Sue Perkins-Grew
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1 PROCEEDINGS

2 CHAIRMAN JACZKO: Good morning everyone. We meet today to
3 discuss the Japan Near Term Task Force report and staff's short term
4 assessment of that report. We have a lot to cover today so I probably won't
5 make much in the way of comments. I just ask people to stick to their five
6 minutes so we can make sure everybody gets through and then we make sure
7 the Commission has ample time for questions and answers.

8 I'd ask if my colleagues have any questions or comments they'd like
9 to begin with. Okay. We'll start with -- who are we starting with. We're going to
10 start with Bill -- how do you say your last name?

11 WILLIAM LEITH: Leith.

12 CHAIRMAN JACZKO: Leith, who is the Earthquake Hazards
13 Program coordinator at the U.S. Geological Survey.

14 WILLIAM LEITH: Is this on?

15 CHAIRMAN JACZKO: If the red button is on then it's on.

16 WILLIAM LEITH: Thank you for inviting me to participate in this
17 review. The materials that I've provided to you are background in case you have
18 questions or the basis for further discussion. I won't be showing any slides.
19 First, let me emphasize the strong collaboration between the USGS and the NRC
20 Office of Research and the Office of New Reactors, through which we have
21 multiple projects at several USGS science centers. At the USGS we participate
22 in combined operating license reviews on seismological and geological topics for
23 the Office of New Reactors. We conduct research on eastern U.S. earthquakes
24 and participate in working groups to evaluate ground motion data. We provide
25 alerts of strong ground shaking at nuclear plants in the United States and

1 worldwide, through a system called Shake Casts. And we have recently
2 evaluated tsunami hazards in the Atlantic and Gulf coasts and earthquake
3 monitoring needs in the eastern U.S., in support of nuclear plant safety.

4 I've been asked to comment on Recommendation 2. USGS agrees
5 with Recommendation 2, and I offer the following explanations. First, regarding
6 Recommendation 2.1: both the USGS and NRC researchers determine
7 earthquake hazards using probabilistic seismic hazard analysis, or PSHA. The
8 framework of PSHA allows us to incorporate new information, such as the recent
9 Virginia earthquake, in a coherent, structured, reproducible, and transparent
10 fashion. The deterministic method and for the Appendix A, for existing nuclear
11 power plants, is much more ad hoc, in terms of how new information is
12 incorporated. So, Recommendation 2.1 should be undertaken using modern
13 PSHA approaches, and I believe that this work could be done in the very near-
14 term.

15 NRC and USGS have been working together on implementing the
16 USGS model within the NRC process, that's used for a Generic Issue 199
17 screening, that project that is performing evaluations of hazard and risk of
18 existing nuclear power plants, and also, on the new Seismic Source
19 Characterization Model for the central and eastern U.S., which is being finalized
20 now.

21 Second, regarding Recommendation 2.2, at the USGS, we update
22 our national seismic hazard maps every six years. These are the basis for
23 modern earthquake resistant building codes at critical facilities, other than
24 nuclear power plants, such as large dams. Periodic updates or reassessments
25 are required ever seven to 12 years for both earthquake and flood hazards.

1 Such requirements are placed by, for example, the Army Corps of Engineers and
2 the Bureau of Reclamation. Recommendation 2.2 is, therefore, consistent with
3 the requirements for other non-nuclear, critical facilities, and would keep
4 earthquake hazard assessments for nuclear plants in sync with current
5 knowledge.

6 I should also remark on the issue of outdated seismic
7 instrumentation at many nuclear power plants. The lack of modern
8 instrumentation not only hinders the quick, well-informed decision making on the
9 part of the licensee and by the NRC, but it severely limits an engineer's ability to
10 understand the response of plant structures, systems, and components to strong
11 ground motion. For example, to understand the input ground motions to the dry
12 stores cask facility at the North Anna Nuclear Power Plant on August 23rd.
13 Modern, digital instrumentation is reliable and relatively inexpensive. Since the
14 operating base's earthquake and the state shutdown earthquake are defined as
15 free-field motions, every plant should, at a minimum, have a modern, digital free-
16 field instrument with automated processing.

17 In conclusion, I view these recommendations of the Near Term
18 Task Force as simply best practices to update seismic hazard analyses to reflect
19 current knowledge and to update seismic instrumentation to take advantage of
20 current capabilities, given the Commission's Defense-in-Depth philosophy, to
21 adopt current best practices simply fully justified. Thank you.

22 CHAIRMAN JACZKO: Thank you. We'll turn to Chip Pardee, who
23 is wearing many hats .

24 CHARLES PARDEE: Good morning. The hat I have on this
25 morning Mr. Chairman, is that representing the industry for Recommendations 2,

1 4, 5, 7, 8, and 9. And actually, we are introducing some discussion in the spent
2 fuel pools that is somewhat distinct from the recommendations that the staff has
3 provided you folks.

4 The industry that I am representing includes the owner-operators of
5 the -- of the nuclear commercial generating stations here in the United States,
6 the Institute of Nuclear Power Operations, the Electric Power Research Institute,
7 the Nuclear Energy Institute, the significant design manufacturing and
8 engineering corporations here in the United States, such as General Electric,
9 Westinghouse, Areva, and others, as well as the owners groups for the various
10 operating units that we have today; so a broad and diverse group of people.

11 That organization, at large, had people in Japan during the event. And some of
12 our member companies had workers at Fukushima Dai-ichi during the event. We
13 very quickly, after the event, dispatched teams to Japan for the purposes of both
14 support to the Japanese companies that were involved, as well as for gathering
15 our owned Lessons Learned, contemplating the analysis that would have to be
16 done, post-event, to search for Lessons Learned that would be applicable here.

17 Very rapidly after the event, we stood up the Fukushima Response
18 Steering Committee. I was designed as chair, we issued the Way Forward
19 document. We've been in to talk to staff and the Commission about the Way
20 Forward document, which establishes our goals and the governance for that.
21 And so my comments today will largely be reflective of our activities to date,
22 where we think we have short-term priorities to stick with today's agenda, and
23 spend a little time comparing and contrasting the staff recommendations versus
24 what the industry has determined would be the best expenditure of our resource,
25 in the short-term, to improve our safety posture.

1 The industry has a lot of experience from learning from events such
2 as Fukushima Dai-ichi. Here in the United States, we of course have the Three
3 Mile Island accident. A great deal of learning's from the Chernobyl accident.
4 We've had a number of externally imposed challenges to our nuclear plants over
5 the decades, such as Hurricane Andrew, Hurricane Katrina. Issues with the
6 space program have caused us to reflect on our command and control structures
7 and our operator training programs, and such. We have Lessons Learned from
8 the Deep Water Horizon accident in the Gulf of Mexico of -- a relatively recent
9 history. So, we are well-positioned to learn from lessons, both within our industry
10 and without, and to take decisive actions. And I think what I'll talk about briefly
11 today is a reflection of those actions.

12 In my materials, I do not intend to go page-by-page, line-by-line, I
13 think, with the time constraints, the introductory comments, time is best served
14 setting the stage rather than getting into the specifics. And I'll be prepared to
15 answer your questions when we get into the question and answer period. I
16 would like to say that the industry largely agrees with the recommendations the
17 staff is providing you. There's a great deal of alignment with what we think the
18 priorities are and our capabilities to undertake this work quickly. There a few
19 exceptions, which I'll point out. But I do not wish the time spent on the
20 exceptions to cloud the general agreement that we have with the -- with the staff
21 and their recommendations.

22 I think the closest analogue that we have to this from the industry's
23 perspective is the events post-9/11. And I think it is self-explanatory why we
24 would use that as a principal analogue as we do these evaluations. There are
25 some differences that I'd like to point out that have colored our response thus far.

1 One: The events of 9/11, by and large by the industry, were not contemplated.
2 We had never really thought about the use of large aircraft as a weapon. And
3 the other significant difference is unlike the events of 9/11, where our activities at
4 the generating stations largely reflected on security, perimeter security, our
5 posture with regard to information flow and such, the learning's from Fukushima
6 will very clearly land principally on operations and operations engineering. And
7 we have a considerable concern with distracting the operators and the operating
8 engineering organizations from their principal mission, and that is running these
9 power plants as safely as we possibly can.

10 That's not to say that there aren't learnings that should be
11 incorporated, but unlike the events of 9/11, we could clearly and easily overload
12 our operations staff, for example, in the analysis of these events. And we think,
13 in balance, that would be a net loss to our safety posture. So, we think that it's
14 very important to have this very deliberative process upfront to make sure we
15 don't overload operations.

16 I'll now quickly go through my comments and I am mindful of the
17 time here, Mr. Chairman.

18 CHAIRMAN JACZKO: [inaudible]

19 CHARLES PARDEE: Okay, very quickly. And I don't know if you
20 were able to follow along. I presume that you are. On the page regarding the
21 industry actions we do think it's very important that NRC and other stakeholders
22 spend time comparing timelines on a fact basis of our understanding the events
23 in Japan, based on what we have learned because, as you know, the information
24 has been somewhat slow in coming here from Japan. And our analysis is
25 ongoing.

1 All right. Number two, the seismic Recommendation 2. The
2 seismic and flooding design basis, we are largely in agreement. I think our one
3 caution would be that in order to incorporate the GI-199 process to the deliberate
4 evaluation of seismic risk, we need to make sure we have realistic time frames;
5 there are very limited resources for experts in seismic hazard analysis, as Mr.
6 Leith described, and it would be very difficult for us to do that at all operating
7 units, in a short timeframe, within a year or so. With that said, we think we can
8 do that at.

9 CHAIRMAN JACZKO: Has to -- we've got all the information here,
10 but we do -- we do need to move on. If I give you --

11 CHARLES PARDEE: Okay. Your choice.

12 CHAIRMAN JACZKO: -- extra five minutes, then I've got to give
13 everybody an extra five minutes, and that's an extra 30 minutes. So -- but we
14 have all the stuff here, so the Commission has all of it to look at, and I'm sure
15 there'll be an opportunity to flesh it out in questions. Mr. Cochran?

16 THOMAS COCHRAN: [unintelligible] this is a tall order for me.

17 But --

18 CHAIRMAN JACZKO: You're under the same restrictions as Chip
19 was. So --

20 THOMAS COCHRAN: [unintelligible]. Well, I'll just go through my
21 slides fairly quickly. The problem with Recommendation 2.1, and 2.3 -- or one of
22 the problems is I don't think they go far enough. I mean, this is a -- this was a
23 statistical event --

24 ANNETTE VIETTI-COOK: Closer to the mic.

25 THOMAS COCHRAN: And I think you ought to look at this as a

1 statistical event -- in Japan -- and really apply what you're trying to do, with
2 respect to seismic and flooding across the board, to all of the significant
3 contributors to core damage frequency. Because we now know that, at least on
4 a worldwide basis, that core damage frequency is higher -- much higher than
5 what it should be. And I think you need to broaden your scope on this one.

6 The staff attempts to resolve some of the issues related to
7 processing criteria, but they didn't drop the order at the end. So, and I don't think
8 that was a good recommendation. On SBO coping, I think you should bite the
9 bullet and just order the licensees to provide eight hour coping. I mean, it's going
10 -- it's going to happen in the rulemaking. You know what the problem is. You
11 don't have to fool around with a bunch of rulemaking. The order -- these guys
12 are running nuclear reactors. You ought to be able to order them to provide eight
13 hour coping and expect them to provide eight hour coping. If they can't do that,
14 they shouldn't be running nuclear reactors.

15 Hardened vents: We were troubled by the fact that the staff had
16 backed off on the task force recommendation with respect to Mark IIs. And
17 they've asked for another 45-days to analyze the situation with -- which I think
18 doesn't speak well for the staff if they don't understand the Mark IIs already going
19 into this process. Again, we know the problem. We ought to simply order the
20 hardened vents on the Mark IIs.

21 We were troubled by the complete omission of Recommendation 7
22 in the staff review. We think that's uncalled for. We think you should get on --
23 this is not a necessarily near-term issue, but you should get on with moving the
24 spent fuel into dry casks. The National Academy of Sciences recommended that
25 you study this issue on a plant-by-plant basis and you apparently have not done

1 so.

2 Emergency response: You know, this is, again, an effort to
3 coordinate the various guidances that they operate under. And again, you know,
4 if you're the commanding officer and you want somebody to clean up the
5 management, you order them to clean up the management. And you don't
6 expect them to come back and ask for, you know, more information and et
7 cetera, et cetera. I mean, these are operators of nuclear plants. They ought to
8 operate like commanders of nuclear submarines. And you ought to be able to tell
9 them what needs to be done and expect them to do it. And I think the staff gets
10 confused between when it's appropriate to get involved in a detailed rulemaking
11 and when it's appropriate to tell somebody to do something, to improve the safety
12 of the reactors now. And you're seeing that in the positions taken by the staff as
13 a whole, versus the positions taken by the task force. I think the task force
14 operates more like a Navy chain-of-command or even was expected just to
15 operate like a Navy chain-of-command. The staff expects us to operate like the
16 Congressional Research Service.

17 On Recommendation 9, we agree with this recommendation. We
18 don't agree with the staff recommendation to issue a request for information
19 along the same lines. Our concern with 9, just to close, is that the way you treat
20 severe accidents is through -- in terms of risk reduction assessment, is through a
21 cost-benefit analysis. And where you're discounting collective dose and
22 economic damage and weighing it by core damage frequency and wind direction
23 frequency. And at the end of the day, you don't take additional requirements to
24 ensure that you are not operating these plants in heavily populated areas or
25 areas where you could have very severe economic damage. And it's because

1 you've averaged everything out and you're only looking at the averages rather
2 than the distribution of the effects that may occur.

3 CHAIRMAN JACZKO: All right. I ask you -- I have to ask you to
4 wrap up there.

5 THOMAS COCHRAN: I'm finished.

6 CHAIRMAN JACZKO: Okay. Great. Thanks. Now, I'll turn to Ed
7 Lyman. He's the senior staff scientist at Union of Concerned Scientists.

8 ED LYMAN: Good morning. And behalf of the UCS, we appreciate
9 the opportunity to present our comments on these very important issues.
10 Overall, UCS strongly endorses the need for swift and comprehensive action by
11 the NRC to identify and eliminate the safety vulnerabilities that have been
12 highlighted by Fukushima, but also by other outstanding issues associated with
13 decline in safety margin Defense-in-Depth across the board.

14 I'd like to comment on the issue of orders. We do believe that
15 orders are appropriate in many of the circumstances that have been outlined by
16 the task force, but there's some issues that have to be considered. I've been
17 looking at the history of the implementation of the B.5.b orders. And there is
18 some information that's come out into the public that the process which concerns
19 us. Those orders were issued February 25th, 2002, but the final guidance for
20 actually how to comply with them was not endorsed until well over four years
21 later. And then inspections, based on that guidance, weren't completed for
22 another two years, and even after that, there were still open issues.

23 From the publicly available history, it looks like this was largely due
24 to Nuclear Energy Institute and the industry disputing the language in the orders,
25 quibbling with the definitions of concepts like what is readily available equipment

1 and what isn't, disputing what parts of the orders were actually legally binding.
2 All of that happened under -- behind closed doors because the B.5.b was a
3 security-related issued. We think if that process had been out in the open that
4 the industry would not have been able to stonewall as much as they have. And
5 we do not -- we hope that we -- there's not going to be a repetition of that process
6 in trying to implement the orders associated with the post-Fukushima actions.
7 So, you need to be as clear as possible in specifying language of the initial
8 orders, so that there is no dispute about what the language means. And that
9 kind of game-playing can't go on.

10 So, in detail, with regards to some of the recommendations, with
11 regard to 2, we certainly agree that the actions needed to address the current
12 seismic and flooding risk profiles. We think, again, some of the information that's
13 come out since Fukushima through FOIAs shown that there does not appear to
14 be any margin with regards to seismic or flooding risk from any plants, according
15 to the data that's been disclosed. And that contradicts what the NRC's public
16 statements have been about the availability of ample margin for all our plants.

17 The draft generic letter could provide a good evaluation basis, at
18 least for the seismic risk. But we're concerned with the time lines; one to two
19 years are too long, and also the fact that the industry will still have the option of
20 doing seismic margin analysis versus a seismic PRA could confuse the public
21 because it wouldn't be one consistent basis.

22 We understand that there are resource issues, but that will have to
23 be worked out so you have the most effective, and efficient, and timely way to
24 resolve those issues.

25 On 4, I'd like to highlight, again, our concern about the B.5.b

1 measures. Credit should not be given to any B.5.b measure for a use for which it
2 was not originally approved, that is, to deal with loss of large areas of the plant
3 due to explosions and fires unless you can actually show that that equipment will
4 be available and that it can be used. And again, information that's come out
5 through the Freedom of Information Act requests have shown that the staff --
6 there had been disputes over the nature of the B.5.b measures, even after they
7 were approved by staff and whether they could actually be effective under real-
8 world scenarios.

9 In addition, all SBO-related measures, we think it could be ordered
10 very quickly would be the requirement for reliable backup power for hydrogen
11 igniters and the ice condensers in the Mark IIIs. This is a long standing issue.
12 I've spoken to the Commission several times on this issue over the last decade.
13 And again, the Freedom of Information Act request data has shown that this
14 issue was actually worked behind the scenes for a long time. The Commission
15 actually did order the industry to do this and it never happened. It still remains a
16 voluntary measure, and we wonder why.

17 Again, on Recommendation 7, we don't think that the staff has
18 provided adequate justification for why all spent fuel issues should be deferred.
19 And we think that there are subsets that could be addressed and should be
20 addressed more quickly.

21 On Recommendation 8, the integrations of EOPs with SAMGs and
22 EDMGs is long overdue. And the, again, the history that was studied showed
23 that it was an explicit choice by the industry not to -- or to fight the NRC on
24 whether EDMG procedures should actually be formally integrated with the other
25 plans. The final rule on 50.54(hh) eliminated requirements to actually have

1 procedures in favor of what's called guidance and strategies that I think led to this
2 very mushy, general set of plans that we have no confidence can actually work
3 under a severe accident or a severe terrorist scenario.

4 So, I'll stop there. I just want to conclude that the flexibility is not
5 always a good thing. If -- if the plans are too general -- because you want to be
6 flexible -- that actually when you have to deal with the details in an urgent basis,
7 that they're not going to work. So, in lieu of flexibility, you need to define a set of
8 rough scenarios and actually work them through, from beginning to end, to make
9 sure they work. Thank you.

10 CHAIRMAN JACZKO: Thank you. I will now to Sue Perkins-Grew,
11 who is the Director of Emergency Preparedness at NEI.

12 SUE PERKINS-GREW: Thank you, Mr. Chairman. Good morning,
13 Commissioners. To amplify Chip's remarks, industry's multiple reviews of the
14 Fukushima event -- accident -- also includes analysis by the industry's
15 emergency preparedness leadership. Our assessment of the events in Japan
16 lead us to agree with the task force position that the existing emergency planning
17 technical basis remains valid, and that existing emergency preparedness
18 programs are effective in protecting public health and safety.

19 Recommendation 9 identifies a variety of proposed actions to
20 enhance responses to an event with wide-area damage and effecting multiple
21 units at a site, including prolonged loss of off-site power. It is important to keep
22 in mind that these are enhancements too, and not the correction of deficiencies
23 with the existing regulations and programs. Any new requirements to enhance
24 response should be integrated to existing programs in a manner that does not
25 distract from the capability and readiness to respond to more likely events.

1 As discussed in the SECY-11-0124 that we released earlier this week, the first
2 near-term recommendation would require licensees to perform a study to
3 determine required staff to fill positions to respond to a multi-unit event. This
4 would be in addition to the EP rule change that requires a comprehensive
5 analysis of on-shift staffing. In the SECY, the staff also recommends that
6 licensees also perform an additional multi-unit staffing analysis, in conjunction
7 with implementation of this current EP rule change.

8 A staffing analysis for an event that affects multiple units will require
9 the creation of additional criteria and instructions. This includes defining the
10 event characteristics, the simultaneous occurrences, the timing of the responses,
11 and the coping strategies. These criteria should also be informed by any other
12 changes being contemplated in the other areas, such as the integration of EOPs,
13 and the severe accident management guidelines.

14 Sufficient time needs to be allotted for the staff and the stakeholder
15 engagement to support the development of the analysis criteria and instructions,
16 and also to revise the associated methodology. If the recommendation to
17 perform the additional staffing study is approved, then the effective date of the
18 ERO staffing analysis rule change should be extended by at least six months to
19 accommodate this process.

20 The second EP near-term recommendation discussed in the SECY
21 concerns evaluating enhancements to power sources for communications
22 equipment. Industry is, again, prepared to engage with all stakeholders to inform
23 the technical bases, the acceptance criteria, and implementation schedule for
24 this enhanced capability.

25 With respect to moving forward to the other recommendations that

1 are listed in the Recommendation 9 in the task force report, we believe that the
2 following items should be accomplished through rulemaking: licensed operators
3 being assigned to facilities outside the control room, new drill and exercise
4 requirements, and upgrading the emergency response facilities to improve
5 response for a multiple unit event. Rulemaking in these areas would provide the
6 necessary regulatory structure and promote consistent implementation and
7 predictable inspection.

8 Development of the revised regulatory and industry guidance
9 should be sufficient to address the other recommended enhancements, which
10 would include the multiple unit dose assessment capability and command and
11 control structure.

12 It should be recognized that the regulatory changes already in
13 progress are having a significant, cumulative impact on licensee resources.
14 Licensees will be implementing many required changes to emergency
15 preparedness programs over the next few years. Key drivers to these changes
16 include the new EP rule and the associated guidance, supplement 4 to NUREG
17 0654 -- excuse me, supplement 3 to NUREG 0654, and the cyber security rule.
18 In additional, licensees will be assisting their off-site response organization
19 partners with implementation of the new requirements promulgated by the
20 revised FEMA REP program manual.

21 The scope and number of the new requirements are quite
22 challenging; requires significant change management, and implementation on a
23 project scale. And of course, implementation of these changes must be done
24 while maintaining proper focus on existing program performance. A noted
25 strength of the recent EP rulemaking process was the staff's willingness to see

1 comments on all draft materials from affected stakeholders. The quality of the
2 final product was significantly improved by the evaluation and incorporation of
3 these comments. We encourage that the staff will again seek stakeholder input
4 as they navigate through the near-term and long-term recommendations.

5 In summary, the industry finds the proposed actions outlined in
6 Recommendation 9 would indeed enhance emergency response capabilities.
7 Because they are enhancements to existing emergency preparedness programs,
8 they should be prioritized in the manner that is reasonable with due consideration
9 of the cumulative impact of the implementation requirements of the new EP rule
10 and the associated guidance, as well as the FEMA REP program manual. That
11 concludes my prepared remarks and thank you for this opportunity.

12 CHAIRMAN JACZKO: Thank you. I will now turn to Patrick
13 Mulligan, who is with the State of New Jersey and the Federal Radiological
14 Preparedness Coordinator Committee.

15 PAT MULLIGAN: Thank you, Mr. Chairman. Good morning,
16 Commissioners. I wanted to first take the opportunity to thank you for the
17 invitation to participate in this panel discussion. And also, for the work that you
18 and your staff have completed thus far on this very important topic.

19 Today, I'm going to talk about NRC staff recommendations for
20 emergency preparedness and more specifically, about offsite resources and
21 communication.

22 The DHS, in cooperation with state government, had been working
23 diligently on the National Emergency Communications Plan for some time. All 50
24 states and six U.S. territories have developed state-wide communication,
25 interoperability plans that identified near and long-term initiatives for improving

1 communication and for enhancing communication networks. These initiatives
2 provide a mechanism to evaluate new technologies and their applicability to state
3 and local response organizations. Further, many state governments have
4 agreements in place to tap into their resources of the Army National Guard, who
5 can provide portable and easily deployable satellite communications, if
6 necessary.

7 NRC rulemaking enhancements to emergency preparedness and
8 FEMA guidance updates will require additional investigation into backup alert and
9 notification systems for nuclear power plant accidents. These requirements will
10 provide another means to enhance effective communication with the public under
11 adverse conditions.

12 In light of the ongoing efforts at the federal and state level to
13 evaluate communication strategies and implement new technologies, I agree with
14 the assessment of NRC staff that there are sufficient redundant and diverse
15 communication methods with NRC and state and local governments.

16 The document staff assessment of Near Term Task Force
17 recommendation identifies three areas within emergency preparedness for
18 immediate action. They deal with staffing necessary to fill all positions during a
19 multi-unit event, backup power for communications equipment during a
20 prolonged station blackout, and having licensees modernize the ERDS initiative
21 by June 2012 to ensure multi-unit site monitoring capability. Each of the
22 identified areas for immediate action are critical to enhancing response
23 capabilities in light of the events in Fukushima. I agree with the
24 recommendation of the staff to move forward with these initiatives in order to
25 identify gaps that could impede effective response effort, and take immediate

1 actions to close those gaps. I do want to take a few minutes to highlight some of
2 the issues identified in the task force report that were not recommended for near-
3 term action, and perhaps raise some additional concerns that we're not included
4 in the report, but certainly need more attention in the near term.

5 First, the task force highlighted the shortcomings of those
6 assessment models to evaluate accident sequences from multiple reactor sites,
7 and or multiple spent fuel pools. While this is not identified in the near-term
8 recommendations for immediate actions, it is certainly a critical component for
9 the evaluation and assessment of catastrophic accidents involving multiple
10 source term contributors. I believe it is critical then for NRC to move forward
11 quickly to address that those assessment shortfalls are identified during the
12 event. This is particularly important in light of the fact that public protective
13 actions in Japan were issued based on results from the dose assessment model
14 that cannot evaluate multiple reactors, spent-fuel accidents with any degree of
15 accuracy. I would recommend that work on developing appropriate dose
16 assessment tools begin immediately.

17 I would remiss if I did not speak about major shortcomings in
18 coordination and information sharing between Federal and states during the
19 Fukushima incident. The NRC Task Force is focused on hardware and
20 infrastructure necessary for effective communication. What is equally, if not
21 more important, is the timeliness, frequency, content, and targeted recipients of
22 the communication. To my knowledge, the only Federal agency that engaged
23 constructively and responsibly to state concerns and questions was the CDC,
24 and that avenue still took some time to establish.

25 As I'm sure you're aware, the NRC has a formal memorandum of

1 understanding with the states to provide information on incidents involving
2 radiological releases to the regional state liaison officer programs. The NRC did
3 not honor that agreement during this event. At the state level there were
4 hundreds of public inquiries as to what effect the accident would have on state
5 residents from the public health perspective. Lacking any real data points,
6 source term, or modeling projections, it was difficult to speak with any certainty
7 and answer the public's questions and concerns. Granted, from the technical
8 perspective, we could all agree that based upon historical information, the
9 release of radiation would have no impact on public health and safety within U.S.
10 borders.

11 At the same time, from a purely scientific and technical perspective,
12 we had no hard data to support our statements, which places us in a very
13 vulnerable position. The need for timely, accurate, and consistent information
14 was clear key messages about the significance, or non-significance of an
15 unintended radioactive release can help NRC and the states put an event and
16 any associated impacts into perspective for the public. Timely, accurate, and
17 clear communications dispels rumors and misconceptions, and helps reassure
18 the public that the event is being handled properly. Data and information
19 sharing, and the development of consistent public information must be improved.

20 Once again, I thank for you for the opportunity to share my
21 comments with you, and I'd be happy to answer any questions after the
22 presentation.

23 CHAIRMAN JACZKO: Thank you. Finally, we'll turn to Timothy --
24 how do you say your last name?

25 TIMOTHY GRETEN: -- Greten.

1 CHAIRMAN JACZKO: -- Greten, who is the deputy director of
2 Technological Hazards Division at FEMA. Mr. Greten?

3 TIMOTHY GRETEN: Thanks for the opportunity to talk to you all
4 this morning. Echoing some of the things that Sue and Pat said, the
5 Commission's recommendations, I think, from FEMA's perspective, are going
6 down the right track. Anything we can do to build on the already robust program
7 we have to mitigate on-site risk can only help make sure there is not a problem in
8 the off-site realm. That said, there's other things going on in the world right now
9 that I want to make sure the Commission is aware of. Contextually, as you
10 implement stuff out of this report, there is the Emergency Preparedness Rule
11 Package that you all voted on, on August 30th, there's changes being made to
12 those rules, to supplement 3, to supplement 4, of NUREG 0654, to the rep.
13 program manual, the most significant changes to that in the last 30 years. It's
14 been done in concert with NRC, the Federal family, and state and local
15 stakeholders, industry stakeholders all across America.

16 In addition to that, especially in the wake of Deep Water Horizon
17 last summer, the National Security staff brought together all the federal agencies
18 and asked us to work through problems during SOEPL 10, a nuclear power
19 plant exercise. And coming out of that, we know that there were improvements
20 that needed to be made to communications plans, to pre-scripted messaging
21 plans, cleanup re-entry standards, making sure that guidance was clearer, the
22 issues with KI, potassium iodide, and other different sticky policy issues that we
23 need better guidance on. Fukushima was really just another layer of things that
24 we could do -- learn from if you will -- based on changes that were already under
25 way. As Pat mentioned from Fukushima, from that situation, there were definitely

1 communications issues. Part of the problem was that it was viewed as an
2 overseas issue, as opposed to a domestic nuclear issue. At FEMA, we're trying
3 to learn lessons but also make sure we learn the right lessons.

4 Unlike the Japanese situation, there was a lack of data coming
5 over, I mean the Japanese prime minister was asking the head of the Tokyo
6 Power Authority, "what the heck is going on here?" except in stronger language.
7 Here, I think the NRC might almost suffer from the reverse problem if there was
8 an incident here. The sheer volume of information coming into your command
9 center, and parsing through that, and making sure it's properly distributed. Some
10 of the different recommendations in here, for instance, improving your ERDS
11 system. Obviously, the more reliable that communication system is, the better,
12 but this isn't just a rules and tools issue, it's also practicing and making sure that
13 staff is familiar with taking that information and parsing it up, not just to, say,
14 communities that might be affected in a nuclear power plant accident, but to the
15 world writ large.

16 Some other issues that really weren't addressed in here, but are
17 contextual in nature: FEMA's been talking lately about the "whole community"
18 idea. That is, that if you had a significant natural disaster -- picture New Madrid
19 earthquake -- the sheer volume of the disaster would mean that it would take a
20 long time for emergency resources to get to some place. You know, 72 hours
21 you might be on your own. I know that the NRC makes sure that industry, and
22 industry made sure on their own, that they have significant secondary and tertiary
23 capabilities to be isolated for some period of time, but we also realize that, as a
24 nation, there would need to be government resources brought to bear to help out,
25 say, a power plant that was in distress. If you have things that are needed to

1 help a power plant in distress; you know, supplemental generators, or batteries
2 or fuel. All of that stuff is heavy and may need to be moved over a long distance
3 if there was an emergency, over roads that were jacked up by an earthquake,
4 and it's something that NRC and industry can't solve themselves. It's a larger
5 Federal-state problem to transport those kinds of resources.

6 Other changes that I know have been discussed here: There's
7 obviously robust models for modeling what would happen if a single nuclear
8 reactor was having issues and releasing radioactive material. I know that
9 additional thought needs to go into multiple unit failure scenarios. If you have
10 several reactors going haywire at once, what does the modeling look like for
11 that?

12 There is a robust set of guidance out there already, be it the
13 National Response Framework, the nuc rad annex to the National Response
14 Network, the NIN system, et cetera. While guidance changes are good things,
15 it's also making sure we do a better job of exercising under our current guidance,
16 and on those lines, FEMA is making sure that we are re-doubling our efforts to
17 rope in on the FEMA Response and Recovery folks, who actually have roles on
18 the ground, making sure that our exercises are even more realistic in concert
19 with NRC and the other members of the federal family, and our state and local
20 compatriots, and industry folks.

21 We continue to look to Fukushima for lessons we can learn, not just
22 about the actual radiation issues associated with the nuclear power plant, but the
23 larger issues associated with the tsunami and how all of these different disasters
24 interacted with each other. I agree with what many folks here have said today,
25 that is that we have a good system in place. There's obviously always room to

1 learn lessons, and because we have a system in place, we've already put a lot of
2 time and effort into figuring out, we want to make sure that, we make sure we're
3 solving a problem before we take actions. We think this through. We have that
4 luxury because we do have a good system in place already, and also understand
5 that when these systems are put into place, changes are put into place, no
6 matter when the decision is made, it will take time for certain changes to be
7 made. For instance, in the updated rep program manual, and guidance that
8 NRC has, hostile action-based exercises in nuclear power plant sites,
9 everybody's already done a drill. Every single site in America has already done a
10 drill, but coming up in the guidance is going to be supplemental information on
11 how to improve plans, and those plans are going to be exercised as part of the
12 FEMA-NRC bi-annual exercise program, but it's going to take time to make sure
13 those plans are updated, and the state and local budget resources are properly
14 re-allocated to cover those changes and stuff. So, just understand, even with
15 folks moving ahead and trying to expedite matters, some of those changes will
16 take time.

17 Thank you very much for the opportunity to talk to you all this
18 morning.

19 CHAIRMAN JACZKO: Well thank you, and thanks everyone for
20 their presentations. I have a couple of questions. I wanted to start, Chip, with
21 you. You talked about the need to prioritize, and I think this is an important issue
22 and one of the things as I look at it, is I hear the talk and discussion about
23 prioritization, generally it seems to be confined within prioritizing all of the things
24 we'll do with Fukushima, but if you were to take a look more broadly, and this is
25 an issue for us as well as for the industry about all the other things that are going

1 on. You know, if you look at plants, some plants are pursuing power uprates,
2 license renewals. Where do you see these changes fitting into kind of the broad
3 spectrum of things that is going on in the industry?

4 I mean, should we put a moratorium on power uprates right now?
5 Should we get Fukushima changes done before that, maybe not with license
6 renewal, but with power, that kind of thing. Do you have a sense of that?

7 CHARLES PARDEE: I think, one, your reflection is correct, that we
8 do have a concern with prioritization, and I think simply stated, we don't think that
9 these should in any fashion be a blanket substitution of priorities for efforts that
10 were underway. Either things like power uprates or license renewals, or other
11 activities that were also in flight regarding other substantive regulatory changes
12 that had been deemed necessary to improve our safety posture. So we think
13 that these need to be examined. Some of them do in fact warrant short-term
14 action. The industry acknowledges that. We've started on short-term action, but
15 that's not to say that they should have some artificially elevated priorities simply
16 because they happened at Fukushima. I think they do require some careful
17 analysis and such, so --

18 CHAIRMAN JACZKO: Are there criteria that we could apply to
19 figure out where these fit in, relative to everything else that's going on?

20 CHARLES PARDEE: I think there are priorities, Mr. Chairman, and
21 I think it's important to start with what will be the attended resources for each of
22 these. In some cases, there may not be a conflict in resources or in skill sets or
23 such, in which case, we should be able to pursue them in parallel. In other
24 examples, and I'll use operator training as perhaps one of the more obvious
25 ones, one of the recommendations coming from the industry and from the task

1 force in the staff in their subsequent review, has been to re-examine training of
2 operators on severe accident management guidelines – the beyond-design
3 bases accidents and events and such. We agree, however, that should be
4 carefully prioritized with our current operator training programs, because we think
5 the unintended consequence of simply substituting one for the other would be
6 detrimental to our safety posture. So, I think we are able to prioritize based on
7 available resources, based on the safety significance of the deltas between our
8 current posture and what we have learned from Japan, and I think in fact, we
9 have begun that. I am not, at this point prepared to rattle off my top 10, but with
10 just a little bit of thought, I'm sure that we could do that.

11 THOMAS COCHRAN: Mr. Chairman, I disagree with Mr. Pardee.

12 CHAIRMAN JACZKO: Well, Mr. Cochran, I was about to ask you
13 the same question. You jumped in there before I got a chance to ask that. So,
14 well let me ask you the same thing. To you, is there a sense of where we would
15 fit these in with kind of the spectrum of all the activities that are going on, and I
16 think as I asked Mr. Pardee, is there, are there criteria we should be looking at to
17 help us figure out where we put this, relative all the other things that are going
18 on?

19 THOMAS COCHRAN: First thing you should do is suspend the
20 power uprates and the license extensions. I think it's really pretty outrageous
21 that you have outstanding issues related to hydrogen generation. You have a
22 rulemaking you haven't -- it's been on your docket since 2009, related to
23 hydrogen generation and a LOCA, and the commission is merely going along
24 giving out power uprates when, if this rulemaking proves to be correct, the
25 recommendation, you would de-rate many of these plants rather than uprate

1 them, and you have outstanding Fukushima issues related to hydrogen
2 production. You shouldn't be doing power uprates. Same with regard to license
3 extensions and BWR Mark I and II's.

4 So, with respect to the orders, the orders are things that ought to be
5 done promptly, and they should take precedent. Chip Pardee is not running a
6 boy's school, and we're not sitting here, trying to figure out a new syllabus for
7 teaching math. You ought to treat this like he's running ships or nuclear power
8 plants. There was a submarine tender earlier this year that ran into a buoy going
9 back to port. The commanding officer was removed from his command. You
10 don't treat these reactors like you should treat them. You ought to order these
11 people to do what's necessary to make these reactors safe and expect that they
12 get done, and I fully expect Mr. Pardee would be able to staff it out and get it
13 done, and if he doesn't have the manpower to do it, he can hire more people to
14 do these chores, and that goes for the NRC staff as well. If you don't have the
15 manpower, you ought to be charging these guys more money, or hire a bigger
16 staff and get these jobs done.

17 CHAIRMAN JACZKO: Thanks. The, Mr. Leith, I'll turn to you, you
18 touched on some issues with instrumentation. I think one of the things we saw in
19 the, not in Fukushima, but here in the, I don't what we've called the East Coast
20 earthquake -

21 WILLIAM LEITH: The Virginia earthquake?

22 CHAIRMAN JACZKO: -- I know it hasn't gotten a name yet, but
23 there seem to be some, to my surprise, some challenges with instrumentation
24 and the level of modernity of the instrumentation we have for seismic monitoring
25 at plants in the Central and Eastern United States. Do you have thoughts on

1 that, and what kinds of modern instrumentation is out there that could give us
2 more real-time information about the spectral characteristics of the earthquakes
3 that we see and are seeing in more real-time?

4 WILLIAM LEITH: I do. And you heard my concerns about the
5 accuracy. I guess I would put it in terms of timeliness and accuracy. I oversee
6 the National Seismic Network and 14 regional seismic networks, and if two or
7 three weeks after an earthquake I didn't have accurate readings on the ground
8 motion from that earthquake, I don't think I would have my job. The second
9 concern I have -- firstly, let me go back to the timeliness. The information that I
10 have, which is secondhand, on the instrumentation that the North Anna Nuclear
11 Power Plant is that it's an older system from the 1970's, and it's probably not
12 accurate within 10 percent, maybe not within 20 percent. So, modern systems
13 can certainly provide much faster information, much more accurate information
14 than these older systems that are in many of the nuclear power plants in the
15 Eastern U.S.

16 A second concern is that the NRC doesn't have an independent
17 source other than the licensee itself. I would make an analogy to, let's say the
18 state trooper being reliant upon the driver for assessing the speed of the vehicle,
19 and that speedometer not being required to be inspected during a normal
20 inspection. So having an accurate and independent source would be to the
21 benefit of the NRC in trying to determine what actions should be taken following
22 a significant ground-shaking earthquake.

23 CHAIRMAN JACZKO: Okay that's -- we don't have too much time,
24 I want to move onto another topic. I appreciate your thoughts on that. Dr.
25 Lyman, I wanted to ask you -- I know you have a strong emphasis on us doing

1 some or most, if not all of the work through orders, and with maybe a more
2 transparent process than we used with the 9/11 orders, and some of that was a
3 result of the fact that these were, in some cases, classified or safeguarded
4 discussions, but, if we were to go to the route of rules, one of the issues the
5 Commission would have to analyze, and I'll get some thoughts from the staff on
6 this later is: Do we proceed with these as adequate protection rules, or not as
7 adequate protection rules, and pursue them more in the backfit space. Do you
8 have thoughts on how, if we were to pursue them as rules or other regulatory
9 tools, which would be the appropriate approach for those

10 ED LYMAN: Thanks. I guess this does go to the task force for --

11 CHAIRMAN JACZKO: I'm actually trying to answer in a fairly short
12 time.

13 ED LYMAN: Yeah, yeah. The first recommendation, which was
14 the framework and whether the boundary between design bases and beyond
15 design bases is in the right place. You know, we think, this is a hard question to
16 answer.

17 CHAIRMAN JACZKO: You got five seconds.

18 ED LYMAN: Right.

19 [laughter]

20 We think that the definition of that adequate protection really needs
21 to be expanded to encompass a wider range of severe accidents that is currently
22 the case.

23 CHAIRMAN JACZKO: Okay. Thanks. Well, I appreciate your
24 answers. We'll turn to Commissioner Apostolakis.

25 COMMISSIONER APOSTOLAKIS: Thank you, Mr. Chairman. Mr.

1 Leith, you talked about the probabilistic seismic hazard analysis and then you
2 said that you also have a methodology for assessing tsunami risk you mentioned
3 something about tsunamis.

4 WILLIAM LEITH: We have evaluated tsunami hazard along the
5 East Coast and the Gulf of Mexico.

6 COMMISSIONER APOSTOLAKIS: Is it also probabilistic?

7 WILLIAM LEITH: Yes, it is.

8 COMMISSIONER APOSTOLAKIS: Have you had the chance to
9 look at the Fukushima Tsunami Evaluation, I mean what they had done before,
10 what maybe the probability of that event was?

11 WILLIAM LEITH: The Japanese have looked at -- the Japanese
12 have a very deep record of historical earthquakes and tsunami over hundreds of
13 years, and they had looked at that record to assess the potential for these great
14 earthquakes, these magnitude 8 earthquakes along the coast. And they had not
15 considered the possibility that essentially multiple segments of the plate
16 boundary would break at the same time. And, so, in determining their tsunami
17 mitigation plan, they had judged that -- they hadn't assessed that there could be
18 as large a tsunami as was produced by this earthquake.

19 COMMISSIONER APOSTOLAKIS: Was that because of the state
20 of the art, or they made a mistake?

21 WILLIAM LEITH: Both of those things. The state of the art was
22 that they had information on historical earthquakes that they used. They didn't
23 go back into what we call the paleoseismic, the geological record of historical
24 tsunamis. And, in fact, they had found evidence about a year before of a
25 magnitude 9 earthquake producing tsunami. Only problem is that it was 1,100

1 years ago. And that hadn't been then incorporated within that year back into their
2 tsunami risk mitigation plan.

3 COMMISSIONER APOSTOLAKIS: Thank you. I have a more
4 general question here. I, even today in Energy Daily, there is a related article. I
5 find it a little perplexing that some people are using the Fukushima accident to
6 attack risk assessment as if what happened there is the fault of somebody doing
7 the risk assessment and dismissing the issue. Although, I think we got a very
8 good answer from Mr. Leith just now. You -- and another thing, the reason why
9 it's perplexing is because the station blackout sequence, its significance, was
10 identified by risk assessments, and it led to 50.63 rule that the Commission
11 promulgated. So, I don't know. I mean, especially Mr. Lyman and Mr. Cochran,
12 do you think that using risk assessment weakens the regulations, that it's not
13 something we should be doing, and we should go to deterministic methods, even
14 though Mr. Leith said that the best way to assess seismic risk these days is using
15 probabilistic methods? I think that's what you said. I'm sorry.

16 [laughter]

17 WILLIAM LEITH: That is what I said, and that is for the majority of
18 reactors, which are in the Central and Eastern U.S. where we don't have enough
19 information on the actual sources of large earthquakes.

20 COMMISSIONER APOSTOLAKIS: So, I did not misinterpret that
21 what you said.

22 ED LYMAN: Yeah. Well, if I can start, I think, in our view, the area
23 where this highlights the weaknesses of risk assessment is the fact that seismic
24 risks were not being consistently treated in risk-informed decision-making before
25 this happened. We had a meeting here last year on risk-informed regulation,

1 and, you know, it came up that, first of all, not every plant had a seismic PRA. It
2 was being applied inconsistently across the board. And, even though there was
3 a kind of understanding among the staff that, of course, the seismic risk could
4 essentially dominate the risk at a number of plants. And, until that -- and so to
5 make decisions based on only looking at internal events primarily with guesses
6 about the seismic risk was just wrong. And now, I think -- and if you look at the
7 way seismic risk was treated, the tunnel vision in applying, you know, looking at
8 the whole picture of the impact on operator actions and external, you know,
9 support as a result of a large seismic event, ignoring all those things made it,
10 really makes the tool very weak.

11 So, hopefully, this will enable, the strengthening of the process
12 ultimately. But, I think it casts some doubt on some of the decisions that have
13 been made based on partial PRA's.

14 COMMISSIONER APOSTOLAKIS: So, I'll come to you. But,
15 basically, then, you don't dispute -- you don't -- you're not against the use of risk
16 information in principle, but you are concerned that in some instances it's not
17 applied well?

18 ED LYMAN: Yeah, and I mean --

19 COMMISSIONER APOSTOLAKIS: That's what I got.

20 ED LYMAN: You need to have the uncertainty analysis.

21 COMMISSIONER APOSTOLAKIS: Yeah.

22 ED LYMAN: And it has to be a good uncertainty analysis. And, in
23 some cases, the uncertainty may wash out everything you're doing. But, that, I
24 think, is not really --

25 COMMISSIONER APOSTOLAKIS: Well, if that's what it is, that's

1 what it is.

2 ED LYMAN: Right, but that hasn't been the case in the past.

3 COMMISSIONER APOSTOLAKIS: Okay. Mr. Cochran?

4 THOMAS COCHRAN: Well, I think probable risk assessment is a
5 very valuable tool, and you should continue to use it as you have been. The
6 problem, I see a couple of problems. There are probably more. One is this, too
7 often, people actually believe the ultimate answer, you know, the risk of a core
8 damage event is less than one in 10 to the fifth. I think it's very good for looking
9 at relative risks. I don't attach a whole lot of faith in the overall final answer, and I
10 don't think you do either. And the other is, as I mentioned earlier, it's too much
11 emphasis on the average and not on the distribution. And, of course, the
12 uncertainties. So, I use it, and I've used it today to say this was a statistical
13 event. If you look at U.S. reactors, you should be worried about fires. And, I
14 think, the, one of the lessons learned from me from Fukushima is, if you're going
15 to take care of the U.S. reactors, first thing to look at is fires. And, why, if you've
16 got a 35 years after Brown's Ferry and you don't have a fire rule that everybody
17 is following? Use your PRA, okay?

18 COMMISSIONER APOSTOLAKIS: Any other comments? Okay.
19 One of the questions in my mind is, and I think only Mr. Mulligan addressed it.
20 Are there any, I mean, you all discussed the recommendations that -- not the
21 task force, but the latest SECY discusses, and some of you complained that the
22 commendations haven't -- should have been included. Are there any other
23 commendations that are not included in the short list that perhaps should be
24 included in addition to the Recommendation 7? Do you think there is anything
25 that's left out that should not have been left out?

1 THOMAS COCHRAN: Yes.

2 COMMISSIONER APOSTOLAKIS: Please.

3 THOMAS COCHRAN: Suspend the uprates, suspend the licensing
4 extensions. You, the Commission, established a process, a short-term process
5 and a long-term process that we were going to be able to participate in. We're
6 still waiting for the long-term process so that we can get some of the issues that
7 we think are important that were not on the front burner of the task force. And,
8 one is, you know, the hydrogen generation issues and the and those speak to
9 stopping the uprates. And I think you should also suspend the backfit rule with
10 respect to application of any of these Lessons Learned from Fukushima. I think,
11 to take this process and then turn it into rule-makings and then turn it into a
12 backfit issue and then do a cost-benefit analysis is going in the wrong direction.
13 You should suspend the backfit rule.

14 COMMISSIONER APOSTOLAKIS: One last -- I think -- I'm sorry--

15 CHARLES PARDEE: No, if you would ask your question and then
16 I'll make a comment [laughs].

17 COMMISSIONER APOSTOLAKIS: Well, we're running out of time.
18 You mentioned that there will be an issue of resources, Mr. Pardee. We had a
19 recent example of that with fires where there was a limited number of experts in
20 fire dynamics and fire risk assessment -- are we going to have the same thing
21 with seismic expertise? I mean, there are very few people, and, how do we
22 handle that?

23 CHARLES PARDEE: Yeah, I think we will have the same
24 challenge with seismic expertise and the issue with resources, just to be clear, is
25 not one of expending payrolls; it's one of simply a finite number of proficient

1 individuals that are expert in their field. So this is not a matter of hire more, this
2 is a matter of where we would most productively dispatch those experts that we
3 collectively, in this industry, including regulatory bodies have. So yes, I would
4 anticipate that we would run into similar circumstances with seismic probabilistic
5 risk assessment. I think it's also important to note that the absence of immediate
6 seismic assessment does not mean that our power plants are not robust. As a
7 matter of fact, empirical experience is showing us that the methodology used
8 previously has resulted in very significant physical margins through damage in
9 our power plants inspections -- North Anna are supporting that. Clearly,
10 inspections at Kashiwazaki-Kariwa site and what we know about Fukushima
11 Daini are demonstrating very robust physical margins. I do think we will
12 transition to a more risk informed approach to seismic analysis, but that does not
13 substitute for the physical the margins that currently exist in our power plants.

14 COMMISSIONER APOSTOLAKIS: Back to you, Mr. Chairman

15 CHAIRMAN JACZKO: Thank you. Commissioner Magwood.

16 COMMISSIONER MAGWOOD: Thank you chairman. I've often
17 made remarks since Fukushima; I've often observed that the NRC staff and the
18 federal family have done every good job, in fact, and excellent job, of responding
19 to the Fukushima emergency and really, a lot of people went above and beyond
20 the call of duty to react to it. I want to take the opportunity to also say that I think
21 that the industry in the United States -- I know that you, Chip, in particular, were
22 personally involved in a lot of Fukushima response and did a very good job, and I
23 think representing United States well. And I also think that the NGO community -
24 - I think I remember seeing Dr. Lyman on TV a few times talking about this.
25 NGO community made a lot of very sober, very serious, very helpful comments

1 publicly. I just wanted to thank you for that because I think that's continuing
2 today. The comments we've heard today so far, from the industry and from Dr.
3 Cochran and Dr. Lyman I think, all have been in the range of the reasonable. I
4 think that there's clearly disagreements about how to go forward, but I think
5 everything I've heard from all of these parties have been the sorts of things that
6 the Commission has to take very seriously and are taking very seriously.

7 There are a lot of details to work out and I appreciate many things
8 that Dr. Cochran and Dr. Lyman brought today and there's a few things I want to
9 look into a bit more and may want to talk a little bit later in detail. But one thing
10 for you, Tom, that I just wanted to ask. You were very emphatic in the idea that
11 we should immediately institute a station blackout coping time of eight hours, and
12 I just wondered if -- I know the task force recommended eight hours, but is there,
13 in your mind, is there a reason to focus on eight hours versus some other time
14 period? What drives us to that particular coping time?

15 THOMAS COCHRAN: Well, obviously, I would make it as big as I
16 can get away with, but I'm not -- don't share the expertise that's on the staff or
17 even in the industry on this matter. But the accident Fukushima says loudly that
18 the coping time was inadequate. And then you look at the coping time in the
19 U.S. -- in the NRC regulations and it's like two hours, and you look at the
20 performance and it's like four hours or more and eight hours is certainly doable
21 because a lot of people are doing it. And again, to me, it's sort of so obvious that
22 the first thing you would do is go ahead and say, "Okay, let's bring everybody up
23 to eight hours," and not -- we don't need to have a discussion about this. Can't
24 you tell this guy to bring it up to eight hours and expecting to bring it up to eight
25 hours?

1 COMMISSIONER MAGWOOD: That's a very --

2 THOMAS COCHRAN: Tell this guy to do it. He would have done it
3 in eight hours. He would have had it in --

4 COMMISSIONER MAGWOOD: Before Chip responds to that let
5 me say that I think that --you know, we've had discussions. In fact, I think we've
6 had a pretty significant Commission discussion about the coping time several -- a
7 few months ago. And we talk about this quite a bit. And one of the things that
8 was left with me after that conversation was I'm not really sure what the target
9 should be. I'm don't know if it should be eight hours. I'm don't know if it should
10 be 72 hours. I don't know what it should be.

11 THOMAS COCHRAN: Does anybody think it should be less than
12 eight hours?

13 COMMISSIONER MAGWOOD: No, I don't think--

14 THOMAS COCHRAN: Well let's make it eight hours and let's do it
15 right here; you know, vote and make it eight hours.

16 COMMISSIONER MAGWOOD: Well, let me give Chip a chance to
17 respond. What's the industry's thinking about this? You've had several months
18 to think about this.

19 CHARLES PARDEE: First of all, I wish it was as simple as Dr.
20 Cochran points out; that that would be something we could mandate and go
21 execute immediately. The industry has already started actions to evaluate what
22 it would take for us to go to 24 hours. Now evaluating what it would take is a lot
23 different than having a tight list of prescribed actions that we have already
24 undertaken. It appears to us that there are generally three windows that we're
25 examining what we can do to -- as preparatory activity. What kind of preparation

1 we can do, what kind of preventive activities we can undertake and how we can
2 best prepare for the unthinkable.

3 And then there's that window of time that we're talking about and
4 that is post event; when the station is in significant upset condition, and we
5 cannot depend on outside resources. And then there is that period of time where
6 we do think we can bring outside resources to bear. And the important thing is to
7 make sure we synchronize those with sufficient overlap such that we can't find
8 ourselves in a position where we are, in fact, sitting with an accident where the
9 blackout condition extends beyond our capability. It's not clear that simply
10 mandating we go to eight hours will fix that. We, frankly, think that focusing on
11 diversity of power sources, on redundancy of power sources and ensuring
12 sufficient flexibility, such that we have protection against a whole different range
13 of events, rather than trying to guess on what the consequences of a specific
14 event would be best for us.

15 So, in increasing the size of our batteries, for example, is an option,
16 but perhaps we would have a superior option in adding independent DC power
17 sources over above our station blackout batteries. Such as, pre-positioned DC
18 generators and such that would give to us the same capability, and much more
19 flexibility as it pertains to other events that we may have to contemplate as we go
20 through looking at synchronizing these windows.

21 Do we consider the exhaustion of the batteries to be an acceptable
22 end point? No, we don't. We think that maintaining DC buses and their viability
23 are vital to us being able to prevent core damage and protect the primary
24 containment systems; but simply prescribing going from four to eight makes little
25 sense to me. The underlying notion makes sense to me.

1 TIMOTHY GRETEN: May I say something?

2 COMMISSIONER MAGWOOD: Yes, please.

3 TIMOTHY GRETEN: The other thing to remember too -- like on
4 this particular issue in the weeds no power plant, with maybe the exception of
5 Fort Calhoun for a big part of the summer, is an island. You have local
6 knowledge when informing these decisions, too. I mean, Pat Mulligan state of
7 New Jersey, for instance, for the power plants there. Smart people have a
8 knowledge of the local conditions. And figuring out how long the power plant
9 could be expected to have to function on its own, or could outside resources be
10 brought to bear, it's something where the state and locals have expertise they
11 can bring to bear and say, "Yes this makes sense," or, "No it doesn't." And the
12 power plant -- I can't think of the name but it's out in the middle of nowhere up in
13 Washington state -- is probably going to have a lot less supplemental resources
14 available from their friends elsewhere in the nuclear power industry or other
15 states than, say, the state of Illinois, where there's a couple power plants 15
16 miles up the street. So, I think that while there's obviously need for a hard and
17 fast minimum, figuring out what makes sense in these things is something that
18 the state and local governments also have to be part of.

19 COMMISSIONER MAGWOOD: I appreciate that comment, but, by
20 the way, we don't make Fort Calhoun jokes around here.

21 [laughter]

22 Chip, that actually raises another question I had for you. The
23 industry made announcement some weeks ago about a rather large effort to
24 make emergency equipment, including emergency generators and other things
25 available on a sort of multi plant basis. It sounds a lot like what are FEMA

1 colleague was talking about. What's the status of that?

2 CHARLES PARDEE: We are now undertaking actions to do just
3 what your are saying; setting up regional facilities where we would pre-stage
4 emergency equipment, such as standby diesel generators, fuel oil supplies,
5 communications equipment, things such as that. And obviously, we would have
6 to do that with a mind towards those timelines. We have to ensure that the plant
7 can protect its vital safety functions during that period of time, prior to which we
8 can get additional safety equipment there. So we are also looking at transport
9 capabilities. And I think the comments that were made during the prepared
10 remarks early on were right on the mark. One of the more difficult challenges
11 that we're going to have is getting the equipment from these regional centers to
12 the power plants in a predictable timeframe, and we think we will need the
13 assistance of things like transport of the National Guard to be able to ensure that.

14 But we have our equipment lists being generated. We're starting to
15 look at the mechanics of how we would station these-- what are the appropriate
16 locations and such. We have also started beefing up the quantities of
17 emergency equipment at our power plants; additional pumps that were procured,
18 similar in fashion to what we did to the B.5.b activities and such. So activities are
19 underway for both these regional dispatch centers and improving the posture at
20 the stations independent of these centers as well.

21 COMMISSIONER MAGWOOD: Thank you. My time is up, so I'll
22 close this. I just wanted to thank Mr. Mulligan for his comments. I heard from
23 several states about the communications issues; it's something that I know the
24 staff is assessing and hope to make sure that sort of lack of communication
25 doesn't happen in the future. But it's something that I've heard from a lot of

1 states, it wasn't just New Jersey. But thank you very much chairman.

2 CHAIRMAN JACZKO: Commissioner Ostendorff.

3 COMMISSIONER OSTENDORFF: Thank you, Mr. Chairman.

4 Thank you all for your presentations. I honestly find this different viewpoints, a
5 little bit of tension at the table, different perspectives but presented in a
6 respectful, collegial manner, very helpful for us on the Commission. I'll note for
7 the record Mr. Chairman I think that Mr. Cochran must never have received his
8 honorary submariner card, and was trying to lobby for one today.

9 [laughter]

10 CHAIRMAN JACZKO: Directing some of those comments at
11 somebody on this side of the table. I can't figure out who.

12 [laughter]

13 COMMISSIONER OSTENDORFF: But, in all seriousness, I really
14 find this interchange and the give and take very constructive for the Commission
15 making some difficult decisions. Sue, you haven't had a question, I'm going to
16 start out with you and I'll come back to some of the others. Big picture on the
17 emergency planning arena. I want to make sure I understand this. What I took
18 from your comments was that the previously approved EP rule appears to be
19 consistent with the foreseen-- if the Commission approved the task force
20 recommendations, whether they be in the short term paper or in the longer term,
21 there does not appear to be any big disconnect or any inconsistency. I'm trying
22 to look at -- mindful of how to implement EP issues, and we already have this
23 ruling that's marching down the path, is there any problem, from your
24 perspective, on inconsistencies with short term recommendations?

25 SUE PERKINS-GREW: I don't see a problem -- sorry-- With the

1 inconsistencies, it's just the overlay of the additional work on top of implementing
2 all of the new rule issue areas, as well as the guidance of 0654, sup 3, and the
3 FEMA REP Program Manual. I did point out though, with the on-shift staffing
4 analysis, we have a very comprehensive methodology that we've developed in
5 order to satisfy the current rule for performing that shift staffing analysis. So now,
6 to develop another template to accommodate whatever this multi unit event looks
7 like, it's just a timing factor that that would be an additional staffing analysis that
8 would have to be done. So it's more of a timing issue, but no inconsistencies;
9 just the overlay and how do we best integrate that with the current workload of
10 the industry as well as our offsite partners.

11 COMMISSIONER OSTENDORFF: Okay, thank you. Patrick I
12 want to echo Commissioner Magwood's comments; we appreciate hearing your
13 perspective on New Jersey with respect to assessment communications.
14 Communications are always extraordinarily difficult, especially in an interagency
15 process that we operate under. And I just wanted to see if Tim had any comment
16 on Pat's comments about the communications in Fukushima.

17 TIMOTHY GRETEN: We agree there was a big issue. The -- part
18 of the problem early on from FEMA's perspective was that the information that
19 the states and the public in the United States was seeking just didn't seem to be
20 available from anyplace including from NRC. Because you all were not getting --
21 I mean, it wasn't one of your plants. You were at the mercy of the Japanese
22 utility or other sources to get that information and I don't think NRC got really
23 hard data until certain U.S. assets got over there from the FERMAC and whatnot
24 to help the Japanese. I think that's when your information feed started getting
25 better.

1 So for the first couple days of this part of the information deficit was
2 that there wasn't good information to give beyond what was available really in the
3 public media. After that point, one of the problems that really came up was the
4 plumbing issue and the set of pipes being used for communicating information
5 was this is an international incident and State Department/DOE really have point
6 on that. I think even NRC was really referring questions that were asked about
7 this back to those entities.

8 I know that one of the bandwidth issues that was raised before, it
9 was about seismology, but it also applies to federal radiation folks, especially
10 those people buried in different agencies: HP's who work for CDC, or EPA or
11 whatnot. A large amount of the federal resources, including backup resources,
12 people who were brought in who were retired, and people from academia, were
13 really focused on helping to organize information that could actually help the
14 Japanese with a real life crisis and not on taking information from that crisis,
15 stepping it down, and making sure it was pushed out the door as general
16 information.

17 A secondary function that was done about that too was answering
18 specific questions: Hey, we have cargo containers that have sailed through this
19 radioactive cloud. They're coming into the port of Los Angeles. The long shore
20 man union tried to go on strike because they don't want to unload these things.
21 What do we have to do with these? What is the safe standards? If you look at
22 what cleanup standards and safety standards are, in like the EPA Protective
23 Action Guides, or some of the other places they are put, a lot of it isn't just 55
24 mile an hour speed limit, exceed not exceed. It's not a binary thing. It depends
25 on source terms and amounts, and you need to do some calculating to figure out

1 what's going on. It's not a simple thing.

2 COMMISSIONER OSTENDORFF: I appreciate -- just a limited
3 time here. We thank you for your response. I'm going to ask a question Chip
4 and Tom and Ed and the topic and the focus on here just for a very brief moment
5 or two is the reliable hardened vent recommendations. I know in the middle of
6 July when I talked to INPO, I asked INPO senior executives, do INPO and
7 industry have sufficient knowledge of the sequence of events of Fukushima, the
8 modes of failure, pneumatic, electro-mechanical, electronic weathering in DC
9 control power kind of issues associated with operating those vents, and as the
10 time period back in July, late July, the response I received was a -- there's still
11 significant outstanding questions in this area.

12 When we had a July 19 public hearing meeting here with Charlie
13 Miller and the task force, there was other discussion about whether we did or did
14 not have sufficient knowledge. And so I want to just kind of ask -- I'm going to
15 frame this because the time limitations here, so please bear with me. Let's just
16 say it's an open question as to whether or not there's sufficient understanding of
17 what happened to Fukushima with respect to the hardened vents and the
18 operator accessibility to those vents to operate them.

19 The question is, if there is not, today, a sufficient or understood
20 technical basis or reliable hardened vents, would it be appropriate or
21 inappropriate for the NRC to issue orders to require reliable hardened vents. I
22 bring it up because the SECY paper talks about including interactions with
23 stakeholders to develop the technical basis and so I'm trying to get to that. I'm
24 just going to go right down the line and start with Chip.

25 CHARLES PARDEE: Okay, first of all, I think to your reflections we

1 are learning more about the timelines associated with the containment control
2 parameters and such. However, we don't yet have a complete understanding on
3 what the transient looked like from a primary containment point of view and a
4 hydrogen generation or release point of view. With regards to your specific
5 question, the industry undertook, as part of the Mark I containment upgrades, the
6 installation of hardened vents on those power plants, which, at the time were
7 dependent upon AC power sources. So we had the ability to vent wet wells at
8 our power plants with the notion that the venting may contain either fission
9 products or hydrogen in the exhaust. And then subsequent to the events in 9/11,
10 we established the capabilities to vent our primary containments absent A/C
11 power, so local operational procedures, access, things like that. I think orders,
12 while they may provide a regulatory footprint as it were for the actions that have
13 been undertaken by owners groups and such. We think that the capability
14 currently exists and the real challenge for us would be making sure that we were
15 concise in exactly what was in the orders, to make sure that there was not some
16 unintended expansion of that would take some time for us to implement.

17 COMMISSIONER OSTENDORFF: Thank you. Tom.

18 THOMAS COCHRAN: Historically, you had five whitewater
19 reactors that had significant fuel failure. Four of them had hydrogen explosions.
20 Three of them couldn't contain the hydrogen explosions. I think that's evidence
21 enough that you got a serious problem with hydrogen. We know it's primarily
22 with BWRs and primarily with BWR Mark I and IIs, and you've demonstrated you
23 could harden vents in Is and IIs are not that different. So, I think you should get
24 on with requiring hardened vents in the five or so remaining reactors. How do
25 you go about that? I would tell them, "Get me a plan within 60 days for how

1 you're going to implement hardened vents in the Mark IIs or we're going to shut
2 them down until you provide us with that plan, and we expect you to accelerate
3 the installation of the hardened vents."

4 COMMISSIONER OSTENDORFF: Okay

5 THOMAS COCHRAN: And I wouldn't, I wouldn't mess around with
6 it. I'd just get on with it and not drag this out in the rulemaking and go through a
7 backfit, and then do a cost benefit analysis. You know what you need. Get the
8 hardened vents. Now, following that, you ought to figure out whether we're going
9 to keep running these Mark Is and IIs with extended licenses as you've done
10 already with the Mark Is, when most of them have gotten 20 year license
11 extensions. You have a system whereby you don't even address this issue in the
12 license extension, because it's not an age related event. So, you've instituted a
13 process which ensures that an obsolete technology like a BWR Mark I will stick
14 around forever if they can keep these things operating like they were B 52s.

15 COMMISSIONER OSTENDORFF: Okay.

16 THOMAS COCHRAN: I think you need to reassess that and figure
17 out a way to phase these obsolete technologies out, rather than to continue to
18 relicense and in the mean time, you'll suspend the relicensing.

19 COMMISSIONER OSTENDORFF: Thank you. I know - if I could
20 30 seconds we had to respond to here --

21 ED LYMAN: We don't think you know along the postmortem of
22 what happened in Fukushima would be relevant for informing perhaps some of
23 the details. We don't think that's necessary to go ahead and ensure that there
24 are robust hardened vent equipment and procedures that are -- could be
25 plausibly operated under severe accident conditions. I mean a lot of the analysis

1 as far as I know has already been done, not only back when the first voluntary
2 measures were applied, but also in B.5.b, I just wanted to read from the B.5.b
3 procedures that when concerning venting and containment, one of the
4 considerations is for the purposes of the strategy, it should be assumed that
5 reactor building and any other locations where vent valves are located will be
6 accessible. Now, that assumption is highly questionable and just removing that, I
7 think we've already learned from Fukushima that that assumption is no longer
8 valid. So, just simply by going through what the industry's already done to
9 comply with B.5.b and questioning some of those assumptions, you should be
10 able to come up with a robust strategy for venting.

11 COMMISSIONER OSTENDORFF: Thank you. Thank you, Mr.
12 Chairman.

13 CHAIRMAN JACZKO: Commissioner Svinicki.

14 COMMISSIONER SVINICKI: Well, I will add my thanks for all of
15 you being here today. I'm grateful for the chairman's adherence to our time
16 limits, because in my view it allows us to have more participants here at the
17 table, so I appreciate that none of you have taken offense at that, because we
18 want -- we always want to extend our invitation list, but it causes us to have to
19 compress the presentations a little bit. The other thing I guess I would share is
20 that I --

21 CHAIRMAN JACZKO: You get an extra five minutes, by the way,
22 for saying that.

23 COMMISSIONER SVINICKI: Okay, thank you.

24 [laughter]

25 COMMISSIONER SVINICKI: -- is that I was scheduled to be on a

1 panel and give a presentation, and the structure of it had been that I was doing
2 the math and assuming I had 20 minutes, and then I found out days before the
3 event that I have five minutes, and the learning that I had from that is it's a whole
4 different -- it's a kind of a Madison Avenue art form to communicate in five
5 minutes, because you can't say nearly as much, but I want to acknowledge that
6 many of you or the organizations you represent have been part of building the
7 agency's record and your participation in other ways, so please know that in
8 other comments you've submitted, or transcripts from meetings that you've
9 participated in, are also part of the record of our deliberation of these important
10 recommendations. So, thank you for that and Mr. Greten, I have to weigh in with
11 a fact just because you mentioned that a reactor in Washington state, that wasn't
12 near to anything, I think you're referring to the Columbia generating station and
13 since I had the chance to visit there recently, I would pass along to you that I
14 enquired since they abut a large Department of Energy Nuclear Installation, the
15 Hanford site, I asked about mutual aid agreements that Columbia might have
16 with the Department of Energy and they informed me that they do have those
17 types of -- so, even in an instance where the geography might tell you that they
18 appear to be very remote, I think it actually is just reinforcement to a comment
19 that you and Mr. Mulligan made that local entities and authorities know about
20 these types of aid agreements and other things, and they have an awareness of
21 the situation on the ground that day to day is important, but in a crisis event is
22 that much more important, so I think that I appreciate your commentary along
23 those lines.

24 Ms. Perkins-Grew, I wanted to return to an answer that you gave
25 Commissioner Ostendorff because I had taken a slightly different meaning from

1 some comments that were made at the staff's public meeting and your
2 presentation. Commissioner Ostendorff asked you if there were inconsistencies
3 between the rule changes that the Commission affirmed just this month, so we
4 had a package of changes to our EP regulations. I was very supportive of
5 moving forward with those, because I couldn't see any down side to getting those
6 in place, that those were in development long before Fukushima occurred and so
7 they weren't informed by those events, but I still thought that they were important
8 changes and we should move forward.

9 I had taken from your comments about the staffing analysis that
10 there might be an emerging concern that you would -- industry will move forward
11 to implement and do that staffing analysis at the same time that there's
12 consideration now of multi-unit events and things. You said there wasn't an
13 inconsistency and I'm not hanging that label on it, but is there a concern that --
14 and I use the staffing analysis, I don't know if there's other changes in that we
15 just affirmed to the EP rule, that it is questionable how you might go about them,
16 because we're in a very active debate now about modifications to that. Is that a
17 fair conclusion from what you stated?

18 SUE PERKINS-GREW: Well, what I was responding to is in the
19 SECY that came out this week that recommended that the additional study be
20 conducted in conjunction with the implementation of the rule change. So, while
21 licensees are embarking on the rule as you approved it for multiple scenarios that
22 they have to do for the rule change that we would be adding on an additional
23 requirement for this additional study. My comment surrounds the fact that it
24 takes time to develop the criteria in order to perform that study, come to
25 consensus on which you know, what does a multi-unit event look like, the

1 multiple occurrences, simultaneous damage. Are you in B.5.b space, EOP
2 space, CMG space, you know defining all those details, because what we
3 learned in developing the methodology for this current rule change, it's very
4 intricate and it's not a simple add on you know, a template to lay over your
5 existing staffing analysis, that it took a lot of time with staff engagement, and
6 stakeholder engagement to come up with the right methodology.

7 So, with that experience, it's just a comment on if we're forwarding
8 with the implementation of the existing rule, we need to take the time to
9 deliberately come up with the additional criteria.

10 COMMISSIONER SVINICKI: Okay, well I think that clarification is
11 helpful and I certainly drew from your presentation and what in my mind I'm
12 referring to as the EP end of the table here with Mr. Mulligan and Mr. Greten as
13 well, that there's a lot of moving parts and I appreciate the FEMA perspective
14 about onsite, offsite, Mr. Mulligan about state and local entities as well, that I
15 think that was certainly the experience on the EP rule that we just finalized. So,
16 we need to look at these connection points and we need to look at unintended
17 consequences or intended consequences perhaps as we proceed down there.
18 So, thank you for clarifying that specific piece on the staffing analysis.

19 I think I would turn to Mr. Leith or Dr. Leith. I just had some
20 questions and I know you didn't stop through your presentation, but I studied it in
21 advance of the meeting today. You had presented that the seismic hazards are
22 updated every six years. Is that a nationwide update or is it regionally on a
23 rolling six year frequency?

24 WILLIAM LEITH: That's a nationwide update.

25 COMMISSIONER SVINICKI: A nationwide update and another

1 part of your written presentation or presentation slides had indicated that for a
2 certain region the hazard estimates had changed. Your term was significantly --
3 was that meant to indicate that in the most recent update there were more
4 significant changes than you had seen in periodic updates in the past and how
5 would you define significant versus a hazard increase that was not significant?
6 Do you have like a, like a numerical metric for that?

7 WILLIAM LEITH: I don't have that information on which and which
8 numerical values have gone up and down. It -- in general we reevaluated the --
9 in the last update of the national seismic hazard maps. We have -- a significant
10 change was in the attenuation of the waves with distance, and that actually
11 caused the lowering of the seismic hazard throughout parts of the United States
12 and other parts of the reevaluation included new understanding of earthquake
13 sources, which resulted in an increase in the earthquake hazard in other parts of
14 the United States. So, it --

15 COMMISSIONER SVINICKI: Okay, that, and that was actually in
16 the follow-up I was going to ask was do, do we ever see hazard estimates
17 diminishing or as our tools become more sophisticated, is it in general that they
18 increase, but you're saying it really as we update it, it may go up, it may go down,
19 depending on the analysis.

20 WILLIAM LEITH: That's correct, yeah.

21 COMMISSIONER SVINICKI: And it is also --

22 WILLIAM LEITH: But it has -- I would remark though that the
23 general picture doesn't change very much. The -- you know --

24 COMMISSIONER SVINICKI: Okay.

25 WILLIAM LEITH: So regionally, one region may go down, another

1 may go up a little, and you know in particular, well as you know, most reactors in
2 the central and eastern U.S., and there's a great deal of uncertainty in those
3 hazard assessments in the central and eastern U.S., because earthquakes are
4 infrequent and if we don't have the opportunity to grab the ground motions, and
5 evaluate them, make steps you know, as in Virginia, you know once every
6 century or so, and so it's a process that is continually evaluated on the research
7 side and we will for example, be using these ground motions from the Virginia
8 earthquake to reevaluate the hazard in this region. There's a -- we recognize -- I
9 think all of you do, that there's a huge risk to underestimating the potential
10 ground motions and there's a huge cost to overestimating them, and there's a
11 great deal of research that still needs to be done in the eastern U.S. to reduce
12 the uncertainty that causes either under-design or over-design.

13 COMMISSIONER SVINICKI: How do you go about reducing that
14 uncertainty? Is it increased amounts of field work or is it just better
15 computational tools, and again, I'm not a seismologist, so just for a lay person,
16 how would you say you would attack the question of reducing uncertainties?

17 WILLIAM LEITH: I can provide a couple of answers to that. We've
18 provided a report to the Nuclear Regulatory Commission in January at their
19 request, which was on how to improve the monitoring of earthquakes, to gather
20 the data necessary to reduce that uncertainty, and so implementing those
21 recommendations, just improving their recording of earthquakes would have a
22 great affect. Small earthquakes are used to extrapolate the ground motion to
23 larger earthquakes. The fact that we can't in many parts of the country record
24 these little, small earthquakes, limits our ability as the tail of the distribution blows
25 up toward the larger side. So, that would be, that would be one really important

1 thing to do.

2 A second is I have to say I look at the Virginia earthquake as a
3 missed opportunity, because we didn't get the ground motions close in, because
4 we don't have the stations there and so, but we still have an opportunity to
5 maximize the knowledge gain from that by evaluating the records that we have.

6 COMMISSIONER SVINICKI: Okay.

7 WILLIAM LEITH: So, fully exploring the information there is going
8 to be very helpful for understanding the eastern U.S. seismic hazard.

9 COMMISSIONER SVINICKI: Okay, thank you, and just quickly, Mr.
10 Pardee, you had made reference too that industry had some written comments
11 about the work, industry's work on a provisional timeline to reconstruct the
12 progression of events and accident conditions at Fukushima and these
13 comments also talk about the timeline would lead to discussions with Tokyo
14 Electric Power. This is an industry to industry engagement. I'm very interested
15 in this work and its results, but at times I've heard folks reflecting on Three Mile
16 Island say that it may be many years before we have great understanding of an
17 accident reconstruction. Can you give me very quickly, just a notion of
18 timeframes or objectives that industry has for this industry to industry
19 engagement? I'm hoping that you're not content to wait many years for these
20 answers.

21 CHARLES PARDEE: No, we -- while I do think that there will be
22 additional information evolving from Fukushima as we learn more, as we're able
23 to inspect buildings and such. We have largely constructed the timeline that we
24 think will constitute the vast majority, the basis for our lessons learned. We,
25 under the auspices of the Institute of Nuclear Power Operations are reviewing

1 the timeline that we've constructed with the Japanese authority and the Tokyo
2 Electric Power Company now, and seeking to address any either gaps in our
3 understanding or factual inaccuracies. So we are talking a matter of a hand full
4 of months, certainly not years before we think we have a very substantive record
5 of the sequence of events, including some less obvious factors such as the
6 evolution of the decision making and such associated with accident mitigation,
7 post event.

8 COMMISSIONER SVINICKI: Okay, thank you. Thank you, Mr.
9 Chairman.

10 CHAIRMAN JACZKO: Well, thank you, and as Commissioner
11 Svinicki said, I appreciate everyone being here and it is a large group, but I
12 appreciate your succinct responses and the information, and if you certainly have
13 more information you want to provide to us, please send us letters or whatever
14 you like and we'll certainly consider that. So, thank you. Now, we'll take a very
15 short, five minute break.

16 [break]

17 CHAIRMAN JACZKO: We'll now hear from the staff. Bill, you
18 want to start.

19 BILL BORCHARDT: Good morning. The NRC staff is committed
20 to learning from the event in Japan and making the appropriate changes to the
21 U.S. facilities. While the presentation that we're providing today is focused on
22 the Lessons Learned from those events in Japan. We shouldn't lose sight of the
23 recent events that even occurred in the United States. In the last four months
24 we've had flooding at Fort Calhoun, earthquake near North Anna, Hurricane
25 Irene, tropical storm Lee. And these reemphasize the importance of ensuring

1 that the U.S. nuclear power plants are protected from all external hazards. I'd
2 like to acknowledge the work of the Near Term Task Force and to publicly state
3 that it's quite clear the work that we have been involved with has built off the very
4 good work by the task team that was led by Charlie Miller.

5 The paper that we provided followed the Commission's direction in
6 identifying those Near Term Task Force recommendations that we believe can
7 be initiated, in part or in whole, without delay. The staff's recommendations were
8 developed by senior management. Representing the major NRC program offices
9 and the regional offices who deliberated and considered the wide range of
10 regulatory tools available to the staff. The staff's independent conclusion agrees
11 with the Near Term Task Force that there's no eminent risk to public health and
12 safety from continued operation, and continued licensing activities for U.S.
13 nuclear power plants.

14 We did indentify a subset of the Near Term Task Force
15 recommendations that we believe have the greatest potential for safety
16 enhancements in the near term and can be initiated without delay.

17 The staff's paper benefited greatly from the external stakeholder's
18 input. As you witnessed this morning there's a wide range of views and they're
19 all very well founded and appreciated.

20 The staff held a public meeting and received written comments.
21 And the stakeholders, I believe, agreed in concept with the fundamentals of the
22 recommendations that were discussed at the meeting. And express a desire for
23 continued stakeholder involvement in the regulatory processes that go forward.

24 As such the staff's recommendations are focused on maximizing
25 the potential for future stakeholder engagement whenever possible. Just note

1 that the next paper is scheduled to be issued on October 3rd. In that paper we
2 will be providing a prioritization of the Near Term Task Force recommendations,
3 including regulatory actions to be taken, implementation challenges, and a
4 schedule with milestones.

5 It'll be important as we move forward that the actions resulting from
6 the events in Japan be integrated with the full range of ongoing and emerging
7 nuclear safety activities of both the operators and the NRC; and that'll be quite a
8 challenge for us to do that integration in an informed manner. So with that I will
9 turn the presentation over to Marty.

10 MARTY VIRGILIO: Thank you, Bill. Good morning, chairman,
11 Commissioners. I just wanted to recognize that at the table with us today we
12 have Eric Leeds, our Director of Nuclear Reactor Regulation and Jim Wiggins,
13 the Director of our Office of NSIR. But they're here today as members of the
14 Steering Committee and also behind me in the well are other members of the
15 Steering Committee; they're the people that helped us develop the paper that we
16 presented to you on Friday. What I want to do is go through the slide deck as
17 quickly as I possibly can and then open up the opportunity for you to ask us
18 questions.

19 So starting on slide 2, just a refresher that the task force, the Near
20 Term Task Force completed its work, provided its report to you on July 12th and
21 subsequently on July 19th we had a Commission meeting with Charlie Miller and
22 the task force members.

23 As directed by the Commission now the staff has engaged in a
24 review of those recommendations to determine what are the appropriate next
25 steps. And what we have provided to you on Friday was staff's assessment of

1 those actions we think we can initiate in the near term.

2 So if we go to slide 3, the agenda. Basically, we'll talk a little bit
3 about our review of the Near Term Task Force report and our staff
4 recommendations around the report.

5 Slide 4, just a summary of what Bill just mentioned that the task
6 force found that there was similar events, or sequence of events very unlikely to
7 occur in the United States. The existing mitigation measures -- mitigation
8 measure and features that are at the U.S. nuclear power plants today reduce the
9 likelihood of core damage. And the staff has independently assessed and
10 concluded that there is no eminent risk from continued operation and licensing
11 activities.

12 The Near Term Task Force report provided 12 overarching
13 recommendations and looked at accidents beyond the design basis from a
14 Defense-in-Depth perspective. Looking at ensuring accidents don't occur,
15 mitigation of accidents that do occur and ensuring preparedness for emergency
16 situations.

17 On slide 5 it's just a refresher as a -- as direction coming out of the
18 Near Term Task Force report. The Commission asked us to provide a number of
19 products. The first was a charter for how we would proceed to manage the work
20 moving forward, and the staff has provided that charter to the Commission. The
21 second piece was the recommendations that could be initiated without undue
22 delay. That paper was provided to you on Friday. We owe the prioritization now
23 of the rest of the recommendations as Bill just mentioned. We'll provide that
24 paper to you on October 3rd. And then with respect to Recommendation 1, the
25 long term review of how we're going to deal with severe accidents, how we might

1 restructure Part 50 or our regulations; that's due -- recommendations are due to
2 you in 18 months.

3 Slide 6, just a summary as directed by the Commission we
4 provided a notation paper, vote paper on Friday, that makes recommendations
5 on what items in the staff's judgment can and should be implemented in part or in
6 whole without delay.

7 We looked and focused, primarily, on six areas: Recommendations
8 2,4,5,7,8 and 9 as we did our assessment. And as stated in our paper, we
9 believe that all of the Near Term Task Force overarching recommendations, so
10 all 12, if adopted would enhance safety, and the staff agrees with moving forward
11 on each of those recommendations. So as we developed our recommendations
12 in the near term, we focused on the six; that should not be misinterpreted by
13 anyone that we're not interested in the others as well. Some of them were longer
14 term recommendations and as I've just mentioned, Recommendation 1 the
15 Commission asked us to look at that in longer term; look at that over 18 months.

16 So on slide 7, what we did is we looked at the recommendations,
17 those that were not the longer term studies, and we looked at them through a
18 lens of what would have the most potential safety improvements, or
19 enhancements in the near term. We also looked at which ones could be initiated
20 without delay. And finally, we looked at what would be a measured approach to
21 moving forward that wouldn't be very -- that wouldn't be disruptive, or too
22 disruptive to the work we already had ongoing. And this is not about bodies,
23 again, as Mr. Pardee pointed out, this is primarily about skill sets. What activities
24 that we have ongoing and how we could adjust our activities so not to have the
25 most impact, but recognizing that certain skills -- we don't have an abundance of

1 certain skills on the staff or available to us under contract.

2 So, again, the remaining recommendations, the one's that we don't
3 talk about today, we will address in the paper that's due to on October 3rd.

4 So now on slide 8, we'll start talking specifically about the
5 recommendations that we believe we can take action on in the near term:
6 Seismic and flooding walk downs, seismic and flooding hazard evaluations,
7 station blackout, the 50.50 4(hh)(2) equipment, this is also known as the B.5.b
8 equipment, and also known as equipment that is there to provide protection for
9 large fires and explosions, and they were put in place subsequent to 9/11.

10 On slide 9, I address three additional issues: hardened vents for
11 the Mark I containments, strengthening of our onsite emergency response
12 capabilities and 9.3 emergency preparedness. And now I will speak to each one
13 of these in a little bit more detail.

14 What I did want to recognize is that on October 31st we did have a
15 stakeholder meeting. Time was very compressed from the time that we had the
16 SRM to the time that we owed you the paper; we'd had 21-days and so, we did
17 our best to gather the stakeholders, and we really appreciate the people that
18 were able to turn out and provide their input. I know it was short notice and I
19 know oftentimes people have problems with logistics needing to get approval, but
20 we did have I think a very good turnout and we did get letters, and written
21 comments subsequent to that meeting. So, that also helped us as we moved
22 forward in this area.

23 I would say that there are three points that the stakeholders at the
24 meeting -- we found that there was general conceptual agreement on the six
25 areas that we were focusing on. We found that the, all the stake holder panelists

1 expressed the desire for stakeholder involvement, regardless of the process we
2 use and there were various points of view that I think emerged with respect to the
3 vehicles that we use, and then we'll talk a little bit about orders, 50.54(f) letters,
4 rulemaking, those kinds of comments. We received some feedback from the
5 stakeholders on that.

6 So, slide 11 gets into the vehicles and we looked at orders,
7 requests for information under 50.54(f) and we looked at rulemaking. Where the
8 staff felt like we had sufficient information to define direction, and not necessarily
9 all the information that we needed, but to define direction. We believe that orders
10 were appropriate and that -- those orders we're thinking that we would use the
11 provisions of the backfit rule that would allow us to redefine the level of protection
12 for public health and safety that would be regarded as adequate.

13 We recognize that even with the orders, although we understand
14 the direction that we want to go in, that there's still a number of details that we
15 still need to have. Our regulatory assessment needs to be developed. We need
16 to make sure that we're clear around performance objectives, what defines
17 success and we need to make sure that we have the acceptance, clear
18 acceptance criteria that all the stakeholders fully buy into and understand.

19 Slide 12, the second of the two vehicles that we'll talk about,
20 50.54(f) letters, these are -- this is our -- this is areas where we felt that we
21 needed additional specific information just to make sure that we were on the right
22 path with respect to direction. We, here again, under 50.54(f), we're thinking that
23 we would move forward and ask these questions under a presumption that we're
24 looking to redefine what constitutes the level of adequate protection.

25 Finally, the third tool that we're going to be using is rulemaking and

1 here again, rulemakings will be issued following our normal agency process and
2 this will include the development of the technical basis, the regulatory basis and
3 all the associated implementing guidance. Again, for each of the
4 recommendations, the final regulatory action is going to in fact, dependent on
5 Commission direction, supporting the basis that we move forward with.

6 Slide 13, now I'm going to get into the specifics of the
7 recommendations, six recommendations, and I'll start with recommendation 2.3,
8 which is the seismic and flooding hazard walk downs. Here the task force, the
9 Near Term Task Force made its recommendations that licensees be required to
10 perform seismic and flood protection walk downs, to identify and address any
11 plant specific vulnerabilities. The staff looked at that recommendation and we
12 believe that the best approach to moving forward is to develop a 50.54(f) letters,
13 basically request for information. Within that, we would develop a methodology
14 and acceptance its criteria for conducting the seismic and flood walk downs. We
15 would ask industry through this mechanism to perform the seismic and flood
16 protection walk downs, identify and address any plant specific vulnerabilities,
17 verify the adequacy of monitoring and maintenance for protection features, and
18 inform the NRC of the results of the walk downs, and any corrective actions that
19 they either have taken or plan to take in response to this request.

20 Slide 14, the second area is seismic and flood hazard
21 reevaluations. This was recommendation 2.1 from the Near Term Task Force.
22 They recommended that we reevaluate seismic and flood hazards at nuclear
23 sites against current NRC requirements, and guidance. So, the staff looked at
24 this recommendation and we believed that we need some additional stakeholder
25 interaction to make sure that we're on solid ground and alignment with respect to

1 the technical basis, and acceptance criteria for conducting these reevaluations to
2 make sure that we understand the specific seismic hazards, and we're going to
3 rely on and leverage some of the existing work that's been done under the
4 generic safety issue, 199. Staff will in this area develop a letter, a request for
5 information under 50.54(f) to require the reevaluation of site specific seismic and
6 flood hazards, identify actions that have been taken or plan to be taken around
7 any plan specific vulnerabilities that are identified.

8 The staff will evaluate each licensee response and take appropriate
9 regulatory actions to resolve the vulnerabilities that have not been acted upon,
10 and here our notion is that we would know the direction and if we find that as a
11 result of our evaluation additional action is necessary, we would use orders as
12 the tool, as the follow-up tool in this area.

13 Slide 15, now we shift to station blackout and the Near Term Task
14 Force had recommended that the NRC initiate rulemaking to update 50.63, to
15 require each operating reactor a new reactor licensee, to establish a minimum
16 coping time of eight hours, establish the equipment, procedures, training, what
17 have you necessary to have this extended coping time of 72 hours and then have
18 preplanned and pre-staged offsite resources to support uninterrupted core
19 cooling and spent fuel pool cooling.

20 What the staff is recommending in this area is that we engage the
21 stakeholders through a rulemaking process to ensure that we have the enhanced
22 capability to maintain safety through a prolonged station blackout. We would
23 develop the regulatory basis for the proposed rule and all the implementing
24 guidance that we would need to ensure that the rule is implemented as part of
25 this process.

1 Leveraging some of the dialogue that you had this morning, again
2 the staff as we've looked at it, are questioning the eight hours, the 72 hours. I
3 think we as the Steering Committee, support the notion of this tiered process. I
4 think we're just again wondering whether -- questioning whether eight hours is
5 sufficient. So, that's part of where we are today and, but we'll continue that
6 dialogue and that conversation through the rulemaking process.

7 The next area, slide 16 is the 50.54(hh)(2) equipment and the Near
8 Term Task Force recommended in this area that licensees provide reasonable
9 protection for this equipment and they add equipment as necessary to address
10 multi-unit events. The staff evaluated this recommendation and we believe that
11 we have enough information directionally to move forward with orders, and to
12 ensure that licensees do provide reasonable protection of this equipment. This is
13 going to take a fair amount of stakeholder interaction to ensure that we define the
14 acceptance criteria. What does success look like? What does it really mean to
15 say reasonable protection? And so, that's going to require a fair amount of work,
16 but we believe directionally that we could do this through orders.

17 Slide 17, reliable hardened vents for the Mark I containments, for
18 recommendation 5.1, the Near Term Task Force recommended that the NRC
19 require licensees to ensure that they have reliable hardened vents in the BWR
20 Mark I and Mark II containments. The staff is recommending that the NRC
21 develop and issue orders to licensees for the Mark I containments. Again, this is
22 an area where directionally we understand where we want to go, but it's going to
23 take I think a fair amount of dialogue and conversation to make sure that we're in
24 agreement around the technical basis and acceptance criteria, with respect to the
25 reliable hardened vents.

1 The task force -- the staff, as we looked at the task force
2 recommendation, was not able in these 21-days to make a conclusion with
3 respect to the Mark II containments. Furthermore, we even asked ourselves
4 whether there is issues that need to be addressed with respect to ice condenser
5 containments and other smaller containment designs. So, we intend to try to
6 explore this further, or will explore this further as we develop the 45-day paper
7 that's due to you on October 3rd, but I think this is going to require a fair amount
8 of study and I don't want to over commit to you as to when we'll have a final
9 answer in this area.

10 Slide 18, strengthening response, onsite response, emergency
11 response capabilities, Recommendation 8, the Near Term Task Force
12 recommended strengthening and integrating what we have today in terms of
13 emergency operating procedures, severe accident management guidelines, and
14 extensive management -- mitigation guidelines. The staff looked at the Near
15 Term Task Force recommendations, 8.1, 8.2, 8.3, and 8.4, and we believe that
16 these can all be accomplished in an integrated manner through rulemaking, and
17 this would be, this would be informed through stakeholder interaction. How we
18 would propose to start this is to issuing an advanced notice of proposed
19 rulemaking. This is an opportunity for us to engage all the stakeholders in a
20 discussion around the methodology for integration of these tools, the processes,
21 procedures, the trainings, the exercises, everything that comes with this
22 recommendation, and we would interact with the stakeholders to modify the EOP
23 generic technical guidelines in order to ensure that the guidelines for the severe
24 accident management guidelines and the extensive damage mitigation guidelines
25 are done in an integrated manner, and reflecting all the appropriate design

1 features and what we know about severe accident progression.

2 Moving on to slide nine, emergency preparedness, actions, here
3 the Near Term Task Force made its recommendations that facilities be ready to
4 address a prolonged station blackout for multi-unit events and the staff has
5 looked at that recommendation, and we believe that we need additional
6 information to move forward and so we're proposing to issue 50.54(f) letters, to
7 require licensees to perform the staffing studies necessary to determine the staff
8 necessary to deal with the multi-unit events. As you heard from the stakeholder
9 panel this morning, that can be done in conjunction with the implementation of
10 the EP rulemaking. It might require a little additional time, might be done as a
11 two step process, but to us as we looked at this as a staff, it made sense to do
12 this collectively. So, that's the first part of our recommendation.

13 The second part of our recommendation goes to ensuring that you
14 have the adequate communications, equipment onsite to deal with onsite
15 logistics and coordination, as well as communicating with the offsite to ensure
16 that that's reliable. So here again, we would engage the stakeholders in
17 development of the technical basis and acceptance criteria for this
18 recommendation, before we required licensees to respond under 50.54(f).

19 Bill, in his opening remarks talked about the next steps and that's
20 slide 20, and my last slide. We owe you a notation vote paper on the 3rd of
21 October that would reflect on the other regulatory actions from the Near Term
22 Task Force. It'll talk a little bit about our implementation challenges. Again, not
23 so much resources, but skill sets are a challenge and we'll do our best to provide
24 you a notion of what work we would have to displace in order to work on these
25 near term actions that we've discussed today, and other actions that we'll discuss

1 in that paper. I'm not sure given that I'm looking ahead and I can see October
2 3rd on the calendar already as to how precisely we'll be able to give you those
3 resource estimates, but we'll give you our best shot, and if we owe you additional
4 information following that paper, we'll certainly provide that to you.

5 We want to in that paper talk a little bit more about regulatory and
6 technical basis that'll need to be developed. We'll address the other
7 recommendations and we'll talk about schedules and milestones, and how we
8 will go about stakeholder involvement. Clearly in our mind and in the paper that
9 we provided you on the charter, having and standing up an external advisory
10 panel would be very helpful to us as a sounding board, but we certainly will reach
11 out to all stakeholders through meetings, through public notices, through all
12 mechanisms available to us, to get the information that we need to make sure we
13 get everybody's input as we move forward on these recommendations.

14 The first of the meetings that we're going to have, there'll be an
15 announcement coming out in the near future, on September 21st, industry has
16 made an offer. The Way Forward Group has offered to come in and present to
17 us the actions they either have ongoing or have planned, and we're going to
18 have that meeting and have that discussion with industry, and that's the
19 beginning, and that concludes my presentation, and the staff stands ready to
20 answer any questions that you might have. Thank you.

21 CHAIRMAN JACZKO: Great, well, thank you. I have a series of
22 questions. I'm going to try and -- I've got a lot of them, so I'm going to probably
23 most of them will be to you. So, I'm going to ask you to be as brief as you can in
24 your answers. So, hopefully I can get through all of them. It's four pages, but
25 there's not that many, hopefully and some of this is just to clarify. I think you all

1 did a very good job trying to put together a very comprehensive paper in a very
2 short period of time and obviously there were challenges in doing that in 21-days,
3 which I think are completely understandable. So, there's some things that I just
4 wanted to help try and clarify, think about what really the intent of the staff is in
5 some of these areas. So, hopefully be able to do that.

6 I think as Bill has mentioned in the beginning, if we look at the level
7 -- the 12 recommendations, I guess I just want to get your sense and just
8 reiterate that what we saw in the papers at that level of the 12 overarching
9 recommendations, the staff does agree with all of the task force
10 recommendations.

11 MARTY VIRGILIO: Yes.

12 CHAIRMAN JACZKO: Okay. The -- if we look to 2.1,
13 Recommendation 2.1, that has some specific recommendations about ordering
14 licensees to look at seismic and flooding hazards, and if necessary after, update
15 their design bases and the SSCs. The Steering Committee, when you look at
16 that recommendation and look at what you've provided in this 21-day report,
17 believe that the recommendations of the Steering Committee, which ultimately
18 includes taking appropriate regulatory action are equivalent to what the task force
19 recommended.

20 MARTY VIRGILIO: Yes, and as a matter of fact, we had
21 conversations with the task force on that very issue and their members said,
22 "Yes," they believe that is equivalent.

23 CHAIRMAN JACZKO: Okay great. If I go on -- you can sense a
24 pattern here; they're all going in order. If you go to 2.3, can you give me a sense
25 of why the Steering Committee chose a different regulatory tool here than the

1 task force. The task force of course specifically stated doing an order.

2 MARTY VIRGILIO: And I think that in cases where we're very
3 comfortable with the direction that we were going, we went forward with orders
4 where we felt we needed additional information to decide what the best
5 regulatory tool and next step would be. We went to the 50.54(f) letters to gather
6 information.

7 CHAIRMAN JACZKO: Okay. The -- if I go now to the 4.1, which is
8 the station blackout 50.63 update, one of the things that was not clear to me is
9 how we -- how the Steering Committee would look at going forward with this rule,
10 and clearly we've had some discussion on some technical details and technical
11 information, but as I read the task force one of things, the task force said was,
12 this rule, for instance, would go forward as a -- through a backfit analysis be an
13 exemption under adequate redefinition of adequate protection. So, the thing that
14 I wasn't clear about in reading the paper is how would the staff plan to prepare
15 this or would it be based on essentially an adequate protection basis with an
16 exemption from a backfit under that basis.

17 MARTY VIRGILIO: I will acknowledge that the paper isn't clear.
18 We've had a lot of discussions amongst the Steering Committee since the paper
19 was developed, but at this point and time, I think the best approach for us is to
20 redefine adequate protection or to take a -- take that as the technical basis or the
21 rationale for the proposals we'll make to the Commission.

22 CHAIRMAN JACZKO: Okay. Thanks.

23 BILL BORCHARDT: And if I could just add, I think a number of
24 issues, I mean this is one very good example, but that may not pass the cost
25 benefit analysis, but what we're going to do is proceed along the line that this

1 work is going to be accomplished and at some point will need to come to the
2 Commission and say, "Do you want to use adequate protection?" and move
3 forward or else we're up against the wall, but and so that'll be a specific probably
4 issue by issue decision we'll be asking the Commission for, some point along in
5 the process.

6 CHAIRMAN JACZKO: Well good, if I could turn then to 5.1 and I
7 think Marty touched on this a little bit, maybe just a little bit more detail here
8 would be helpful and this has to do -- obviously I think the real fundamental
9 difference here between where the Steering Committee came out is not including
10 the Mark IIs and can you give me a sense of why I mean, a little bit.

11 MARTY VIRGILIO: We just did not have sufficient information with
12 respect to the Mark IIs, the ice condenser containment and other containment
13 designs to move forward at this point and time. If we will --

14 CHAIRMAN JACZKO: Oh, go ahead.

15 MARTY VIRGILIO: We'll address it to the best we can and the
16 paper we'll provide you on October 3rd.

17 CHAIRMAN JACZKO: Okay, so --

18 MARTY VIRGILIO: But we need additional technical detail.

19 CHAIRMAN JACZKO: Okay, and so one of the things you may be
20 considering is more containment designs even then just Mark IIs.

21 MARTY VIRGILIO: Right. There's our discussions amongst the
22 Steering Committee was geez, ice condenser containments might pose an
23 additional opportunity.

24 CHAIRMAN JACZKO: Okay. Well, I appreciate that. If --
25 Recommendation Number 7 we haven't really touched on. The Steering

1 Committee didn't recommend moving forward now with the task force
2 Recommendation Number 7 and that deals with the spent fuel, make up capacity
3 instrumentations for spent fuels. Based on the discussion in the paper and the
4 earlier discussion we had in general about the recommendations, does the
5 Steering Committee support this recommendation and should we expect
6 something coming forward in the 45-day report?

7 MARTY VIRGILIO: Yeah, we do support the recommendation.
8 We're conflicted over how to move forward with respect to the pedigree of some
9 of these requirements, and we see that these are tied to 2.1, 2.3 and I think we're
10 going to need to make sure we understand clearly where we're going to respect
11 of seismic design, and other features.

12 CHAIRMAN JACZKO: And by pedigree --

13 MARTY VIRGILIO: We're talking about quality controls and
14 maintenance procedures.

15 CHAIRMAN JACZKO: Great, thank you. Going on to -- maybe
16 we're going to do it, we're almost there. If we look at Recommendation Number
17 8, which has to do with the emergency operating procedures and kind of
18 incorporating all this scenario where the Steering Committee recommended a
19 rule instead of a I think they were orders on the task force and then followed up
20 with a rule, so you know, to some extent it may be six and one half dozen of one
21 and versus the other. But again, to get to that specific question, where there
22 didn't seem to be clarity, does the staff right now envision this rule being
23 prepared on the basis of adequate protection?

24 MARTY VIRGILIO: Redefining adequate protection, yes.

25 CHAIRMAN JACZKO: Okay thanks. Looking at 9.1 and 9.2 which

1 again weren't touched on in the discussion but clearly are recommendations that
2 had some short term components, again I just want to clarify here, does the staff
3 support these recommendations and this something we expect to see more of in
4 the 45-day paper?

5 MARTY VIRGILIO: Yes, we support them, I'm just trying to think
6 through whether we'll have more information. I mean what we're recommending
7 now is to engage in the conversation, start the staffing analysis, under 50.54(f)
8 ask licensees to provide us the information of the communications equipment.
9 We will address all of these in October 3rd from various perspectives, but
10 technically I think we need to move forward on this. We're ready to move
11 forward on this.

12 CHAIRMAN JACZKO: The -- and again 9.3 is similar and I think
13 you touched on that a little bit in what you heard a little bit from the previous
14 panels about how we would proceed with 9.3. The last one to get to is 9.4 and
15 that has to do with ERDS modernization. And this is one I know we're doing a lot
16 of work now to get folks to move forward on the ERDS modernization initiative.
17 Is the sense of the staff that if licensees don't get things done which I think
18 they're supposed to be done sometime mid next year, with the commitments that
19 they've made to us, is this something the staff would be prepared to issue orders
20 on if necessary to?

21 MARTY VIRGILIO: Yes, if you got the moment where we stand
22 now is I think 50 percent, Jim you can correct me, 50 percent of the licensees
23 have implemented. We'll have another 30 percent by the end of the calendar
24 year, and the remainder have committed -- firm commitments -- to do the
25 upgrades by this summer.

1 CHAIRMAN JACZKO: Okay, great, good, well that's excellent, so.
2 Again, and I appreciate that because I think some of those things weren't
3 necessarily clear, and again I think some of that was just a reflection of the
4 difficult challenge you had in a fairly short period of time. So I appreciate you
5 helping me clarify some of those.

6 I had one other question that doesn't get so much to the specifics of
7 the recommendations, but it does get a little bit to how we move forward to some
8 of the new reactor issues, and if anybody has thoughts on this, Marty or Mike
9 Johnson. The Steering Committee refers to both SECY-11-0110 and SECY-11-
10 0115. In those two SECYs the staff gives two options available to the
11 Commission for implementing the Near Term Task Force recommendations for
12 the Vogtle and Summer COL's. The staff didn't necessarily give us a preference
13 about either of those two options. I don't know if the staff has a preference for
14 how we would kind of apply those, or is that something that just left us to figure
15 out.

16 MIKE JOHNSON: Chairman, we've been thinking about it. The
17 fact is we don't have a preference. We think either would be viable.

18 CHAIRMAN JACZKO: Okay. Thank you. So we've got to figure it
19 out, which is fine. Yeah, that's okay. Okay great, well those are the questions I
20 had. We'll turn the Commissioner Apostolakis. Thank you.

21 COMMISSIONER APOSTOLAKIS: Thank you. Well, I read also in
22 addition to the SECY the comments submitted by stakeholders. I noticed that
23 NEI in its comments keeps coming back to the theme that we ought to have
24 provide flexibility to the licensees when we implement these recommendations,
25 however they didn't define the concept of flexibility. Perhaps they mean we

1 should have performance based objectives that we define rather than telling
2 them exactly what to do. You have any comment from that?

3 ERIC LEEDS: Yes commissioner, I you know Marty touched on it
4 in his presentation and I think Chip Pardee also touched on it in his presentation.
5 I think what we want to get out of this process is to make sure we both
6 understand what success is. What the end point is as we go into it. And I think
7 we heard from all of our stakeholders. I know in our previous meeting before this
8 meeting with our stakeholders, they all want to be involved in the process and
9 they all want to make sure that we hear what they have to say. And I think that'll
10 go a long way into us being able to formulate what is success for this activity,
11 what our expectations are, we'll listen to the industry, but we want to listen to the
12 NGOs just to make sure we all understand what success is so that we're driving
13 to an end point that we can agree to.

14 COMMISSIONER APOSTOLAKIS: But we can define success in a
15 highly prescriptive way. I mean that doesn't mean that you're not giving them
16 any flexibility, so I agree that we have to all understand what success is, but the
17 question is, should the definition of success be performance based, or highly
18 prescriptive, or case by case?

19 ERIC LEEDS: Well certainly, we always defer towards
20 performance based, risk informed performance based, that's our overarching
21 mantra. That's what we like to go to.

22 COMMISSIONER APOSTOLAKIS: Except in the SECY there is no
23 word "risk" anywhere.

24 [talking simultaneously]

25 ERIC LEEDS: Overarching mantra [laughs]. All right. But, you

1 know, you take a look at flooding, just taking a subject out of the air, we have
2 plants that are in the desert in Arizona where they have to get their makeup
3 water from the city of Phoenix. They have a different issue flooding than the
4 plants, say, a Fort Calhoun. So is it plant specific? It's got to be performance
5 based. It's has to be appropriate for that site. So there, there always has to be
6 flexibility.

7 COMMISSIONER APOSTOLAKIS: I agree with that I really think a
8 lot of these things are site specific.

9 ERIC LEEDS: Yes, sir.

10 COMMISSIONER APOSTOLAKIS: And there's only way to study
11 site specific but I don't want to go into it. I was surprise -- yes, that's what it is.
12 Yeah, because you can't impose the same requirement on Palo Verde and San
13 Onofre.

14 I was surprised to read that we want to develop or we want the
15 licensees to develop, that's another question, each licensee or any -- but
16 anyway, I don't want to address that. Develop acceptance criteria methodology
17 for doing walk downs. I would have thought that was something we settled some
18 time ago. And we know how to do walk downs, Marty?

19 MARTY VIRGILIO: I would have thought so too, until I had a
20 discussion with Jack Grobe on the Near Term Task Force about really what he
21 had in mind in terms of the walk downs and the technical expertise that was
22 involved. It almost reminds me of the ISA approach in terms of walking down the
23 site, not only just to look at what you have and does the as-built design match
24 your design drawings. I think that the Near Term Task Force had in mind a
25 different look at this, and we need to make sure that we're clearly aligned before

1 we start these walk downs as to what is the methods that we expect, what
2 technical expertise we expect to be involved in this and how they're conducted.

3 COMMISSIONER APOSTOLAKIS: But we have conducted walk
4 downs in the past.

5 BILL BORCHARDT: I don't think it's an issue of methodology; it's
6 an issue of acceptance criteria. Look at the flooding issue, you're going beyond
7 the current design basis, so part of the evaluation was, okay, given this new
8 scenario, what is the appropriate acceptance criteria, when you do the system or
9 the plant walk downs.

10 COMMISSIONER APOSTOLAKIS: That's interesting that you said
11 that we're going beyond the design basis. We did ask a number of years back
12 the utilities to do the IPEEEs and the word vulnerability was all over the place
13 without being defined and now we also have the word vulnerability in several
14 places and again there is no definition. Is it because everybody understands
15 what it is, or is it difficult to define, or -- because you remember one interesting
16 result of the IPEEEs was that every single licensee said they didn't find any
17 vulnerabilities and then in the next sentence they said, but we did the following
18 things to enhance safety. So why are we still using a term that is not well
19 defined?

20 BILL BORCHARDT: Well I --

21 COMMISSIONER APOSTOLAKIS: But are we meaning ...

22 BILL BORCHARDT: What I think we're illustrating is that some of
23 these activities in the past years had a soft regulatory footprint, if I can introduce
24 a phrase, and certainly safety improvements were made at the plant, some of
25 them done by industry voluntary initiatives, some of them prompted by generic

1 letters or other regulatory tools. But there, what we didn't do is have in all cases
2 very firm acceptance criteria. We looked at more of a process that helped to
3 improve safety at the plants. So we didn't ensure that there was 100 percent
4 consistency across the fleet, from our perspective the industry may have done
5 activities in that with that intent, and we didn't have firm acceptance criteria for all
6 of those individual specific issues. And what is being discussed in the walk down
7 is at some point -- now if we're going to have a regulatory requirement it is our
8 responsibility to make sure there's a clear understanding as to what the
9 acceptance criteria for each of the elements that are being walked down. And
10 what the language as I interpreted it is that we believe that it should be
11 commonly understood amongst all stakeholders as to what the appropriate
12 acceptance criteria are. Then go out and do it.

13 What we don't want to do is say rush out, go do something, and
14 then have the regulators say, well we don't really like the acceptance criteria you
15 used, go do it again and use these acceptance criteria this time, so it's more like
16 the principle that it's more important to do it right than it is to do it fast.

17 COMMISSIONER APOSTOLAKIS: The way I understand your
18 answer is defining the acceptance criteria automatically you also defining what is
19 vulnerability.

20 JIM WIGGINS: I'd just offer another insight, and this is a lot of this
21 is coming from my regional experience. We've had walk downs even in our own
22 programs for many, many years. My experience even at the sites as a resident
23 and supervising others is you're best able to do the walk down when you know
24 what you're looking for. A fire walk down's going to be different than a seismic
25 walk down's going to be different than a flooding walk down. And I agree with Bill

1 with and Marty, what we've heard from Jack Grobe and others on the task force
2 and I think it's smart and it's the right thing. If you're looking for seismic I think
3 you'd better have seismic experts on that group that have an idea of what they're
4 looking for.

5 Also, when you talk to acceptance criteria, it's a universal
6 assumption if they find problems they'll be put in the corrective action program.
7 What gets interesting is how do you define what's a problem. What level of an
8 issue is it that you would have to react to and when do you get to a simple broke-
9 fix like a say you're doing a seismic walk down you find a place for a hangar
10 that's missing some hardware or something like that, it's pretty straight forward,
11 you're going to restore it back to the condition. But this walk down might be even
12 beyond that. It might raise a question with regard to whether they selected the
13 right hangar design for this particular application, this particular level in the facility
14 knowing what the seismic hazard would be that they're assuming they're looking
15 at.

16 COMMISSIONER APOSTOLAKIS: Another way of putting it, is you
17 know, what is the problem is the same thing as what is vulnerability.

18 [talking simultaneously]

19 BILL BORCHARDT: You're redefining vulnerability, that's the
20 important part because take B.5.b equipment, that was for a certain scenario.
21 Now we're going to look at that equipment from a whole different scenario,
22 flooding, which wasn't really incorporated. So, there's different vulnerabilities
23 and acceptance criteria.

24 COMMISSIONER APOSTOLAKIS: Just a quick question here. I
25 get the impression that when the document, the SECY document, says flooding it

1 means external flooding, and I don't understand why internal floods were not
2 included. And second, I think Mr. Cochran this morning said that one can look at
3 what happened at Fukushima in one way that says we had an earthquake and a
4 flood or a tsunami. Another way is to say we had an earthquake and another
5 serious event that occurred which happened to be a tsunami there but it may be
6 something else somewhere else. Now if we take that broader view and we're
7 going through the trouble of defining acceptance criteria and walk downs and
8 how to do them and so on, why not do it for -- include you know fires and internal
9 floods and maybe hurricanes, and then do a comprehensive job there and define
10 walk downs for all these events. Why limit ourselves to external floods?

11 ERIC LEEDS: If I may respond.

12 COMMISSIONER APOSTOLAKIS: Sure.

13 ERIC LEEDS: A number of items, no, we did not as a Steering
14 Committee we did not discuss internal flooding and we didn't discuss all of the
15 external hazards, and reviewing all the external hazards. There are a number of
16 external hazards that were discussed in the report. Certainly earthquakes, the
17 flooding, tsunami, and fires caused by earthquakes are also discussed ...

18 COMMISSIONER APOSTOLAKIS: That's what I meant.

19 ERIC LEEDS: Internal flooding, we have had Lessons Learned in
20 the past the Susquehanna plant had a significant internal flood at that plant just a
21 couple years ago where they had a condenser boot I believe failed and flooded
22 that site and I think the industry learned a lot of lessons from that. We didn't
23 necessarily have safety lessons from that, but you know, in the 45-day paper, the
24 Commission asked the staff to consider things outside of the report, things that
25 aren't considered in the report. And we've already started a list of those items.

1 Perhaps we should add that to the list.

2 COMMISSIONER APOSTOLAKIS: Thank you.

3 CHAIRMAN JACZKO: Commissioner Magwood.

4 COMMISSIONER APOSTOLAKIS: Oh, I'm sorry. Marty

5 CHAIRMAN JACZKO: Oh, yeah.

6 MARTY VIRGILIO: Just to add to what Eric said, I do read into
7 Recommendation 1.4 which is to go back and reevaluate the insights in the IPE
8 and IPEEE's to determine if there additional actions that we can work on. I
9 personally would say that if we're going to go down that road we out to think
10 about updating those tools and then looking at those. And that would get you to
11 the kinds of issues you're talking about I think. But that's the longer-term effort
12 and we are recommendations on that.

13 COMMISSIONER APOSTOLAKIS: Terrific.

14 MARTY VIRGILIO: No, that's 18 months.

15 COMMISSIONER APOSTOLAKIS: Oh, that one.

16 MARTY VIRGILIO: Yes, sir.

17 CHAIRMAN JACZKO: Commissioner Magwood.

18 COMMISSIONER MAGWOOD: Let me echo some of the thanks to
19 the chairman for working on such a compressed time frame, I know that 21-days
20 isn't much time to do this kind of work. I also wanted to thank the stakeholders
21 for doing it this morning because I know we asked them to respond in a very very
22 short period of time that was much shorter than our normal process and I really
23 appreciate the effort they've gone through to respond to our request for their
24 participation.

25 I should note that you know the Commission, in its infinite

1 generosity, originally was thinking about doing this in 20 days but we decided we
2 might need the extra day so we went to 21-days. You've already covered the
3 issue of the Mark II's the Chairman brought that up in his questions and I wanted
4 to explore that just a little bit further because I think you've raised an important
5 point about the other small containments. It sounds -- it certainly seems to me
6 that we're likely to do something with those small containments. Is there nothing
7 that needs to -- should be conserved in this short term 21-day report timeframe to
8 think of -- to look for more information or to gather information because I find as I
9 look at this there's a lot of things we -- that I find I don't know about these
10 systems, and as I asked staff that they don't know about these reactors at this
11 point. I wonder, is there anything we should consider doing at this early stage
12 before moving off to a 45-day report?

13 JIM WIGGINS: We were having a number of discussions in the
14 group. First on the Mark II's if you go back to the actual Near Term Task Force
15 report the basis for going after Mark II's as indicated in that -- I have a lot of
16 comments on this during the Steering Committee that's why the emergency
17 planning guy is answering a containment venting question. You'll see and I know
18 that there's a historically solid basis for venting Mark I's. We've been there,
19 you've heard from the prior panel that was part of a Mark I program that was
20 back in the 80s. The Mark II we haven't gone there yet. And the task force
21 makes a conclusion of it's reasonable to assume based on the volumetric
22 comparison between Mark I's and Mark II's that you should do Mark II's also.

23 We just want to talk to our staffs. We don't think it's a gather
24 information licensee exercise; we think it's a gather information from the
25 containment systems branch staff here. With regard to the other containments, in

1 particular the ice condenser containments, I think if we were to ask, and we likely
2 would, for an operating experience summary between Mark II's and say ice
3 condensers, you might find there's more provocative issues than the operating
4 experience on the ice condensers. There's been a number of rather knotty
5 issues with regard to the ice in the baskets, the corrosion of the baskets, and
6 how do you know you got what you need in there, and how do you it'll perform
7 and how do you know its existing condition meets the design condition for it to
8 function the way it's supposed to.

9 So I think we want to take the time to ask our own staff and the time
10 is 24 days. It's the difference between 21 and 45. We thought we can get a
11 discussion from our own staff here which would allow us to make a more
12 informed decision. I think for a -- you may -- I would not be surprised when you
13 see the 45-day report but you'll see that the schedules for some of the other
14 issues don't appear to be as far down range as you might suspect. It's not all
15 long term things. Some of these particularly the containment one and I think the
16 issue with regard to the spent fuel pool and the instrumentation; that's a pedigree
17 issue, it's a very specific question. We didn't have time to resolve -- to get by the
18 21-day report. I think we can resolve both of those before we do the 45-day
19 report, and then we'll -- you may see those things in a timescale more -- May. I
20 don't want to over promise because there's some serious resource issues for the
21 staff on how to make all these things happen. You may see some things that are
22 happening earlier than you might think if you think all of these are long term
23 issues.

24 COMMISSIONER MAGWOOD: I appreciate that. That explanation
25 helps a great deal. Thank you very much. I believe it was Dr. Lyman was talking

1 about -- spent some time talking about the hydrogen igniters and the need for a
2 short backup power; that's not an issue I recall seeing much about. Is that
3 something that was discussed by the Steering Committee in any detail?

4 MARTY VIRGILIO: It wasn't necessarily addressed but we are at
5 this time, formulating the list of additional actions that we believe we need to look
6 at and I know that fuel performance, hydrogen generation, hydrogen control are
7 all on that longer term list.

8 ERIC LEEDS: If I can just make a statement; I think that the report
9 -- The near term taskforce that wrote this report. I think they -- and I think I've
10 said to each member of the Commission, I thought this was a bold and
11 courageous report. They had a couple disadvantages. One of them was that
12 they didn't get any external stakeholder input and the value that we're seeing
13 from external stakeholder input are these types of suggestions. You know, what
14 about igniters, backup power for igniters, what about filtered vents, what about,
15 you know, there's a number of items and I think that's why -- I heard Bill mention
16 that we want to do it right the first time. It's so important that we have that
17 external stakeholder input, that we listen to that, help use that information to
18 inform us as we go forward, factor that into that paper and provide you that
19 information.

20 COMMISSIONER MAGWOOD: Very well said, I agree entirely.
21 Eric, since you jumped in -- a question for you. One of the things that I think that
22 will become important as this goes forward, not just over the next few weeks, but
23 really over the next several years is when we get into the implementation of
24 actions at the plant sites. And we had a conversation this morning briefly about
25 prioritization. I think the Chairman was asking about how we prioritize these

1 activities related with regard to things like license renewal and all sorts of things -
2 - but beyond those types of activities is there's safety activities. There's things
3 that are enhancing the safety of various plants: GSI-191 and other activities that
4 are going on at the plants. Have you considered how you're going to prioritize
5 these activities when you go to the licensees and begin the conversation about
6 getting this work done verses other safety activities that are taking place at the
7 plants?

8 ERIC LEEDS: Commissioner, you just touched on the greatest
9 concern that I have with regard to going forward with the Fukushima actions; how
10 to prioritize them, how to prioritize them vice the work the staff already had
11 ongoing and how to prioritize them vice what licensees have ongoing at the sites.
12 And I can give you examples of each one of those where we're going to have to
13 do a lot of thinking and a lot of work. One of the task force recommendations is
14 to take a look at the fires resulting from earthquakes. Well, as you all are aware,
15 we're very, very busy with NFPA805 activities; very safety significant activities.
16 And we have a limited skill set in the fire protection.

17 Another example that I want to share with you is when I met with
18 Constellation Energy. Licensee for Ginna is completely redoing their auxiliary
19 feedwater system. It's going to reduce the core damage probability at that site.
20 Voluntary initiative; you know, I applaud it as a regulator I want them to do that
21 work. I'm very loath to put something else on their plate that might deter them
22 from doing that; that may not have the same safety impact. So we have a lot to
23 weigh. It's going to be a real challenge for the staff.

24 BILL BORCHARDT: Commissioner, I think there's a couple
25 dimensions to that question and I think the drivers going to be skill sets; we've

1 already mentioned that. And I think if we take the skill sets that are required for
2 each of the recommendations and look at what other work is being accomplished
3 and then risk inform a prioritization of that work, that'll help make a better
4 informed decision about which ones -- activities should be done and when.

5 COMMISSIONER MAGWOOD: You're thinking about skill sets
6 assessment internal or external?

7 BILL BORCHARDT: Well, internal is a first step but as part of that,
8 then once we come up with a first rough cut I think we need to engage the
9 stakeholders to find out what makes sense from an outside of NRC perspective
10 as well. So, I mean, it's not a simple issue, it's just taking these
11 recommendations and force ranking them for safety significance because it's -- I
12 think going to be more -- at least as much influenced by skill set availability as it
13 is by risk.

14 COMMISSIONER MAGWOOD: And obviously it'll be something
15 you'll have to look at by a plant by plant basis. It won't be something where one
16 size fits all. One last question. There was a USGS representative this morning
17 who was talking about the seismic instrumentation. I just want to give you a
18 chance to sort of give us your thoughts about that. He did indicate that he
19 thought we should have our own equipment out there which, obviously, we don't.
20 But just as for your opinion about that or your reaction as to his comments.

21 MARTY VIRGILIO: The only thing I can say is that, shortly
22 following the earthquake at North Anna, I asked our staff about that issue and
23 they came to the same conclusion with respect to instrumentation; more modern
24 instrumentation would've been helpful.

25 BILL BORCHARDT: To be honest with you, I don't recall whether

1 or not it had been seriously considered in the past as to requiring something
2 more sophisticated than scratch plates to be installed in the plants and how that
3 issue got resolved so it's probably a look up we need to take.

4 COMMISSIONER MAGWOOD: Especially, I think -- and Jim if you
5 wanted to respond, but since it's after the fact, does that fall into the safety area
6 since it's more diagnostic than it is predictive? I'm not sure how to think about
7 that issue.

8 JIM WIGGINS: It does though, influence and trigger certain review
9 activities that we have to do, and the licensee has to do. While I haven't thought
10 a lot about it; I'll give you a first reaction on instrumentation. Generally, come
11 down if it's important enough to have them we should require licensees to have
12 it. I'm not talking about instruments out in the area remote from the plant to
13 monitor, which would be a legitimate interest from USGS. That may be another
14 government organization that ought to think about that. But if you look at the
15 seismic response, in particular maybe the North Anna response, and you try to
16 ask yourself what is the essential information that North Anna or a licensee would
17 need in order to do the right thing. You have to ask what's the regulatory
18 structure; they got to tell where they are vice a vie the operating basis
19 earthquake and the safe shut down earthquake to determine what level reviews
20 they have to do from a regulatory point of view, and any approvals they need
21 from us.

22 You know, the North Anna-- you could say it's timely; it took weeks,
23 a few weeks, you got an answer enough to know they have to do the exceed the
24 SSE level review. Having a better instrument would give it more real time; it
25 would resolve some of the questions that existed in the interim period and raise --

1 scratch an itch on why don't we know more about it.

2 The plant that I was a senior at did not have-- they had a
3 generation beyond scratch plates and that's a 1980-ish license, probably
4 designed in the 70s. There's other technologies; they had a system, at least at
5 the time, that was -- a panel in the control room that recorded. It was, at that
6 time, cassette recordings that you can take and analyze, so it went beyond the
7 scratch pad. So there's other generations of instrumentation. The answers
8 probably three questions that you asked.

9 COMMISSIONER MAGWOOD: I really appreciate this --

10 JIM WIGGINS: I'll leave it to you to kind of match answer to the
11 question.

12 [laughter]

13 CHAIRMAN JACZKO: It's the questions he didn't ask.

14 [laughter]

15 COMMISSIONER MAGWOOD: It does sound like Jim is moving
16 closer and closer to the 21 century so that's a good thing.

17 CHAIRMAN JACZKO: Commissioner Ostendorff?

18 COMMISSIONER OSTENDORFF: Thank you, Mr. Chairman. I
19 want to extend Bill, my thanks to you and Marty and Eric and Jim and the rest of
20 the team for your hard work. I know the Commission final SRM on this whole --
21 on the near term taskforce report -- had some aggressive timelines in there and I
22 think it's consistent though with doing this in a measured way to get it right the
23 first time and getting it right rather than quickly is, I think, Bill, a comment I've
24 heard you make several times which I agree with. I applaud the hard work you
25 all have done over a very short period of time and our thanks to you.

1 I've got a number of questions, some of them I am just going to
2 make a couple of comments on. I going to maybe pickup with where
3 Commissioner Magwood was. I acknowledged that he was very gracious in
4 giving one extra day, from 20 to 21-days as he previously highlighted. He's a
5 very generous man.

6 On the seismic piece -- and I'm trying to understand a little bit the
7 relationship between GI-199 those ongoing efforts that started out well before
8 Fukushima. Could someone comment, maybe Marty or Eric, you know, how that
9 timeline for 199 interfaces with the task force efforts and the different
10 recommendations.

11 ERIC LEEDS: Commissioner, preliminary thinking, as we have
12 discussed this as a Steering Committee, is that the GI-199 effort is perfect to use
13 to go forward and pretty much what we're looking at doing is just expediting what
14 we've already started using GI-199 as a basis for licensees to go back and
15 reevaluate what they have at their sites if it's right, and also from preliminary
16 information. What we have so far, our seismologists on the staff seem, strongly
17 believe that the North Anna event, that earthquake that was centered in Mineral,
18 VA, is bounded by GI-199.

19 COMMISSIONER OSTENDORFF: What is your understanding of
20 the overall timeline for completion of GI-199 activities by the licensees?

21 ERIC LEEDS: The timeline prior to Fukushima, prior to
22 [unintelligible] --

23 COMMISSIONER OSTENDORFF: As of today, where things
24 stand.

25 ERIC LEEDS: We believe that the seismic hazards analysis is

1 supposed to be done by the end of this year and we were hoping that by early
2 spring we'd be ready to go ahead with a final generic letter setting the licensees
3 off with a timeframe to go forward. I think we're going to need to, we still need to
4 have the work that's being done to develop that seismic hazards effort that's
5 being done by the NRC, DOE and EPRI that, we can't speed that up. That just
6 has to go through its course. We should have that done by the calendar year.
7 Rather than using the generic letter what we suggested is using a 50.54(h) and
8 just telling licensees to use that process, go forward. And that would truncate it
9 and get us the information earlier. By doing those seismic walk downs ahead of
10 time, Recommendation 2.3, we think that we'll have a better idea of what
11 condition those sites are in and provide us that comfort that we need as the
12 licensees go through the analysis that we'll need for the longer term seismic
13 review.

14 COMMISSIONER OSTENDORFF: Okay. Thank you. Marty, I
15 have a question for you. I appreciated your explanation of the thought process
16 on the regulatory vehicles between orders, 50.54(f) letters, rulemaking, et cetera,
17 and I wanted to maybe just kind of bore down into one of those and I'd asked a
18 question of the previous panel dealing with the reliable hardened vents, the 5.1,
19 and I know that we've had some discussions about is there or is there not an
20 existing technical basis to move forward with an order and is there further
21 engagement required with stakeholders in order to issue an order in that area.
22 Are there examples of the NRC as a regulator issuing orders where that process
23 required further interaction with stakeholders to understand the technical basis
24 for the subject being regulated?

25 MARTY VIRGILIO: I would look to some of the orders that we

1 issued post 9/11 as examples of where in fact we issued the orders, but then we
2 still had additional dialogue to make sure that we were in alignment with respect
3 to methodologies that would be used in acceptance criteria.

4 COMMISSIONER OSTENDORFF: Okay. The big picture in just
5 respect to the 5.1, how long would it take us, is there a ballpark estimate for how
6 long would it take to issue an order for the reliable hardened vents?

7 MARTY VIRGILIO: I think it would depend, again, it's going to start
8 out with, you know, the availability of the resources, the other work that would be
9 disrupted. We're going to have to look at that and make sure that we're not
10 disrupting things of higher safety significance. But, you know, our notion is that
11 this is not going to be years. I mean, that's why we went to orders as opposed to
12 rulemaking. So, we want to make sure that we start the dialogue, make sure that
13 we're in agreement about things, and I think it was Mr. Pardee that talked about
14 motive power, or you might have talked about, you know, how many cycles do
15 we want, what does it mean for operator availability. There are a number of
16 things that we want to make sure that we're in agreement on before we would
17 say okay, go ahead and this is the requirements. This is what you're expected to
18 meet.

19 ERIC LEEDS: If I could add just one thing about orders, we heard
20 very strongly from the NGO's that they had some reservations with orders
21 because they felt that they were being cut out of the process and they want to be
22 part of the process. And so, I think this staff needs to consider that and going
23 forward with issuing orders and making sure that our interactions allows for that
24 type of stakeholder input before the orders are issued.

25 COMMISSIONER OSTENDORFF: Okay. Let's, specifically the

1 words that are in your SECY paper say this will allow and include interactions
2 with stakeholders to develop a technical basis, basis and acceptance criteria for
3 suitable design expectations.

4 MARTY VIRGILIO: Let me admit to an intentional ambiguity in the
5 paper because we thought, there are two -- there are two paths we can go down.
6 One is to issue the order that would start dialogue. And the other would be to
7 have the dialogue completed and then issue the order, and we're still open at the
8 time that we signed out that paper as exactly how to approach that. We definitely
9 need to have the dialogue and we need to have the alignment around the
10 acceptance criteria before anybody takes any action. But, you could in fact issue
11 the order in a way that would say, as part of a feature of the order, you need to
12 come to an agreement on acceptance criteria and then move forward to
13 implement.

14 COMMISSIONER OSTENDORFF: Well, what I'm hearing, I think,
15 if I'm correct, just confirm that, to the extent that you're going to have interactions
16 with stakeholders that the NGO's would be part of that population?

17 BILL BORCHARDT: Absolutely.

18 COMMISSIONER OSTENDORFF: Okay. Good. Marty, you made
19 a comment. I think the chairman had asked a question about Recommendation
20 7, spent fuel pool, and then I just kind of wanted to get a very specific question
21 here that there is nothing in the short-term paper based on some concerns and
22 interface with the Recommendation 2.1 on the seismic piece and what the
23 pedigree quality control measures might have to be for, in that area. Can you
24 give us an example?

25 MARTY VIRGILIO: Well, do you apply Appendix B and all the

1 provisions of Appendix B to the instrumentation that you would have for wide
2 range monitors. They have to have narrow range monitors today so they know
3 where the water is relative to the top or close to the top of the pool. But, under
4 what conditions do we do this? And again, this goes back to, I think, some of the
5 notion in Recommendation R1 as to, do you need, you need to come to some
6 alignment or some agreement as to what are the provisions of Appendix B that
7 you would provide, what provisions of the maintenance rule you would provide
8 for these beyond-design basis, the design basis extension, accidents and events.
9 We're, we may be uneven today with respect to some of our beyond-design
10 basis rulemakings and requirements with respect to quality assurance,
11 maintenance rules and other activities.

12 BILL BORCHARDT: I'm sorry. In the past, for example after 9/11,
13 there's a lot of discussion as to how do you ensure functionality of the function
14 that you're concerned about and if you, the historical approach is if it was safety
15 related equipment it would have to be 1E electrical power supply. It'd have to be
16 seismically designed. You'd use Appendix B. All of those have many sub tier
17 requirements built into it. Another approach was, would be that you, well, you
18 don't need that, all of those requirements. You need to just enhance its
19 functionality. So, those are the kinds of decisions that need to be made as we
20 looked at spent fuel pool instrumentation as to what's appropriate under this
21 circumstance and the other systems that already exist.

22 COMMISSIONER OSTENDORFF: Jim, did you want to say
23 something?

24 JIM WIGGINS: I was going to say the principal hang up on 7, at
25 least as I look at it, was that the task force said it should be safety related

1 instrumentation, safety related. I want to explore whether that's actually
2 necessary rather you need reliable and next we'll get to Commissioner
3 Apostolakis' question about having some flexibility in there. I believe the,
4 fundamentally I believe the answer is that you need reliable instruments. You
5 need reliable power to the equipment that you're counting on. If you buy into
6 safety-related, there's a tail that comes along with it. It's Appendix B sure, but
7 more specifically you're looking at separation of channels. You're looking at
8 separation of control and instrumentation. You have the whole IEEE 603 rigger
9 for how you set up a safety-related system and I'm not sure that's needed. It's a
10 heck of a backfit if it is in terms of retrofit. I don't want to use the backfit word.
11 It's really a retrofit. You'd have to say you'd have to do some major
12 reconstruction in there. I just want to make sure we actually know what we're
13 shooting for and what we really need in this and that's one of the ones as I
14 mentioned that Commissioner Apostolakis, you could expect, or Commissioner
15 Magwood rather, you could expect when you see it in the 45-day, the time scale
16 for this might not be long, long. It might be, you know, something approximately
17 what the rest of these things that we're talking about in the 21-day paper pending
18 the fact that, you know, Eric can get enough resources and skill sets available to
19 look at this and implement it.

20 COMMISSIONER OSTENDORFF: Again, thank you all. Thank
21 you, Mr. Chairman.

22 CHAIRMAN JACZKO: Commissioner Svinicki.

23 COMMISSIONER SVINICKI: Well, I will join in thanking you and all
24 those who supported you in your work on this and all you accomplished in 21-
25 days. You looked at the work of people for 90 days and we gave you 21-days. I

1 think at some point we'll give you two -- we'll give you a couple hours to turn
2 around on some things here at some point. So, if we keep having it.

3 CHAIRMAN JACZKO: [unintelligible]

4 COMMISSIONER SVINICKI: That's true. Hi, Marty, how are you?

5 MARTY VIRGILIO: All right.

6 COMMISSIONER SVINICKI: I'm kind of thinking, well, Marty had
7 to deliver most of the staff's presentation, so I ought to just, that means that out
8 of fairness the questions should be directed to others. But, then I thought, no. I
9 have to direct my questions to Marty. Marty, you made a statement that, and it's
10 in the paper that I'm quoting, but I think you used it just off the top of your head,
11 but it was I think almost verbatim, this -- the staff believes that all of the task
12 force's recommendations if adopted would enhance safety. My question for you
13 is if the tragedy in Japan followed by the nuclear event had never occurred, and I
14 presented you with the list of recommendations of the task force, would it be your
15 assessment that those recommendations just taken by themselves enhance
16 safety even if Fukushima never happened?

17 MARTY VIRGILIO: I think they would enhance safety.

18 COMMISSIONER SVINICKI: Okay. So, I'm not trying to pick on
19 you, but I wanted just to confront you with that because I think that you know
20 really what you as a steering group and the staff have to evaluate. It's a lot more
21 complicated than a statement of do these recommendations enhance safety. I
22 mean, at the end of the day you may wish it were really that straightforward. And
23 so, I asked Mr. Pardee about accident reconstruction and timelines out of the
24 events at Fukushima and the task force acknowledged that there's a lot that we
25 don't know about the specific sequence of events. I'm assuming that didn't

1 change in the lengthy 21-days that you were given either.

2 So, I think you know and I just want to give you a chance to react to
3 that, to say that at the end of the day it's more complicated than looking at
4 whether they enhance safety. I mean, we -- you also responded to questions
5 about redefining adequate protection. So, I might ask you or anybody else to
6 respond really to this train of thinking, which is that we use the term redefine
7 adequate protection. I mean, what that's a fancy way of saying that we're going
8 to relook at how safe is safe. I mean, that's what that means in laymen's terms.
9 So, we don't have the kind of fidelity on the events at Fukushima that we would
10 like and yet we will go ahead and say that in some high level those events have
11 led us to believe that we must reexamine how safe is safe.

12 How do you respond to that disconnect, that you have an absence
13 of some of the key specifics that you might want? How did you as you looked at
14 the task force recommendations and develop the 21-day paper, what was your
15 discussion about that particular kind of high level disconnect?

16 MARTY VIRGILIO: We recognize that our state of knowledge is
17 not complete at this point in time, but for those actions that we felt that we could
18 move out of the near term we felt pretty comfortable that the kinds of details
19 that'll be revealed as TEPCO and the government of Japan gain access to the
20 plant and actually see what the state of the core damage is and get a better
21 understanding maybe of how the core damage progression occurred, but we'll
22 definitely learn more. But, on some of these issues we felt like we did have
23 enough information to move forward. Station blackout is a really good example.
24 I mean, I'm not sure that we need to know more about the station blackout event
25 than to know that we need to relook at the six to eight hours that we have in

1 place today and think about do we have the right scheme? Eight hours might be
2 the right time, but I really do think that that three tiered approach really makes a
3 lot of sense in light of what we've seen from Fukushima.

4 COMMISSIONER SVINICKI: How are you as a steering group
5 struggling with the sequence here where the Commission has given you 18
6 months really to look at the overarching redefinition of our framework and yet
7 you've got to address implementation of near term actions? I mean, it's nice that
8 the Commission set up that construct, but I think it's probably -- it's complicated
9 for you on a going forward basis. How are you day to day dealing with that?

10 MARTY VIRGILIO: We've looked at each one of these near term
11 recommendations and we believe that the best approach is to move forward in a
12 process that redefines adequate protection or 50.109. We did some amount of
13 research on this given we didn't have a whole lot of time. I have to give a shout
14 out to Commissioner Ostendorff for his -- in March of this year he developed a
15 presentation on adequate protection in Commission decision making and I think
16 that was very helpful to us.

17 We've also looked at some of the court actions, the Union of
18 Concerned Scientists versus NRC in the D.C. Circuit Court provided some
19 guidance to us that I think was fairly useful with respect to Congress not defining
20 adequate protection and giving the Commission wide latitude to what constitutes
21 adequate protection recognizing it's an evolving standard and that it needs to
22 keep pace with information as information becomes available. And so, we look
23 at Fukushima as this is new information that's become available and I think it fits
24 right into where the Circuit Court fell out and where Commissioner Ostendorff
25 summarized in his speech some of the things that we need to look at as we look

1 at what constitutes adequate protection and what constitutes the basis for
2 redefining adequate protection.

3 COMMISSIONER SVINICKI: And I'm not in any way visiting the
4 question of, obviously the agency has got a lot of discretion on defining adequate
5 protection, a tremendous amount of deference than the judgments that we render
6 in that regard in terms of any litigation. But, I'm more asking you are you as you
7 go about assessing implementation of these near term actions, are you kind of
8 answering the 18-month question as you go along? And by the time we get to 18
9 months you will already have -- and the Commission has made discreet one by
10 one decisions on specific actions where we also have answered that question.
11 What are we even looking at in 18 months?

12 MARTY VIRGILIO: We may in fact do this. I mean, this is a one at
13 a time decision, which is consistent, I think, with the way Commissioner
14 Ostendorff in his presentation on adequate protection outlined the approach and
15 it may be at the end of 18 months we're well informed as to how we would
16 proceed with respect to Recommendation 1. I'm not sure that it'll, we certainly
17 will --

18 COMMISSIONER SVINICKI: That we're well informed or --

19 MARTY VIRGILIO: Yes.

20 COMMISSIONER SVINICKI: -- we'll already have made the
21 decision that --

22 MARTY VIRGILIO: They will have.

23 COMMISSIONER SVINICKI: -- we'll be implicit in all the other
24 decisions that we make.

25 MARTY VIRGILIO: It may well have.

1 COMMISSIONER SVINICKI: I think it's more likely to be the latter.
2 Another easy topic, I would ask each of you perhaps that as you looked at, not
3 the recommendations, but at what I term the instruments or the regulatory tools.
4 We have different ways of describing its orders, generic letters, it's that whole
5 basket of options that we have as a regulator the instruments available to us.
6 So, not the substance of what you're doing, but the instrument by which you're
7 doing it. So, there's been a lot of discussion about the 21-day paper did not align
8 in every instance, frankly, in most instances with where the task force was. I
9 would ask if the, could you -- is there an easy way to give me a calibration on
10 how hard over you were on the instrument? Meaning that often that when I read
11 a staff recommendation I don't know if that was 51-49 judgment call or were you
12 80 percent that it had to be the instrument that you picked and felt strongly? In
13 general for the instruments that you arrived at as a steering group, did you feel
14 strongly that that instrument and no other?

15 ERIC LEEDS: If I could answer that question, Commissioner. I
16 don't know that I could give you a 51 to 49 or a percentage, but we reached
17 consensus very quickly on the different --

18 COMMISSIONER SVINICKI: Well, that's helpful because that's
19 indicative of your, the strength of what you thought.

20 ERIC LEEDS: Thank you. And if I could just say one thing, about
21 a 50.54 letter and really it's for the external stakeholders. That's a very powerful
22 regulatory tool. It requires a response from, you know, it's a request for
23 information from a licensee that requires a response under oath or affirmation
24 and then the staff uses that information as stated in the regulations to determine
25 whether a license should be modified, revoked or suspended. It's a strong

1 action.

2 COMMISSIONER SVINICKI: Well, so can -- on that point, there
3 are those of us, okay -- so some of these appear, to use another colloquial term
4 that are tougher, you know, some of the tools and instruments are tougher and
5 more compelling than other tools. Did the steering group when it considered the
6 instrument that it wanted to recommend for these various actions, would you
7 characterize that the steering group was in any way influenced by the extreme
8 amount of external scrutiny of the NRC right now in terms of looking tough? Was
9 that at all a factor in what you arrived at in choosing instruments for various
10 actions?

11 ERIC LEEDS: That's an interesting question.

12 COMMISSIONER SVINICKI: And that might be something that an
13 individual in their mind is really, it's not, it wasn't part of your discussions, but do
14 you think it was a factor?

15 ERIC LEEDS: I think that the, I think the steering group began with
16 the end in mind. What do we want to accomplish? What's the best tool to get us
17 there? And I think that's how we made the decisions that we made and picked
18 the tools that we picked. I don't think it was the case of looking at -- well, I think
19 we acknowledged that if there was a discussion about it, we acknowledged that
20 we'll probably get criticized from both sides. You know, we wanted to do what
21 was right. Jim?

22 JIM WIGGINS: Yeah. I would say, you know, we'd be hard
23 pressed to offer an argument that we were oblivious to the pressures that the
24 staff and the Commission --

25 COMMISSIONER SVINICKI: No, and that's fair. I'm not saying

1 that it's wrong.

2 JIM WIGGINS: -- was under. But, we also were focused on the
3 Commission direction, which was an action oriented direction, identify those
4 actions that can go forward now without unnecessary delay. So, the Commission
5 direction was actually more of a focus on us than what I would characterize as
6 these atmospheric conditions behind it. It was an action oriented thing. It was
7 the idea that we wanted to not study things to death. We wanted to actually do
8 something. Now, a number of these -- it's probably more accurate to say we're
9 initiating activities in it, but that's in fact there's an active verb in there, you know?
10 There's going to be engagement. There's going to be decisions made. The
11 decisions that we're going to have to deal with on an earlier question about
12 where does the stakeholder engagement happen, vis-à-vis the order. One of the
13 things that I think we have to be very careful about is that we don't get drug in to
14 analysis paralysis activity. You heard that from the earlier stakeholders. You
15 know, you can't deny the truth in that. We try to do things by consensus, not just
16 internally but externally also. Sometimes that causes us to drag things out. In
17 the EP world and in the security world we've been working -- we're a little bit off
18 the subject -- we've been working with --

19 COMMISSIONER SVINICKI: Are you once again answering
20 questions that weren't asked of you? And I well know that I'm over my time, so.

21 JIM WIGGINS: It's related.

22 CHAIRMAN JACZKO: Do you have more questions you wanted to
23 ask before we go into [unintelligible]?

24 JIM WIGGINS: I was just going to say it's a related answer. We
25 use those working groups that I talked about before I meetings and private

1 meetings, and also, and it's more of an action-oriented activity. You get with the
2 stakeholder and say, "We're going to do this, it's going to get done by this time,
3 so we can move forward." So that'll be a consideration. I think it was
4 Commissioner Ostendorff's question of where does the stakeholder come vis-à-
5 vis the order?

6 We're committed to have a process that we're not going to get bogged
7 down in analyzing things for excessive amount of time.

8 COMMISSIONER SVINICKI: Okay, and I think that's fair. I'll just
9 close by saying that I think, Bill Borchardt made the comment that, you know --
10 well he didn't make this comment, but after Three Mile Island the NRC put in
11 place some things which it subsequently revoked. And I imagine it was a desire
12 to look action-oriented that probably caused them to put in place some things
13 that it subsequently pulled back on, so I appreciate, Bill, that you're trying to keep
14 that prism in mind as we move forward. Thank you. Thank you.

15 BILL BORCHARDT: Commissioner, if I could just add, the
16 regulatory tool's important. But it pales in comparison, in my mind, to where we
17 end up, right? And where the regulatory requirements are, what regulatory
18 requirements exist from whenever we make final decisions, whenever the
19 Commission makes final decisions. That'll be really important because that'll
20 have the long-standing safety impact that do or don't. Mr. Chairman, can I just
21 make one thank you --

22 CHAIRMAN JACZKO: Sure.

23 BILL BORCHARDT: -- before you close. I want to thank Marty and
24 all the office directors that served in the Steering Committee, but specifically
25 there's four people who made this 21-day paper possible. These guys talked a

1 lot, but the people who really did work were David Skeen, Rob Taylor, Amy
2 Cabbage and Tim Reed, who I'm sure are in the room here. But they are the one
3 who actually put the paper together and distilled all the comments made by all of
4 these brilliant colleagues of mine. So, thank you.

5 CHAIRMAN JACZKO: Well, thanks. And they've set the bar high,
6 so we -- maybe next time we'll go with Commissioner Magwood's 20 days
7 instead, so we know the team that can get it done.

8 Well, I want to thank everybody for their very thoughtful comments,
9 and I think it was a very good discussion and given us a lot of things to think
10 about as we go forward. And I will just, I think, echo to some extent what was
11 said about it in the end. You know, it's what we accomplish is what's going to be
12 important and, you know, if we look to the challenges we have in front of us, even
13 if, you know, I think as Commissioner Svinicki asked, without Fukushima we
14 have issues: fire protection, GSI-191, GI-199, that are ongoing activities. And so
15 all of this has to be brought together and that's why it is so important for us to
16 have a timeframe and a timetable to get these things accomplished, because
17 three years from now there will probably be something new and it will be
18 important for us to be well on the way of addressing the Fukushima issues that
19 we decide need to be addressed. Otherwise we will find ourselves never getting
20 out of the hole of moving forward and always have new challenges.

21 So, but I appreciate all the work so far, and I think we have a lot to
22 think about. So, thank you very much.

23 [Whereupon, the proceedings were concluded]