

UNITED STATES OF AMERICA
U.S. NUCLEAR REGULATORY COMMISSION

WORK ORDER 54 - BRIEFING ON NRC ACTIONS FOR
ADDRESSING THE INTEGRATED REGULATORY
REVIEW SERVICE (IRRS) REPORT

July 12, 2011

9:30 A.M.

TRANSCRIPT OF PROCEEDINGS

Public Meeting

Before the U.S. Nuclear Regulatory Commission:

Gregory B. Jaczko, Chairman

Kristine L. Svinicki, Commissioner

George Apostolakis, Commissioner

William D. Magwood, IV, Commissioner

William C. Ostendorff, Commissioner

APPEARANCES

NRC Staff:

Marty Virgilio
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Eric Leeds
Director, NRR

Bruce Boger
Deputy Director for Reactor
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Jon Hopkins
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Margaret Doane
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1 PROCEEDINGS

2 CHAIRMAN JACZKO: Good morning everyone. We are going to
3 meet to discuss the recommendations and suggestions of the IAEA's Integrated
4 Regulatory Review Service Mission. Certainly I think the Commission has
5 demonstrated a longstanding commitment to the IRRS missions, and it was, I
6 think, a tremendous show of support that we were able to host our own mission
7 last October. And we'll have a follow-up mission sometime in the near future.

8 In response to the report, the staff has developed an action plan to
9 address the recommendations and suggestions included in the report, and I want
10 to commend the staff for their excellent work in developing this detailed plan, as
11 well as their efforts throughout the process. You know, the two weeks when they
12 were here, and Bruce, you led that effort, that was certainly an extensive effort on
13 behalf of the agency, and I think a really good result came out of it.

14 This plan provides a strong foundation for our work ahead,
15 including, as the staff notes in the action plan, incorporating Lessons Learned
16 from Fukushima Daiichi accident, into our follow-up activities. As the NRC and
17 other regulators seek to learn and apply the lessons of Fukushima Daiichi, I
18 believe these peer review activities have an important role to play in facilitating
19 the open exchange of information and experience, and ultimately in
20 strengthening nuclear safety worldwide. And I think, as we continue to engage in
21 the international community, we'll find that these types of review missions will
22 become even more important to further help other countries and our own, better
23 enhance and improve our regulatory programs. Before we begin with the staff,
24 any comments from my colleagues?

25 COMMISSIONER SVINICKI: Just very quickly, Mr. Chairman. I'd

1 like to second what you said, that, laying aside the outcomes of the review, which
2 we'll be discussing in this meeting, the team members with whom I interacted
3 were uniformly complimentary of the NRC staff's logistical support and
4 organizational support for the mission. And I know that was a lot of work by
5 those of you seated at the table and others who aren't here today on the NRC
6 staff. So I appreciate that, thank you.

7 CHAIRMAN JACZKO: Any other comments? Okay. Marty, you
8 want to start.

9 MARTY VIRGILIO: Thank you. Good morning, Commissioners.
10 What I want to do is just provide an overview of our actions, and Eric and the
11 staff will talk a little bit more about the specifics. But in general, I would say that
12 the IRRS mission was a very positive outcome for the NRC, in part because of
13 the preparation, but mostly because of our programs and our activities. I think it
14 was a very thorough assessment of our operating reactor program, and I'm real
15 pleased with the results.

16 There were a number of suggestions for, or opportunities for
17 improvement, and you'll hear today from the staff about how we intend to
18 disposition those specific recommendations and suggestions that we received.
19 Just one final note before I turn it over to the staff is that report was issued on the
20 1st of March. It went public on the 9th of March, all around the time we were
21 having the RIC. But the real milestone was March 11, when Fukushima, the
22 accident at Fukushima happened. And our attention was diverted from working
23 on this task to a number of other activities. And so I would say right from the
24 onset, we haven't made as much progress as I would have liked to have made.
25 This is one of those areas where we did, in fact, deliberately slow down the work,

1 divert resources, in order to support other activities.

2 So with that, I'd like to turn it over to Eric and let him start the
3 program.

4 ERIC LEEDS: Well, thank you, Marty. Good morning, Chairman,
5 Commissioners. I just have a few talking points to begin with. To begin with, you
6 know, the NRC has supported the IAEA Integrated Regulatory Review Service
7 for years, sending senior managers to participate in reviews of regulators around
8 the globe. As you're all aware, currently, the Executive Director for Operations is
9 leading the IRRS review of the South Korean nuclear safety regulator.

10 Well, this was our opportunity to be assessed by senior regulators
11 from around the world. To have our system of regulation, our processes,
12 reviewed and examined by senior regulators focused on the same goals that
13 we're focused on, protecting public health, protecting the environment.

14 As a continual learning organization, we welcomed the review and
15 the assessment, which provided another demonstration of our openness and
16 transparency. It also gave us an opportunity to show foreign regulators how we
17 do business. Now, we're not so arrogant to think that we can't learn from others;
18 indeed, we received some valuable insights and feedback from the Integrated
19 Review Service team. But we're also rather proud of the way that we conduct the
20 business of public safety here at the NRC, and we were pleased to share our
21 good practices with the international community.

22 Finally, one of the values of hosting an IRRS review is really
23 intangible. It's the discussion, the exchange of ideas, the exchange of
24 philosophies with senior regulators who do things differently. It makes us sit
25 back and ask ourselves two very important questions: why are we doing this,

1 and why are we doing it this way? I think it's a very healthy exercise, and it was
2 very beneficial to all those involved.

3 Now I'm going to turn it over to Bruce Boger, he's the NRR Deputy
4 Director, and he'll provide an overview of the IRRS mission, as well as the
5 findings contained in the report. Following Bruce, Jon Hopkins, our NRR senior
6 project manager for International Activities, will present the specific actions
7 planned by the staff to address the IRRS report findings. Bruce?

8 BRUCE BOGER: Thank you, Eric. Chairman, Commissioners,
9 good morning. As an overview, we chose a partial scope IRRS mission to
10 provide us with a specific focus on the Operating Reactor Program. We were
11 interested in having depth rather than breadth of the program review, so we
12 focused on the operating reactors. And, as it turned out, the two week period, as
13 the Chairman indicated earlier, is a very intense two week period for both the
14 international folks and the NRC folks that supported the effort. Next slide,
15 please.

16 I appreciate the comment about the preparation, because we felt
17 that was the key to IRRS having a successful mission. Early on, we established
18 a senior management advisory board made up of people who had been on IRRS
19 missions in other countries. We used that board to provide us suggestions and
20 insights, and some of the insights led to the creation of teams that we used to
21 support the mission, one of those being a logistics team. We also had a
22 technical team, and we had a communications team to make sure we were
23 spreading the word.

24 We performed a complementary self-assessment. It was an update
25 to an assessment we had done previously to that, but we wanted to bring it up to

1 date. We wanted to make sure it reflected current agency processes. But we
2 also wanted to use it as an opportunity to identify any gaps that we had between
3 our procedures and international standards.

4 We had two preparatory meetings with the IRRS team leaders. We
5 did that to make sure we were on track. And we also took a lot of time to prepare
6 advance reference material, it's actually this document. Pause for lifting. But it
7 turned out to be very helpful, because it not only had the information in our self-
8 assessment, but it included summaries of our assessment of that, to provide the
9 team with a running start on their reviews. So we felt that was well worth the
10 time. And also, we provided it on thumb drives, so that they had ready reference
11 to all the management directives and office instructions that were used as part of
12 our reference material, so it was very handy for them to have that.

13 Lastly, we made use of counterparts for each of the modules and
14 policy issues where we had two SES managers that were assigned to each of
15 the modules to interact continuously with the module leads from the IRRS team.
16 And we found that the transfer of information, the continuity of information, was
17 very important throughout the mission, to make sure that the IRRS folks
18 understood what we were doing.

19 As an example, in the inspection module, we had an NRR
20 headquarters manager and a Region I manager assist the team in their
21 discussions of the inspection program here in headquarters, of the reactor
22 oversight process, and then continue with the team to the Regional office, where
23 the IRRS team received information on how the Region executes the program.
24 And then they visited Salem and Limerick to find out how the inspectors actually
25 implement the program. So that continuity was very important to us. Next slide,

1 please.

2 There are three types of findings that can come out of an IRRS
3 report: recommendations, suggestions, and good practices. Recommendations
4 are the highest level of improvement finding, and are made when key aspects of
5 IAEA safety requirements are not met. We had two recommendations in the
6 report. Suggestions identify opportunities for improvement that have a basis in
7 an IAEA document. There are 20 suggestions in the report. Good practices
8 identify performance or programs that are superior to those generally observed
9 elsewhere. There were 25 good practices identified in the report.

10 Our actions to address some of the recommendations and
11 suggestions may potentially involve policy issues. We will seek appropriate
12 Commission guidance for any of these issues. Likewise, we will need to address
13 issues that come out of the Fukushima Lessons Learned. The follow-up mission
14 is typically conducted 18 to 24 months after the mission. We haven't scheduled
15 the follow-up mission at this time. Next slide, please.

16 To address the two recommendations. The first recommendation
17 concerned confirming and documenting that the NRC has a fully integrated
18 management system. This was a gap that we had identified in our self-
19 assessment. We have all the parts of a management system: we have strategic
20 plans, we have operating plans, we have performance monitoring, but we don't
21 have an overarching document that describes the management system. And
22 that's an international requirement in the international guidance.

23 The second recommendation concerned a periodic assessment of
24 effectiveness of the management system. Again, we have many assessments
25 performed by the NRC staff, the Office of Inspector General, the Advisory

1 Committee on Reactor Safeguards, but we don't have a holistic look at that that
2 takes a look at the effectiveness of the management systems. Next slide,
3 please.

4 Suggestions generally concern safety margin improvements. For
5 instance, the IRRS team felt that licensees have not been as proactive in making
6 voluntary measures to upgrade systems with improved technology, as many
7 foreign countries have done. The team also suggested that we ensure that
8 severe accident management is appropriately covered in operator training in the
9 reactor oversight process. And also, although a strong link was seen in the
10 sharing of operating experience, the link was not seen to be as strong in the
11 sharing of safety/security interface experience. Next slide.

12 Of course, we were pleased by the recognition of our good
13 practices. They reflect areas where the NRC has put a lot of emphasis. For
14 instance, we stress openness and transparency in our activities; we value
15 recruiting, training, and retaining of NRC staff; we have developed and
16 implemented a robust operating experience program. Now, Jon will discuss the
17 action plan for the recommendations and suggestions.

18 JON HOPKINS: Thank you, Bruce. I'll first discuss the
19 recommendations with the integrated management system. As Bruce said, from
20 our self-assessment, the staff commenced development of a comprehensive
21 document describing the many components of the agency's management
22 system. The staff will complete this management systems document, which will
23 involve the development of a process map with an intent to confirm the
24 comprehensiveness of our existing management systems for the Operating
25 Reactor Program. Following completion of the management system document,

1 the staff will evaluate the need for additional periodic reviews to close any gaps
2 from a holistic review perspective. Next slide.

3 These two suggestions regard a licensee's responsibility. And to
4 provide some background regarding these suggestions, the NRC is significantly
5 larger than other nuclear regulatory programs. We perform continuous
6 aggressive oversight reviews, such that licensees having the primary
7 responsibility for safety may not be as apparent to the IRRS team as the same
8 amount of emphasis as they see in their own countries.

9 Regardless, the staff will develop a consistent message on safety
10 responsibility that can be conveyed to licensees during management meetings,
11 and the staff will develop discussion points to address maintenance of safety
12 margins and planned facility safety improvements for use in routine meetings. A
13 communication plan will be developed for these actions. In addition, the recently
14 approved and published safety-culture-policy statement reflects the expectation
15 that licensees have the primary responsibility for safety and security. Next slide.

16 There were several suggestions on harmonizing with IAEA
17 standards. Again, we identified this in our self-assessment. Management
18 Directive 6.6 was under development prior to the IRRS mission, and 6.6 is on
19 Regulatory Guides -- excuse me --

20 As a result of our self-assessment, this Management Directive was
21 revised to include a section on harmonization with international standards.
22 Management Directive 6.6 has been approved and issued on April 12 of this
23 year. Staff will review and update guidance for regulations and office instructions
24 to include consideration of IAEA safety standards. Next slide.

25 There are two suggestions on severe accident management. The

1 staff will consider the adequacy of NRC's current approach to the oversight of
2 severe accident management guidelines. This will include development and
3 maintenance of the procedures as well as training and drills conducted by
4 licensees. This will also include an assessment of how the NRC reviews severe
5 accident management guidelines under the reactor oversight process. We have
6 developed a more detailed -- we will develop -- excuse me -- a more detailed
7 plan addressing these suggestions following review of the staff's report on near-
8 term Lessons Learned from Fukushima. Actions to address either or both of
9 these suggestions could involve changes to agency policy that will require
10 Commission review and approval. Next slide.

11 There were two suggestions on acceptance criteria, the first S6 on
12 considered time limit for code approvals. The staff will review its current
13 requirements and expectations for code use. The results of that review will be
14 assessed to determine the benefit and practicality of establishing time limits for
15 use of NRC approved codes.

16 On Suggestion S7, the staff will explore this issue to better
17 understand how international regulatory bodies have used the ALARA principle in
18 safety analysis. Of course, ALARA stands for "as low as reasonably achievable".
19 The results of our assessment will -- excuse me -- the results of our review will
20 be assessed to determine the benefit and practicality of the use of the ALARA
21 principle in establishing acceptance criteria in safety analysis. Actions to address
22 Suggestion 7 could involve changes to agency policy that will require
23 Commission review and approval. Next slide.

24 Two suggestions on NRC assessment. For Suggestion 8, the staff
25 will assess regulatory requirements on design control such as 10 CFR Part 50

1 Appendix B, the quality of licensing submittals and our inspection program
2 results, specifically component design basis inspections, to determine whether
3 confidence exists that licensees are performing acceptable safety analysis. If a
4 gap is identified, the staff will explore the potential benefit of independent
5 verifications. Actions to address Suggestion 8 could involve changes to agency
6 policy that will require Commission review and approval.

7 For Suggestion 11, the staff will assess our guidance and
8 expectations on event response to ensure that NRC doesn't unduly impact
9 licensee incident response. Lessons learned from our Office of Nuclear Security
10 and Incident Response's assessment of NRC's response to Fukushima Daiichi
11 event will be considered and incorporated as appropriate. Next slide.

12 Two suggestions on operational experience. Suggestion 9 was
13 identified in our self-assessment. The staff will conduct a limited scope pilot
14 effort to obtain some example Periodic Safety Reviews performed in other
15 countries. These will be reviewed for potential insights regarding nuclear power
16 plant operating experience topics. The pilot effort will seek to establish the value
17 added from the review of the example Periodic Safety Reviews. Of course,
18 Periodic Safety Reviews are performed in other countries on a roughly 10 year
19 basis. The licensees review them and submit them to the regulator.

20 For Suggestion 19, the staff will assess our current processes for
21 collecting information that is used to identify potential impacts on safety, security
22 and the safety/security interface with consideration of non-nuclear input. Our
23 processes will be updated as appropriate to address any gaps. Next slide.

24 Several suggestions for emergency preparedness. The first
25 suggestion is improved notification of IAEA. The IRRS team witnessed an

1 emergency preparedness exercise while they were here. They witnessed our
2 reactions in our Response Center to that. And the team recognized that part of
3 our actions involved calling IAEA and notifying them of the event. But the
4 suggestion relates to we can improve how we do that, improve the information
5 provided.

6 The remaining suggestions regarded improvements for operational
7 intervention levels in line with IAEA Standard GS-R-2, a suggestion on having a
8 single database for field measurements during an EP exercise and explore
9 options to make emergency preparedness exercises more challenging and less
10 predictable.

11 Regarding that last suggestion on options to make exercises more
12 challenging and predictable, less predictable, that's an item that the staff has
13 been working on with FEMA, and we consider that suggestion to be an
14 affirmation of what we have been doing. The other suggestions we have
15 presented at a Federal Radiological Preparedness Coordinating Committee this
16 year. Our initial feedback from the committee with our federal stakeholders was
17 positive, but no decisions have been made on those two suggestions, and we will
18 continue to raise them in future meetings. Next slide.

19 The last suggestion deals with the safety/security interface. For
20 background, the suggestion reflects the IRRS's team belief that the amount of
21 safety/security interface attention could be increased when you consider
22 comparison to the attention given just operating safety experiences. NRC staff
23 has increased its attention to the safety/security interface including issuance in
24 June, 2009, of Regulatory Guide 5.74, "Managing the Safety/Security Interface".
25 That Reg. Guide was issued to provide guidance for implementation of Rule 10

1 CFR 73.58.

2 In addition, NRC has recently met with industry at the NEI, or
3 Nuclear Energy Institute, organized nuclear security working group. At that
4 working group, we discussed the IRRS's mission Suggestion 20 and encouraged
5 industry to take actions to ensure the effective coordination of the safety/security
6 interface. This ends my presentation. Marty will now discuss the IRRS's
7 Lessons Learned workshop.

8 MARTY VIRGILIO: Thanks, John. The IAEA has asked and we
9 have agreed to host the next Lessons Learned Review. They do this every
10 several years. It's been three years since the last one of these reviews. The last
11 one occurred in Spain three years ago. The workshop is really for the regulators.
12 It's for those regulators who have had a recent IRRS mission or are anticipating
13 one in the future, and it's an opportunity to take the Lessons Learned and to
14 revise the program. That said, it's not clear to me, but it will probably become
15 more apparent in September, maybe at the General Conference, as we discuss
16 the Lessons Learned from Fukushima and how that action plan will address the
17 IRRS program. There may be some discussions with respect to the future of the
18 IRRS program at this meeting that we host in October. That remains to be seen.
19 I would say that Denis Flory himself has committed to be here for three days to
20 participate in that meeting with us. So they're putting a high hat on it, and so are
21 we. So with that, I just would like to say that concludes the staff's presentation.
22 We're available for any questions you might have.

23 CHAIRMAN JACZKO: Thanks. Start with Commissioner
24 Apostolakis?

1 COMMISSIONER APOSTOLAKIS: Thank you, Mr. Chairman. I'd
2 like to start with the periodic safety reviews. I believe we're the only country that
3 doesn't do them. I may be wrong, but everybody else I think does them.

4 BRUCE BOGER: I'm not sure that --

5 COMMISSIONER APOSTOLAKIS: That's okay.

6 BRUCE BOGER: -- everyone does them. And I'm not sure that
7 they do them to the same level.

8 COMMISSIONER APOSTOLAKIS: Margie?

9 MARGARET DOANE: Yeah, and I don't think that's exactly right. I
10 think there are some countries that --

11 COMMISSIONER APOSTOLAKIS: Okay.

12 MARGARET DOANE: -- do periodic safety reviews or do
13 something like that.

14 COMMISSIONER APOSTOLAKIS: I have two questions. One,
15 does one gain anything from a PSR, Periodic Safety Review, that we don't have
16 maybe other means of getting, information about the plant and so on? And
17 second, would our legal system allow us to have such a periodic safety review?
18 For example, with my limited interaction with European counterparts, I am under
19 the impression that, you know, after each Periodic Safety Review, the regulator
20 asks the licensee to do things, and they do them. And I'm not sure that's the way
21 we operate here, so can you please enlighten me? First, do we get the same
22 information through other avenues? And second, if we wanted to adopt them,
23 would our legal system allow us to do that?

24 BRUCE BOGER: Let me try to tackle the first part.

25 COMMISSIONER APOSTOLAKIS: Sure.

1 BRUCE BOGER: And the -- certainly, we were curious also what
2 types of plant changes and modifications were coming out of the Periodic Safety
3 Reviews, so we assembled as many copies of the Periodic Safety Reviews as
4 we could, and tried to glean what changes. And when we look at those changes,
5 what we saw were things that we see anyway. They were changes made with
6 respect to refurbishment. There were changes made with respect to power
7 changes. They were changes that maybe reflected back on Station Blackout,
8 ATWIS, things that we had taken care of in process, if you will, rather than
9 waiting for the end of a Periodic Safety Review period, we would tend to review a
10 operating experience and then make requirements at that time rather than wait.
11 So we didn't see a lot of benefit, change-wise, from our review of those Periodic
12 Safety Reviews. But we did feel that we needed to explore further and see if we
13 could find any more information.

14 But the second part, on relative to whether or not we could legally
15 do it, we were challenged by the Backfit Rule, so we would certainly, that's one of
16 our legal requirements that would --

17 CHAIRMAN JACZKO: Steve, is that a correct statement? The
18 Backfit Rule is a legal requirement?

19 STEPHEN BURNS: Excuse me. Why don't I take a stab at the
20 answer, and then you are going to add onto it.

21 BRUCE BOGER: Please.

22 STEPHEN BURNS: From a statutory perspective, there is no
23 Backfit Rule in the statute, in the Atomic Energy Act, so the way the agency
24 frames how it regulates the licensed entities, it has fairly broad discretion, and it
25 could structure -- in theory, you could structure how we regulate in terms of

1 looking at retrofitting and looking at, not only retrofitting, but taking periodic
2 assessments; that's something within the statutory framework I think could be
3 adopted or adapted.

4 What the agency has done, it has adopted a backfitting regime and
5 I'm not sure the backfitting regime necessarily precludes an assessment itself.
6 What it might preclude is that by its application, it might say that certain
7 enhancements are not cost-beneficial such that they meet the substantial
8 additional protection criterion that the agency has adopted as a regulation.
9 Again, not as a -- it's not articulated in the statute per se.

10 One thing, in some of my interactions in terms of legal counterparts
11 have reflected on the Periodic Safety Review, is that in a way, and I don't want to
12 say I've done an extensive study of that from the legal framework standpoint, but
13 at least in some circumstances, it may be it's a surrogate in those countries for
14 the Backfit Rule, because what I've understood is that in some circumstances,
15 their flexibilities about interim enhancements may not be as robust under the
16 national laws as it is in the framework that the NRC has done.

17 Now that again, I'm not arguing for or against the Periodic Safety
18 Review there, but that is one impression I've been left with in some discussion
19 with foreign colleagues. And Bruce, anything you want to add?

20 BRUCE BOGER: No, thanks Stephen.

21 COMMISSIONER APOSTOLAKIS: Okay. Regarding
22 harmonization with IAEA standards, whenever this is said, I get the impression
23 that there is an assumption that these standards are their standards, and we
24 have to try to harmonize our own with theirs. So then the question is, how are
25 these standards developed? I don't know. Do they have, for example, a public

1 comment period? Are they consensus of the countries that are participating
2 there? I mean, what -- I have seen how some of the standards of ASME and
3 ANS have been developed, and it's a very long process. All sorts of stakeholders
4 get involved, and there is give and take, and you have to respond to all the
5 comments. Do they do that?

6 MARTY VIRGILIO: The short answer is no, they don't. They're not
7 consensus standards. They're developed by basically regulators, for regulators.

8 COMMISSIONER APOSTOLAKIS: But they are consensus of the
9 regulators?

10 MARTY VIRGILIO: Yes, but they don't really meet the true
11 definition of a consensus standard, as you would see.

12 COMMISSIONER APOSTOLAKIS: I see.

13 MARTY VIRGILIO: And there's government-wide guidance that we
14 adhere to, and we're actually directed when it's practical and possible for us to
15 adopt consensus standards as opposed to going out and develop our own
16 regulatory guidance. Those standards that the IAEA develops really don't qualify
17 as consensus standards because they do not, in fact, include that stakeholder
18 interaction.

19 COMMISSIONER APOSTOLAKIS: And so what would be the
20 benefit for us?

21 MARTY VIRGILIO: Well for us, I would say the benefit is it does
22 reflect a body of knowledge from other regulators for us to draw on, and that's the
23 way we're changing our internal guidance. It is a source for you to draw upon of
24 information and knowledge.

25 COMMISSIONER APOSTOLAKIS: I would agree with that, but to

1 say from other regulators -- so our own regulators do not participate?

2 MARTY VIRGILIO: No, we certainly participate in that
3 development.

4 CHAIRMAN JACZKO: We have a clearance rule, if we did.

5 MARGARET DOANE: Yes, we would, that's right, it's an
6 international standard.

7 COMMISSIONER APOSTOLAKIS: Anyway, I mean this whole
8 thing, harmonize with us, it sounds a little bit arrogant to me. I'll tell you the truth.
9 Maybe we are the arrogant guys. I don't know.

10 CHAIRMAN JACZKO: We all say it's arrogant because --

11 MARGARET DOANE: But then we don't --

12 MARGARET DOANE: I think if I could just add --

13 COMMISSIONER APOSTOLAKIS: Yes please.

14 MARGARET DOANE: Just so that there isn't a negative
15 impression of the standards. I think that for the United States, we've had a
16 regulatory body for a long time. We have very well-developed regulations, but if
17 you can imagine going forward for countries that are just developing regulatory
18 programs, how important these standards are. And so it's not -- it is useful for all
19 countries to seek harmonization, rather than to just say those newcomers should
20 be harmonized, they should be --

21 COMMISSIONER APOSTOLAKIS: So I guess what you're saying
22 is that if the United States really tries to harmonize its own standards with the
23 IAEA's, then it adds gravitas to the IAEA standards.

24 MARGARET DOANE: Right. And it does give countries an
25 incentive to participate, you know, in standard-setting.

1 CHAIRMAN JACZKO: If I could -- I mean, just to leave an
2 impression, but we're not wildly inconsistent with IAEA standards.

3 COMMISSIONER APOSTOLAKIS: No, no. Having a time limit for
4 codes, I find that intriguing. I know that some of our codes, important codes, are
5 geriatric. They were developed a very long time ago, and there are good
6 reasons for that. I mean, there was a period of 20 years in the '90s and early
7 2000s where nobody felt like investing the money to bring them up to date. Then
8 we started with, what is it, Chase -- the base the more detailed calculations. I
9 know that you said that we will study this, stop and study this to see whether, but
10 I really think it's -- I don't know. I mean, it's an intriguing concept, and I would be
11 very curious to see what you gentlemen come up with. I don't know that we can
12 actually say this code is applicable for the next five years. Maybe we can.
13 Maybe that will be an incentive to update them using the latest science, so that --
14 I don't have a question for that.

15 And the other thing about the licensee responsibility, I just don't
16 understand that. I mean, as you say in the Safety Culture Policy Statement, we
17 do say that it's the licensee's responsibility, but let's not forget that our charge is
18 to make sure that there is adequate protection, and not to give lessons to the
19 licensees what they should do and what their responsibilities are. I mean, I'm
20 sure they know what they are. But anyway, I mean, that's another comment.

21 Thank you, Mr. Chairman.

22 CHAIRMAN JACZKO: Commissioner Magwood?

23 COMMISSIONER MAGWOOD: I always hate following
24 Commissioner Apostolakis. He usually takes all the good material.

25 [laughter]

1 COMMISSIONER APOSTOLAKIS: Does he always have to follow
2 me?

3 CHAIRMAN JACZKO: All I do. I follow this card, and the only time
4 -- yeah, he always follows you because it just loops around, so -- we can just
5 randomly pick from a hat each time, and then --

6 COMMISSIONER MAGWOOD: That won't be necessary. The
7 issue of the IAEA standards is something. I think Commissioner Apostolakis has
8 explored it enough. I might engage in some more private conversations with
9 some of you about that.

10 But the last point that he was getting into, this issue of the
11 licensee's responsibility is one I, actually, found quite interesting. I think, Marty,
12 you and I have talked about this soon after the mission, and I'll just sort of relate
13 my impression. When I -- I was sitting with one of the members of the mission,
14 and they were going through the conclusions and they got to this particular one.
15 And I reacted rather negatively to the comment, thinking that, well, of course, our
16 licensees know they are responsible for safety. We don't have to write that down
17 or have a piece of legislation that says that they are responsible for safety. But
18 quite honestly, as time has gone on, the more I've thought about it, the more I've
19 actually questioned whether there is a real issue here. I don't think it's quite the
20 issue the IRRS was thinking about. But an example, and I think, Eric, you and I
21 talked about this one recently, we have a licensee that had a faulty piece of
22 equipment and the immediate reflex was to say, "Well, it wasn't our fault. We
23 had this vendor, and they screwed up, and it's not our fault." And, you know, if
24 you're operating a nuclear power plant -- and I actually challenged another utility
25 executive on this, and they immediately told me, "No, no, we're responsible for

1 everything.” But, you know, when you do -- when we have a strong regulator,
2 and there’s a pro and a con to having a strong safety regulator – if you have a
3 strong regulator, there’s a tendency to sort of sit back and wait to see what the
4 regulator wants to do, as opposed to taking proactive steps as licensee. And I
5 think there’s -- and I think that does happen to some degree. And I wonder, now
6 it’s been some months since this recommendation has been made, and you’ve
7 all had a chance to ruminate about it. Do you have any thoughts about -- about
8 this? And I’ve heard what you’ve had to say about the Safety Culture Policy
9 Statement. And I think that that is a piece of the answer. But do you feel, -- do
10 you feel that there is a germ of truth there where there’s a culture that has been
11 created over time where the licensees sit back a bit more than perhaps they
12 should, waiting for NRC to dive in and tell them what the right answer is?

13 BRUCE BOGER: I will -- I think if there’s a clear -- a well-defined
14 safety issue, I think there’s not a rub. I think industry and the NRC come quickly
15 to agreement as to what needs to be done. Sometimes when it’s not as clear of
16 a safety issue, then the discussion starts and industry does have an opportunity,
17 either to lean forward and take it on, or they can sit back and wait for us to
18 decide. But it -- I think it depends on the perceived safety importance. I think the
19 safety things will get addressed.

20 MARTY VIRGILIO: I think there are situations, and we’re going
21 through one just this very week with a nuclear power plant and a piece of
22 equipment that was degraded and the licensee thought it was still operable. We
23 dispatched a special inspection team, and we have actually come to the
24 conclusion that it is not operable. And in -- I’m not -- it is, you know, it is the
25 strength of our regulatory team, you know, out at the site that I think sometimes,

1 you know, we wind up in those situations. I'm not sure that the licensee was not
2 trying to do the right thing, but, you know, we certainly did in fact demonstrate I
3 think to everybody's satisfaction that action needed to be taken.

4 COMMISSIONER MAGWOOD: I --

5 MARTY VIRGILIO: There may be a different paradigm, than I think
6 some of the team members are used to. They're very small regulatory
7 organizations without the technical strength that we possess.

8 COMMISSIONER MAGWOOD: And I think that's, you know, and
9 again as I said, I think there's a pro and a con in that in some -- some sense.
10 Because, you know, it's kind of like if we -- I sort of think of NRC as safety net.
11 Well, if there's a safety net under everything you're doing, well, you know, maybe
12 you take a few more risks, you take maybe a little bit less precise than you would
13 otherwise because you know that there is a safety net that will catch you if
14 there's problem. And that's, you know, that example that you gave is a little bit
15 like that because you really would like to think that licensees are catching these
16 things and taking action, and telling us, "Yeah, we found this problem. Here is
17 how we're going to fix it," as opposed to waiting for one of our resident inspectors
18 to find a problem and then tell them what the answer is.

19 ERIC LEEDS: Commissioner, if I would add a point to the two
20 points made. I agree with what's been said. Just -- we have strong licensees,
21 and we have licensees that are not as strong. And I think that that plays out with
22 the staff also. And there are licensees that go after problems a lot, very hard,
23 very quickly. By the time we get there, things are on the clean-up side. And then
24 there are licensees that are just not as strong, and they need a stronger regulator
25 to make sure they do the right thing. That was one point I wanted to make.

1 Another point I wanted to make about the licensee's responsibility
2 for safety. We've talked about it. I've talked about it with the RA's. I've talked
3 about it with Marty. And I know when I go out to plants and I go on site visits,
4 inevitably over time, usually over lunch or at some point, I get an opportunity to
5 address the site management and their management team. And the message I
6 always give them is I ask them to stay focused on improving the safety of their
7 site in three different ways: first, from a strict PRA sense, make sure you
8 understand what are the most risk-significant event sequences for your site, and
9 do what you can to improve that, those risks, whether it's adding a pony diesel or
10 motor-driven fire pump or whatever it is. Do what you can from the strict PRA
11 sense.

12 The second area I ask them to look at is the human -- the risk from
13 human factors. You know, we know that the industry is going through a
14 generational change and they're -- they're licensing new operators. And we need
15 them to make sure they have strong knowledge management, and they're
16 teaching these operators to Lessons Learned that we've developed over
17 decades of work. And the third area that I ask them to look at is a sense of
18 business risk, outreach to their community. Make sure that they're doing the
19 outreach to the community, that they're building trust with their community, with
20 their state and local officials, and with the local public, since that they're building
21 a bank account that -- of openness, of trust, of good operations. And so that's --
22 that's a message that I know I send to the plants when I go out.

23 COMMISSIONER MAGWOOD: I appreciate that. One other area,
24 if I explore a bit -- I found Suggestion 8 -- this is one that didn't resonate with me
25 as much at first, when I first heard it, as it does now. We've been through some

1 back and forth a bit with the AP1000, specifically, all of which has been quite
2 public. And I wonder if, after seeing the -- some of the issues we've had with --
3 going through the analysis and verifying that things are -- were done correctly
4 and if they weren't, getting the analysis -- the proper analysis done, have you
5 looked at this suggestion to assess the -- whether we had adequately provided
6 for an independent verification? Do you think about that any differently? I guess
7 mostly aimed at Marty, because you would have gone over this and the others.
8 Is this one where, perhaps, that -- you might think about it differently now that
9 we've been through some of these back and forths?

10 MARTY VIRGILIO: With regard to Suggestion 8, I -- suggest --
11 okay. Sorry. What they were focusing on was when the team was here, they
12 were focusing on the QA requirements, and I think they were focusing specifically
13 on what kind of independent assessments do licensees do before they submit an
14 analysis to us to ensure its -- validity, its integrity, et cetera, et cetera.

15 At the time that this was -- this recommendation was coming
16 forward at us, we were dealing with a containment issue at one of our plants
17 down south, and they were providing significant analysis to us with respect to
18 repair about that containment. And, you know, I was just using that as a
19 benchmark to say, in my own mind, is there something more to this? And in that
20 case, I think we found that the licensee's analysis was in fact thoroughly
21 scrubbed and was, you know, well founded when it came in to us. There are
22 other cases that I can look at that I can say, well, you know, we've rejected
23 license amendments and applications because the technical basis wasn't sound.
24 So again it goes back to Eric's point of sometimes there's mixed performance out
25 there, but I think what we need to do is look at that, and if we find that the

1 provisions in Appendix B with respect to the quality of the licensee's analysis are
2 not sufficient, that's why we said, well, that might be a policy issue that we want
3 to come back to had Commission on. It may be more than -- in some cases, it
4 might be just an enforcement issue. It may be that licensees are just not doing
5 what they need to do. And in other cases, our analysis may demonstrate there's
6 a broader problem.

7 COMMISSIONER MAGWOOD: So, this is something you'll be
8 giving some thought to as you -- look at the --

9 MARTY VIRGILIO: It is one of the areas that could be a potential
10 policy issue.

11 COMMISSIONER MAGWOOD: Excellent. Thank you. Thank you,
12 Mr. Chairman.

13 CHAIRMAN JACZKO: Commissioner Ostendorff.

14 COMMISSIONER OSTENDORFF: Thank you, Mr. Chairman.
15 Thank you all for being here today, and I thank you and your staffs for their work
16 on the IRRS mission and the path forward. It's very helpful. I think Eric, you had
17 mentioned in your introductory remarks the importance of this mission, how
18 valuable it is it, and I just want to echo that. We've all seen elsewhere, in the
19 Department of Energy and Department of Defense, where relationships with
20 international partners that are part of an ongoing relationship prior to reaching a
21 crisis, that that relationship-building pays tremendous dividends when you do
22 have a real emergency or problem to deal with. And then you already have the
23 people that you're dealing with, you know who they are and you have some basis
24 to help move forward after you have a crisis. I want to come back to that topic

1 later with a question. But I wanted to just reinforce that I agree with your
2 comments on the values of these kinds of missions.

3 At the risk of retreading some ground that has already been plowed
4 by Commissioner Apostolakis and Commissioner Magwood, I'm going to do it, or
5 I'm going to try, because I think they've hit on two very key points.
6 Commissioner Apostolakis has talked about the Periodic Safety Reviews and
7 what information we're getting that's -- perhaps is it available or not available in
8 our current process. And Commissioner Magwood's comment about licensee
9 responsibility and the very fact that we have a very large regulatory agency
10 compared to other countries, and so recognizing there's a little bit of an ends and
11 a means issue here. The -- means to get to an end-state are different between
12 United States NRC approach and industry and perhaps international partners.
13 And, not saying that anybody's way is right, anybody's way is wrong, but I do
14 have this following question is: Assuming we had different approaches, would it
15 be maybe a greater heavy hand of a regulator here in this country compared to
16 licensee voluntary action, or different approach from the PSR, flash backfit issues
17 that Commissioner Apostolakis raised?

18 As far as the end-state for reactor plant safety, was there any
19 indication that the IRRS mission found that safety of existing nuclear power
20 plants in the United States is less than that in the international community
21 because of these different approaches that we have compared to their
22 approach? I'll leave that to Marty, Eric, Bruce, or Jon, whoever who wants to
23 take that on.

24 MARTY VIRGILIO: I don't believe that there was anything in that
25 report that indicated that there was a safety issue with the plants here in the

1 United States. And in many of the conversations, they -- the team members said
2 or their impression, based on a limited sample of two sites, was that they
3 believed that some of the plants of that same vintage in other countries had been
4 upgraded beyond what they had observed through their visits. And I don't know
5 if they hadn't gone to a larger sample where they would have seen more plants,
6 but they came to focus on control rooms in particular. And they said gee, control
7 rooms for some of these plants that were designed in the '60s maybe and built in
8 the '70s, they still look like they did back in the day that they were licensed. And
9 that's not what some of the team members said they saw in their own countries
10 or in other countries. But they didn't imply there was a safety issue there.

11 COMMISSIONER OSTENDORFF: Bruce, John, you guys want to
12 add anything?

13 BRUCE BOGER: I think they consciously tried not to judge
14 reactors in various countries. They cautioned us about looking at the number of
15 recommendations and suggestions and good practices, and said, "Well, that
16 really don't judge yourself based on that. So you can't score that way." And I
17 think they went out of their way not to judge safety, looking at the regulatory
18 approach.

19 JON HOPKINS: I would just say that I heard no feedback that
20 there was any safety operational concern.

21 COMMISSIONER OSTENDORFF: I ask that because I've seen a
22 lot of -- been hearing a lot of buzz ever since I've been here about different
23 approaches and I think there are some areas where we ought to learn from the
24 international community, and we ought to try to improve, if we can, but we also
25 realize that maybe the one-size-fits-all approach might not be the best

1 philosophical way for us to look at some of these issues. And I go back to
2 Commissioner Apostolakis' comments on the harmonization of standards and
3 what's the process that was used to get to some due-diligence approach
4 involving stakeholders to come up with some standards. And I simply need to be
5 very careful about trying to look at changing approaches without some evaluation
6 as to whether or not we're satisfied with our in-state. I think that in-state piece is
7 very critical when we're talking about the PSR, and we're talking about the
8 perception of the licensees taking responsibility to improve their facilities. Eric,
9 did you want to --

10 ERIC LEEDS: Just to comment on -- end state for reactor safety,
11 and you mentioned the PSR's which Commissioner Apostolakis has also
12 mentioned. And I know that Bruce responded. We looked very hard at the
13 PSR's. And the staff actually did an examination of the PSR and wrote a white
14 paper. There are 14 different elements in a PSR, and what we did was a gap
15 analysis, analyzing each one of those elements of the PSR versus what's the
16 NRC's process, and does it get us to that same end-point for reactor safety. And
17 for each one of those 14 areas, we found a corresponding activity that the staff
18 undertakes in our current regulatory regime that responds to that element of the
19 PSR.

20 In our discussions with the staff, with the IRRS team members, that
21 was a focus for quite a while that we went back and forth on. And one of the
22 things that I thought we got to, and something you won't find in the report -- the
23 intangible I talked about was -- the biggest thing that the -- a couple of the foreign
24 regulators could point out as a difference between our system and the PSR is
25 that the PSR is done by the licensee, where our regulatory regime is done by the

1 regulator. And the only -- the only place where we really found a difference was
2 that that PSR that the foreign regulators would argue that was a good
3 knowledge-management tool for the licensee, because they go through that
4 exercise.

5 COMMISSIONER OSTENDORFF: That's helpful. Thank you, Eric.
6 Margie, I'm going to ask you a question here, and others may want to chime in.
7 Recognizing this report was completed last, you know, last fall and as Marty
8 mentioned, the release date came out just a couple days before the Fukushima
9 event, I'd be interested, and I appreciated the fact that you have all
10 acknowledged that you are going to take a hard look at the Fukushima Task
11 Force Lessons Learned, and think carefully about that, as it might impact the
12 response to the IRRS mission. But are there any initial thoughts, Margie, you
13 have, about the IRRS process or the relationships. Not necessarily the content
14 of this report, but just the big picture from your OIP position now that you've seen
15 Fukushima?

16 MARGARET DOANE: Well, I think that the peer-review missions in
17 general have gotten a tremendous amount of attention from the international
18 community, starting with the G-8, the presidents coming together at the G-8.
19 Peer reviews have been talked about there, at the G-20 ministerial talks in
20 France, and at the high level ministerial in -- at the IAEA.. So peer reviews have
21 become very important because the international community always knew it but
22 has learned again how the implications of something happening somewhere else
23 and those implications for the global community, and so, there's been a reaction
24 that there should be stronger peer-review missions.

1 Actually, they're concentrating on really I guess maybe a couple
2 different areas. They want the peer-review missions to be the periodicity to be
3 more frequent, the peer reviews -- the strength of them -- for them to be maybe a
4 little bit more stronger, maybe making sure that they're looking at the right issues
5 and incorporating into the modules some of the Lessons Learned from
6 Fukushima, like let's say for example, with emergency response.

7 And then lastly, what happens when you do a peer-review mission,
8 you have recommendations. Some of the things you are talking are suggestions,
9 remembering good practices. But when there are recommendations, where
10 there are things seen by the international team that comes, if those
11 recommendations aren't followed up on, then having the peer-review mission
12 doesn't really do any good. So I'd say big-picture looking at our follow-up
13 mission, it's very important that we are doing a hard look, that we give the right --
14 that we communicate our findings and our actions with respect to the findings in
15 a way that demonstrates that we do take it as something that is very positive to
16 help your program improve and that you appreciate the international
17 commissions, but that we recognize that peer-review missions are going to be
18 much more important going forward. And so, you know, the extent to which we
19 can contribute to that will be a help to the international community.

20 COMMISSIONER OSTENDORFF: Thank you. Thank you Mr.
21 Chairman.

22 CHAIRMAN JACZKO: Commissioner Svinicki.

23 COMMISSIONER SVINICKI: Well, thank you all for your
24 presentations, and Margie was just mentioning that there are different categories
25 here and I think that Bruce started with that. And my colleagues have asked a lot

1 about the suggestions, but there were only the two recommendations. And those
2 are areas that have a little more impact in terms of the review teams somewhat,
3 perhaps, insistence that we direct our attention there. And I'm not sure, although
4 we've covered them, I think I would benefit from a fuller understanding since
5 there were these two recommendations, and I would characterize them as being
6 more administrative or process than technical. And it has to do with an
7 integrative management system here and our proposal to address it is to develop
8 an overarching document. And I don't want to characterize for the team. I don't
9 know why this is an area that manifested really as the area, the only area of
10 recommendation.

11 But can you help me understand what is the international standard?

12 It has got to be about more than having a document. I mean, I think, is it truly
13 that they felt that the way we approached our management system is not
14 integrated? And again to have the response to be, "Well, we're developing a
15 document that explains how we had all the pieces and how they all fit together."
16 Is there really something more substantial here than just a statement of, "Well,
17 we're going to develop a directive or a document that stitches these things
18 together." What is the international standard that calls for an integrated system
19 intended to address? And then what did the review team find lacking here?

20 MARTY VIRGILIO: John Lubinski, who was our point-person on
21 this for the IRRS review, is going answer the question.

22 JOHN LUBINSKI: Thank you. The international standard is a
23 GSR3 document that's an international standard on quality -- it's called a
24 management system, but if you read it, it's really a quality management system
25 document. My equating it is more to an ISO 9000 standard for developing a

1 quality management system at a facility. When you ask the question of whether
2 or not this is something deeper since we're looking at just developing a
3 management document, the response from the IRRS team was more along the
4 line of the NRC has been established for a long time, over 30 years, had a lot of
5 government requirements in place in building management systems, the GPRA
6 Act, the Atomic Energy Act, many of the requirements that come out of OMB on
7 putting systems in place. And the response from the team was, "You have a lot
8 of good systems in place."

9 The way we approached it, with new countries developing -- when I
10 say new -- developing new systems in place, they needed a top-down approach,
11 and they looked at developing this overarching document first and then
12 developing all of the supporting systems. So their conclusion and ours was it
13 looks like you have all the good supporting systems in place. It appears as
14 though they're integrated because of the -- Bruce said earlier -- we wanted them
15 to drill down. They drilled down in areas and identified no concerns, and
16 everywhere they looked, it looked to be integrated, and it looked to be
17 comprehensive. Their concern that they came out with was there was not one
18 way to look or not one document to look at, not a way to go through this in a
19 week or two weeks, and say, "Yes, we agree. This is fully comprehensive."
20 Because of the vast amount of systems we have, they said this could take a six-
21 month audit to go through to verify this is comprehensive.

22 So instead, if you develop this document that then links all the
23 different components of your system together: Number one, that will
24 demonstrate to everyone that it actually is an integrative and comprehensive
25 system; number two, it will allow you to determine for yourself that it is integrative

1 and that there are no gaps; and number three, this document can serve as a
2 knowledge-management tool, so that when new staff come into the organization,
3 they can look at this document and understand how all of our systems integrate
4 together versus having to go through, you know, 5, 10, 15 years of experience in
5 here to understand how all the different systems and components integrate.

6 COMMISSIONER SVINICKI: I appreciate that explanation. I do
7 think that many of our, again, being a government agency, we do have a lot of
8 requirements and some of them have unique origins, and then they grow up and
9 are imposed upon us for different reasons. So it seems -- I'll be curious to see
10 the integrated document just for my own curiosity. But I think it would be hard,
11 and I'm not sure that every single piece, you know, necessarily relates to every
12 other piece, meaning that, obviously, you need a core of integrated systems, but
13 I do think that we have many diverse government mandatory things that we have
14 to comply with that are probably not, at the end of the day, core to our mission.
15 So -- it just again, struck me as interesting. And I wanted to know if underneath
16 the recommendation there was some concern that although we have pieces,
17 there's a lack of coherency. It sounds like that was not what they found.

18 JOHN LUBINSKI: No. From the perspective they actually -- the
19 country that was the lead for doing the audit, they developed theirs based on the
20 ISO 9000 system, and are ISO 9000 certified. And their comment was, "We see
21 nothing here. Every part of your system, every component that we've looked at
22 seems robust and meets the requirements of GSR3 as far as having audits in
23 place and having a robust system." And did not identify any gaps, any areas
24 where they would not see it integrated. But they looked at it more from the
25 second recommendation, recommendation two, of performing periodic audits,

1 and said for us to perform -- us being the IRRS team -- to perform a periodic
2 audit of your system is very difficult because of the vast number of documents
3 within your system and being able to roadmap it together.

4 If you look at the key words in the recommendation, it talks about
5 having inputs, flows, and outputs. And they very much centered on putting that
6 into a process map which would help them to determine which parts of the
7 systems are core -- and they talk about core processes -- versus those that are
8 the more minor support systems. But -- and short response, they did not identify
9 any gaps.

10 COMMISSIONER SVINICKI: And so, having developed an
11 overarching document when the team would come to do the follow up, is this
12 something -- have they given any indication that they feel that the existence then
13 of this overarching document would allow them to do the thing that they said
14 would take six months in the absence of that document? Would they look at the
15 adequacy of the overarching document as a response to this recommendation
16 and a follow up?

17 JOHN LUBINSKI: We believe that they would look at the adequacy
18 of the document, how it's implemented and also determine from that standpoint
19 or were there any findings from us developing the document where we ourselves
20 identified any gaps or inconsistencies.

21 COMMISSIONER SVINICKI: Okay, thank you. Thank you very
22 much for that response. Eric, I might turn to the response you gave earlier when
23 you were -- and I don't remember the question that was posed, but you talked
24 about having an opportunity in your capacity as director of NRR to address a
25 management team at an individual reactor site and the messages that you

1 emphasis there. And you had talked about -- I'll paraphrase -- and if I don't get it
2 right, please correct me -- your first item was as the operators of the site, they
3 should understand the risk profile. You said it kind of comes out of a PRA
4 motivation but they should understand the aspects of their operation that would
5 pose or have the highest risk profile given that, in theory, all of these risk profiles
6 have been reduced. So we're not talking about anything that exceeds our
7 regulations. But they should continue -- continually seek those opportunities to
8 further reduce a risk of operations at their site.

9 And so I'm curious in my mind if you've ever been confronted either
10 at a site or when you've been meeting with other members of the regulated
11 community with an analyses that any licensee can show that by their risk
12 analysis if they had, you know, X number of dollars to make an investment purely
13 to reduce risk, that the areas they'd be driven to from a PRA or a risk analysis
14 might be different than the regulatory areas of focus we have, meaning that, I
15 think at the end of the day, the conclusion would be that our regulations are not
16 yet fully risk-informed, which I don't think we claim anyways, that they are yet
17 fully risk-informed; it's certainly an objective that we've been moving towards.

18 And so, have you ever had licensees engage in that discussion with
19 you, that if they were buying down risk with investment, they might actually on a
20 risk-informed basis, go to areas other than, you know, where we might direct
21 them?

22 ERIC LEEDS: Interesting question. I don't know that I can --
23 directly say that we've gotten into that type of a conversation. But typically, what
24 happens -- and these are conversations that I begin with where I'm encouraging
25 them to be responsible for the safety of their plants, that we're both in the

1 business of safety. There's a common ground there. And when I talk about the
2 risk profile at the site, usually the response that I get is I get a lot of heads
3 nodding up and down, and licensees that want to say, "Oh, let us show you what
4 improvements we made to this system. Or let me show you what we've done
5 with our fire or -- you know, emergency diesel generators, emergency AC power
6 is a dominant risk at our plant, and we want to show you some of the things that
7 we've done to make sure the fuel oil supplies are redundant." And it gets them
8 excited because they get to show me something that they did on their own, you
9 know, on their own initiative, as opposed to something that's a regulatory
10 requirement. And it starts that conversation.

11 Sometimes it also starts the conversation in terms of -- because
12 what I usually do when I go to the site, I have a list of our knowledge of their site
13 with regard to the probabilistic risk assessment and the event sequences. And
14 sometimes they don't also match up, you know, and then you start with the
15 question -- well, why did -- NRC, why do you think this is a dominant sequence?
16 We think this is a dominant sequence. And then I get something that I get to
17 bring back and have our folks take a look at. What modifications were made to
18 that site? You know, what more can we learn about that site? So I don't know if
19 I'm answering your -- question --

20 COMMISSIONER SVINICKI: No, I --

21 ERIC LEEDS: -- Commissioner, but that's what I see comes out of
22 those discussions.

23 COMMISSIONER SVINICKI: And it's useful. I think it's very -- it's
24 very front of mind probably for many of us but certainly for me given that there
25 have been the events of Fukushima, and I think both as NRC and internationally

1 now we'll be engaging in learning the lessons there, and I think it's an interesting
2 message, core message that you've indicated that you emphasis to operators,
3 first in light of the finding about whether or not our licensees are proactive
4 enough on this risk question. But I think also fundamentally going forward, as we
5 look at something like Fukushima of a low-probability, perhaps negligible for U.S.
6 licensees of that particular initiating event, but yet high consequence; and no one
7 can avoid the fact that it was a high-consequence event. Looking at this, you
8 know, focus on understanding the greatest risk to your own operating site and
9 then doing all you can on a continuous process to reduce that, I think when you
10 overlay events of low-probability and high-consequence, I think it's another inject
11 into that dialogue. And again, this is something I think will be a very emergent
12 conversation over the months and years to come. All right. Thank you. Thank
13 you, Mr. Chairman.

14 CHAIRMAN JACZKO: Focus on the -- well, on two things. I mean,
15 one, there's been discussion on the Periodic Safety Review. But what did the
16 report actually say about our system and the Periodic Safety Review? Paul or
17 Bruce?

18 BRUCE BOGER: Well, in one respect, it did not offer a
19 recommendation or even a really strong recommendation relative to a PSR. So
20 they didn't say that we didn't meet it. I think that we finally convinced them that
21 we do an equivalent process --

22 CHAIRMAN JACZKO: -- just simple words that you just said, but
23 those were -- that was a profound outcome of this report.

24 BRUCE BOGER: Yes.

1 CHAIRMAN JACZKO: I would have assumed that everybody had
2 thought going in that that was going to be the number one recommendation, that
3 the NRC should do Periodic Safety Reviews. And I think, you know, the fact that
4 we were able to demonstrate, I think probably for the first time ever that there's
5 equivalency in what we do with Periodic Safety Reviews was probably one of the
6 most fundamental things in the report. But of course, there is no
7 recommendation or suggestion on it, so it can get lost as a finding. But the
8 absence of a finding there was in fact a profound thing.

9 BRUCE BOGER: We thought -- we were happy in that outcome.
10 We put a lot more effort -- we've had this discussion with international
11 counterparts for many years. This particular time, we went a little further. We did
12 the -- took a look at the findings out of the PSR's and tried to analyze that. As
13 Eric indicated, we did a side-by-side comparison, and I think we were able to
14 show that we do an equivalent job. So they only suggested that we do what we
15 were already going to do.

16 CHAIRMAN JACZKO: Yeah.

17 BRUCE BOGER: Which was --

18 CHAIRMAN JACZKO: Good. Well, no, I think that that's a fairly
19 significant aspect of this report, and I think your team should be really
20 congratulated on doing what I think has eluded us for -- this is not a criticism for
21 the other people who have tried, but I think we were able to really demonstrate
22 something that has taken us a long time to be able to demonstrate.

23 I wanted to turn to one of the other suggestions. Which, again, it -- well,
24 while the suggestion itself seem said rather innocuous -- innocuous or -- I don't
25 know, I don't even know of a word -- it doesn't really seem very meaningful. The

1 actual report has some very strong language that I was interested in your
2 thoughts on it, and language that, if it's really true, raises a lot of questions in my
3 mind, in all honesty. And that's on the radiological acceptance criteria and the
4 use of ALARA. And what they -- and I also recall as this was coming up, they
5 were focused on the design basis accidents and effectively our 25 rem site
6 boundary limit for source term for design basis of accidents. And the report says
7 that, "This value is considerably higher than equivalent numbers currently used in
8 many countries, even taking into account large conservatism embedded in
9 demonstration of compliance with the criterion." Why is that? I mean, are our
10 plants much better than 25 rem and we just don't talk about it? Or are all the
11 other plants which are all basically derivative of -- I mean, other than kind of
12 saying the Russian designs, are in many ways all derivative of U.S. designs,
13 ultimately. Why are they so much better on source term?

14 MARTY VIRGILIO: Chairman, it really did take us back, too, as we
15 didn't quite understand that, and it took a lot of conversation with the team to
16 understand what they were getting at. But in the end, we said we need to -- we
17 need to go out, and we need to understand: Is there is design difference, or is
18 there a methodology? Or is this about the assumptions in the methods? We
19 don't really know right now. But they were very strong in their assertions,
20 because we certainly pushed back.

21 CHAIRMAN JACZKO: Did they give numbers? I mean, did they
22 talk about the numbers --

23 MARTY VIRGILIO: They were talking on the order of -- in the
24 conversations I had on the order of five versus 25.

1 CHAIRMAN JACZKO: And if you are talking on the order of five
2 rem and then you're at a point which --

3 MARTY VIRGILIO: But I could --

4 Male Speaker: -- realistically you're just barely starting to touch
5 PAGs. I mean, if you go farther out, you would never even necessarily in that
6 situation -- and design basis accident, of course, with severe accidents may be
7 different -- but in a design basis accident you would never even and in almost by
8 design need to execute protective actions.

9 MARTY VIRGILIO: In the conversations I was in, I couldn't tell that
10 there were design differences that were driving that answer. And it just may be
11 the way they approach it analytically. But our commitment is to go and look --

12 CHAIRMAN JACZKO: Yeah.

13 MARTY VIRGILIO: -- to try to understand that. Because that's a --
14 it's one of the most significant -- out of the four policy issues that are embedded -
15 -

16 CHAIRMAN JACZKO: Yeah.

17 MARTY VIRGILIO: in this or potential policy issues, to me, that is
18 one of the most significant.

19 CHAIRMAN JACZKO: Eric, did you --

20 ERIC LEEDS: I agree.

21 CHAIRMAN JACZKO: So, as I said, I think it's somewhat startling
22 a statement that if we are that far out of -- you know, again, it's when you go from
23 25 rem down to five rem, you -- it's not -- I mean, it is a reduction of five, which is
24 good, but it's also gets you into a space in which you, you're not -- I mean, you're
25 close to the point at which you don't necessarily ever by design you need to

1 exercise the PAGs. So that is a significant difference. That's one that I'll be very
2 interested to see how that plays out because -- which is surprising to me, given
3 all the other areas in which there really weren't, because I think as Commissioner
4 Svinicki mentioned, I mean, the recommendation were in the areas of
5 management systems. And here, you have this huge discrepancy potentially in
6 source term. If there's really that difference, then there's probably at heart some
7 other things that probably we need to change and think about. If other countries
8 can get down to a five rem source term at the site boundary by design, that --
9 and it's not just an artificiality of, maybe we're including more events into our
10 design basis analysis than they are, or maybe they were excluding external
11 events; who knows. Maybe -- although I guess that I don't know if that would
12 affect the source term. But anyway, it's one I'm very interested to see how that
13 plays out.

14 The other one I wanted to touch on was the EP. I know Jon, I think
15 you in your presentation talked about the recommendation and the rule that we
16 have in front of the Commission now would address that idea, of making
17 exercises more realistic. Was that discussed at all during the mission? I know at
18 the time of the mission the rule was in a much different status than it is right now.
19 But did that issue come up, that we were working on a rule or we were even
20 looking to address those issues and have that dialogue?

21 JON HOPKINS: Yes. During the mission, that was discussed that
22 we were working on that rule, that we were trying to make EP exercises more
23 diverse, let's say, and more -- more improved, like I had previously talked about.
24 So the team recognized that we were working on that, but still they said you
25 could do better than you have, than having all these exercises -- drive to the

1 same point and it seems a lot the same way, so they recognized we were
2 working on it. And they agreed.

3 SCOTT MORRIS: May I just add, Scott Morris, with respect to
4 challenging exercises, drills, training, obviously, the Fukushima experience has
5 taught us a number of things. We're looking internally at our own exercise
6 training program, which I think, you know, not when we get to the point where we
7 can share some of that information more completely with the Commission,
8 certainly, will, but I think the point -- it is definitely pointing to that as an issue for
9 us in terms of readiness for real-world events.

10 Secondly, the -- as a federal government, there's been a fairly
11 substantial shift from the White House all the way through within the last year on
12 a national exercise program and moving towards sort of a more robust graded
13 approach over a course of a two-year period, exploring a lot of the more
14 challenging issues that ultimately culminates in a national-level exercise. And so
15 there's a number of drivers, externally and internally, that are having us take a
16 really hard look at our overall exercise programs. So I think it's going to be
17 positive. And the IRRS report just serves to accentuate that point.

18 CHAIRMAN JACZKO: Well, good. I appreciate that. And again,
19 any other questions or comments from any of my colleagues? I appreciate all
20 the work that you put in to get us to the time of the report and to the successful
21 work on the report and look forward to your continued efforts on addressing the
22 policy issues in here. And we'll see some things from you on the
23 recommendations. Thank you.

24 [Whereupon, the proceedings were concluded]