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on Near-Term Task Force Recommendations

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1 UNITED STATES OF AMERICA

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3 NUCLEAR REGULATORY COMMISSION

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5 CATEGORY 2 PUBLIC MEETING TO OBTAIN FEEDBACK ON

6 NEAR-TERM TASK FORCE RECOMMENDATIONS

7 + + + + +

8 WEDNESDAY,

9 AUGUST 31, 2011

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11
12 The meeting was convened in the Auditorium
13 of One White Flint North, 11555 Rockville Pike,
14 Rockville, Maryland, at 1:00 p.m., LANCE RAKOVAN,
15 Facilitator, presiding.

16 PRESENT:

17 LANCE RAKOVAN, Facilitator

18 GENE CARPENTER, Co-Facilitator

19 ERIC LEEDS, Director, Office of Nuclear Reactor
20 Regulation, NRC

21 AMY CUBBAGE, Office of New Reactors, NRC

22 BRIAN SHERRON, Director, Office of Nuclear
23 Regulatory Research, NRC

24 DAVID SKEEN, Deputy Director, Division of
25 Engineering, NRR, NRC

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PRESENT (Continued):

JIM WIGGINS, Director, Office of Nuclear

Security and Incident Response

TIM GRETEN, FEMA, Federal Emergency Management

Agency

ADRIAN HEYMER, NEI, Nuclear Energy Institute

CHRISTOPHER PAINE, NRDC, Natural Resources

Defense Council

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

(1:01 p.m.)

WELCOME AND OPENING COMMENTS

FACILITATOR RAKOVAN: Good afternoon. everyone. My name is Lance Rakovan. I am a communications specialist here at the Nuclear Regulatory Commission, or NRC. It is my pleasure to facilitate today's meeting along with my associate, Gene Carpenter, who is in the booth.

Our role today is basically to try to make this meeting productive for everyone. And before we really get started, I wanted to go over a few ground rules.

The purpose of our meeting today is to solicit public comments on actions the NRC staff proposes to address the near-term task force recommendations. The report was issued July 12th of 2011. And it was established to conduct methodical and systematic review of NRC processes and regulations in response to the March 11th, 2011 Japanese earthquake and tsunami.

This is a category 2 public meeting by NRC's definition. The primary discussion is expected to be between our panelists and the NRC staff. However, there is if you look at the agenda a section

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1 where we will open it up for public comment later in
2 the meeting.

3 Our agenda is pretty simple if you want to
4 bring that up, please. After some opening comments,
5 we are going to be going one by one through the
6 recommendations that the staff believes that we should
7 take action on in the short term. Those are
8 recommendations 2, 4, 5, 7, 8, and 9 from the
9 near-term task report.

10 For each recommendation, we're going to
11 give our panelists a chance to give a few minutes of
12 kind of opening statements. And then we're going to
13 look to have some discussion between the NRC staff and
14 the panelists.

15 Once we have made our way through the
16 recommendations one by one, again, we're going to open
17 it up to preregistered people, both here and on the
18 phone lines, to make comments.

19 I'm going to have to take a look to see
20 how long the initial discussions are going to take,
21 but I am guessing everybody is probably going to have
22 probably about three minutes or so to make their
23 comments.

24 Please keep in mind that this is not the
25 only time that you will be able to make comments. We

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1 are accepting comments through regulations.gov. And
2 we will be going into detail on how to do that later
3 in the meeting.

4 Keep in mind that the purpose of this
5 meeting is to provide comments on NRC's path forward
6 on the recommendations. If you have questions about
7 the reports, you could either see me or any other NRC
8 staff member, and we'll try to get your questions to
9 the right person and get them answered for you.

10 The meeting is being transcribed today.
11 So please try to keep noise levels down if you have
12 any electronic devices. Please turn them off or put
13 them on vibrate at this time.

14 If there is something going on in the room
15 that is leading to kind of background noise or
16 detracting from the main conversation, I may have to
17 step in and ask to take steps to resolve it.

18 There are public meeting feedback forums
19 along with the slides that are on both sides of the
20 room here. If you could take a minute to fill that
21 out, you can either leave it here or you can send it
22 in. Postage is free. That will give you a way to let
23 us know how we did at today's meeting. And we
24 appreciate that feedback.

25 For those of you in the room, if you look,

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1 there's emergency exits kind of all over the place.
2 So just in case anything happens like -- I don't know
3 -- an earthquake or something like that, you can take
4 steps hopefully to calmly leave the room.

5 Before I turn things over to Eric Leeds,
6 who is going to kind of give us the background in
7 terms of how we got to this point, I would like to go
8 around the table and have everyone introduce
9 themselves. If you want to use your microphone, just
10 make sure that the little orange is appearing on your
11 button.

12 Eric, do you want to start things off?

13 MR. LEEDS: Sure. Good afternoon. My
14 name is Eric Leeds. I am the Director of the Office
15 of Nuclear Reactor Regulation here at the NRC.

16 MR. SHERRON: I am Brian Sherron. I'm the
17 Director of the Office of Nuclear Regulatory Research
18 at the NRC.

19 MS. CUBBAGE: My name is Amy Cubbage. My
20 home office is the Office of New Reactors. And I was
21 a member of the Near-Term Task Force on Fukushima.

22 MR. WIGGINS: Jim Wiggins. I'm the
23 Director of the Office of Nuclear Security and
24 Incident Response. So we have the emergency
25 preparedness items on the Near-Term Task Force.

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1 MR. SKEEN: And I am Dave Skeen. I am the
2 Deputy Director of the Division of Engineering in NRR,
3 but also I have been dealing with the Fukushima
4 support ever since the event. And we are now tasked
5 with developing the Commission papers that are being
6 written right now.

7 MR. HEYMER: Adrian Heymer, NEI,
8 representing the industry. And I'm the project
9 manager responsible for the regulatory response
10 associated with Fukushima.

11 MR. GRETEN: Tim Greten, Deputy Director,
12 FEMA Technological Hazards Division, home of the
13 radiological emergency preparedness program.

14 MR. PAINE: Christopher Paine, Director of
15 the Nuclear Program at the Natural Resources Defense
16 Council.

17 FACILITATOR RAKOVAN: Okay. With that, I
18 will turn things over to Eric. And he will give some
19 background as to kind of how we got to this point for
20 today. Eric?

21 MR. LEEDS: Thank you very much, Lance.

22 2. PANEL DISCUSSION ON RECOMMENDATIONS OF THE
23 NEAR-TERM TASK FORCE REPORT

24 STATEMENTS ON NRC'S PROPOSED ACTIONS

25 MR. LEEDS: Good afternoon and welcome to

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1 the meeting to everyone. I want to thank all of the
2 stakeholders here at the table and in the audience for
3 being her today. I also want to thank those that are
4 on the phone or who are watching through the internet.

5 I'm pleased to see so many of you here today.
6 Obviously it's a very important meeting, very
7 important topic for all of us.

8 Originally the Commission directed the
9 Near-Term Task Force to develop their recommendations
10 without public input. Now that the Commission has
11 received those recommendations and it had time to
12 digest them, they have asked the staff to get
13 stakeholder input. They believe it is very important
14 that we hear what all stakeholders have to say about
15 the recommendations so that we can consider your
16 insights as we develop a paper recommending to the
17 Commission which of the Task Force recommendations the
18 NRC should implement without any unnecessary delay.

19 The purpose of today's meeting is to hear
20 from the stakeholders at this table on their thoughts
21 on the recommendations from the NRC's Near-Term Task
22 Force. In addition, we would like to hear from as
23 many of you as possible this afternoon, whether you
24 are in the audience or listening remotely, as time
25 allows during the meeting.

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1 We can go to the next slide, please.
2 Thank you. The Commission has given the staff
3 direction and a staff requirements memorandum to
4 provide three Commission papers within 45 days. This
5 is a highly aggressive schedule, but we intend to meet
6 their request.

7 Within that, the staff has been requested
8 to provide a prioritization, both of those items that
9 need to be implemented without necessary delays as
10 well as an over-arching prioritization of all of the
11 recommendations that came out of the report.

12 The staff has already provided the
13 Commission with the first of the three papers: the
14 charter that will guide the staff's review of the
15 recommendations, including the prioritization directed
16 by the Commission.

17 Once the staff has provided the final two
18 papers, we will brief the Advisory Committee on
19 Reactor Safeguards, which is an independent committee
20 that advises the Commission directly.

21 Next slide. The second paper directed by
22 the Commission is due September 9th. It will identify
23 and make recommendations regarding any Task Force
24 recommendations that can and in the staff's judgment
25 should be implemented, in part or in whole, without

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unnecessary delay.

In accordance with the Commission's direction, the staff is holding this meeting to solicit stakeholder input through an open dialogue with the panelists here at the table that will be considered in the development of the paper.

As Lance mentioned, we are transcribing this meeting. We currently have a number of staff listening. And comments can be submitted through regulations.gov via docket number NRC-2011-0196. I'm sure all of that information is available on our website.

And we will review your comments to the extent possible. Unfortunately, because of the short time frame we are working on, we don't believe that we will be able to respond to them all, as we normally do. However, that doesn't mean that the comments aren't important to us and won't be appreciated. We will appreciate them. We look forward to them. And it is your opportunity to provide us input to help us in our path forward.

Our goal is to get the Task Force recommendations into our normal regulatory processes.

Those processes are designed to maximize the potential for stakeholder engagement. As such, we

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1 expect that there will be many more opportunities for
2 stakeholders to meet with the NRC and to give us your
3 feedback.

4 Next slide. The specific recommendations
5 proposed for discussion today are those which have
6 been identified as potentially requiring
7 implementation without unnecessary delay.

8 As you frame your discussion on these
9 recommendations, we would ask that you consider the
10 following guiding questions. First, which specific
11 sub-recommendations do you propose the staff undertake
12 without unnecessary delay? Second, provided the basis
13 for your proposal. And, third, what do you see as the
14 potential implications should the staff follow your
15 proposal?

16 I believe if we frame our discussions in
17 the context of these three questions, the staff will
18 have the information necessary to develop our paper
19 and ensure that the Commission has the views of all of
20 our stakeholders as they make the decisions that will
21 guide us going forward.

22 Now I am going to turn this meeting back
23 over to Lance Rakovan to facilitate our discussion on
24 each one of the recommendations.

25 Thanks, Lance.

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1 FACILITATOR RAKOVAN: Thank you, Eric.

2 - RECOMMENDATION 2: DESIGN-BASIS SEISMIC AND FLOODING
3 PROTECTION OF STRUCTURES, SYSTEMS, AND COMPONENTS.

4 FACILITATOR RAKOVAN: Let's go ahead and
5 jump in and start with recommendation number 2. Just
6 to kind of let you know, I'm going to go ahead and
7 read the primary recommendation, if you will, before
8 we begin each session.

9 If you have seen the report, which I'm
10 assuming most, if not all, of you have, you have seen
11 that some of the secondary recommendations can be
12 quite lengthy. So for the slides that we have, as you
13 can see, we have kind of taken a crack at putting
14 together a brief phrase that kind of summarizes what
15 the secondary recommendations say, if you will. So
16 I'm going to read the primary recommendation now.

17 Recommendation 2, "The Task Force
18 recommends that the NRC require licensees to
19 reevaluate and upgrade, as necessary, the design-basis
20 seismic and flooding protection of structures,
21 systems, and components for each operating reactor."

22 We'll go ahead and ask our panelists to
23 make statements. I am going to probably go with a
24 different order each time just to kind of keep you on
25 your toes.

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1 Let's go ahead and start with our NEI
2 industry rep. And we'll go ahead and head across the
3 table. So, please, sir?

4 MR. HEYMER: Thank you, Lance.

5 First of all, the industry very much
6 appreciates the opportunity to provide input on these
7 topics and issues, especially given the time frame
8 that you were working on this. So thank you very
9 much.

10 I would also like to point out that we
11 agree that there are important lessons to be learned.

12 And we can move forward to improve the safety margins
13 and operation of our facilities as we go forward.

14 As regards to recommendation 2 -- and I
15 would like to go in I guess reverse order with point
16 2.3, which is the walkdown issue. We think that is an
17 issue that we can move ahead with. We believe that
18 that should be the first element, to perform walkdowns
19 to confirm that the plant be protected against a
20 design-basis flood and design-basis seismic events.
21 We think that is a near-term action and actually forms
22 the basis for the other two elements that you've got
23 in here.

24 As regards on the seismic, we believe that
25 we should go forward and develop criteria for

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1 conducting a walkdown on a sample set of
2 safety-related equipment and then, if necessary,
3 expand the walkdown criteria and the walkdowns
4 depending upon what we find, although we don't expect
5 to find too much.

6 As regards flooding, that is in the
7 similar vein, but we don't believe there should be a
8 sampling approach. We believe that we can perform a
9 walkdown to confirm that we meet the design-basis
10 criteria.

11 We also believe that prior to conducting
12 those walkdowns, there needs to be public interaction
13 so that we can actually reach a common understanding
14 with the regulator on what are the criteria that we're
15 going to conduct the walkdowns, what are the
16 acceptance criteria, what are the measures of success.

17 And because probably some of the safety-related
18 systems certainly from the seismic perspective may be
19 in accessible areas, we think that the seismic
20 walkdown would take probably longer to complete than
21 the flooding walkdowns.

22 In fact, we have already started work in
23 this area through the work of the Institute of Nuclear
24 Power Operations in Atlanta. And so we think that is
25 something that we can move ahead with.

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1 We don't think there needs to be an order
2 in this regard. We think there are other regulatory
3 vehicles. And, in fact, overall we're not sure that
4 we need 12 orders. We think that there are other
5 regulatory vehicles that would still achieve the same
6 objective, such as a 50.54(f) letter or a bulletin
7 that could be just as effective in that regard.

8 As regards to item rulemaking regarding
9 the seismic flooding hazard that is outlined, which I
10 guess is the ten-year update, we don't think we should
11 wait ten years. If you get new information, we
12 believe that we should move forward and start
13 conducting an evaluation of trying to determine would
14 the design basis be impacted. And then you can go to
15 the next step and say, "Okay. If it could be, how
16 would it be? And what's the necessary change?" And
17 then evaluate the plants going forward.

18 I think it is important that when we
19 consider that -- and I know there has always been some
20 work in the area of seismic in this regard -- it's
21 important that we recognize and identify what types of
22 information break the threshold for actually going
23 forward to kind of step to performing the
24 determination. And I think that warrants a fairly
25 thorough public discussion on what would that criteria

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1 be so that we can identify that.

2 But, in short, we don't think you should
3 wait ten years. If you get new information, you
4 should act on it and then move ahead if it breaks that
5 threshold. So we wouldn't support the ten-year
6 interval, mainly because we think from a safety
7 perspective, if we identify something that presents a
8 potential hazard, we should get on, evaluate it; if it
9 is, take action and sort it out.

10 And as regards the reevaluation of the
11 hazard from a seismic perspective, we're kind of doing
12 that, we believe, under GI 199. And so once we have
13 done the walkdown and established a baseline and know
14 where we are, I think that's a natural progression to
15 actually move ahead and be supportive of GI 199, which
16 I think is going to be a reevaluation.

17 For the flooding, I think once the process
18 for determining what new and significant information
19 has been developed and the walkdowns have been
20 completed, we could then move in to that activity and
21 then see where we end up and make any necessary
22 adjustments, fixes that we need to based on that
23 evaluation if, indeed, there is any requirement to
24 adjust the flooding design basis.

25 So those are the three areas, I would say.

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1 Again, the rulemaking one, okay. The two others, we
2 think that there are other mechanisms.

3 FACILITATOR RAKOVAN: Thank you.

4 Please?

5 MR. GRETEN: Certainly. Anything I say is
6 going to sound less credible because I don't have the
7 English accent.

8 (Laughter.)

9 MR. GRETEN: From FEMA's perspective, you
10 know, many of the recommendations that we are going to
11 discuss today are primarily onsite concerns. And
12 through our partnership with the NRC, the offsite area
13 is primarily FEMA's responsibility working with the
14 state and local response organizations; whereas, the
15 onsite community is really NRC's bailiwick.

16 Over-arching we think we have a very good
17 program. We think we have a very good cooperative
18 relation with NRC and our two halves together make a
19 very good program.

20 At the same time, of course, we need to
21 look and see if we can learn lessons from anything
22 that has happened, whether it was the earthquake in
23 Japan or whether it was even the earthquake under Lake
24 Anna and right underneath the nuclear power plant the
25 other day.

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1 Throughout today's hearing or public
2 comment solicitation, I am going to probably reference
3 several different things that NRC is working on that
4 weren't covered in this report.

5 The other day the Commission actually
6 voted to approve a rulemaking that FEMA and NRC have
7 been working on long before Fukushima started as part
8 of our over-arching modernization of the offsite
9 preparedness realm, which is really FEMA's area. And
10 it is happening in parallel with the recommendations
11 made in this report.

12 So closing on my opening remarks here,
13 FEMA is definitely supportive of NRC moving forward
14 with this if the cost and justification and
15 engineering all work out.

16 We are a little concerned that there might
17 be overload; that is, there are so many different
18 things happening at once. I know that the emergency
19 preparedness role out of the REP program manual, the
20 NRC's rulemaking, NUREG 0654, sub 3 and sub 4 dealing
21 with different aspects are certainly going to require
22 the attention of folks over the next year. There are
23 going to be a number of public meetings, a number of
24 meetings we're going to be having with our state and
25 local folks.

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1 And I know NRC long before Fukushima
2 happened was mindful of potential bandwidth issues.
3 So we would ask that that be taken into account. But
4 this recommendation and all of them, it seems the
5 smart thing to do is to take lessons we've learned and
6 if it makes sense incorporate them into what is
7 already a good program.

8 FACILITATOR RAKOVAN: Thank you.

9 MR. GRETEN: Thanks.

10 MR. PAINE: Yes. Speaking about NRDC's
11 concerns about recommendation 2, we don't understand
12 why the near-term reevaluation in 2.1 is limited to
13 seismic and flooding hazards. What about tornadoes?
14 What about increased fire risk stemming from such
15 events? Will existing siting criteria be reviewed in
16 this reevaluation? I mean, it comes to mind the
17 wisdom of continuing to locate a nuclear plant like
18 Fort Calhoun in the flood plain in the Missouri River.

19 It's not clear from the Task Force report
20 whether those kinds of concerns are going to be
21 incorporated in this reevaluation, this near-term
22 reevaluation.

23 The 2.1 appears to assign primary
24 responsibility for these near-term assessments to the
25 licensees, but a major problem identified in the Task

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1 Force report is that licensees are using inconsistent
2 and dated design-basis criteria and other more
3 informal criteria to evaluate these threats, even
4 within the same multiunit plants.

5 So why is this review pegged to a
6 licensee's self-assessment of the existing licensing
7 basis when the immediate problem seems to be an
8 egregious lack of plant readiness to withstand severe
9 events that are outside or beyond the current
10 licensing basis.

11 So I'm not sure that this recommendation,
12 as much as I value it as far as it goes, I'm not sure
13 that it actually addresses what the immediate need is
14 and what was identified as the immediate need in the
15 report.

16 And it begs the question, what role will
17 NRC inspectors and independent scientific experts,
18 including the ACRS, play in this inspection process?
19 Are 2.1 and 2.3 supposed to be conducted concurrently
20 or, as NEI, I think rightfully, suggests, should 2.3
21 logically precede 2.1? Is one necessarily informed by
22 the other? In other words, what level of NRC
23 oversight is there in this whole process?

24 It's not clear from the Task Force report
25 what level of oversight and criteria establishment is

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1 indicated. I have similar concerns to NEI that the
2 whole thing may be so fuzzy as to not actually advance
3 the ball very far down the field. Who makes the
4 judgment on the adequacy of inspection and evaluation
5 methods?

6 We believe that recommendations 2.3 and
7 2.1 should include fire protection in their compliance
8 updates. It seems grossly inefficient to address
9 these seismic flooding vulnerabilities independent of
10 the need to abate the ensuing fire risks, especially
11 considering that these fire risks are largely
12 unresolved within the current regulatory framework.

13 Thank you.

14 MR. LEEDS: Well, thank you. Thank you to
15 all the panelists, appreciate your views. We heard a
16 number of concerns, a number of very, very productive
17 thoughts.

18 I'll turn it back to the NRC members at
19 the table. Questions for our panelists? Please,
20 Brian?

21 MR. SHERRON: Yes. This is for Adrian. I
22 was just curious. You had said that, instead of an
23 order, you thought either a generic letter or a
24 bulletin would be an appropriate vehicle for
25 instituting I guess walkdowns and the like.

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1 I presume is that based on the assumption
2 that this is a one-time event if you want to call it
3 that, these walkdowns or would this -- do you believe
4 these walkdowns should be -- is this a periodic thing
5 that the industry should embark on, you know, every so
6 many years or something, just go back and do it
7 because designs change and they make modifications to
8 the plant and the like.

9 MR. HEYMER: In my mind, when you perform
10 a design change and, in fact, the industry procedures
11 are quite clear, one of the things that you look at is
12 where are you as regards the design basis and what
13 other aspects of the plant are you impacting. So that
14 should be picked up there in the design change
15 process.

16 So we would see this as a sort of a
17 confirmatory, a one-step sort of process. You go out
18 there, "Something has happened overseas. Let's make
19 sure that we're still okay."

20 Once you are, then we are back to where we
21 were before. You have processes in place to really
22 control configuration at the plant, both from a design
23 and a plant layout perspective. And once you look at
24 those and then if there's any new information, as I
25 said, that comes up, if we have a process for

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1 assessing that, certainly from an external event or
2 even an internal event perspective, we have procedures
3 in place certainly from the internal. And we need to
4 develop those perhaps for the external. What is that
5 set of information that determines, "Well, this is
6 new. It could impact the plant. Does it impact the
7 plant"? You do an evaluation. So we see it as being
8 a one of type exercise.

9 MR. LEEDS: Okay. Thanks.

10 Chris or Christopher, which? Christopher?
11 Thank you. Thank you. And I'm Eric, please.

12 Question. You raised a concern. I want
13 to make sure I understand. You raised a concern about
14 licensees using the existing licensing basis for
15 seismic or for flooding. And you raised the question
16 about -- and I probably don't have this right. So I
17 am asking you for clarification. Are you asking about
18 the adequacy of the current licensing basis in these
19 areas?

20 MR. PAINE: Right. I mean, this is about
21 the lessons of Fukushima. One of the first things we
22 learned is that the licensing basis of the Fukushima
23 plant was entirely inadequate to the threats that it
24 faced. So applying that logic to the United States,
25 why would one go simply confirm the existing licensing

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1 basis of the plants?

2 The issue is whether the licensing basis
3 is adequate or not. So that the walkdowns and the NRC
4 criteria should all be directed to establishing
5 whether that licensing basis is adequate. And, you
6 know, so I am afraid that in a licensee-driven
7 inspection process oriented to "confirming the
8 existing licensing basis," that is exactly what you
9 will get, that everything is fine with a few minor
10 adjustments.

11 So there needs to be either some criteria
12 that says we are measuring the existing or a new
13 assessment of the conditions surrounding the plant and
14 the threats to the plant against the existing
15 licensing basis for the purposes of altering or
16 strengthening that licensing basis.

17 MR. LEEDS: Very good because I thought
18 that the recommendation was -- I'm turning towards Amy
19 because Amy was one of the members of the Near-Term
20 Task Force report. And I thought the recommendation
21 was to reevaluate those design bases, as you said. So
22 can I --

23 MR. WIGGINS: There is a clarifying way to
24 get to this. You know, if you look at the various
25 structures in this report and you ask yourself how the

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1 things actually happen in the agency, rulemaking tends
2 to take longer because it's an administrative process.

3 Orders are very quick. Orders after 9/11
4 went out and made immediate actions and fixes,
5 although the rulemakings to catch up with the orders
6 took ten years. So I just am kind of a little puzzled
7 by your statement and maybe you can help me.

8 It would seem that 2.1 and 2.3 could be
9 viewed as for seismic and flooding, taking a look at
10 what currently exists against what currently is
11 understood as the requirements.

12 And 2.2 gets at periodically changing the
13 requirements, looking to see if the external
14 environment is such that we should change the seismic
15 design, change the flooding basis here.

16 MR. PAINE: That's your ten-year review?
17 Is that your --

18 MR. WIGGINS: That is what the thing says
19 is the ten-year review. It's not too different, much
20 different, than how the American Society of Mechanical
21 Engineers code handles inspections of piping and
22 vessels.

23 Every ten years, you update the code to
24 the current thinking. That's the kind of thing. So
25 you sweep up all of the changes that have occurred in

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1 the ten years. And then a licensee either has to meet
2 that new requirement or they have to come to Eric and
3 basically get authority not to.

4 Will that framework kind of be workable
5 here when you review?

6 MR. PAINE: Perhaps if the other concern I
7 raised is satisfied, which is that there is some
8 objective oversight and imposition of criteria on this
9 process. Otherwise I suspect -- I mean, what happened
10 at Fukushima is that this nuclear and safety agency in
11 Japan made certain recommendations.

12 TEPCO evaluated them against this existing
13 licensing basis and failed to implement them and, in
14 fact, even failed to identify them.

15 MR. WIGGINS: I think I would agree. I
16 think we might debate a while what oversight would be,
17 but I think -- and I think what you heard from the
18 NEI, I think I would agree that is the case, too.

19 When you go through any of these
20 recommendations, there needs to be a period where you
21 decide what the criteria are that you are going to be
22 judging against.

23 We haven't discussed what the oversight
24 piece is. I think it's a safe assumption you can
25 present. The NRC will provide the oversight, either

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1 through licensing or inspection.

2 MR. PAINE: And what concerns me is it
3 might make a rather confused and incremental progress
4 since on this first round of inspections because, as
5 we know, the licensing basis for these plants, even
6 between units of the same plant, are very different.
7 And so we're going to come up with different kind of
8 incommensurate results. And then there's going to be
9 a process sometime down the road where a rulemaking
10 ensues where perhaps new requirements are established
11 and then we have to go back and do this all over
12 again.

13 And I'm suggesting that perhaps more
14 attention be paid to focusing this first round of
15 walkdowns and reevaluations on the key issues that
16 require upgrading or that some sense of guidance and
17 criteria to the licensees about what they are looking
18 for and what --

19 MR. SHERRON: Can I ask, would a sense of
20 -- if you're going to do a walkdown right now, if you
21 started like today, you would have to come up with
22 some criteria. You might not be able to -- it might
23 be too much of a moving target to change the
24 assumptions of the fundamental design basis made.

25 I would presume you could create criteria

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1 that would try to come up with a sense of margin above
2 what is necessary to meet the current -- if you look
3 at mechanical design, you look at piping, say pipe
4 supports, right, the pipe --

5 MR. PAINE: Doesn't it beg the question,
6 though? I'm still trying to get clarity on this.
7 Doesn't it beg the question when you say, "meet the
8 current requirement" if the current requirements are
9 in question? What good does it do to confirm? That's
10 the problem.

11 MR. LEEDS: That is where I wanted to go
12 to Amy and see what was the intent. And that ten-year
13 item that you both have talked about I think we need
14 to address. Amy?

15 MS. CUBBAGE: Right. So this spring after
16 the event, there were some walkdowns done and some
17 inspections. And they were strictly aimed at the
18 current licensing basis.

19 The vision with 2.3 would be to take a
20 little harder look, look for vulnerabilities. And you
21 raise a great point about the side-by-side units that
22 might have different vintage licensing. That would be
23 a known issue that a licensee could look at potential
24 vulnerabilities from information that they know and
25 try to address those.

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1 But a full reanalysis that is proposed in
2 2.1 will take some time. So what we are looking at is
3 2.3 as more of an immediate near term where some
4 practical solutions could be done to enhance safety
5 while the time is taken to do a thorough reanalysis to
6 current licensing criteria and guidance and updating
7 the design basis as necessary.

8 MR. PAINE: Okay. I just have a problem
9 with the current licensing criteria and guidance when
10 it's that licensing criteria and guidance that's in
11 question.

12 MS. CUBBAGE: Okay. Let me clarify. When
13 I say, "current," I mean the updated new guidance, not
14 what the existing plants were necessarily licensed to.

15 MR. PAINE: But the Commission might issue
16 an interim? Is that the idea?

17 MS. CUBBAGE: There is current regulatory
18 criteria and guidance that's being used for our new
19 reactor reviews. And what we are proposing is that
20 the existing plants be evaluated against that updated
21 information.

22 MR. PAINE: Okay. That wasn't exactly
23 clear the way it was worded.

24 MS. CUBBAGE: Okay.

25 FACILITATOR RAKOVAN: Do we have any

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1 additional questions before we move on?

2 MR. WIGGINS: I think also I appreciate
3 your points about other hazards that aren't
4 entertained in this. I think it's helpful to know
5 that there is probably a long and maybe a long,
6 long-term part to this for --

7 MR. PAINE: I would say in the short term,
8 since we just experienced one of the worst tornado
9 seasons in American history, that it might be
10 appropriate to include tornado risk given that Browns
11 Ferry was done on generators for five days.

12 MR. WIGGINS: All right. I hear your
13 point. Yes.

14 MR. PAINE: And then the question about in
15 the same walkdowns evaluating fire abatement measures
16 related to seismic and tornadic and flooding-induced
17 fires.

18 MR. WIGGINS: Yes. I just wanted to make
19 it clear that our intent now is to find some things
20 that need to be, should be done now. There's no
21 reason not to do them now.

22 It doesn't foreclose additional actions
23 happening later. In fact, there are more
24 recommendations that are going to be done on a longer
25 term. And there are longer, longer-term items that

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1 will come out of this as we move forward, just as we
2 have done with other reviews.

3 So I think certainly your comments, at the
4 very least, fit in those longer stages about what
5 should be the content or what might be the content of
6 the longer-term reviews and things.

7 MR. PAINE: Well, we could like the
8 security of Commission orders on 2.1 and 2.3, but we
9 agree with NEI that there should be another bite at
10 the apple for public comment and industry comment and
11 for some process for recent clarity with the
12 Commission and with industry and with us on what the
13 requirements of these reviews are and what the
14 standards are and what the expectations are because
15 it's not clear right now.

16 MR. WIGGINS: Yes. That is a good point.
17 Good.

18 MR. LEEDS: Good. Thank you.
19 Other questions from the NRC for the
20 panelists?

21 (No response.)

22 MR. LEEDS: Thank you. Very productive.

23 - RECOMMENDATION 4: STATION BLACKOUT MITIGATION
24 CAPABILITY FOR DESIGN-BASIS AND BEYOND-DESIGN-BASIS
25 EXTERNAL EVENTS.

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1 FACILITATOR RAKOVAN: Okay. Let's go
2 ahead and move on to the next recommendation,
3 recommendation number 4, "The Task Force recommends
4 that the NRC strengthen station blackout mitigation
5 capability at all operating and new reactors for
6 design-basis and beyond-design-basis external events."

7 And there are two sub-recommendations involved with
8 this one.

9 Mr. Paine, if you would like to start
10 things off for us this time?

11 MR. PAINE: We strongly support all the
12 aspects of recommendation 4. We just have one
13 concern, which is why not require extension of SBO
14 coping capability to eight hours immediately through
15 Commission order given that the rulemaking will
16 eventually require it? And this is easily
17 accomplished in most reactors by adding, just adding,
18 battery capacity. And battery capacity is getting
19 cheaper.

20 And the reason we feel this is that, even
21 within the current regime, there are reactors that
22 only consider a four-hour window. And the regulations
23 range from 2 hours to 16 hours. So we would think
24 that, you know, as a kind of good faith, short-term,
25 immediate response to Fukushima, which was all about

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1 coping time, that the least the Commission could do
2 would be to order an immediate upgrade to eight hours
3 of coping without AC.

4 FACILITATOR RAKOVAN: Thank you.

5 MR. GRETEN: From FEMA's perspective,
6 obviously the -- thank you very much -- all-hazards --
7 we look at from an offsite perspective what might
8 prompt an accident in a nuclear power plant and
9 incident, anything going wrong. These things happen
10 often as related to something like else, like the
11 earthquake and tsunami in Japan.

12 It is a discussion that has come up
13 recently, such as during the New Madrid and OE
14 exercise this year, where you might be trying to deal
15 with situations that would be trying under normal
16 circumstances but would even be more difficult if you
17 would have a hard time, you know, bringing for a
18 nuclear power plant, for instance, diesel fuel or
19 supplemental generators, et cetera, to a site.

20 So obviously anything that can be done to
21 make sites more self-sufficient, it seems like there
22 certainly is a marginal benefit to any marginal cost
23 that comes with that.

24 I also know there have been proposals that
25 weren't necessarily discussed in here, but industry

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1 itself has been information gathering on what would
2 happen. If they had, say, generators stashed
3 someplace, not on a site but at a common location, and
4 the question they had for FEMA was what linkages do
5 they need into the government structure, to the
6 federal stricture, to the state structures to make
7 sure that if there was an earthquake, let's say the
8 New Madrid earthquake did happen but it didn't happen
9 where they had rehearsed it this year and several
10 nuclear power plants were severely impacted, it also
11 stands to reason bridges, roads, and traffic signals,
12 you know, anarchy out there in some cases from the
13 earthquake and actually moving stuff from point A to
14 point B, especially heavy-duty equipment, is going to
15 require federal intervention, you know, DOD, National
16 Guard, priority, that kind of stuff.

17 So things like this are things that FEMA
18 right now is looking at as offsite responsibilities
19 and things that we should be looking at as we think
20 about beyond the absolute immediate response of
21 evacuating people in EPZ, what kind of
22 responsibilities do we have beyond that, those first
23 12 hours or whatnot when responding to an emergency?

24 You know, if there is a need to get
25 equipment to a site or get diesel fuel or things like

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1 that, where the capacity for NRC and the site to
2 actually do something about this might be out of your
3 hands because it's something that is out of your
4 control. It's something that the national government
5 needs to kick in and support.

6 So this wasn't something that was
7 necessarily addressed in here, but we recognize that
8 we had a complementary role to any change you make to
9 that, you know, based on what we saw happening in
10 Japan.

11 Thank you.

12 MR. LEEDS: Thank you, appreciate it.

13 MR. HEYMER: Yes. We agree that on 4.1,
14 which is initiate rulemaking, we need to start going
15 down that path. So we would support rulemaking.

16 What we would believe needs to be done is
17 perhaps to have an advance notice of proposed
18 rulemaking in this area that sort of flushes out some
19 of the questions that you might have, 8 hours, 72
20 hours. Is it 48 hours? What is the basis? It begins
21 to flush out some of the criteria. What would be the
22 approach? Get feedback, which I think would then
23 enable you to put together a much more -- a
24 closer-to-the-mark notice of proposed rulemaking when
25 you get to that stage and, therefore, might help move

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1 the process forward without getting a whole variety of
2 diverse comments coming in. So I think we would go
3 along those lines.

4 I would like to point out that the
5 industry has already started under the Institute of
6 Nuclear Power Operators in Atlanta, started to look at
7 extended loss of AC power and what it would take to
8 further extend out beyond where we are today. What
9 actions should you take or what you should consider
10 sort of from a planning perspective?

11 But make no mistake. This isn't a simple
12 task. There is a lot of interplay here.

13 As regards 4.2 and providing additional
14 contingency equipment that's required under 50.54(hh)
15 to really support all units at a site if it's a
16 multiunit site, I think, as has been mentioned by FEMA
17 here, we need to take into account regional support
18 centers before we actually finalize what that set of
19 equipment might be.

20 It may be that if the event is a much more
21 slowly evolving event, like perhaps in the fuel pool,
22 then perhaps you can have equipment at a regional
23 support center because you may have days before you
24 get at what are actually needed.

25 Likewise, it's because the protection from

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1 external events, we understand there is a need for
2 that, but there might be some unique ways that we can
3 figure out without building a Normandy Beach-type
4 bunker in the facility. Perhaps if we had it at a
5 diverse location close to the plant so that you could
6 get it to the plant in the time frame that you would
7 need it, I think those are some of the things that we
8 would need to look at before we actually finalized it.

9 As regards it being an order, again, we
10 don't see the need for an order. If you have got an
11 order, there has to be some specific criteria laid
12 out.

13 And I think with some of the unknowns that
14 we have got unless you're going to be very
15 prescriptive and say it is exactly the same set of
16 equipment, which really takes away the flexibility of
17 the other options that I spoke about about the
18 regional support centers or diverse set of equipment
19 or, in fact, over-supply of equipment, had two sets of
20 equipment in different locations in close proximity if
21 there's a concern about tornadoes or something of that
22 region.

23 So I think you have got to allow
24 flexibility from a plant siting perspective in this.
25 So I don't think you can come out straight with an

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1 order at the moment, but I think one of the other
2 regulatory vehicles that you have could be more
3 appropriate and give us perhaps a little bit greater
4 flexibility from an implementation standpoint going
5 down the road but still meet the intent. In other
6 words, you must have equipment that meets the needs of
7 50.54(hh) for all the units on the site.

8 So I think overall we agree with the
9 concept. It's how we get there and the speed at which
10 we get there I think is something to bear in mind.

11 I think with near-term items, as sort of a
12 rule of thumb, we should really focus on those that we
13 really think we can realistically expect to get
14 completed in the next 12 to 18 months if we can.

15 Now, there may be some exceptions to that,
16 but I think that's what we should think about going
17 forward. So that's where we are on this one.

18 So I think rulemaking, yes. Advance
19 notice of rulemaking I think might help us all out.
20 And then as regards the 50.54(hh), we agree that we
21 need to go down that path. I think we've just got to
22 be a little bit careful about being overly
23 prescriptive about how we go down that way.

24 MR. WIGGINS: If I interpreted your
25 comments correctly, on the latter point, the concern

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1 is if we were to write an order that would be overly
2 prescriptive in terms of the specifics of the
3 equipment and locations and the protection, that might
4 be problematic. But would you have a problem with the
5 direction that talks about the goals or the
6 achievement, that you have to have the equipment that
7 will do these particular types of top-tier functions,
8 protections, core, the containment and the spent fuel
9 pool, and has to be available and has to be protected
10 such that it likely survives flooding, seismic,
11 whatever the thing we say?

12 MR. HEYMER: Yes. I mean, I think that
13 the second item or group of items that you mentioned,
14 a second approach, is more along the lines that where
15 we're looking at.

16 MR. WIGGINS: It would seem do we then
17 need to -- if we go in that direction, is that another
18 one where we need to incorporate some period of time
19 to understand criteria or --

20 MR. HEYMER: I think there may be -- I
21 think we need to have that discussion to make sure we
22 are really on the same page, but I think we have got a
23 pretty good understanding as it is.

24 But we have all been surprised on both
25 sides of the table sometimes with assuming too much.

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1 But I think with the (b) (5) (b) activities and 50.54(h)
2 and the contingency measures that we have more
3 recently put in place, I think there is a pretty good
4 understanding there.

5 MR. LEEDS: An item of agreement that we
6 are hearing from the panelists is before we go forward
7 on any of these, we need more interaction, certainly
8 to come up with criteria and to vet these in a public
9 forum.

10 And I am hearing that from -- can I ask a
11 question of -- NRDC raised an issue, the idea of all
12 plants going to an eight-hour coping right now and
13 that it wouldn't take that much to get a plant to
14 that. NEI, I would like, Adrian, if you would react
15 to that.

16 MR. HEYMER: Well, as I said, we are
17 looking at means today to determine how we can extend.
18 And I don't know sufficient information about
19 individual plants, about where they stand, about what
20 it would take to get them there.

21 It may be straightforward for some people.
22 It may be more challenging for others. So I think we
23 would need to take a look at that. But I want to
24 emphasize is that overall from a planning perspective,
25 we are trying to get to a point where we are going way

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1 beyond eight hours today.

2 So I think we can get there from a
3 planning perspective, but I think you've got to look
4 at this as a holistic measure. And there may be some
5 interim steps that we can take that can get you there,
6 but we may need to have some regulatory interaction
7 because there may be some regulatory conflicts that we
8 need to deal with before to allow us to get there.

9 MR. LEEDS: Thank you. Thank you.

10 MR. PAINE: Could we just have a -- I
11 think our take on this is very much like the task
12 force, that there are sort of three categories.
13 There's a media onsite robust coping capability up to
14 eight hours. We think that is a short-term issue. It
15 is really an acquisition, maybe a design-build issue
16 for a couple of plants. Others would just expand
17 their existing battery capability.

18 But, nevertheless, it is well within the
19 financial capacity of plants to add that kind of
20 capacity very quickly. It should be robust,
21 flood-proof, and hardened shelter. You know, this is
22 your immediate recourse in the event of an extended
23 outage, and it should be there. And it should have
24 been there years ago. But it should be there now.

25 And then we understand the next step --

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1 and we support the next step -- is 72 hours of
2 extended coping capability and though I think it is a
3 more subjective issue and a more complicated issue
4 about how you are going to satisfy that and do it
5 cost-effectively across multiple plants and so forth.

6 And then there is the pre-planning and
7 pre-staging of offsite resources that would be brought
8 in within that 72-hour coping period.

9 And, again, maybe that is more an
10 appropriate subject for rulemaking, but I think the
11 Commission can act on eight hours. And I think it is
12 a priority to do so.

13 MR. LEEDS: Thank you.

14 MR. GRETEN: One other related point on
15 that that FEMA definitely agrees with is the
16 self-sufficient notion of self-sufficiency for a
17 certain amount of time.

18 I know as FEMA has gone and looked at
19 catastrophic disasters, you know, something akin to a
20 wide area earthquake, where there just aren't going to
21 be enough immediate resources to respond, especially
22 since a lot of the responders in the area are going to
23 be caught up. They're going to be disaster victims
24 themselves.

25 You know, the whole community initiative

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1 that the Administrator Fugate has been making a
2 central part of FEMA's policy says the first 72 hours,
3 you need to be self-sufficient. You are going to be
4 kind of on your own because it's going to take a while
5 to get the help in that you need, especially if it's a
6 wide area of devastation. Think Katrina or
7 potentially the East Coast.

8 And certainly if a nuclear reactor were
9 having severe problems, they would go to the top of
10 the list for people to get help, but being
11 self-sufficient for a measure of time and not just 8
12 hours but 72 or even beyond is a good thing.

13 MR. LEEDS: Tim, I am glad you mentioned
14 Hurricane Katrina because that's what I was thinking
15 of when you were speaking because Hurricane Katrina,
16 of course, Waterford, the Waterford Nuclear Power
17 Plant is 20 miles from New Orleans, right on the
18 water. And, of course, it took a direct hit from that
19 hurricane. And it made it through the hurricane fine.

20 But one of the advantages of a hurricane,
21 we know it's coming. And so people made the
22 preparations necessary so that that plant was shut
23 down and was prepared to ride out that storm.

24 Fukushima was very different. And being
25 prepared, you know, not having that time, having it

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1 already there is one of the big differences. So it's
2 a very interesting point.

3 MR. GRETEN: Yes. And definitely FEMA,
4 not just from the nuclear power plant aspect but from
5 the earthquake and tsunami aspect has been examining
6 what happened to Japan and what can we take away from
7 there.

8 The administrator has made a central tenet
9 of his policy that that window of time when -- you've
10 got to look out for yourself because nobody is coming
11 to help you just because there are so many people who
12 need help.

13 You know, Fukushima supported that
14 calculation. It's like, hey, they were on their own
15 for a while until the Japanese government, and even
16 then, help trickled in just because of the sheer
17 difference between the need people had and what
18 everybody could provide, even just taking into account
19 the distance stuff had to travel over.

20 And I know that the nuclear power plant
21 there was no different than that, you know, especially
22 with the problems the Japanese seem to be having with
23 the information getting out of there what they
24 actually needed, although this is something that you
25 all obviously all know way more about than we do.

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1 MR. WIGGINS: Yes. I'm trying to sort
2 this out. Maybe NEI, Adrian, you can help me with
3 this. I am under the impression that out of INPO,
4 there is an expectation that you work on something
5 quite similar to this with an 8-hour and maybe a
6 24-hour. So this gets back to the point about the
7 eight hours and can we do more with the eight hours
8 sooner?

9 Do I have that right? What is INPO asking
10 industry generically to do on station blackout?

11 MR. HEYMER: INPO has asked the industry
12 to go off and look at what would it take to go beyond
13 eight hours. And they're looking at, what would it
14 take to get to 24? Can you get to 24 or what other
15 additional measures could you get there?

16 I wanted to point out that for each plant,
17 it does tend to be a little bit different depending
18 upon where the credible external event or the risk is
19 coming from and how it affects the infrastructure.

20 For some plants, it may be the fact that
21 okay, you can get a lot of equipment within 24 hours
22 because of your location based on what is the credible
23 risk. On other plants, it may be 48. And it's the
24 same for the eight hours.

25 I think you can probably get to eight

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1 hours, but what is it going to take at each plant to
2 get there is going to vary.

3 So the industry is looking at this and
4 looking if we get -- we recognize that we're probably
5 in some instances going to have to go beyond 24 hours,
6 but that's an activity that is underway. It is in the
7 planning stage. For some people I wouldn't say it's
8 a straightforward exercise, but it's easier at some
9 plants than for others.

10 MR. WIGGINS: Can you give me a sense of
11 the schedule for that first part? What would it take
12 to get to eight hours?

13 MR. HEYMER: I think from determining what
14 would it take to get there, I mean, if I remember
15 rightly, you are looking at about a six-month period
16 to actually do that evaluation and determine what
17 would it take to get there. That's not getting there.
18 That's determining what would it take --

19 MR. WIGGINS: Yes.

20 MR. HEYMER: -- and then having a review
21 and an okay, once you say, "What would it take?" and
22 "How could we put the package together to do that?"
23 So I think we're looking at about six months.

24 MR. WIGGINS: What would it take probably
25 would be six months and then plus some period of time

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1 after that to implement.

2 MR. HEYMER: Yes. And for some people,
3 there may be very little implementation. For others,
4 it may be a stretch.

5 MR. WIGGINS: Okay. I'm just trying to
6 see where this could look if we go in the direction
7 that you suggest. You know, what do the times
8 actually look like?

9 You know, unless I have it wrong, -- you
10 guys can comment -- we're not going to be able to fix
11 any of these by throwing a switch. Even if we issue
12 an order, it's not going to be -- the actual fix isn't
13 going to be there the next day.

14 You know, I'm kind of thinking that what
15 is going to happen in a lot of these is there will be
16 an effective date of the instrument. There will be an
17 implementation schedule that is built into the
18 instrument that plays out over time. I'm just trying
19 to get an idea of what time scale industry is already
20 on on this eight-hour piece.

21 MR. HEYMER: The eight hours --

22 MR. WIGGINS: A bit about the other
23 comment here I think.

24 MR. HEYMER: The eight hours also we're
25 also looking at 24. So within that six-month period,

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1 it's determining what would it take to get out to 24.

2 MR. WIGGINS: Yes. The whole process I
3 think goes in Tim's comments about the -- I think he's
4 got a great point. It's unfortunate, for a number of
5 reasons, that Fukushima happened, but one of the less
6 harmful but still important is Fukushima completely
7 blew off NLE11, this New Madrid Fault, which would
8 have been quite informative in terms of what he talked
9 about, what it would take on the federal side to
10 facilitate or the state or federal side, to facilitate
11 movement of things from point A to point B in the
12 midst of a large catastrophic problem that affects the
13 infrastructure.

14 So it's too bad that didn't happen. But I
15 think there is a good point in what you are saying.

16 MR. LEEDS: Christopher?

17 MR. PAINE: Yes. I think there needs to
18 be obviously some criteria and clear expectations
19 about the 72-hour period. Is that supposed to be
20 accomplished with resources that are on site,
21 prepositioned on site? Is some fraction of that
22 acceptable to be supplied from outside? You know, I
23 didn't get a sense of where that 72-hour coping is
24 supposed to come from.

25 MS. CUBBAGE: From a Task Force

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1 perspective, the recommendation is that it be all on
2 site, not necessarily readily hooked up and be in
3 ready standby mode but it be equipment on site that
4 could be utilized.

5 But on that note, I did want to ask you,
6 Adrian. You said that industry is trying to focus in
7 on 24 hours. I wanted to ask from a practical
8 perspective what is the implementation difference
9 between 24 and 72 once you have the equipment.

10 MR. HEYMER: I don't know the difference
11 between what it would take to go from 24 to 72. We're
12 still trying to figure out how we're going to get to
13 24 and what that would take. And so that process is
14 ongoing. I think for some plants, you are going to
15 have to say, "Well, what is it going to take to get
16 out beyond that?"

17 But I think you're looking at okay, if
18 we're now talking about further extensions going out,
19 then you're to be totally self-sufficient. I think
20 you begin to face a slightly different challenge than
21 just going out to 24. And some people, it might even
22 be that they will only be able to get to 16. But it
23 varies.

24 I think as regards the federal response on
25 Hurricane Andrew, I think if you go back, I think

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1 either the state or the federal government were asked
2 to help out Turkey Point on Andrew to try and get some
3 equipment down there. And that worked out reasonably
4 well.

5 So I think that there is sort of some
6 precedent that we can actually build around. So I
7 don't think we should be concerned about what is it
8 necessarily going to take but how do we justify
9 whether it's 48, 72? What's that based on?

10 So it goes back to something that Chris
11 said. What's the basis for some of these numbers?

12 MR. LEEDS: I think you had some more to
13 say.

14 MR. PAINE: Yes. Just on the question of
15 the 72 hours, I mean, if what you're trying to guard
16 against is a severe event at a site, then counting on
17 all the equipment you prepositioned at that site to
18 survive the event you are defending against is kind of
19 a risky assumption. And I understand the intent, but
20 I think more thinking needs to go into this.

21 You pile a lot of equipment at the very
22 site that you think is going to be subjected to a
23 catastrophic event. How do you know that equipment is
24 going to survive?

25 MR. LEEDS: Common-mode failure, right.

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1 MR. PAINE: And we see that with the fire
2 engines at Diablo Canyon. You know, that's the first
3 building that is going to go, so no fire prevention.

4 You know, the coolant delivery, emergency
5 coolant delivery, is supposed to be done by an onsite
6 contractor who can't get there. You know, he's
7 supposed to take trucks down to the ocean or something
8 and pump water up to the plant. But the offsite
9 contractor isn't going to get there in an earthquake.

10 So that's the current arrangement. So you
11 still need to think about those things. You know, I
12 think Diablo Canyon is moving to an arraignment with
13 the National Guard to airlift stuff.

14 MR. WIGGINS: Is there not a tradeoff
15 between onsite and offsite when you think about Tim's
16 point, the ability to even move the stuff offsite?

17 MR. PAINE: Absolutely. I don't have an
18 answer. I just think that there is an assumption that
19 prepositioning all the equipment is the solution.

20 MR. WIGGINS: Yes. I think the extremes
21 are not -- they never have been, but they're useful.
22 If you go toward everything you need for beyond 72
23 hours has to be on site, then it's acceptable to the
24 problem you said. The actual site problem could be as
25 bad as to take out all that you were counting on.

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1 On the other hand, if you put too much of
2 your eggs in the "Well, we'll just stack it somewhere
3 else" and get it moved --

4 MR. PAINE: You can't move it.

5 MR. WIGGINS: -- then you're putting a lot
6 of eggs in the basket of assuming that the
7 infrastructure is there and you can move it assuming
8 that you can get priority out of the federal
9 government to come deal with the nuclear plant when
10 it's also trying to deal with a bunch of other things
11 that may or may not be perceived to be as dangerous as
12 a nuclear plant, right?

13 So a way to look at Fort Calhoun is the
14 Army Corps of Engineers sized up the relative risks
15 and figured that since Fort Calhoun was apparently
16 able to handle what they were handling, you know, they
17 made some decisions on what to do with the spillways
18 in there.

19 So a lot of the floods that Fort Calhoun
20 saw were the natural result of a triage that the Corps
21 of Engineers made. So there's no perfect solution to
22 this.

23 MR. PAINE: I recognize that.

24 MR. LEEDS: It needs to be discussed.
25 Good points. One more. And then Lance is giving me a

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1 head's up to move on. But let me just -- please?

2 MR. SKEEN: The only thing I would like to
3 get some clarification on, Adrian, you had mentioned
4 about the regional support centers. I was trying to
5 figure out, is that something you see as a short-term
6 or a long-term fix?

7 And then, even if I have these regional
8 support centers, it's the same thing. If I have that,
9 how do I get the equipment from there to the site?
10 And are you going to have your own helicopters or are
11 we going to rely on the federal government to help
12 with that or what was the thinking?

13 MR. HEYMER: Under the industry's
14 strategic response plan and the way forward document,
15 we've got that as an element within there on emergency
16 response from an industry-wide perspective.

17 There's a lot to look at. And you
18 identify, quite rightly, some of the issues, as did
19 Jim. I mean, it depends upon location, depends upon
20 what the credible threat is, risk is, from the
21 external events. And so it is going to vary.

22 At some plants, you may have a series of
23 regional support centers close at hand, others that
24 may be quite some distance.

25 It really comes back to the statement I

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1 made. Getting out to 24 is one thing. But going
2 beyond that, you've got a lot of other variables that
3 come into play. And, as you quite rightly said, Dave,
4 it's the transportation. What are the risks? What
5 are the bridges? Are there major rivers there? What
6 is the flooding potential? Are you in the desert?
7 Are you on the coast? Are you in a major seismic
8 area?

9 So there it is from region to region. And
10 you've got to bring all of that together. So you may
11 have two or three regionals. And then it's the number
12 of plants in the immediate location.

13 So I think you've got to look at that and
14 then look at, well, do you then stash equipment closer
15 to the plant? And how close is close?

16 MR. SKEEN: Right.

17 MR. HEYMER: And is that available? I
18 want to point out that the industry does interact
19 amongst itself a lot. So if you're in one part of the
20 country and you know a certain plant is in trouble or
21 has got a problem and it's of the magnitude that we're
22 talking about here, you're going to be able to get
23 your hands on that equipment if you can get it there.

24 So there is the infrastructure and
25 transportation issue that comes into play.

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1 MR. WIGGINS: This conversation makes the
2 security look easy. At least in reactors for
3 security, we have a design-basis threat. Beyond it,
4 that's what government has to come in for.

5 It's the same kind of thinking we have
6 here. Is there a boundary beyond which you have --
7 you know, is there a maximum boundary to which
8 industry has to be prepared to handle and then beyond
9 it, government has to step in to help? We don't have
10 the 40 years of legacy to decide what that is.

11 So I think in my mind, I know we're not
12 supposed to make decisions here. I've got to come
13 back to what the Near-Term Task Force said and just
14 look at those things and ask myself, "Can they or any
15 parts of them be just done now?" And that's the
16 answer to the 21-day paper.

17 We've got to start the process. There's a
18 substantial long-term that's going to be for the life
19 of these plants. We have to be able to raise these
20 issues. It's just going to get something going now.

21 MR. LEEDS: Good focus, Jim. Thank you.

22 Are you ready to move on?

23 FACILITATOR RAKOVAN: Yes. We've really
24 got to move on to the next one.

25 MR. LEEDS: Then let's move on.

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1 - RECOMMENDATION 5: RELIABLE HARDENED VENT DESIGNS
2 IN BOILING WATER REACTOR FACILITIES WITH
3 MARK I AND MARK II CONTAINMENTS.

4 FACILITATOR RAKOVAN: Recommendation
5 number 5, "The Task Force recommends requiring
6 reliable hardened vent designs in boiling water
7 reactor facilities with Mark I and Mark II
8 containments." And, again, it looks like there are
9 two sub-recommendations involved with this one.

10 Mr. Greten, since you haven't had a chance
11 to start, would you like to go? And then, Mr. Paine,
12 if you would like to follow?

13 MR. GRETEN: I don't know why you don't
14 use the Mark III. FEMA doesn't have any comments on
15 this one.

16 MR. LEEDS: Okay.

17 FACILITATOR RAKOVAN: I kind of thought
18 that might be the case.

19 Mr. Paine?

20 MR. PAINE: Yes. Of course, we support
21 recommendation 5. We're very concerned about hydrogen
22 issues in general beyond the venting questions and
23 have a number of petitions that have been submitted by
24 our consultant Mark Lays on some of the hydrogen
25 issues.

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1 So related to the deferral of
2 recommendation 6, hydrogen control and mitigation
3 inside containment, there are several petitions
4 already pending for rulemaking and enforcement actions
5 with respect to this issue.

6 We believe the ACRS should immediately be
7 tasked to examine the technical issues raised in these
8 petitions and asked to formulate recommendations
9 regarding the conduct of further cladding oxidation
10 experiments to resolve the outstanding issues, which
11 appear serious to us and any necessary conservative
12 operating protocols that should be implemented at
13 existing reactors while these issues are under review.

14 As we noted, this is a critical issue for
15 safety analysis of loss-of-coolant accidents and the
16 safety of power uprates, especially those uprates
17 involving BWR, Mark I, and Mark II designs. Study of
18 the Fukushima events will no doubt yield further
19 insights on hydrogen production and mitigation issues.

20 So, in short, we don't really endorse the
21 kind of deferral that was accorded recommendation 6.
22 We think that should be brought forward and dealt with
23 urgently by the ACRS since it implicates the safety,
24 literally the safety, of power uprates.

25 MR. LEEDS: Thank you.

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1 FACILITATOR RAKOVAN: Thanks.

2 MR. HEYMER: Recommendation 5 as regards
3 the venting capability and the use of hard vents, I
4 think one of the things that we're finding out from
5 the timeline that the industry is trying to put
6 together and, in fact, has just about completed on the
7 progression of accident events at Fukushima and has
8 been performed under INPO's leadership is that there
9 are a number of open issues.

10 The more we find out, the more questions
11 we have. And there are a number of questions about
12 what happened in venting, what occurred. Why was
13 there a delay? Did they get to the vent valve? Did
14 they know where it was? Did they know how to operate
15 it in manual?

16 And so I think, you know, we need to
17 really sort out what actually occurred there and when
18 INPO is going to Japan to discuss their timeline with
19 Tokyo Electric Power Company, hopefully come back with
20 some more answers.

21 So what we think -- and we agree that the
22 accessibility of the hardened vent valve is an
23 important topic. And we need to determine that we can
24 access that valve manually in a loss-of-AC power
25 condition and determine whether or not we can do that,

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1 is that feasible. And if not, we would take necessary
2 action to fix the problem if you don't access it, but
3 I think fixing the problem is probably different than
4 actually accessing the accessibility as regards to
5 timelines, as regards to time to actually implement.

6 So that's where we are as regards
7 evaluation of the accessibility. We think that is
8 something that we should move forward with and
9 determine where we are because it is an important
10 sequence to try to prevent core damage should you
11 actually get there to that point in place.

12 As regards to whether or not we should
13 mandate it on the Mark II's, I think until we have
14 additional information to determine what happened at
15 Fukushima, we shouldn't actually jump to that
16 conclusion straight away.

17 As regards to other designs, again, and
18 other containment structures, again I think we need to
19 find out really what happened there, do the
20 assessment, and then move forward and take any action
21 based on that information that I'm not sure that we
22 have a complete understanding of the current time.

23 All I will tell you is from what INPO has
24 told us so far, what we initially thought was some of
25 the rationale and reasons for some of the venting

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1 issues in Japan is not where they are ending up. And
2 that's where they have to go to Japan to discuss it
3 with Tokyo Electric Power Company to get a better,
4 more complete understanding so that we can put
5 together the timeline and then figure out how U.S.
6 plants need to react and what action we need to take
7 so that we don't have the same problem.

8 MR. WIGGINS: Is it possible -- your
9 comment seems to tie to what actually happened at
10 Fukushima. You know, you want to go back to see what
11 actually happened to find out if they had one or not.

12 It's hard to tell whether they have a -- if they have
13 a vent, it's hard to say whether it's hardened or not,
14 what that meant to them.

15 Answer this isn't there enough severe
16 accident work that you have available, even before
17 Fukushima, that would tend to shed some light on the
18 utility of having these? I think that's why we had
19 the Mark I's put in, the vents in the Mark I. It was
20 a --

21 MR. HEYMER: I meant that time there was a
22 significant amount of discussion and evaluations on
23 installing the Mark I vent, the hardened vent. So I
24 think we're there.

25 Until we know exactly what happened and

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1 why it didn't work as we thought it should have
2 worked, I think it's somewhat premature to sort of
3 jump out and say, "We're going to do" X when it may be
4 four months down the road, five months down the road,
5 we have more information, and say, "Okay. It didn't
6 occur exactly like that. Therefore, we should do
7 something else."

8 So I don't think we're saying, "No." It's
9 just saying, "Let's find out, get some more
10 information, and then make a determination."

11 MR. WIGGINS: I'm not trying to debate
12 these things with you, a lot of this. I'm asking you
13 maybe in an awkward way just to get information to
14 help do what I have to during this decision.

15 I don't know why there isn't enough
16 existing information about severe accident behaviors
17 of these containments that would indicate whether the
18 decision to have event or not would be good or not.
19 But beyond that, there are questions about -- this is
20 the actual 5.1. I wish I had my ruler and red pen
21 here diagramming the sentence because the words are
22 very important.

23 You talk about a reliable hardened event.
24 Reliable means you can operate it and it's
25 accessible. You know, it doesn't do you any good if

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1 in order to operate the vent, you have to send
2 somebody in a right rad area that you wouldn't want to
3 send somebody into. That's all things that can be
4 done as an analysis.

5 Wouldn't you think that we could decide
6 whether that needs to be done just based on the severe
7 accident work that has been done for the last 30
8 years?

9 MR. HEYMER: Well, I think as regards the
10 accessibility and the capability of the valve,
11 operation of the valve, I think you are quite right,
12 Jim. That's exactly what we're talking about. Okay.

13 If it's manual, can you get in there? Do you have
14 confidence that it would operate when you actually
15 need it, whether it's manually or remote?

16 So I think that accessibility and
17 capability is what we are talking about.

18 MR. WIGGINS: And operations could be one
19 way, although it does say in the recommendation "open
20 and close."

21 MR. HEYMER: Right.

22 MR. WIGGINS: I've become ware of some
23 design somewhere in the Northeast where it's a once
24 and done thing. You decide to do it. You enable it.

25 And you have the entire vent system running on a pie

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1 plate breaker kind of thing. You know, it's sitting
2 there, whatever you want, pressure dose.

3 MR. HEYMER: Yes.

4 MR. WIGGINS: And then when pressure in
5 the containment gets high enough, the vent goes, but
6 it does it on its own.

7 MR. HEYMER: And there are some designs
8 that look to you to open and shut the valve because
9 they want to maintain the pressure for MPSH or you
10 don't want to boil the whole water off in the torus.

11 So, I mean, it varies from station to
12 station. And, as we have found out, there are
13 different configurations out there.

14 MR. WIGGINS: That's a good point, though.
15 You know, everything is connected to everything else.
16 You would have to look at what the station's severe
17 accident management guidelines are.

18 I think that's where you are when you want
19 to use these and how we would want to use that vent.
20 Are you venting when you're filling the containment or
21 you're venting some other time. But, then, that would
22 translate the functional requirements for the vent,
23 right?

24 I mean, I think it can be done if you use
25 those to translate the functional -- I'm speaking too

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1 much. Okay.

2 MR. LEEDS: No, no. This is a very
3 helpful conversation. This is the type of dialogue we
4 were looking for. And we value very much your inputs.
5 This is very, very helpful.

6 MR. WIGGINS: I guess my point is I am not
7 wedded to the Fukushima experience, to answer this
8 question as your statement might suggest they ought to
9 be.

10 MR. LEEDS: I want to get to Chris because
11 Chris has --

12 MR. WIGGINS: Yes. I just wanted to --

13 MR. LEEDS: And I want to ask Chris a
14 question. So go ahead.

15 MR. PAINE: Well, I just wanted to say we
16 agree with you. We think that the functionality and
17 importance of events, it was long established in NRC
18 reports and documentation in NUREG CR-5525.

19 MR. WIGGINS: For the Mark I's, right?

20 MR. PAINE: Yes, for the Mark I's.

21 MR. WIGGINS: Yes.

22 MR. PAINE: And we think that the Task
23 Force report is correct in saying that the Mark II
24 containment has a sort of functional equivalent of the
25 Mark I's and, therefore, is subject to the same

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1 vulnerabilities. So we endorse that. And I think we
2 know enough already about Fukushima to know that the
3 event systems as a whole were not robust enough to
4 provide responders with information regarding their
5 successful actuation or failure to actuate. We know
6 that.

7 So the question is, you know, why did the
8 NRC after establishing this requirement back off the
9 inspection and enforcement of the continued
10 operability of these events? And I think that was an
11 error that the Commission made. It should be
12 rectified. Fukushima is clear evidence that it should
13 be rectified and it should be done promptly.

14 MR. LEEDS: Can I go to your
15 recommendations for clarity? Not challenging you at
16 all, Chris, I just want to make sure I understand.
17 You agree with recommendation 5?

18 MR. PAINE: Yes.

19 MR. LEEDS: Both of those?

20 MR. PAINE: Yes.

21 MR. LEEDS: But then you brought up
22 recommendation 6, --

23 MR. PAINE: Yes.

24 MR. LEEDS: -- which we didn't include on
25 a slide and because the Task Force talked about it as

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1 the long term, --

2 MR. PAINE: Right.

3 MR. LEEDS: -- a longer term. But you
4 disagree with that assessment. Do I understand this
5 right?

6 MR. PAINE: We do. We do.

7 MR. LEEDS: You believe that it --

8 MR. PAINE: We want that brought forward
9 to one of the near-term actions. We think that the
10 issue of hydrogen production, the onset of hydrogen
11 production, the rate of hydrogen production in a LOCA
12 should be referred to the ACRS.

13 We think there are very convincing
14 petitions on the technical issues pending before the
15 NRC. And since it relates to the advisability of
16 power uprates for the Mark I and Mark II reactors, I
17 mean, some of which are pending now, I think that that
18 should be really an issue of attention.

19 MS. CUBBAGE: If I might?

20 MR. LEEDS: And it's in a petition. Just
21 one more question. But I thought it was very
22 interesting. I thought I heard you specify that the
23 ACRS should be tasked with examining hydrogen. Can
24 you explain that a little bit?

25 MR. PAINE: Well, we think, you know, this

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1 is a highly technical issue. It involves the original
2 modeling that was done that underpins the safety
3 licensing of nuclear power plants with respect to the
4 hydrogen production issue in a LOCA.

5 And we think our petitions or, actually,
6 those of our consultant, Mark Lays, contain very
7 convincing data and argumentation on why the current
8 modeling is not supported by the experimental
9 evidence.

10 And he points to a need to reevaluate and
11 revise the model or at least conduct more experiments
12 to evaluate the current model.

13 MR. LEEDS: I am familiar with the
14 petitions and the questions, a lot of work there.

15 MR. PAINE: Yes.

16 MR. LEEDS: I think the stuff is --

17 MR. PAINE: I think the ACRS is the
18 appropriate body to look at this.

19 MR. LEEDS: Yes. Why the ACRS to do,
20 actually do, the work, as opposed to the staff with
21 the ACRS in its normal oversight?

22 MR. PAINE: Oversight. We think it's an
23 issue that should be referred to the ACRS for
24 independent scientific evaluation. And, of course,
25 the staff should work on it.

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1 MR. LEEDS: Oh, okay.

2 MR. PAINE: And the staff can make --

3 MR. LEEDS: The staff.

4 MR. PAINE: But I think the ACRS should
5 weigh in on this since this is a highly technical
6 issue. It involves experiments that were conducted a
7 long time ago. They are scientists. They have the
8 training on the fundamental physics to evaluate
9 whether these petitions have merit or not.

10 MS. CUBBAGE: I just want to acknowledge
11 that we certainly appreciate your concerns about the
12 hydrogen issues. I don't want the Task Force
13 recommendation to make it a long-term evaluation to be
14 construed as any diminishing of the significance of
15 that issue. It's just that in the short amount of
16 time that was available to the Task Force, we weren't
17 able to formulate concrete recommendations for
18 specific actions that should be taken by industry to
19 address this issue.

20 It is a very complicated issue. And
21 additional insights were needed out of the
22 fact-finding of the accident and also more detailed
23 technical analysis before any specific recommendations
24 could come forth.

25 MR. PAINE: Well, that said, and I can

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1 accept that, but I think there is a larger problem
2 here, which is that we have ongoing power uprates and
3 relicensing issues. And those explicitly implicate
4 the concerns that are raised in the hydrogen
5 production petitions.

6 And we're making decisions to uprate
7 plants which would exacerbate the very problem that's
8 identified in those petitions without having reviewed
9 the issue. And so we think that is really not the way
10 the NRC should be conducting its business when we
11 again reiterate the need to bring this issue forward
12 and to deal with it promptly.

13 We would argue that power uprates and
14 relicensing should be suspended generally until the
15 Fukushima recommendations emerging from this Task
16 Force report are decided upon and can be woven into
17 the relicensing or power uprate decision.

18 There's more than just the hydrogen
19 production issue, as you know.

20 MR. WIGGINS: Just for clarity, though,
21 the issues with hydrogen production that you are
22 talking about now -- you mentioned petitions. They
23 are all subject to the petitions.

24 MR. PAINE: Yes.

25 MR. WIGGINS: Is it petitions for

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1 rulemaking or --

2 MR. PAINE: Yes. It's rulemaking. And
3 there is one enforcement petition pending at Indian
4 Point.

5 MR. WIGGINS: I am not trying to pick at
6 this, but those petitions like that have petition -- I
7 hate to say this -- processes that are working in
8 parallel with this.

9 MR. PAINE: Right.

10 MR. WIGGINS: So your comment could be
11 taken as maybe the lead office that looks at those
12 petitions needs to accept the comment about should
13 they be advanced in schedule in order to kind of try
14 to bring them closer.

15 Frankly, I'm concerned. There's a lot of
16 stuff in this Near-Term Task Force. We kept adding
17 additional things for the short term. You're not
18 going to get Bill DeLute to focus on getting something
19 that could be done here done.

20 It is good that your concerns with regard
21 to hydrogen are in recognized process practices,
22 right? You're talking to the Office Director that
23 sits on top of the processes.

24 MR. PAINE: Right. Well, I think this
25 issue goes to the larger question, which perhaps you

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1 can address at the end because we're not clear how the
2 current process that we're engaged in today relates to
3 the 2.206 and rulemaking.

4 MR. WIGGINS: Yes.

5 MR. PAINE: This process that we're
6 talking about today relates to the larger 2.206 or
7 rulemaking petition process.

8 MR. WIGGINS: We'll think about it. I
9 don't know if we have a good answer other than it all
10 comes together at the Commission, right?

11 MR. LEEDS: Go ahead.

12 MR. SKEEN: Just one clarification.
13 Adrian, you mentioned that INPO was working on the
14 timeline of the Fukushima event. Do you know when
15 that is supposed to be done? Is that going to be
16 short-term or long-term?

17 MR. HEYMER: That's the short-term that
18 just about completed it. They will go to Japan in the
19 next couple of weeks and discuss it with TEPCO.

20 MR. SKEEN: Okay.

21 MR. HEYMER: And then they will come back,
22 adjust the timeline. And I think it would be very
23 beneficial if we had an interaction with the NRC --

24 MR. SKEEN: Right.

25 MR. HEYMER: -- so that we're actually

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1 talking off the same page of what happened, what
2 didn't happen.

3 MR. SKEEN: Right.

4 MR. HEYMER: And then we can really move
5 forward with some high degree of confidence that we
6 are basing our actions on: one, what happened there;
7 and, two, how does what happened there apply to plants
8 here in the United States. And so I think --

9 MR. SKEEN: So the next three months or --

10 MR. HEYMER: I would say by the end of the
11 year we certainly will have that and hopefully would
12 have had an interaction with this agency, with the
13 NRC, to discuss that.

14 MR. SKEEN: Okay. Thank you. I
15 appreciate that.

16 MR. LEEDS: Jack? Jack Grobe is going to
17 -- Jack was on the Near-Term Task Force. He's Deputy
18 in the NRR.

19 MR. GROBE: Thank you, Eric.

20 I just wanted to make sure there wasn't a
21 misunderstanding between the issue of venting
22 containment and hydrogen. Containment venting is not
23 related to hydrogen control. Containment venting is
24 specifically designed to address a certain sequence of
25 severe accidents where you continue to put energy into

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1 the containment structure and you have no way of
2 removing that energy. And at some point in time you
3 are no longer able to cool the core.

4 So you don't generate hydrogen until you
5 lose cooling to the core. The containment vent is
6 intended to protect core cooling capability to remove
7 energy from containment. It has nothing to do with
8 hydrogen control.

9 The issue was, Amy correctly stated, on
10 hydrogen controls, we simply don't have enough
11 information yet from Fukushima to understand the
12 behavior of the hydrogen, how it got from one place to
13 another. And those are things we need more data on.
14 And that's why that's a longer-term recommendation.

15 Containment venting has to do with core
16 cooling, not --

17 MR. PAINE: We understand that.

18 MR. GROBE: Okay.

19 MR. LEEDS: All right. Lance?

20 - RECOMMENDATION 7: SPENT FUEL POOL MAKEUP

21 CAPABILITY AND INSTRUMENTATION

22 FACILITATOR RAKOVAN: Yes. If we could
23 move on to recommendation 7, "The Task Force
24 recommends enhancing spent fuel pool makeup capability
25 and instrumentation for the spent fuel pool." There

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1 apparently are five sub-recommendations for this one,
2 so a lot going on here.

3 If we could start with Mr. Heymer and then
4 go to Mr. Paine second?

5 MR. HEYMER: Thank you, Lance.

6 The fuel pool is at Fukushima Dai-Ichi.
7 As an example, the facts, once they have become known,
8 somewhat validated earlier conclusions. I think there
9 were many, including a number in the industry in the
10 early days of the accident, that believed there had
11 been a major event in the fuel pools, where there had
12 been even perhaps a fuel pool accident and damage.

13 Now, with the benefit of visual
14 inspections and samples from the four affected fuel
15 pools, it now appears that that was not the case. In
16 fact, it looks from the visual inspections and from
17 the samples that, more or less as it should be, that
18 there may be some minor physical damage, perhaps from
19 debris falling in, but there isn't anything to
20 associate it with that.

21 And I think I would just reemphasize some
22 of the points I made earlier that it is important that
23 we actually determine what occurred and then act on
24 that and confirm that and then see how it applies back
25 here in the United States.

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1 And so with that regard, we struggle with
2 now. We struggle with the fact that you have got four
3 orders and a rulemaking going forward.

4 We also want to point out that, as shown
5 in Fukushima and in events that have occurred here in
6 the U.S. There is thermal inertia that provides time
7 to take action and mitigated measures while the
8 operators really focus on what are probably the more
9 critical aspects of bringing the reactor to a safe
10 condition.

11 Now, having said all of that, the industry
12 is moving forward to take certain actions as regards
13 to fuel pools. One of those is to make sure that we
14 have a good understanding of how long have we got in
15 our fuel pools to go from where we are, which is
16 normally around about 90 degrees Fahrenheit, to 200
17 degrees Fahrenheit if you should lose fuel pool
18 cooling. And so in that regard, we believe that there
19 are some actions that need to be taken.

20 Another action that is clear to us that we
21 need to look at, it's another one of these things
22 where depending upon what plant you're at or going to,
23 things are a little bit different. But we believe
24 that there is a benefit for remote monitoring of the
25 spent fuel pool during not only just normal operations

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1 but actually in the midst of a reactor event so we
2 don't get distracted or perhaps coerced to divert
3 resources when there is no need to divert resources.

4 Now, when we say that there is a need for
5 remote monitoring, I think perhaps we are going to
6 have to get innovative. It doesn't necessarily have
7 to be in a control room, but you have to be able to
8 get to it in the event of an accident.

9 And so there needs to be a process for
10 determining what that is. And, as I said, it might
11 vary from station to station depending upon what you
12 have in place today.

13 So in that regard, for example, for one
14 specific parameter, it may be a camera with a battery
15 backup and an intermediate power supply that you can
16 just go to and check. And then you're not draining
17 the battery continually.

18 So it's things like that that I think
19 there is some innovation that we can look at and
20 perhaps learn from perhaps what the Japanese have in
21 place today.

22 One area that we struggle with and we
23 notice that's in the orders is the need to be
24 safety-related for the instrumentation.

25 We do have time. I think it is really

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1 important that we say, "Okay. What capability do you
2 have for monitoring the fuel pool, the conditions in
3 there, temperature and level predominantly and
4 obviously radiation when you can't access or there's
5 no AC power available or you can't access the fuel
6 pool area?"

7 And so I think when you look at what that
8 is and determine what you need to do there and because
9 of the time that we have with the thermal inertia, we
10 don't believe you need to have to be safety-related as
11 regards to instrumentation or even the power supply to
12 the cooling pumps because of the fact that you have so
13 much time on your hands. I mean, I think it was
14 almost nine days before they actually got cooling
15 water to the pools in Fukushima. Now, I'm not
16 suggesting that we wait that long, but it just
17 demonstrates that you do have time.

18 And if they did have safety-related power
19 supplies for the pumps and for the instrumentation, it
20 wouldn't really have helped too much at Fukushima
21 because they didn't have AC power and they didn't have
22 diesels. And if they had, they would have probably
23 focused them on some other area of the plant because
24 of limited.

25 So I think we need to look at these four

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1 and really focus on the instrumentation. And where we
2 would come down from our perspective is make sure that
3 we are out there, reach a common understanding on the
4 methodologies and guidelines for performing the
5 evolution that I spoke about, which is "Okay. How are
6 you going to monitor the spent fuel pool, the methods
7 and equipment that you either have in place today or
8 that you would need to put in place or what action
9 plan or what actions would you take to actually
10 monitor the spent fuel pool?"

11 As regards to the need for a seismically
12 qualified spray line, we have processes, measures in
13 place today as a result of the contingencies that we
14 put in place post-911 to get water up to the fuel
15 pool. And I think when you look at everything else
16 that is going on in this 90-day report, which I would
17 like to add, Amy and Jack who were here, I think it
18 was a pretty commendable effort to put that report
19 together in the time frame that you did with what you
20 had to work with.

21 I think when you look at everything else
22 that we have got going on, I think the priority
23 associated with a line going to the fuel pool area is
24 certainly down the list compared to some of the
25 activates that we have got out there today.

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1 So I wouldn't say orders. I think there
2 are other regulatory processes in place. And so I
3 don't think we need safety-related power supplies.

4 And, as regards to 7.4, it is probably
5 nice to have. It's additional belts on the system. I
6 think we have some of those measures in place today.
7 We can improve on them, but I think that is a lower
8 order of priority.

9 MR. PAINE: We support recommendation 7 in
10 its entirety. We have some refinements that we would
11 suggest adding. We would note that the Fukushima
12 pools were much less full than your typical U.S. fuel
13 pool, which changes the thermal inertia equation.

14 We disagree with the task force, with the
15 technical claim that the increased pool loads do not
16 contribute to pool cooling issues. The ability of the
17 water in the pool based on my high school physics, the
18 ability of the pool to dissipate heat and resist
19 boiling is proportional to the water volume relative
20 to the volume of spent fuel and to its flow rate
21 through the pool. Both are adversely affected by the
22 amount of spent fuel packed into the pool,
23 irrespective of the heat load of any particular fuel
24 element.

25 So we would recommend that -- well, I

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1 would add that, additionally, in the event of an
2 explosive dispersal accident involving a spent fuel
3 pool, the source term for the spread of radioactive
4 material is directly related to the amount of fuel in
5 the pool. So we would be -- we think further
6 attention needs to be given to pool unloading and ways
7 to minimize these risks through accelerated dry cask
8 storage.

9 And so, I mean, I think in that sense we
10 would agree with NEI that the focus solely on bringing
11 additional reliable cooling to the pool to the
12 exclusion of unloading the pool and to balancing those
13 requirements is something that should be examined.

14 MR. LEEDS: Done?

15 MR. PAINE: Yes.

16 MR. GRETEN: FEMA has no comment.

17 MR. LEEDS: Okay. Thank you.

18 Questions for the panelists? Please,
19 Dave?

20 MR. SKEEN: Yes. Just to follow up, then,
21 what you're saying is unloading the pools as you would
22 go to dry storage, dry cask storage --

23 MR. PAINE: Dry cask storage.

24 MR. SKEEN: -- onsite or --

25 MR. PAINE: Well, I think that is sort of

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1 immaterial to the immediate resolution of the safety
2 issue. That's why --

3 MR. SKEEN: Get it out of the pool and put
4 it in dry cask is what you're recommending?

5 MR. PAINE: Yes.

6 MR. SKEEN: Okay. Thanks.

7 MR. WIGGINS: I wanted to ask a question.
8 I don't know whether it's for the Task Force or
9 whether it's for NEI. So here is a ten-point toss-up
10 question.

11 When you talk about seismically qualified
12 or safety-related in the instrumentation, -- that's
13 the term, "safety-related instrumentation" -- did the
14 Task Force intend that to be a surrogate for reliable
15 or did the Task Force really think you needed a
16 safety-related pedigree on the pieces, parts, and -- I
17 don't know how we -- I'm trying to struggle with this,
18 honestly.

19 One could -- we have been around trying to
20 define reliable instrumentation in reg guide 197. So,
21 as ugly as that was, we came to some conclusion about
22 what reliability needed to be for various types of
23 instrumentation.

24 Not all reliable instrumentation needs to
25 be safety-related. So I was wondering, what does -- I

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1 could almost guess what industry thinks in this, but I
2 was wondering if we could have a little bit of
3 dialogue on what we were trying to accomplish by
4 making it safety-related.

5 MS. CUBBAGE: I have some of my help here.

6 They can chime in if they want. But I can say from
7 my perspective I want to make sure that it can
8 withstand the external events that have gotten you
9 into this situation.

10 So you mentioned a camera. I would be
11 curious if you envisioned that it would be protected
12 from a seismic event.

13 MR. HEYMER: As regards to the camera,
14 it's solid state. We think that it would be mounted
15 in a way that it sort of just wouldn't just drop off
16 and fall in the pool.

17 But I think from our perspective, its
18 diversity is more important than just being purely
19 safety-related in the pure definition of
20 safety-related as it is in the regulatory structure,
21 which I think speaks to the reliability of being able
22 to monitor what is going on in the fuel pool area,
23 rather than having a strict regulatory definition of
24 safety-related and all the bells and whistles and
25 pedigree that that involves.

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1 MR. WIGGINS: Safety-related would drag
2 you to a class 1E kind of arrangement.

3 MR. HEYMER: Right.

4 MR. WIGGINS: You're into an IEEE
5 standard.

6 MR. HEYMER: Right.

7 MR. WIGGINS: And you're looking at
8 isolation, separation, connectors, that kind of stuff.

9 But there is other licensing basis in the plant that
10 is certainly important that I think we agree just
11 needs to be reliable. And I think what Amy is saying
12 is maybe what we ought to think about is what is the
13 definition of reliable in this context.

14 That gets us back to "Well, we can move
15 quickly, for instance, on something like that," but
16 there is an enabling step that is part of the moving
17 quickly, which is, "Well, let's define what we are
18 actually trying to achieve.

19 MR. HEYMER: Yes. I mean, I think --

20 MR. WIGGINS: You've got me on the wrong
21 side of the table. I'm actually making an argument
22 you ought to be making, but I think in the end, what
23 we need is what this is getting at.

24 I appreciate what you said. I think I
25 agree with you. You need to have the instrumentation

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1 or you have to have the indications that are reliable
2 because if you don't, you'll do what happened at
3 Fukushima, even us. We diverted attention on
4 something that it turns out we wouldn't have needed to
5 divert attention to if we knew what was actually going
6 on in the pool. Right?

7 We see your point.

8 MS. CUBBAGE: I have a question for
9 Adrian. You mentioned the industry was looking at the
10 time to get to 200 degrees if you lose cooling. Do
11 you have a timeline of when that type of a study would
12 be done or is that just a --

13 MR. HEYMER: I think they are looking to
14 have that by the end of the year.

15 MS. CUBBAGE: And would the goal be to
16 have some sort of a performance-based acceptable
17 number of hours or just to have that knowledge?

18 MR. HEYMER: To have that knowledge
19 because it is going to vary depending on where you are
20 and when did you last unload, what fuel's in there,
21 what's the configuration of what is in there. I think
22 so --

23 MS. CUBBAGE: So is the vision a snapshot
24 or is it for continual awareness, like the --

25 MR. HEYMER: I think it's a continual

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1 awareness, not to say, "Well, now it's 11:15. How
2 much time have you got?" but sort of a rough
3 estimation of --

4 MS. CUBBAGE: Right.

5 MR. HEYMER: -- how much time you have.
6 And I think that is borne out by the fact that even
7 though fuel pools -- and I admit fuel pools over here
8 have more fuel in them than what's in Japan. It is
9 interesting to note that some of the recent events
10 that we have had here, where they have lost fuel pool
11 cooling, the temperature really hasn't moved off where
12 it was around 90 degrees Fahrenheit, even though that
13 went on for a number of hours.

14 And so that's something that I think you
15 can -- it helps I think reinforce what I am trying to
16 say, perhaps not very articulately, in that we have
17 time here.

18 As long as we know sort of a sense of mind
19 of the condition of the fuel pool, the operators can
20 really focus on what is really important, which is
21 making sure the reactor is safe, because the time
22 interval on that is a lot shorter than it is on the
23 fuel pool.

24 MR. WIGGINS: Don't you think from an
25 operations perspective they're going to want

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1 instrumentation, though? They'll like the engineer
2 giving them the time to pool like if they were reduced
3 inventory --

4 MR. HEYMER: We agree.

5 MR. WIGGINS: They don't want the
6 instruments, right?

7 MR. HEYMER: We agree that there needs to
8 be a method of monitoring the fuel pool.

9 MR. WIGGINS: Yes.

10 MR. HEYMER: I mean, I think that's a
11 given.

12 MR. WIGGINS: Okay.

13 MR. HEYMER: And some people have that.
14 Some people do not. Some people have some of what
15 we've got, and some people don't.

16 MR. WIGGINS: I'm not trying to pick at
17 it. Time to boil might be useful information, but I
18 don't think it's completely surrogate for
19 instrumentation.

20 MR. PAINE: Agreed.

21 MR. LEEDS: Brian, you had a question?

22 MR. SHERRON: Yes. Chris, you had made a
23 statement that you said you really supported moving
24 fuel out of the pool, you know, rather than just
25 trying to put more monitoring or systems and stuff.

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1 MR. PAINE: I think that that is a
2 solution that should be looked at alongside. We
3 support the instrumentation recommendations.

4 MR. SHERRON: Yes.

5 MR. PAINE: We think that is an additional
6 safety issue. For example, instrumentation doesn't
7 cure the source term problem of packing these pools in
8 the event there is an explosion.

9 MR. SHERRON: I guess that was my
10 question. What is the basis for -- I mean, I guess
11 there is an assumption that you think that the pool is
12 either safer with the fuel removed and in casks versus
13 --

14 MR. PAINE: We think just an attempt --

15 MR. SHERRON: -- if there was a basis?
16 That's all, I mean, because obviously there are
17 competing issues. You know, we have looked. And we
18 have said, you know, "Well, you know, that's more cask
19 movements. There's more probability of a cask drop,
20 which could damage the pool" and stuff. Most of the
21 heat load in the pool comes from the most recent
22 offloads.

23 So the question is, you know, I think when
24 my office is -- we're trying to look at it right now.
25 You know, is there any major benefit?

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1 MR. PAINE: Well, I guess --

2 MR. SHERRON: And I was wondering if you
3 had done something or --

4 MR. PAINE: No, we have not. We were just
5 -- purely on the basis of high school physics, I was
6 making the supposition that time to boil would be
7 longer for a pool that had a greater ratio of cooling
8 water to fuel.

9 And so, especially if you've got a pool
10 that has got recently irradiated fuel in it, you would
11 want to maximize the cooling capability of that pool
12 and, therefore, remove the older fuel just as a
13 cooling issue.

14 But then when you add on top of that the
15 question of -- it's also flow rate. If you have more
16 of that fuel, the pool doesn't cool efficiently
17 because the water doesn't flow as easily.

18 So the issue then becomes on top of that
19 you have a source term issue that if an explosion
20 occurs or a complete loss of coolant in the pool
21 occurs and the fuel melts, you've got a bigger source
22 term.

23 So considering all of those
24 considerations, we think that outweighs the
25 probability the cask is going to be damaged when it's

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1 dropped.

2 MR. LEEDS: Interesting because I had a
3 similar question. The question I was going to ask
4 you, though, Chris, is from the other side. Is there
5 any down side to taking the fuel out of the pool and
6 putting it in the dry cask storage?

7 MR. PAINE: That is, from our perspective
8 and I think from the National Academy study that
9 looked at that, the net-net of that was no.

10 There may be some down sides on that.
11 That's not an area of expertise. Spent fuel storage
12 is not my area of expertise. But generally we have a
13 consensus now in the environmental community that
14 moving fuel out of the pools into dry cask storage is
15 a good thing to do for a number of reasons: safety;
16 security; and now what we have learned, whatever we
17 have learned, from Fukushima, which I understand is
18 still in dispute.

19 Thank you.

20 MR. LEEDS: Thank you.

21 I'm sorry. Jim?

22 MR. WIGGINS: I was just going to comment.

23 As with most things in this industry, it's a pretty
24 complicated issue. You mentioned security. We are
25 looking at dry cask storage security again in my shop.

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1 You know, I don't know where this is going to end up,
2 but we are looking to determine whether there is a
3 security difference or there is a security issue
4 related to how and where the casks might be.

5 MR. PAINE: If you shoot a toe missile at
6 a spent fuel pool, it's going to have a very bad day.

7 If you shoot a toe missile at one of those German dry
8 casks, it's going to stay secure inside the cask.
9 I've seen the film.

10 So, I mean, I think we're talking on that
11 level of distinction.

12 MR. WIGGINS: Yes. I just can't talk a
13 lot about what we're doing in this, but I'm just
14 saying it's a bigger question, too.

15 And I'm not trying to pick at you either.
16 You know, I'm just trying to figure out how I'm going
17 to conclude on this thing.

18 I think I understand the point that maybe
19 it would be good to have a progression and move it.
20 Some would say it would be good to have a progression
21 and move the fuel even beyond the dry casks.

22 MR. PAINE: Right, but I think that
23 becomes more of an economics and overall fuel cycle
24 disposal issue, rather than a safety concern.

25 MR. WIGGINS: Yes. I agree.

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1 MR. LEEDS: Lance?

2 - RECOMMENDATION 8:

3 ONSITE EMERGENCY RESPONSE CAPABILITIES

4 FACILITATOR RAKOVAN: Okay. Let's go on,
5 move on to the next recommendation, recommendation 8,
6 "The Task Force recommends strengthening and
7 integrating onsite emergency response capabilities,
8 such as emergency operating procedures, severe
9 accident management guidelines, and extensive damage
10 mitigation guidelines."

11 Mr. Greten, since you've kind of passed on
12 a few of these, do you want to take the first stab at
13 this?

14 MR. GRETEN: The better trained people
15 are, the better it is. That's really my comment on
16 there. This is an onsite issue, as opposed to FEMA's
17 offsite issue, but certainly the better versed folks
18 are onsite with what is going on, both onsite and
19 offsite, the better it is for everybody.

20 I know that NRC and industry have been
21 working together to incorporate a lot of the different
22 things that have come since 9-11, you know, certainly
23 the progression of the national incident management
24 system and other changes that have been made to
25 emergency response communication architecture, things

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1 along those lines.

2 I know that the guidance right now that
3 NRC and FEMA have been working to turn out, most
4 notably supplement 3 talking about protective accident
5 decision-making and even stuff that EPA is doing,
6 updating their protective action guidelines, all of
7 that knowledge in terms of how the folks onsite are
8 interacting with the folks offsite and passing
9 information is a very valuable thing.

10 I know that the Commission's
11 recommendations really are focusing on training for
12 things that are onsite. You know, if you can stop
13 something bad from happening in the first place, that
14 is the optimal solution.

15 But making sure that there is good
16 information flow from onsite to offsite, from Japan
17 alone -- I know that it took us several days to figure
18 out what was going on, you know, open media reports of
19 the Japanese Prime Minister asking the head of the
20 power authority "What the hell is going on here?"

21 You know, at FEMA, we have been very
22 careful to try to make sure we -- and I think this
23 actually goes into what the next recommendation is
24 going to be talking about, communications issues, but
25 making sure that there is good information getting off

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1 the site to everybody, both in the immediate emergency
2 preparedness zone and to, really, the world writ
3 large, is as much a responsibility as anything else
4 that is being done onsite to contain the situation.
5 You know, that seemed to be a lesson that we learned
6 out of Fukushima.

7 And I know that there was an insatiable
8 demand for public information from every state in the
9 union and territories, too. And it wouldn't be any
10 different during a domestic event.

11 And, actually, I will keep the rest of my
12 comments for the next recommendation. Thanks.

13 MR. LEEDS: Thank you, Tim.

14 MR. PAINE: This is not an area of
15 expertise of NRDC, but we do have some sort of broader
16 observations on it. And I'll just do 8 and 9 together
17 in the interest of time so that the audience can
18 participate.

19 You know, that is the issue of the Task
20 Force did not look at objective changes in the
21 reactor's external environment. It didn't address the
22 sort of fundamental changes that are involved in
23 evaluation, in evaluating the feasibility of
24 evacuation plans. You know, how do these changes
25 relate to the improvement of emergency planning or

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1 whether a site should be closed, whether an operating
2 site should actually be closed? I'll just list a
3 couple of those just to give you an illustration of
4 what we're thinking about.

5 Population density of the surrounding
6 area. What has been the change since the reactor was
7 licensed? The capacity, transportation
8 infrastructure, time-dependent traffic flows and
9 bottlenecks. The value of economic activity and the
10 value of land in the affected emergency planning
11 zones.

12 NRC has a standard that relates to the
13 exposed individual, the maximum exposed individual,
14 but it doesn't relate to the economic damage to the
15 area or the loss of the economic use of that.

16 In the case of Indian Point, you might not
17 have any severe accident at Indian Point. You might
18 fully comply with exposure limits in the NRC regs and
19 still have a trillion-dollar economic disaster and a
20 panicky evacuation that probably kills more people
21 than the radiation.

22 So I think these fundamental issues about
23 how reactors are sited and will be sited in the future
24 need to be dealt with because one of the fundamental
25 problems with Fukushima was it was located four meters

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1 above the sea coast with very little protection.

2 MR. LEEDS: Thank you.

3 Adrian?

4 MR. HEYMER: Recommendation 8. As regards
5 8.1, we agree that enhancements can be made in the
6 areas that you're mentioning here, especially to EOPs,
7 SAMGs, et cetera, to incorporate the lessons learned
8 from Fukushima. And we're working in that regard to
9 achieve that.

10 But I think we need to recognize that this
11 activity, certainly 8.1 and 8.4 are not items that are
12 quickly going to be completed. These are going to be
13 very large, complex endeavors as we go forward.

14 If you look at the time it took us to put
15 in place the SAMGs, severe accident management
16 guidelines, and now what we're looking at is perhaps
17 integrating those with some of the bigger strategies
18 and then factoring in the EOPs, although we have
19 already started, this is going to be a long-term
20 effort. And so, once again, I'm not quite sure an
21 order really is the appropriate tool.

22 We believe the near-term focus should be
23 on improving training and implementation of the EOPs,
24 severe accident management guidelines, and the
25 50.54(hh) mitigation procedures and measures.

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1 We believe that we should go forward and
2 the training programs as they are now should be
3 reviewed and, if necessary, enhanced to assure the
4 operators and, probably more importantly, emergency
5 response organizations are capable of making the
6 correct decisions.

7 The reason why I think it is important
8 that the emphasis is on the emergency response -- and
9 we're talking about training -- although it's
10 important for the operators to be perhaps more
11 knowledgeable of some of their mitigation measures out
12 there as regards going into the (b)(5)(b) measures, I
13 think it's more important and it's a fundamental
14 aspect that I want to get across this afternoon that
15 operators at training are focused on normal plant
16 operations, abnormal occurrences, and EOPs. And it's
17 very important that we focus, really give prime
18 emphasis for the operators on that segment.

19 And so when you get about training and
20 you're talking about operators and you're getting into
21 severe accident management guidelines and (b)(5)(b)
22 strategies and measures, I think there is more of an
23 aspect of being familiar and aware of in terms of
24 training and examination than detailed knowledge and
25 in-depth knowledge of those events. So I think that

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1 is an important element that we should not miss.

2 There needs to be some form of training
3 standards developed and reach a common understanding
4 with the agency on what those are and make sure that
5 those training standards are applicable to the
6 emergency response organizations.

7 On the technical specification
8 requirements, I think we need to have some further
9 discussion to really fully understand what that is and
10 how that would be applied and what are the
11 implications for operator training going forward to
12 make sure that we maintain the correct emphasis.

13 So we're not saying, "No. Operators
14 shouldn't be aware of." We're not saying. But I
15 think it's just a depth of knowledge and making sure
16 that we focus our training and our examinations on the
17 areas where we want the operators to really excel in
18 performance, which is operations, abnormal occurrences
19 in EOPs, rather than getting into severe accident
20 management aspects.

21 So that's where we are, but we are
22 beginning to move forward and take steps to take a
23 hard look at that training in these areas. And so
24 that's our recommendation.

25 MR. LEEDS: Thank you. All right.

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1 Questions from the panel?

2 MR. SHERRON: Adrian, I was -- when you
3 said that you didn't think rulemaking was, I guess,
4 the appropriate vehicle --

5 MR. HEYMER: If I said rulemaking, I meant
6 orders.

7 MR. SHERRON: All right. Oh, I'm sorry, I
8 thought you said rulemaking. But even if it is
9 orders, in terms of, you know, from the standpoint of
10 when we would want to start something right away,
11 okay, rulemaking is a longer-term process. It could
12 take, you know, years; whereas, orders get things
13 moving right away.

14 But I didn't hear any like, you know, if
15 we wanted to move this right away, what was the
16 industry proposing as an alternative to orders? In
17 other words, would the industry step forward and say
18 we will voluntarily integrate -- start the integration
19 of EOP, SAMGs, et cetera? Or what?

20 MR. HEYMER: We'd be willing to start a
21 dialogue. I mean I think, you know, if you are
22 looking for a vehicle, perhaps a bulletin or a generic
23 letter, in that area, but we would certainly be
24 willing to step forward and start a dialogue with the
25 agency here on what do we really mean here. What are

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1 the standards? How do we go forward? How do we deal
2 with this?

3 And go forward, if you like, in parallel
4 with what might be a rulemaking later if you feel you
5 need a regulatory footprint in this area. But we're
6 willing to work with the Agency to make sure that we
7 actually move in this area so that there is a good
8 understanding not along amongst ourselves but amongst
9 yourselves.

10 MR. LEEDS: Adrian, to follow up on the
11 question, I'm wondering how much INPO is involved.
12 And I know on the international community, WANO -- and
13 we're all very interested in making progress and going
14 forward with regard to SAMGs and -- can you talk about
15 those interactions? Are you aware of interactions
16 between INPO and WANO and the other operators?

17 MR. HEYMER: Well, only very much on the
18 periphery, Eric. I mean it is clear that the industry
19 wants to strengthen WANO, the World Association of
20 Nuclear Operators. And to try and bring them and to
21 be successful in getting them to move into the same
22 mode of operation that INPO works in. And this
23 regards training and SAMGs, making sure that people
24 have those sort of similar types of procedures and
25 strategies in place on a global basis.

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1 And WANO is also interacting with the
2 IAEA. So I think there's a recognition out there
3 amongst the international nuclear community that we
4 need to do more and better in this area and overall.
5 So there are some discussions being taken at the WANO
6 level, at the senior management level. And we're just
7 going to have to see how they play out.

8 There's a lot of other issues in play once
9 you start dealing in the international arena. But
10 here at home, INPO is encouraging plants to move
11 forward in this area. And take a look at training.

12 MR. LEEDS: Thank you. Other questions?

13 MR. WIGGINS: Yes, I've got a -- I guess
14 I'm going to be picky again on this. Regulatory
15 footprint means different things to different people.
16 I think it actually has two definitions in the way I
17 look at it. Sometimes you do regulatory footprint for
18 let's say non-technical reasons but other times you
19 want to take a regulatory action to make sure whatever
20 you fixed has a durability to it.

21 And order and a rulemaking has certainly
22 undeniable durability. When you look at some of the
23 experiences we've had as we did brief TI inspections
24 on the SAMGs and the EDMGs, while they were fairly
25 good results, I think. Out of the 65 sites, you're

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1 not seeing large percentages of them that let them
2 drop. There were some that needed to do better, all
3 right?

4 How would we -- how do you think your
5 solution would be durable? However we would --
6 whatever solution we effect in this, how would you
7 make it durable?

8 MR. HEYMER: Well, I mean --

9 MR. WIGGINS: Without us having to have to
10 inspect it every week.

11 MR. HEYMER: Well, we would have the
12 program at place that at periodic intervals, we review
13 to make sure that the procedures are still pertinent
14 and valid. And then through the training processes
15 that we have in place, even in areas that do not have
16 hard regulatory oversight at the moment, that we have
17 those programs in place and that they are monitored
18 with oversight being provided by the industry going
19 forward.

20 So now it may be that in some areas, you
21 feel that there is a need to have a tie back from a
22 regulatory perspective. And in which case there would
23 be a rulemaking. But, you know, as Brian suggested,
24 that takes time. But in the meantime, we're willing
25 to work with you to establish one, to make you more

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1 aware of what we're doing, and two, to move the
2 process forward.

3 MR. WIGGINS: Do you get a sense, since I
4 haven't -- I don't know a lot about what INPO is doing
5 in this regard -- but in this particular area, do you
6 get a sense that INPO is evolving their accreditation
7 process and training to absorb these things?

8 MR. HEYMER: I'm not quite sure where that
9 stands at the moment.

10 MR. WIGGINS: But that is a durable
11 mechanism that's worked well.

12 MR. HEYMER: Right.

13 MR. WIGGINS: You know when you talk about
14 a rulemaking with regard to training, we already have
15 a training rule.

16 MR. HEYMER: Right.

17 MR. WIGGINS: This is, you know, it could
18 be just additional things that you look at. But that
19 accreditation process seems to have served the test of
20 time and does create a durable solution to an issue
21 that's a legitimate regulatory issue on training.

22 MR. HEYMER: Right.

23 MR. WIGGINS: Do you know whether anything
24 is going on on that?

25 MR. HEYMER: I'm not aware. But that

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1 doesn't mean to say it's not happening.

2 MR. WIGGINS: Yes. Now what would be the
3 -- I'll give you another funny question. Why
4 shouldn't we take an action to make sure at the very
5 least that SAMGs and the EDMGs are treated in terms of
6 how they are controlled the same way the EOPs are?
7 And in addition, there's actions working to clarify
8 the roles and responsibilities in the overall
9 emergency response organization on implementation of
10 all this.

11 MR. HEYMER: I don't want to take my
12 remarks as assuming that we don't think that should
13 happen. I mean if you believe that's necessary, then
14 you will go forward and that will just be another item
15 that we deal with in the regulatory arena as we move
16 forward.

17 And that's what I think if you need sort
18 of a greater assurance that that's being done and
19 feel there is a strong nexus to safety, then you're
20 going to institute a rulemaking to make that happen.

21 But in the meantime, we can work together and pursue
22 these activities so that we move forward in this area.

23 MR. PAINE: I just would add that we fully
24 support recommendation 8 and we fully support the
25 involvement of the Commission by order and by

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1 rulemaking in this issue. And we just can't conceive
2 of any -- it's just incredibly important that we have
3 trained operators who know how to respond to
4 accidents.

5 It seems very obvious. The
6 recommendations of the task force are very obvious.
7 The role of the Commission in ensuring public health
8 and safety under these circumstances is very clear. I
9 just can't imagine the Commission not moving
10 forthrightly and directly in this area.

11 MR. WIGGINS: Well, the Commission had --
12 I think prior to Fukushima, the Commission had
13 expectations that that very thing was happening, okay?
14 We've got a lot of track record up to the EOP level.
15 There is a lot of regulatory history, lots of
16 inspections done by the regions in that regard.

17 Where things -- where the questions start
18 developing is when you get beyond the things covered
19 by the EOPs.

20 MR. PAINE: Right.

21 MR. WIGGINS: The SAMGs and these
22 50.54(hh)(2), B5B, whatever you want to call these
23 large -- beyond --

24 MR. PAINE: Beyond design basis.

25 MR. WIGGINS: -- design stuff. You know I

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1 don't that we've addressed that with anywhere near the
2 rigor that we've addressed the EOPs, the operating
3 procedures and things like that.

4 MR. PAINE: Well, I just -- you know, we
5 just know as a result of the tornado, we had this
6 recent episode at Browns Ferry. The reactor operator
7 successfully shut down the reactor. Well, actually it
8 was an automatic shutdown. They had two parameters to
9 keep track of, the pressure and the water level, two
10 parameters. And they lost track of the water level.

11 So, you know, H.B. Robinson, the employees
12 in 2010, you guys did a special inspection because
13 they didn't know how to activate their alert network
14 and bring the employees back to the plant. So I mean
15 I think there's some very serious issues out there.
16 And I think it mainly is an area of enforcement.

17 I think you may -- I think this is kind of
18 alphabet soup of guidelines and everything. They need
19 to be unified and streamlined and integrated in a
20 constructive way. And then you need to enforce them.

21 MR. LEEDS: Any other questions for the
22 panel on this issue?

23 (No response.)

24 MR. LEEDS: All right. Lance?

25 MR. RAKOVAN: Okay. Let's go ahead and

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1 move on to the final recommendation, nine. The task
2 force recommends that the NRC require that facility
3 emergency plans address prolonged station blackout and
4 multi-unit events.

5 Mr. Greten, do you want to take a stab at
6 this first?

7 MR. GRETEN: Thank you.

8 Building on the comments I made earlier,
9 you know, including, you know, FEMA's emphasis lately
10 that it is going to take a while before external help
11 can reach you in the most dire circumstances, you
12 know, something like Japan.

13 I talked a lot today about some of the
14 events that aren't specifically mentioned in here
15 because other than Jim, because the folks at NRC who
16 have been part of this effort are in his realm, there
17 is a parallel universe of stuff going on for the off-
18 site community that started long before Fukushima,
19 even long before Deepwater Horizon last year, you
20 know.

21 Really, after 9-11 with FEMA and the post-
22 Katrina Emergency Management Reform Act, you know
23 changes made the way disasters are managed -- all
24 hazard disasters are imagined, certainly last summer
25 after deep water horizon, the national security staff

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1 put emphasis on how would we respond to some of these
2 other technological disasters that could happen that
3 the government hasn't experienced in a while?

4 And there was an exercise last fall
5 conducted by the national security staff, SOE/PLE-10.

6 Coming out of that were a number of recommendations,
7 including, you know, updating already existing plans
8 on communicating, prescribed messaging, reentry
9 standards, safety standards, you know, exposure both
10 for, you know, emergency responders and long-term
11 clean up issues. Where would you put the stuff from
12 this? How would you pay for it? How would the
13 recovery be managed?

14 All of these questions have been worked
15 long before Fukushima started. Since Fukushima
16 happened, it was certainly a chance to test out our
17 communications capabilities, our prescribed
18 messaging, a chance to educate a lot of folks and, you
19 know, certainly a chance to learn some lessons and
20 making sure we didn't learn the wrong lessons, that
21 is, you know, the Japanese didn't seem to know what
22 was going on at their own power plant or, you know,
23 that was, at least, the information that was floating
24 through to the United States; whereas, you know, the
25 NRC here and the emergency protocols we have in this

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1 country, you know, Nuc/Rad Annex and stuff, would be
2 much more rigorously followed.

3 I think there might be too much
4 information as opposed to no information initially.
5 In any case -- and the whole federal family has been
6 looking at things, making sure not only are we
7 learning the lessons but learning the right lessons.

8 So, you know, the changes that the
9 Commission has been looking at here, you know,
10 additional training and stuff on-site, you know
11 especially with regards to making sure that sites are
12 more self-sufficient, that personnel, the training
13 that they already have is improved, that
14 communications and the communication feed from the
15 plants back to the NRC is improved.

16 It's happening. You know it is one big
17 star in the larger constellation of things that have
18 been happening outside of what this group has been
19 recommending, you know, with how the NRC and industry
20 have been working with all the different other
21 government agencies and state and local folks with
22 what happens off-site if God forbid something
23 happened.

24 In any case, that's really what I wanted
25 to highlight for you all is that there are a bunch of

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1 things that you all didn't get into that, you know,
2 are going to directly mesh in with the recommendations
3 that are being made here.

4 Thank you very much.

5 MR. LEEDS: Thank you.

6 Adrian?

7 MR. HEYMER: Emergency preparedness and, I
8 guess associated with station blackout and multi-unit
9 events, I think if you look at the four areas here
10 that you've listed, 9.1, .2, and .3, and 9.4, I think
11 we agree that we would move forwards and these are
12 things that need to be done.

13 I think we struggle a little bit with
14 doing it, as I've said before. Building upon what Tim
15 said from FEMA, I think from our discussions after
16 Fukushima with a number of Japanese utilities, it's
17 clear that here in the U.S., the infrastructure that
18 we have in place, both within the utilities and with
19 the government, state, local, and federal emergency
20 response infrastructure is more mature and probably
21 is, from our perspective and, I think, from the
22 perspective of the Japanese utilities we've discussed,
23 it seems to be perhaps a little bit better positioned
24 than where they are at the moment in Japan.

25 If you just look at the organizations, the

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1 training, the drills, the working relationships that
2 are established at the state, federal, and local
3 organizations, I think are some of the significant
4 differences.

5 You know we agree that there is room for
6 improvement. And, in fact, one of the improvements
7 has been we're just on the verge of completing a
8 rulemaking, a fairly extensive rulemaking, to further
9 enhance the EP capability. And FEMA, although Tim is
10 not here, is issuing a revision to the radiological
11 emergency preparedness manual.

12 And so that is just about to happen. And
13 I think it is really important we, from a priority
14 perspective, focus on implementing that rule first.
15 And get that moved forward and get those activities
16 underway as regards to implementing the rule.

17 And then in parallel with that is, when
18 you look at the multi-unit staffing, I think we need
19 to establish new criteria, which includes defining
20 event characteristics, simultaneous occurrences,
21 response time requirements. And append that to the
22 existing staffing analysis criteria so that we can
23 actually build on what we intend to do under the
24 revised rule that is about to become effective. And
25 move forward with multi-unit staffing.

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1 So I think -- then we can move perhaps
2 into looking at some of the other areas in that
3 regard. And as an interim measure, I think what we --
4 and I think as you mentioned, Amy, in the task force
5 report, there are sort of voluntary actions that we
6 can take to make sure that we can notify and bring
7 people into the station should -- if there is a multi-
8 unit event and there's some infrastructure issues out
9 there.

10 So that when you look at the balance of
11 the NRC task force recommendations, I think we're
12 looking at rulemaking. But going back to what I said
13 -- additional rulemaking that is over and above the
14 one that we're just about to complete.

15 But we're willing to work with you on
16 these other recommendations that you have listed here
17 such as required licensed operators in the ERO outside
18 the control room, drill and exercise changes,
19 emergency facilities for multi-unit events, and some
20 of the other items that you mentioned in the report.

21 We're willing to work with you ahead of
22 time, perhaps in parallel with the additional
23 rulemaking activity once we've actually moved down the
24 path of implementing this revised rule that is about
25 to become effective. So it's like a parallel -- three

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1 sets of parallel activities that eventually will be
2 going forward with the prime focus on implementing the
3 revised EP rule and dealing with the multi-unit
4 staffing needs to be incorporated.

5 And then moving into a subsequent
6 rulemaking. And as an interim measure, working with
7 the Agency and Jim and your people to deal with and
8 begin to implement through guidance some of these
9 other activities which eventually would be the
10 implementing guidance for any subsequent rulemaking
11 that came along.

12 MR. WIGGINS: I had a --

13 MR. LEEDS: We have one more panelist.

14 MR. WIGGINS: All right.

15 MR. HEYMER: It's okay.

16 MR. PAINE: We support the recommendation.

17 MR. LEEDS: You support the
18 recommendation.

19 MR. PAINE: With the caveats that we
20 stated earlier.

21 MR. LEEDS: Yes, that's good. Thanks,
22 Steve.

23 All right. Go ahead, Jim. Sorry.

24 MR. WIGGINS: I really need some
25 clarification, particularly on 9.3, the first one

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1 about the staffing analysis piece on the multi-unit.
2 Yes, there is a staffing analysis requirement in the
3 new rule that the Commission approved. Is industry's
4 interest in doing those -- doing it once or doing it
5 twice?

6 MR. HEYMER: Well, I think what we --

7 MR. WIGGINS: The current staffing
8 analysis rule, the regulatory guidance that underlays
9 that would look at a fairly interesting event but not
10 multi-unit. So this is a multi-unit version of it.
11 Would you want to do it once or twice?

12 MR. HEYMER: I think the best --

13 MR. LEEDS: Adrian, would you like Sue
14 Perkins-Grew to respond?

15 MR. HEYMER: Yes.

16 MR. LEEDS: She's right here. Is that all
17 right?

18 MR. HEYMER: Yes, that's fine.

19 MS. PERKINS-GREW: Hi, Sue Perkins-Grew,
20 NEI. Yes, we had deliberated the whole issue, Jim, at
21 the last EP working group meeting. And I guess when
22 we went through and developed the methodology for
23 analyzing the current staffing to perform EP functions
24 for the current rule, it took us a considerable amount
25 of time to come to refinement for what the

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1 requirements would look like -- what scenarios were
2 appropriate, how they should be evaluated, and the
3 whole methodology.

4 It is simple to say that just add another
5 scenario that has three or four or two units impacted.

6 But when you look at the experience we had in coming
7 up with the methodology for 10.05, which required a
8 lot of stakeholder engagement, we need to go back
9 through that process in order to make sure we have a
10 credible set of scenarios, maybe more than one, to
11 determine what is adequate staffing for a multi-unit
12 casualty would look like.

13 And, again, if I go back to what Adrian
14 had remarked on, you know, the simultaneous
15 occurrences, what does that look like, the extent of
16 damage to each of the units, the time requirements in
17 which the specific EP functions have to be performed,
18 and interface with new or changed -- whatever we're
19 going to do going forward with the emergency operating
20 procedures, that's kind of complicated.

21 So I would just strongly recommend we've
22 got a good rule change about to take place, let the
23 licensees get a good baseline from this comprehensive
24 staffing analysis they're going to do. And while the
25 licensees are doing that, then let's engage and work

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1 on these new requirements and these new criteria.

2 Then we would append the staffing
3 methodology. So for those multi-unit sites, they
4 could perform an appendix, maybe an additional,
5 shorter methodology to accomplish this objective.

6 MR. WIGGINS: It sounds like you want to
7 do them serially.

8 MS. PERKINS-GREW: Correct.

9 MR. WIGGINS: Okay. Well, actually that
10 doesn't control whether we decide to move forward
11 immediately on it. Again, that's the differences
12 between the effectiveness date of the decision and the
13 implementation schedule for the activity

14 MS. PERKINS-GREW: Well, that's true, Jim.
15 So maybe an option would be postpone the
16 implementation of the rule to these criteria for this
17 particular rule issue area for the staffing analysis -
18 -

19 MR. WIGGINS: I don't think we're going to
20 change anything --

21 MS. PERKINS-GREW: -- until the new
22 criteria --

23 MR. WIGGINS: -- on the rule. It has to
24 do with this that's in front of us. The rule is too
25 far -- that's not the right way to -- I don't think

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1 that's the prudent way to go to change the rule at
2 this point. Or change the implementation schedule of
3 the rule.

4 The challenge is to get this done because
5 I think -- you know, to me it seems like -- well, let
6 me not comment. I appreciate the points that you made
7 in it.

8 But I'm also thinking you think that if
9 you do the staffing analysis it's going to lead you to
10 an other type of analysis that gets to equipment and
11 locations and facilities and things like that? When
12 you try to figure out what staffing you need to handle
13 the issue, aren't you also going to have to develop or
14 think about what equipment is going to be needed and
15 what locations they are going to be needed?

16 MS. PERKINS-GREW: That's correct.

17 MR. WIGGINS: So some of the other bullets
18 under 9.3 fall out of the staffing analysis, don't
19 they?

20 MS. PERKINS-GREW: Well, in the additional
21 staffing analysis that you would do to accommodate
22 these multi-unit casualties. But then again, like
23 we've discussed with many of these proposals, the
24 performance standards needs to be better refined so we
25 know exactly what capabilities we're looking for, the

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1 extent of capability and the performance standards.

2 Once those are determined, then yes, we
3 can certainly determine additional equipment, personal
4 protective equipment, et cetera.

5 MR. WIGGINS: All right. How about ERDS?

6 There is an ERDS issue in 9.4 and there is an ERDS in
7 9.3 also. The 9.3 sounds like reliable power to run
8 the emergency response data system. And 9.4 is
9 actually complete modernization initiative that is
10 going on. Do you have any specific comments on those
11 two points?

12 MS. PERKINS-GREW: Well, again, you know,
13 the recommendation to provide backup power sources for
14 the ERDS system, again, we would have to determine and
15 engage with what the expectation is for the
16 performance standards for those backup requirements.

17 I don't believe they are defined right at
18 this moment. And this would be the first
19 recommendation for prolonged station blackout event.
20 I mean we agree because we're already in process with
21 the conversion that's at 9.4.

22 MR. WIGGINS: Yes.

23 MS. PERKINS-GREW: So that's already in
24 progress. But as far as the backup power for ERDS, I
25 think, you know, based on again the operating

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1 experience we had with the old conversion, it seemed
2 like a simple process going from the old modem to the
3 VPN. Some sites had a little bit more complex
4 challenges with that. It might be the same thing with
5 the backup power.

6 So again, if we define what criteria we're
7 actually trying to achieve to satisfy this capability,
8 then I think we would be in a better position. But
9 again, that's not to stop us from thinking about it
10 and start, you know, looking at what that would look
11 like.

12 MR. WIGGINS: I think 9.4 is already on a
13 path for -- well, first, with 9.4 we have schedules.

14 MS. PERKINS-GREW: That's correct.

15 MR. WIGGINS: And all the schedules would
16 support June 2012.

17 MS. PERKINS-GREW: That's correct.

18 MR. WIGGINS: Okay. So the decision we
19 need to make is to recommend to the Commission is that
20 schedule that we have good enough? Or do we have to
21 confirm it in some way in addition?

22 MR. LEEDS: Jim or Amy or Jack from the
23 near-term task force, what was the thinking behind --
24 because I looked at ERDS and I recall that ERDS was
25 being able to communicate on-site, off-site, during a

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1 prolonged SBO and maintaining ERDS capability, which
2 is more than just backup power.

3 MS. CUBBAGE: Right. There's a
4 communication issue aside from ERDS and that's
5 basically being able to communicate within the site
6 and off-site via phone, whether it be satellite, et
7 cetera. And the capability to do that on a prolonged
8 station blackout. And then there was another issue
9 with the backup power for ERDS.

10 MS. PERKINS-GREW: Yes, there was backup
11 ERO communication, if I recall, that was one of the
12 recommendations aside from ERDS.

13 MS. CUBBAGE: Right.

14 MS. PERKINS-GREW: ERDS was kept separate
15 for a backup power source for ERDS. But in addition
16 to that, the backup ERO communication capability to
17 communicate on-site. It's my recollection that the
18 task force concluded that communication off-site was
19 redundant and diverse enough that I don't believe
20 there are any recommendations associated with that.

21 It was predominantly for the licensees on-
22 site within the facility.

23 MS. CUBBAGE: On-site, you're right.

24 MR. LEEDS: It's on-site? It's not an
25 off-site issue? Because I know that was one of the

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1 issues at Fukushima.

2 MS. CUBBAGE: Right. It specifically says
3 on-site here.

4 MS. PERKINS-GREW: Yes.

5 MS. CUBBAGE: For 9.3.

6 MR. WIGGINS: So the training and exercise
7 that are mentioned in 9.3 is an on-site version that
8 is more drills and exercises in the vernacular of EP?
9 Training and drills? The exercise the people usually
10 think are biannual, full participation type things.

11 MR. HEYMER: But that's how I understand
12 we were reading that.

13 MR. WIGGINS: Yes. At some point though I
14 think Tim's direction, you know, the off-site folks
15 also need to understand how the dual unit activity
16 might differ from what they are used to also.

17 MR. GRETEN: And along those lines, I mean
18 FEMA has been getting a lot of questions from a range
19 of constituents, ranging from folks on the Hill to
20 members of the public on, you know, asking us
21 questions about, you know, multiple units, about EPZs,
22 and even some questions that are starting to come in
23 about small module reactors.

24 And certainly we have been routing all
25 those to NRC but, you know, there have been questions,

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1 you know, related to the NRC after seeing, you know,
2 multiple reactor failure plus potentially multiple
3 fuel ponds that were having serious issues in Japan,
4 saying evacuate out to 50 miles versus just the, you
5 know, ten or 12 mile radius for all American citizens.

6 You know that recommendation was made.

7 You know we're still definitely working
8 through the aftermath of that. And we have been
9 getting questions about well, as part of all of this,
10 is NRC planning to go back and take a look at those
11 EPZs and reevaluate, you know, would the EPZs change
12 if there was a multiple unit failure, you know, versus
13 just the single unit? Or would the -- with I guess
14 with the science that drives what causes the EPZs to
15 be set up the way they are change based on a multiple
16 unit failure?

17 So -- and I just don't know if that is
18 something that you have all gotten to or not yet.

19 MR. WIGGINS: I think at best it is a
20 long-term issue. It's not -- it's the longer -- maybe
21 the long, long-term issue in it. But it is -- it does
22 correlate to one of these actions here. EPZS analysis
23 and history relates to we had to figure out what the
24 source term was and see what would happen.

25 And, you know, there is a point in here

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1 about how do you deal with a multi-unit event from a
2 dose assessment point of view. You know if you think
3 -- it's going to be a bit different. Maybe not too
4 much but a bit different than a single unit I think.

5 MS. CUBBAGE: I'd like to clarify the
6 point on the communications. I'll go back to what I
7 said initially. It is on-site and off-site
8 communications in the report.

9 MS. PERKINS-GREW: Okay. Thank you.

10 MR. WIGGINS: Okay.

11 MR. LEEDS: Other questions for the panel?

12 MR. WIGGINS: Well, I could ask -- you
13 know on the industry side, is the information you're
14 providing -- or the stuff that comes out of your
15 information system that goes into the interface to the
16 system we gave you for ERDS, does that handle
17 simultaneously multiple units? Or do you have to
18 select what unit is feeding ERDS?

19 MR. HEYMER: I don't know the answer to
20 that question.

21 MR. WIGGINS: Okay. Yes, there's some
22 pieces of 9.4 that I don't know the answers to either.
23 And they could be -- that could adjust or effect not
24 whether to do it but how long it would take to get it
25 done I think.

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1 MR. GROBE: This is Jack Grobe. I just
2 wanted to make sure -- I don't know what actions the
3 Agency might take in the longer term but the task
4 force clearly concluded that the EPZs we have today
5 are sufficient and adequate for protecting the public
6 in the event of an accident, multi-unit or single unit
7 in the United States.

8 So there is no initiative or
9 recommendation as far as the task force is concerned
10 to revisit the question of the ten-mile EPZ and the
11 50-mile extended EPZ that is currently in the
12 emergency planning standards.

13 MR. LEEDS: All right. Thank you for that
14 clarification, Jack.

15 All right. Lance?

16 MR. RAKOVAN: If there is no further
17 discussion, I was just going to go ahead and move us
18 along to the public commenting period.

19 MR. LEEDS: sure.

20 MS. CUBBAGE: Could we take a break quick?

21 MR. RAKOVAN: I'd rather not take a break
22 to allow for the maximum people. But if people need
23 to, you know, stretch, please take them as necessary.

24 I'd like to thank our panelists. If you
25 guys want to, you know, retain your seats at the

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1 table, that's fine. If you want to, you know, find a
2 seat in the audience as well for this, that's fine,
3 too. We'll give you that opportunity.

4 And I also wanted to thank the people who
5 gave clarification to some of the discussions.

6 We've -- we'll take -- we had a number of
7 people pre-register. So we'll go ahead and call
8 people both here and then we'll toggle kind back and
9 forth to the phones in terms of bringing people up.

10 We had a disproportionate number of
11 people, if you will, pre-register to comment on the
12 phone. So we'll probably be taking a few more people
13 on the phone as we do in here.

14 I ask, given the number of people that we
15 did have sign up, that you keep your comments to about
16 three minutes in length. Obviously given the topics
17 that we're trying to discuss, three minutes is not a
18 lot of time to address them all. I understand that.

19 So I guess what I would recommend is you
20 take your time to kind of hit the high points or the
21 specific points that you want to get across and then
22 provide more in-depth comments through our written
23 comment mechanism, which we'll have that up on the
24 last slide when we close the meeting. But, again, you
25 can submit electronic comments --

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1 MR. CARPENTER: Yes, this is Gene
2 Carpenter from the Nuclear Regulatory Commission.

3 MR. RAKOVAN: We can hear you out here,
4 Gene. Okay. Thank you. Kind of jumped the gun a
5 little bit there on the phones.

6 Okay. First, I'd like to call to the
7 microphone Paul Gunter from Beyond Nuclear. Next I'll
8 ask for Greg Halnon from FirstEnergy Nuclear Operating
9 Company. And third from Bryan Erler from ASME or
10 representing ASME.

11 Mr. Gunter please?

12 MR. GUNTER: Thank you, Lance.

13 My name is Paul Gunter. And I'm with
14 Beyond Nuclear. We're out of Tacoma Park, Maryland.

15 I guess the first issue has to do with the
16 fact that your -- the work of this task force is
17 ongoing and in parallel with a number of petitions for
18 emergency enforcement action as well as rulemaking.
19 So I think there needs to be some clarity as to how
20 these two processes are meshing together and how they
21 will be consistent.

22 Since I last addressed the NRC task force,
23 the Petition Review Board that we've been working with
24 has recommended two of the emergency enforcement
25 actions that were filed on April 13th, 2011, that

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1 parallel the recommendations 5 and 7 for the task
2 force.

3 And I have to say that given that the
4 recommendation 5 picks up with a search to renew this
5 experiment on what constitutes a reliable compromise
6 of containment, as we view it, it really raises the
7 question for us whether or not this whole process is
8 driven by a power production agenda or a safety
9 agenda.

10 And I think this is a common issue that
11 has come up in terms of public confidence. We view it
12 as another example where we now have these 23 units
13 and the additional Mark II units that were originally
14 licensed for a containment that worked.

15 Let's not mince words. The vents were
16 installed because the containment system was found to
17 be a high likelihood of failure. You don't put vents
18 on -- at least the high pressure events for releasing
19 severe accidents on PWRs. So, you know, there is an
20 inconsistency of standard here that we view this
21 recommendation starts off on the wrong foot.

22 So it also starts off on the wrong foot
23 because of the whole due process issue. This
24 experimental vent that is now demonstrated with 100
25 percent failure rate on the Mark I was installed as a

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1 voluntary initiative. And it was installed without
2 any independent review or access from the public for
3 due process such as a license amendment issue.

4 And the fact that the recommendation moves
5 forward with this idea of issuing an order, it does no
6 justice to that same due process where we are left
7 with, as we view this Mark I vent, right now it is
8 obscured under the 50.59 process and I should say that
9 the recommendation for further review from our
10 Petition Review Board is to revoke the prior approval
11 for the Mark I under 50.59.

12 And an order gives us no more justice or
13 due process than this previous voluntary initiative
14 that proved to be a tremendous shortcoming for those
15 who adopted it in Japan. And we are offered no better
16 protection here in the United States.

17 So to order this again circumvents public
18 confidence. While it may, you know, I don't -- the
19 industry doesn't want any orders and all eyes are
20 going to be on the Agency to see if, in fact, you have
21 the willingness and the ability to address an order to
22 these issues.

23 But in any case, what it does is it still
24 provides the industry to hide this experiment behind a
25 proprietary set of conditions as the 50.59 process

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1 also did. So we are not served in our due process.

2 I will just raise up the issue of --

3 MR. RAKOVAN: Paul, Paul, I'm sorry. I've
4 got to ask you to summarize.

5 MR. GUNTER: But one just one quick note
6 here that the recommendation for seven to provide
7 emergency power to make up capability does not address
8 the unintended consequence of boiling off these pools.

9 If it is your plant to provide defense in depth, it
10 should be your first measure of defense to prevent
11 tremendous amounts of condensation and particularly
12 for these Mark Is and IIs where it will then rain down
13 on the rest of the reactor.

14 That's not really addressed in any of the
15 -- it's not fleshed out anywhere in the
16 recommendation. And we would like to see that better
17 explained in the follow up. Thank you.

18 MR. RAKOVAN: Thank you, Mr. Gunter.

19 Greg Halnon from FirstEnergy Nuclear
20 Operating Company?

21 MR. HALNON: I just have a few comments --
22 clarifications mainly.

23 We talked earlier about the practicality
24 of putting eight-hour coping for batteries. And I
25 just to -- we made it sound real easy to add battery

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1 capacity to the plan. And I just wanted to establish
2 that, you know, for a four-hour coping, the plant
3 roughly would have to double the size of their
4 batteries unless you had a cancelled plant next to you
5 with an already-established room.

6 Not many battery rooms have enough room to
7 double the size of the battery. It is a tremendous
8 modification. It is straightforward but it is
9 tremendously complex when you start dealing with an
10 operating plant, safety-related circuits, and trying
11 to tie that in.

12 Probably during an outage since we have a
13 very short allowed outage time for those two-year
14 cycles. So I just wanted to give you a practical
15 sense of the timeline that it would take. So that was
16 just earlier on.

17 The second thing is back to the EOP SAMG
18 discussion. We are, from an industry perspective, you
19 know we did the IER. You all did the TI. We saw some
20 variability in how those were implemented and trained
21 on.

22 And we fully agree that we need to train
23 the right people, probably more in the ERO than the
24 control room. But the ERO especially. We need to
25 maintain that proficiency through programs, drills,

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1 re-qualification training.

2 We also need to make sure that the
3 equipment that we're expecting to use is there and
4 ready to use. So we fully agree that that all has to
5 be done.

6 Jim, back to your durability discussion,
7 you know, the NRC TI was a good exercise. It revealed
8 some items for us. Activities like that help. We
9 also have programs and plans. We have other models
10 that have worked that we could probably maintain our
11 programs that would be transparent to the NRC in that
12 respect. So I just wanted to make those
13 clarification.

14 MR. RAKOVAN: Thank you.

15 Let's go to Bryan Erler.

16 MR. ERLER: Well, thanks for getting a
17 chance to mention a few words. I just wanted to let
18 you know I'm Bryan Erler, the outgoing Vice President
19 of Nuclear Codes and Standards for the American
20 Society of Mechanical Engineers. I also am their task
21 force leader for dealing with Fukushima.

22 We immediately started right after --
23 well, actually on the day of March 11th, started
24 forming a task force because obviously we provide a
25 lot of the rules and codes and standards that are

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1 necessary in these plants. And we've got to make sure
2 we're on top of seeing what changes have to be going
3 forward.

4 We have a very close relationship with
5 JSME. And a number, including TEPCO and JEA, a number
6 of organizations to get information going forward.

7 So we formed the task force and we've had
8 several meetings both in the U.S. as well as in Japan
9 in order to collect data, in order to set up what we
10 feel is necessary. We need a structure and a charter
11 right now as the data comes out.

12 As has been brought forward in your
13 discussions here, there is a lot of times the data is
14 wrong. Then you get clarification. So we want to
15 make sure we're keeping the data, whether it is on
16 component integrity or hydrogen systems, whatever we
17 have. We have identified some specific focal points
18 that are really critical.

19 They are kind of consistent with your list
20 of items, including, you know, dealing with external
21 events, dealing with hydrogen generation, component
22 and containment integrity, fuel pool integrity, severe
23 accident management. And we've kind of got a
24 structure put together.

25 Then we realized as we looked at all of

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1 our other standard developing organizations, that it
2 cuts across ASCE, American Nuclear Society, IEEE. And
3 so we have made this task force a multi-SDO task
4 force. And Don Spellman, who is the Chairman of the
5 American Nuclear Society, has taken the initiative --
6 American Nuclear Society Standards Board -- to getting
7 this multi-task group going.

8 And I really encourage the staff as well
9 as the industry -- we met with NEI last week -- to use
10 the standard developing organizations because we have
11 a lot of contacts. We've got a lot of people who have
12 gone over there and have talked with people in Japan.

13 But this is a long-term effort obviously for data to
14 -- it takes a while to come out.

15 But I think working with you, I think -- I
16 know you had to hurry and do it your own way for this
17 report but I think now we should be really reaching
18 out across the industry, some of the experts and the
19 contacts that maybe you don't have that we have. And
20 maybe we can use what you have.

21 And I'll be meeting with -- I have a
22 meeting set up with NRC after this meeting to discuss
23 -- and I've talked with Bill Borchardt. He's agreed
24 to support our task group so we get your guidance.
25 But I just think it is important that you understand

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1 this relationship.

2 JSME is doing some very specific items.
3 They are looking at development. They've asked us to
4 help them with regard to those items and developing a
5 design criteria for Level E, which is designing for a
6 severe accident within a reactor vessel. I'm not
7 saying we should do this. I'm just saying that it is
8 something that they have -- they are initiating and
9 they would like our -- ASME's comments on and
10 developing that going forward.

11 They also have developed a severe accident
12 guideline to evaluate the existing plants that are
13 shut down to see what needs to be done to bring them
14 back on line. And they have done a substantial amount
15 of work on that area. And we'll be helping them with
16 that.

17 So our charter is really to collect data
18 to see where new code -- not new code but code
19 initiatives need to be done. Also to help JSME in
20 some of their code development or their standards
21 development they have going forward.

22 But thank you very much for the chance to
23 talk.

24 MR. RAKOVAN: Okay. Gene, if we could go
25 ahead and take our first caller from the phone lines

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1 please?

2 MR. CARPENTER: Okay. As a reminder for
3 those that pre-registered, please press star one on
4 your phone. David Lochbaum, your line is open, sir.

5 MR. LOCHBAUM: Good afternoon. This is
6 David Lochbaum with the Union of Concerned Scientists.

7 I cannot convey all of my comments within three
8 minutes so we will be providing written comments via
9 regulations.gov.

10 Today I'll just one of those comments.
11 This one involves task force recommendation 2. The
12 task force's report details several steps the NRC has
13 taken to protect future reactors from heightened
14 seismic hazards and also notes that none of these
15 steps has been taken for existing reactors.

16 Generic Issue 199 was initiated by the NRC
17 staff more than seven years ago to reconcile the gap
18 between the seismic protection levels required for new
19 reactors and the lower seismic protection levels
20 required for existing reactors. GI 199 remains
21 unresolved so that gap still exists.

22 Until GI 199 is resolved, the
23 reevaluations of recommendation 2.1 and the walkdowns
24 of recommendation 2.3 would, at best, merely confirm
25 that existing reactors conform to the outdated,

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1 obsolete, and inadequate seismic hazard levels.

2 The NRC must resolve GI 199 to define the
3 Agency's expectations regarding current seismic
4 hazards that owners of existing reactors can then
5 incorporate into the answer keys for their
6 reevaluations and walkdowns. Otherwise, these
7 activities are not going to be much different from the
8 reevaluations and walkdowns already conducted by the
9 owners per INPO guidance and by the NRC temporary
10 instruction.

11 I also must register a formal complaint
12 with how this meeting was unfairly conducted. Mr.
13 Rakovan, in his opening remarks, said that this was a
14 category 2 meeting between the NRC staff and those
15 external stakeholders at the table. And yet NEI got
16 two people involved in the discussion whereas the
17 public interest community was limited to but one
18 representative throughout the discussion.

19 This is unfair and unacceptable. And I
20 beg the NRC staff to stop this unfairness and stop it
21 now. Thank you.

22 MR. RAKOVAN: Give him a chance. We're
23 going to get the next caller on the line.

24 MR. CARPENTER: Mr. Butler, your line is
25 open.

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1 MR. BUTLER: Thank you. This is John
2 Butler.

3 The only comment I have is on
4 recommendation 2. And I agree with Dave that we need
5 to resolve GI 199.

6 The point I'd like to make is that until
7 GI 199 is resolved, it is a little difficult to do the
8 walkdowns to the results of that issue. So in the
9 interim, recognize we need to do something in the near
10 term, our recommendation is to conduct those walkdowns
11 against the current design basis so that you can have
12 a good understanding of where plants stand.

13 And that's the end of my comments.

14 MR. RAKOVAN: Okay. We'll pause until we
15 can bring the next phone caller on line please.

16 MR. CARPENTER: I would like to give one
17 more reminder. Press star one for those who are pre-
18 registered.

19 This line now is Lou Zeller. Your line is
20 open, sir.

21 MR. ZELLER: Hello. Thank you. My name
22 is Lou Zeller. I'm science director with the Blue
23 Ridge Environmental Defense League in North Carolina.
24 We have projects in Georgia, Tennessee, and several
25 southeastern states.

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1 I want to read into the members of the
2 near-term task force two items. And then make a
3 specific comment. These are from Japanese Nationals.

4 They were published within the last week in the wake
5 of the Fukushima disaster.

6 The first one is entitled A Man-Made
7 Disaster. This by Hiroshi Senju, a Japanese painter.

8 He says when the earthquake struck, I had just
9 returned from Tokyo to New York. At first I watched
10 the shocking images on the news as if what was
11 happening was a natural disaster.

12 But once the grave problems at the
13 Fukushima Daiichi nuclear plant were revealed, I began
14 to think that the disaster was actually manmade. The
15 Tokyo Electric Power Company, which operates the
16 plant, made on strained attempt after another to
17 conceal the danger while the public's anxiety reached
18 its peak. As people learned of the increasing
19 severity of the nuclear accident, former Prime
20 Minister Yoshihiko declared this is not a manmade
21 disaster, it is a crime.

22 The second piece is from Hideo Furukawa, a
23 novelist who was born in Fukushima. And he writes
24 Restoring the Time Capsule.

25 He says I grew up in the city in the middle of

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1 Fukushima Prefecture, mostly unaware of the fact that
2 there were nuclear power plants near the coast.
3 People closer to the power plants, however, lived with
4 the fear that some day something like this would
5 happen.

6 When a hydrogen explosion occurred in the
7 number one reactor on March 12, and the terrible news
8 was broadcast live, the situation was almost like the
9 Cuban Missile Crisis. During the scheduled power
10 outages when the city was so dark at night, it was
11 like a city at war hiding from air raids.

12 Only Fukushima is still at war. People
13 don't go outside without wearing masks. Their
14 children can't play outside. And no one knows when
15 this war will be over. If they lose, the radiation
16 problem will only get worse. We hope they can stop
17 the radiation but no one knows when the war will end.

18 The people of Fukushima are facing a
19 second problem, discrimination. For example, when
20 someone from Fukushima tries to make a reservation at
21 a hotel in a different prefecture, they are told they
22 can't stay there. When they try to go to a gas
23 station in another prefecture, they are told that cars
24 with Fukushima plates can't fill up there.

25 One of the rituals of grade school in

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1 Japan is for students to fill up a time capsule at
2 graduation and bury it in the ground at school. They
3 are supposed to dig it up in 20 years. But in my
4 school, the ground that held our memories was
5 contaminated by radiation. The bulldozers moved it
6 all away.

7 These comments, I believe, point to the
8 urgency of the issue before us, that the near-term
9 task force has attempted to deal with. Information
10 that has been provided to me from our experts show
11 that TEPCO --

12 MR. CARPENTER: Excuse me, Mr. Zeller?

13 MR. ZELLER: Yes?

14 MR. CARPENTER: We need you to go ahead
15 and start wrapping up please.

16 MR. ZELLER: Of course. TEPCO measured
17 just last week, August 19 and 20, showing severe
18 damage of the spent fuel in Fukushima Daiichi units 1,
19 2, and 3, high levels of cesium 137 and cesium 134 in
20 all three spent fuel pools. This data clearly
21 contradicts the NRC's assertion that Fukushima
22 Daiichi's spent fuel pools were not damaged in this
23 accident. This comes from Fair Winds Associates.

24 In our own experience here -- and then I
25 will wrap up -- in the southeast, we are working in

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1 Burke County, Georgia, where Vogtle operates two
2 nuclear power plants, also in Alabama in Scottsboro
3 and North Anna, the issues of river and reservoir
4 seiches, which are not tsunamis, which cannot occur
5 inland but are seiches on rivers and reservoirs,
6 which, in the record according to the United States
7 Geological Survey, have reached six-foot high waves on
8 the Gulf Coast of the United States from an earthquake
9 over 4,000 miles away in the state of Alaska.

10 Talking to our coworkers and members in
11 the state of Georgia around the Vogtle Nuclear Power
12 Plant in the community called Shell Bluff on the banks
13 of the Savannah River, they have no appreciation there
14 at the local government for the lack of shelter or so-
15 called sheltering in place.

16 Talking to my coworkers there just in the
17 last few weeks meeting with Georgia Power officials,
18 sirens, for example, that were referred to earlier in
19 the meeting today, have been heard over the years but
20 no one was told what those sirens meant. Were they to
21 evacuate? Was it a test? Or what?

22 MR. RAKOVAN: Oh, okay. Apparently we
23 don't have anybody else on the phone. Okay. Let's go
24 ahead to go to some people who were preregistered
25 here. We'll start with Fred Emerson from GE Hitachi.

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1 Then William Renz from Entergy. And Ed Lyman from
2 Union of Concerned Scientists.

3 Is Fred Emerson here?

4 MR. EMERSON: Yes, but I have no remarks.

5 MR. RAKOVAN: No remarks? William Renz?

6 (No response.)

7 MR. RAKOVAN: Doesn't appear to be here.
8 Is John McCann here from Entergy since -- okay William
9 isn't here. Okay. John McCann?

10 MR. McCANN: I'll fill in for Bill. A
11 couple of quick comments.

12 First of all, I think one of the only
13 plants that was mentioned here today in terms of
14 potential impact of an accident was our Indian Point
15 facility in New York. And without going into too much
16 detail, we would have a differing point of view on the
17 trillion dollar impact of a potential accident there
18 just for the record.

19 The comments, you know when you think in
20 terms of an order, that is probably the Howitzer of
21 the NRC's tool kit in terms of actions that can be
22 taken. Immediate impact, significant impact, et
23 cetera.

24 And with many different tools that could
25 be used, I think as was suggested earlier, to maybe

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1 accomplish the same outcome. So in using that tool,
2 you know, just thinking what would the criterion be,
3 from my perspective I think the first criterion would
4 be that you really understood what the specific
5 actions were and their outcome that you were trying to
6 accomplish with the order. And that means a pretty
7 good understanding exactly what happened and exactly,
8 you know, what the actions are that need to be taken
9 to remedy that.

10 In a couple of instances, I'm not sure
11 that we absolutely have that yet. The ones that come
12 to mind would be, I think, the spent fuel concerns.
13 They changed significantly even from the time that the
14 task force originally put their thoughts together.

15 But the second would be, at least from the
16 industry's perspective, my perspective anyway, in the
17 area of the hydrogen vent issues. I think there's
18 still, from our perspective, a lot of things yet to be
19 understood about that. And so, you know, number one
20 criteria, you know, do we really understand exactly
21 what it is that ought to be ordered.

22 Secondly is is the issue significant
23 enough that the order is the right tool. And, you
24 know, I think many of us before all of this happened
25 were thinking in terms of an industry issue -- an NRC

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1 issue for that matter of aggregate impact. And, you
2 know, what are all the things that are on the plate
3 and what happens when you put two or three more on at
4 the same time.

5 So, you know, I think, as the report
6 pointed out, you know, the immediate health and safety
7 concerns here are not really evident. You know in the
8 great scheme of things, we're still talking about ten
9 to the minus six events. And, you know, how much do
10 we want to take out of the regulatory toolbox to
11 address the ten to the minus six event as opposed to
12 moving in a more measured way to attack the issue.

13 And those are my comments. Thanks.

14 MR. RAKOVAN: Okay. We can go to Mr.
15 Lyman.

16 MR. LYMAN: Thank you. Edwin Lyman from
17 the Union of Concerned Scientists.

18 The previous speaker set me up very well
19 because I also want to talk about the issue of orders.

20 We do believe that orders are appropriate for a
21 number of the actions that have been outlined. We'll
22 be discussing that more in our written comments.
23 Provided that the orders are conducted in as public a
24 way as possible.

25 However, we do have a concern that even

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1 though Mr. Wiggins said that orders are very quick and
2 looked at the example of the internal compensatory
3 measures orders after September 11th compared to the
4 rulemaking, if you actually look at the details, even
5 though the orders can be issued quickly, the
6 implementation seemed to have taken a lot longer.

7 And correct me if I'm wrong but it took
8 over four years before the NRC and NEI came to an
9 agreement on what the orders actually meant and how
10 they could be inspected. And then after that, there
11 was another couple of years of inspections before NRC
12 actually made its conclusions.

13 And in looking at the record of how that
14 was conducted, which was completely behind closed
15 doors because those were security related matters, NEI
16 seemed to have challenged every word in the orders,
17 challenged the meaning, challenged whether it was a
18 regulatory requirement, what it actually meant, what
19 readily-available equipment meant. They were word-
20 smithing the entire thing to the extent that it
21 dragged on for a very long time.

22 We would not like to see a repeat of that
23 process and hope that if orders -- that the orders
24 that progress here are conducted in a fully
25 transparent manner, that NEI won't have the

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1 opportunity to engage in that kind of stonewalling.

2 One specific thing I'd like to mention
3 with regard to orders that weren't addressed directly
4 in the task force report that don't require a whole
5 lot of additional analysis, would be to order a
6 requirement for the backup power for hydrogen
7 ignitors, that ice condenser, PWRs, and Mark III BWRs,
8 all the analysis supporting such a requirement was
9 done long ago and it is in your files.

10 And the fact that right now it is still a
11 voluntary measure on the part of the industry really
12 needs to be reconciled because as the task force has
13 discussed in other areas, relying on voluntary
14 measures for some of these critical safety functions
15 may not get the desired result.

16 Thank you.

17 MR. RAKOVAN: Okay. Let's do a quick
18 check to Gene in the booth to see if there is anyone
19 on the phones who -- no? Okay.

20 For those of you who are listening on the
21 phone lines, if you do want to make a comment, give us
22 a star one. And that will let the operator know that
23 you are interested.

24 Jim, if you want to go ahead, this is Jim
25 Riccio.

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1 MR. RICCIO: Hi, guys.

2 Just a quick reminder. About ten years
3 ago, you guys had a wake up call called 9-11. Many of
4 the environmental groups in this room petitioned you
5 to get the waste out of the pools then. You'd be in a
6 much better position now if you had.

7 It doesn't take a rocket scientist to
8 figure out that less waste in the pool is better than
9 more waste in the pool when you blow the doors off
10 your reactor building with a hydrogen explosion.
11 Again, it doesn't take a rocket scientist to figure
12 that out. In fact, your Chairman pointed out that
13 that is where you can get some safety margin added
14 back to these reactors.

15 So, again, we encourage you to get the
16 waste out of the pools. I'm appreciative of our
17 colleagues at NRDC and anyone else who participated.
18 We wholly endorse their findings and recommendations.
19 Speed would be warranted as well.

20 Again, ten years ago, you had 9-11. That
21 was a wake up call. Fukushima is another wake up. We
22 shouldn't have to wait another ten years before you
23 remove waste from the pools.

24 MR. RAKOVAN: Okay. I want to quickly
25 just kind of check to see if any of the other people

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1 who I had in terms of preregistration had any comments
2 that they wanted to make.

3 I've got John Giddens or David Midlick
4 from Southern Nuclear.

5 (No response.)

6 MR. RAKOVAN: Okay. David White from
7 Areva?

8 (No response.)

9 MR. RAKOVAN: Rob Slough from Luminant.

10 MR. SLOUGH: No comment.

11 MR. RAKOVAN: Craig Nichols from GE
12 Hitachi?

13 MR. NICHOLS: No comment.

14 MR. RAKOVAN: Stuart Minahan from NEI?

15 MR. MINAHAN: No comment.

16 MR. RAKOVAN: Vijay Nilekani from NEI?

17 (No response.)

18 MR. RAKOVAN: Gordon Clefton from NEI?

19 MR. CLEFTON: No comment.

20 MR. RAKOVAN: All right, Gene. One more -
21 - no one on the phone lines. Okay. We had a number
22 of people who registered to talk by phone but
23 apparently either they're having issues or -- well,
24 hopefully they're not having issues.

25 Do we want to go ahead and move on and

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1 conclude since we're at four o'clock, Eric? Okay.
2 Please. Please go ahead.

3 MR. LEEDS: All right. Just some
4 concluding remarks. I'd really to thank everyone for
5 their participation. I thought the panelists did a
6 terrific job. It gave us constructive, valuable
7 feedback. And we value the insights that we heard
8 today. And we will use those in going forward in
9 presenting our papers to the Commission.

10 So I thank you all. Appreciate it. We
11 will be engaging with you again in the future on these
12 Fukushima issues. This is just the beginning. We
13 have a long way to go, folks.

14 Thank you.

15 MR. RAKOVAN: Okay. Hold on. Before you
16 conclude, can we please bring up the slide for where
17 people can submit their comments? Hilda, can you
18 bring that up? Okay, comments, regulations.gov.
19 There's the docket number, NRC-2011-0196. Again, due
20 to the fact that we're trying to move on this so
21 quickly, we'll be accepting comments through this
22 Friday.

23 And can you bring up the contact please?
24 Contact information, if you have any issues with
25 trying to get your comments in, the contact for that

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1 is Carol Gallagher. And these are with the slides
2 that were provided to you.

3 Okay, thank you.

4 (Whereupon, the above-entitled public
5 meeting was concluded at 4:03 p.m.)
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