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REGULATORY INFORMATION CONFERENCE (RIC)
SPECIAL PLENARY SESSION

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TRANSCRIPT OF PROCEEDINGS

Public Meeting

APPEARANCES

Moderator:

Eric Leeds
Director, Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission

Panelists:

Michael Johnson
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Tony Pietrangelo
Senior Vice President and Chief Nuclear Officer
Nuclear Energy Institute

Dennis Koehl
President, CEO, and Chief Nuclear Officer
STP Nuclear Operating Company

1 PROCEEDINGS

2 ERIC LEEDS: Thank you all for returning so promptly. I'm
3 assuming that this microphone is on; I think I can hear the echo. Yes, definitely,
4 definitely. Please, if you can take your seats. Again, my name is Eric Leeds; I'm
5 the director of the Office for Nuclear Reactor Regulation. And this is the
6 director's session, so this is my session, and I need to thank the participants, the
7 panel here. I'm going to act as a moderator. This is your opportunity to have
8 your questions answered by our distinguished guests today. And if I can
9 introduce them, I have Michael Johnson, he's the NRC deputy executive director
10 for Reactor and Preparedness Programs; Tony Pietrangelo, who's the senior vice
11 president and chief nuclear officer for the Nuclear Energy Institute; and Dennis
12 Koehl, who's the president and CEO and chief nuclear officer for the STP
13 Nuclear Operating Company.

14 To give you all some time to get your questions written and get
15 them up here to the front so that I can read them ,we have a couple -- I have a
16 couple questions to begin the conversation and get the juices flowing and get the
17 conversation started. So, if you'd all bear with me, the first question. It's been
18 almost two years since Fukushima, what has the industry and the NRC done to
19 make U.S. nuclear power plants safer? And since this is the NRC's conference,
20 we'll allow our guests to go first. Dennis, if you'd like to take that.

21 DENNIS KOEHL: Sure, I'll take that, but I'm going to follow
22 Commissioner Apostolakis' lead a lot.

23 [laughter]

1 With that said, we were actually very well positioned, you know,
2 prior to Fukushima from the standpoint of the events of 9/11. We did a lot of
3 work from the standpoint of -- that fell out from Bravo Five Bravo, getting
4 temporary portable-type equipment on the site. So as the events of Fukushima
5 unraveled, we didn't leverage a lot of the things that we already had in process
6 from the standpoint of the temporary equipment. We evaluated our flexible
7 approach to using flexible, diverse, portable equipment. The industry quickly
8 surveyed all the utilities that were here in the United States to find out what
9 equipment actually each site had available to them on site. We put together an
10 inventory of that equipment that's maintained through providing information to the
11 Institute of Nuclear Power Operation, but each of the sites actually has a list of
12 that equipment. We definitely responded to the orders and the request for
13 information. The industry has submitted our flex response, as well as submitted
14 our response on spent fuel pool instrumentation. We put in place regional
15 response centers where we'll have two regional response centers in the United
16 States for some of the more, larger equipment, those being located in Memphis,
17 as well as in Phoenix, Arizona. INPO has upgraded their emergency response
18 center. We've actually had an opportunity to utilize that, even though it was
19 unfortunate that Sandy came through on the East Coast. We did implement and
20 INPO did man. As a matter of fact, we actually even started to proceed to send
21 some equipment. We were actually packaging equipment up, a small portable
22 diesel at Susquehanna and making it ready to be shipped and delivered to one of
23 the units in New Jersey, but then they found one that was closer so we didn't
24 have to deploy that.

1 We've done a lot of work identifying the larger equipment that we
2 need and each of the sites has actually purchased a lot of portable, flexible
3 equipment. We're deploying a strategy such that all of the connections for the
4 equipment that we're going to have in the regional response centers are going to
5 be like for like, so when the equipment arrives at the station it'll be established
6 such that it'll be plug and play right there. It'll come with the instructions on how
7 to operate it. We're keeping the instructions to as simple as we can. I think one
8 of the other advantages that the U.S. has is because of our training programs
9 and then being accredited through the Institute of Nuclear Power Operation, we
10 have the flexibility to leverage employees from just about any utility here in the
11 U.S. and deliver them to whatever the needed site is, and then basically, what
12 they need is somebody to show them where the connection is or where the
13 equipment is and then they're capable of going there, and knowing that they've
14 been through our training program, they will have all the skills. We also have all
15 the security credentials that would go with it that would allow us to get those
16 employees there.

17 ERIC LEEDS: Thank you, Dennis. Tony, is there anything you'd
18 like to add?

19 TONY PIETRANGELO: No, I think Dennis covered it adequately.

20 ERIC LEEDS: So, Mike, from the NRC's standpoint, what's the
21 NRC done to make U.S. nuclear power plants safer?

22 MICHAEL JOHNSON: Thanks, Eric. And I want to build off of what
23 Dennis has talked about in terms of the tremendous progress I think that we have
24 made both the NRC and the industry in terms of moving forward with lessons
25 learned, taking real actions, and making real improvements in the plants as a

1 result of the lessons learned from Fukushima. Certainly, starting with the
2 issuance of the orders and the request for information and the hard work that
3 really preceded that and to coming to that point, we've worked with external
4 stakeholders, key stakeholders in the industry in terms of putting together
5 guidance needed to be able to implement those orders. And as Dennis
6 described, certainly, with respect to the mitigating strategies orders, but with
7 respect to the other orders, we've -- with that guidance that had plants come
8 back, with innovative plans that had been just received, and we'll review those
9 plans going forward, something that has been a real action.

10 Of course, with respect to the requests for information and the initial
11 activity, with respect to the seismic and the flooding walk downs, again, that's an
12 area that I would point to as where both the NRC, but also the industry has made
13 tremendous progress. There's walk down, that guidance got finalized on time.
14 Licensees conducted walk downs, submitted those walk down reports on time.
15 We, the NRC, with resident inspectors, with headquarters, our folks have taken a
16 look at those walk downs. We verified, did independent verification of the results
17 of the walk downs, witnessed the walk downs, and we've witnessed actually
18 results of those walk downs being captured. In our [unintelligible] reports were
19 captured by licensees in terms of being in and under corrective actions, and I've
20 actually been to plants and I've seen corrective actions having been implemented
21 as a result of the walk downs.

22 Most of the findings, as a result of the walk downs, were not of
23 high-safety significance. They were, I would say, of fairly low-safety significance
24 finding, but they're important nonetheless because that provided our ability to
25 make sure that licensees were looking at the current licensing basis with respect

1 to being able to respond to a flooding or a seismic situation at the plant. And so
2 that, again, is a tremendous amount of progress. We're getting ready for the
3 next stage, working on the reanalysis that has to happen as a result -- in the area
4 of seismic and flooding; again, some hard work again on the part of the agency
5 working with the industry, working with other stakeholders in terms of pulling
6 together that guidance. That activity is important of course. One of the things
7 that we were able to do very recently, Eric sent out a letter to the industry, to
8 licensees, that provided really a clear expectation about where -- what should
9 happen in the instance where a reanalyze hazard comes back and it provides for,
10 for example, the level of flooding that's beyond the current licensing basis. But
11 what space are we in with respect to regulatory space? What action should
12 licensees be taking? What actions should the NRC take? That letter captured
13 that guidance. I think that is a significant milestone; it enables us to be aligned
14 internally, it enables the industry to be aligned. So, again, just pointing to
15 another area, I think where we've made tremendous progress.

16 I guess the last point I'll make is -- so, finishing the theme of
17 tremendous progress in the last few years, one of the things I want to point out
18 though is that we've still got significant work ahead of us. But we've got
19 significant work ahead of us, the reanalysis analyses will happen, we'll finish up
20 the requests for information with respect to the emergency preparedness area,
21 staffing, communications, we'll move forward on that. We've got to move forward
22 in terms of looking at the integrative plans that were submitted. Our plan is to
23 write safety evaluations by the end of November of this year, and so there's a lot
24 of work on the part of the staff in terms of looking at what then is in those
25 integrated plans, and of course, licensees have continued -- will continue to

1 implement those plans moving forward. So, there's a lot -- excuse me -- more
2 heavy lifting to go, but again, I think we've made considerable progress in the last
3 two years.

4 ERIC LEEDS: Terrific.

5 DENNIS KOEHL: Eric, if I could follow up on one item that Mike
6 talked about, and that's the standpoint of the walk downs. One of the items the
7 industry has done is it that we've identified potential vulnerabilities in these walk
8 downs. We have put in place comp measures in order to allow us the time to
9 make sure that the safety function is adequately protected while we make the
10 needed design changes moving forward at the facility.

11 MICHAEL JOHNSON: And Eric, if I can also have one other
12 second on the reanalysis. Thanks, Dennis. I'm building on Dennis' point. You
13 know one of the important things also with the reanalysis is that plants, when
14 they conduct that reanalysis, should they find the -- talk about the situation which,
15 for example, a plant could find that using current-day-methods, the analysis, the
16 hazardous is higher than the current licensing basis. Licensees are identifying,
17 will be identifying compensatory actions, interim plans, if you will, that they would
18 be taking in those instances. And I think that all goes towards enabling us to
19 have adequate assurance that as we move forward, that the plants are protected
20 as we reset, in some cases, what the current licensing basis will be. So, again,
21 just I think, a good amount of progress to date, certainly more work ahead of us
22 in that area.

23 ERIC LEEDS: Okay. Thank you both, thank you both for those
24 insights. I liked focusing on Fukushima first, what are we doing now. The
25 second question moves away from that. It's an issue that I haven't heard anyone

1 raise yet during this RIC, but it's something that looms ahead for us. And the
2 question is what are the industry and the NRC doing to prepare for a second-
3 term license renewal? Look out a little bit further. Tony, I'm looking for you, if
4 you don't mind leading it.

5 TONY PIETRANGELO: As a matter of fact, we just sponsored a
6 workshop a couple of weeks ago here in D.C. that Chairman Macfarlane
7 participated in, as well as some congressional representation, it was over two
8 days; significant effort on the part of the Electric Power Research Institute, DoE,
9 and your office of research. What we learned the first time around on license
10 renewal is you have to do your due diligence on the front end, establish the
11 technical basis for how to move forward. At least to this point, we don't see any
12 showstoppers and don't see a need for a new rulemaking with regard to another
13 term, but we haven't completed the research, but we're looking now for a pilot
14 plant to start that process. We're already within about 15 or 16 years of the first
15 60-year license expiring. So, the time is now to get this program rolling, and
16 given that our progress on new plants is going to be very deliberate, the
17 importance of another term of generation is very, very important for the existing
18 fleets, though. We're putting added emphasis on that and look forward to
19 interacting with your shop, Eric, as we move forward.

20 ERIC LEEDS: Thank you, thank you. Mike, anything you'd like to
21 add?

22 MIKE JOHNSON: Yeah, certainly I think from our perspective, our
23 preparations, I think of them as sort of as a three-pronged activity, and Tony's
24 touched on them. It really is to look at the licensing, you know, framework, to
25 make sure that that framework is going to be okay. And so, that's where we

1 start. We're also, as Tony indicated, interacting with DoE, with EPRI, with the
2 industry, with other external stakeholders of course, to make sure that we have
3 the right issues identified, that's important. We've got -- we expect that there'll be
4 a study made up -- participated in by expert panels to make sure that we focus in
5 on the right issues. We want to make sure that when we get to the right point
6 where we're ready to take on that second renewal period, if you will, that we've
7 identified and provided the technical basis and the research that needs to
8 support that technical basis development. And so, that's all important work that
9 is happening. And as Tony indicated, I think, we're learning lessons from looking
10 at the effectiveness of current aging management programs and then we'll look
11 to plow that -- those insights as we go forward.

12 DENNIS KOEHL: And Eric, if I may, just the one item -- and Mike
13 brought it up. It really is on the industry to make sure that we maintain a very
14 good aging management process and program for our equipment. And even
15 though ones that have actually already received and are in their 20-year
16 extension right now, because the real issue will be how well that we've
17 maintained that equipment and we keep the plant safe from the standpoint of
18 ensuring all that safety-related equipment can serve its function.

19 ERIC LEEDS: Thank you, thank you. All right. While we're waiting
20 for questions to come up from the audience -- that's a hint.

21 [laughter]

22 Let me go to this next question. And I think that if there's a theme
23 that I've heard from this year's RIC, I think this question embodies it and it has to
24 do with the cumulative effects of regulation and just all the activities that are
25 going on that have the regulator and the licensees just very, very engaged. So,

1 the question's a little bit long, but let me try to get through it. Both the NRC and
2 licensees are engaged in numerous diverse actions with varying impacts on
3 improving safety of nuclear power plants; these include plant-specific risk
4 reduction measures, as well as generic regulatory enhancements, such as
5 NFPA805 and GSI-191, as well as the post-Fukushima actions. It's not always
6 easy to compare the relative importance of different issues. So, how does the
7 NRC set its priorities of regulatory initiatives, and is there room in NRC's process
8 to recognize when a licensee is undertaking a voluntary safety enhancement that
9 provides greater safety benefit than some ongoing regulatory mandates? And
10 how do licensees set priorities among these different projects, and are there
11 ways that priorities can be better evaluated and more clearly communicated
12 between the licensee and the regulator in full view of the public? Mike, I'm going
13 to ask you to take the question first from the NRC.

14 MICHAEL JOHNSON: [laughs] I was afraid you were going to do
15 that. I'm going to give an answer; I hope my answer matches the questions that
16 you've asked. I want to -- thanks for the opportunity to talk about cumulative of
17 effects of regulation. And I want to just spend a little bit of time on that if I can. I
18 think it is an important topic. Of course, as a safety regulator, we focus on
19 adequate protection on public health and safety, common defense and security
20 of course. And we recognize that actions associated with that, as a start, have
21 an impact on licensees on facilities. So, we recognize that as a part of our job,
22 we have an impact on licensees.

23 Of course licensees must meet our regulatory requirements. In
24 fact, we presumptively assume that the plants are adequate, that we have
25 adequate protection in public health and safety, defense, and security based on

1 licensees' compliance with our regulatory requirements. And in fact, when a
2 licensee finds that they're not in compliance with the regulations, they're well
3 aware of what the regulations provide, what is provided for in the license and
4 tech specs, what is provided, for example, through guidance that we have like
5 guidance and Regulatory Issue Summary 2005-20. For example, with respect to
6 what they should when they find themselves in situations where they're not in
7 compliance with the requirements. And so, of course, again, actions must be
8 taken. That's another area where -- in which we impact licensees.

9 Regarding, for example, new requirements, 5109, our backfitting
10 regulation says that we will always backfit, we will always backfit licensees in the
11 instances where we find that those actions or activities are necessary for
12 adequate protection, all because of safety, common defense, and security. So,
13 again, very necessarily there is certainly a cumulative effect, or there's an effect
14 of our actions in terms of what they cause licensees to do. Now, we recognize
15 that in accomplishing our safety mission that we need to preserve the ability for
16 our staff for us, but also preserve the ability for licensees to focus on -- first on
17 activities that are highest priority. We recognize that. And it's in that context that
18 we also then recognize that it's entirely appropriate that we ought to pay attention
19 to the cumulative effects of all of our activities on licensees to preserve their
20 ability to focus on things that are most important first. In fact, 5109, the backfit
21 rule for COLs justifies substantial safety enhancements, really says that the
22 Commission will reach a determination about how actions or activities are
23 scheduled, if you will, in light of ongoing regulatory initiatives. So, the backfit rule
24 talks about making sure that as we go to add new requirements, that we, in fact,
25 consider the cumulative effect of ongoing actions and activities. So, again, very

1 appropriate for us to have this conversation. We've made, as you've heard in
2 earlier -- heard through earlier discussions, made some progress with respect to
3 cumulative effects of regulation. Of course we, you know, the staff has been
4 working for a number of years in terms of trying to get better, in terms of -- in sort
5 of starting first with rulemaking, I think, what can we do to better manage the
6 effects of new rules, if you will, in terms of considering their impact on licensees.
7 And we've done things like, for example, making sure that we reach out that we
8 continue to improve our process by which we develop our regulatory analysis;
9 the cost information that gets submitted to support that. We continue to work to
10 make sure we have draft guidance ready for the issuance at the time of the
11 proposal, final guidance ready for issuance at the time of the final rule. We work
12 really hard. We're adding an interaction -- or meaningful interaction at the final
13 rule stage where we talk with the affected licensees about schedules. So, these
14 are things, again, very much rulemaking-centric, if you will, but that will help us
15 move forward, continue to make improvements with respect to the cumulative
16 effects of regulation.

17 I want to point out though that even though, again, in the paper, the
18 decision the Commission's made supporting activities, focus, again, rulemaking -
19 - initially on rulemaking. We have continued to look beyond rulemaking and
20 some of the other activities where -- that drive licensees. Reflecting on a letter I
21 think, Tony, that you wrote, with respect to recognizing that it's not just rules --

22 TONY PIETRANGELO: Right.

23 MICHAEL JOHNSON: -- it's more than rules. And honestly,
24 candidly, even with respect to Fukushima and the actions that we took, in terms
25 of rolling those out, we considered the cumulative effects of regulation and the

1 way that we went after that. We considered, for example, the fact that we
2 needed to prioritize some of those actions. First, they were immediate, should be
3 implemented without delay. There were other actions that needed to wait; wait
4 on the availability of resources, wait on the availability of research, wait because
5 they were -- we could afford to wait on them. So, we, again -- and Fukushima
6 considered, if you will, the cumulative effects of regulation. We -- in the way that
7 we went after those items, we went after them, made it very clear we didn't want
8 to displace things that were more important. So, we -- there was, if you will, not a
9 rigorous, not a rote [spelled phonetically], but certainly, I think a fair consideration
10 of cumulative effects of regulation and the way that we did that. So, it's an
11 important -- it is important that we expand beyond where we are, with respect to
12 our initial start, and to focus on regulatory -- on rulemaking.

13 Eric, and I'm almost finished, I know I'm going long winded on this,
14 but I've been dying to talk about this, if that's okay.

15 [laughter]

16 I'm just not often long winded, so I want to just continue a little bit if
17 I can. You know, the Commission has given us some direction, Commissioner
18 Magwood and Apostolakis, I think, initiated an activity that has us -- that
19 ultimately the Commission approved, but has us going back and looking at a
20 plant-specific basis to see if there's a way to consider risk on a plant-specific
21 basis as a way to provide and a way for the licensee to look in an integrated way
22 the requirements that are on the plate for that licensee. We owe the Commission
23 a paper that provides pros and cons, and the Commission will ultimately decide,
24 but that's one way, again, to go after this. We -- harkening getting back on a
25 point that I think Commissioner Svinicki made, this is an area where we really do

1 -- really are looking for good insights, good perspectives, with respect to how we
2 can take the next step. Initially, we talked about a template, development of a
3 template. I think that that could have some promise. There's more work to do
4 and we'll have to get down into the details, if you will, if we're going to be able to
5 make, again, continued progress -- in order to make continued progress with
6 respect to cumulative effects of regulation, but I think it is an important task.

7 ERIC LEEDS: No, thank you for taking the time, Mike.

8 [laughter]

9 No, you've got to have a - --

10 TONY PIETRANGELO: I'm gratified to hear Michael go through
11 that.

12 [laughter]

13 ERIC LEEDS: Now, Tony?

14 TONY PIETRANGELO: This is our number one issue right now,
15 but let me just start by saying it's not just regulation. And we're just calling it
16 cumulative impact now, because as an industry we are perfectly capable of doing
17 it to ourselves. And by that I mean drawing attention and resources away from
18 the sites to support the industry organizational activity. Bill Borchardt, at every
19 talk I've heard him give over the last couple of years, talks about the need to
20 focus on safety and reliability first and to not distract that. That's what cumulative
21 effects is all about, okay? So, we have to be mindful every time. It's a mindset,
22 all right? It's not just a series of activities; it's a cultural change. Everybody
23 wants to do the right thing in their own individual order, there's no question about
24 that. But who's minding the store and looking at the entire holistic picture of what
25 a licensee has to deal with on a day-to-day basis, with respect to, not only what

1 the industry asks for through NEI, INPO, and EPRI, but what the NRC requires
2 us to do and expects us to do? So, we broaden our look at this. I can tell you at
3 NEI we've done a scrub of all our working groups, committees, and task forces to
4 make sure that we're not inadvertently drawing too many people away from the
5 site. We're trying to leverage technology better with webinars, conference calls,
6 et cetera. So, we're not taking people needlessly away from the site. We've got
7 some suggestions that we'll be providing you on areas that we think we can
8 manage better. But I think at the heart of that is a rigorous, transparent
9 prioritization process. You know, when you've got that much work on the table,
10 you've got to prioritize. I thought it was done very well with respect to
11 Fukushima. We got alignment, I think, very soon on what the tier one activities
12 had to be and that's what we're in the process of executing now. So, I think, you
13 know, we've got to deliver on the timetable there. We're very mindful of that, but
14 there's other things that really need to be parked later that aren't as important.
15 So, you know, that's a public, again, transparent process that we need to go
16 through. But again, as Bill reminds us at every talk, the first thing has to be how
17 are we affecting the sites and their safety, focus, and attention.

18 And I think, one last word, Commissioner Svinicki's been very
19 eloquent about this in terms of, there's only so many management attention units
20 to go around. It's not just all about resources. It's about how much a
21 management team can focus on in a given day. And that's true for both the
22 agency and for the folks that operate and run the site. So, I think we're getting
23 there, a long way to go, but we've made progress; we need to continue it.

24 ERIC LEEDS: Thank you, Tony, Dennis?

1 DENNIS KOEHL: Yeah, number one item. The inside, as Tony
2 said, we are focusing on the overall cumulative effect. One of the items that
3 we've recently done is gone out with a survey to all 26 CNOs, asking for really
4 items we need to keep as our top priority and focus. And then what are some of
5 the items that we can either stop doing because they've outlived their usefulness
6 or things that we can work to change? To the T, all 26 reported that, you know,
7 we have to maintain focus on operation and maintenance at a plant; the basic
8 fundamentals of operation and maintenance are the utmost priority. And so from
9 the leadership, that is where we have to keep our attention as we go forward.

10 But there are things that we've put into our system, specifically the
11 Corrective Action Program. We leveraged the Corrective Action Program quite a
12 bit. But it is not a standardized process across the board. And so we've got
13 opportunities to potentially help that process and make it a little less cumbersome
14 for our workforce as we go about identifying and fixing our own problems. Going
15 over -- it was about two weeks ago, I think it was -- but it was -- WANO had
16 brought together a group of CEOs, and Southern Company hosted it in
17 Birmingham. But it was really to bring them in and international CEOs to discuss,
18 you know, in light of everything that's happened at Fukushima and everything
19 else, what's the major concern that you, as a CEO, have facing when it comes to
20 safety culture and how we approach it. To the T, the top discussion
21 internationally was the cumulative effect. Everything that we are doing, are we
22 making the right-informed decisions of what items should be first? What is going
23 to bring us the biggest return from safety, you know, and constantly looking at
24 that list and reviewing it. Earlier today there was a discussion on, you know, Tier
25 2 and those activities. It is a living, breathing process. As we identify items in

1 flex and we start to see the value in flex, there's going to be things that will
2 change in Tier 2. I mean I participated on the Fukushima Steering Committee. I
3 interact with the regulator. And they are open. I realize that we took this
4 snapshot back in 2011, but as we move forward we're going to find, you know,
5 that we gain a lot of safety significance in this one area, and now this item that
6 we may have on Tier 2 or Tier 3, it's not going to return the value and it won't
7 have as high a priority as it did when the team first put it on the list.

8 MICHAEL JOHNSON: Eric, can I make one other second if I can?

9 ERIC LEEDS: Please, please.

10 MICHAEL JOHNSON: It was actually before I started talking, I
11 looked out in the audience. I saw Cathy Haney and Janet Schlueter seated
12 there, and I meant to make a note sometime -- you mentioned about cumulative
13 effects of regulations, that it's more than just reactors, it's more than just
14 reactors. So we started, of course, in this discussion with respect to reactors, but
15 we're looking more broadly, I think, in exchanges that we've had on developing
16 our ability to better manage, if you will, the cumulative effects. We certainly are
17 looking, not just in reactors, but in other programs. So...

18 TONY PIETRANGELO: I'm surprised Janet didn't throw a rock up
19 here, but...

20 [laughter]

21 ERIC LEEDS: Go ahead, Dennis.

22 DENNIS KOEHL: One other item. And I'm reflecting back on
23 Commissioner Svinicki's talk when we talk about the academic piece and the
24 practical piece of everything. You know, every site has the academic piece. We
25 have a five-year resource plan. And like Tony said, we're sometimes the worst.

1 We add that cumulative impact. We stick items in that five-year schedule that we
2 try to get done for our businesses or whatever, goes beyond the regulatory side
3 of the house. It may be enhancements, may be up rates. But I think we have to
4 also think about it from the practical side of the house, which is to sit and say,
5 you know, where are the majority of our employees' focuses? And are we
6 making sure that in a day-to-day process that they are focused on the correct
7 items and we're not, you know, adding a multitude of distractors for them?
8 Because that is one item that we are held responsible for as the managers and
9 leaders, is to, you know, facilitate those individuals in what they're concentrating
10 on through the course of the day.

11 ERIC LEEDS: Well, thank you all for your answers to this question.
12 Yeah, I serve as the moderator for this panel, but I think you all know from past
13 years, I'm not shy about giving my own opinions, and this is such an important
14 issue. I really think it is a theme for this year. I agreed very, very strongly with
15 what Tony and Dennis just said. The focus has always got to be on operational
16 safety. And if we're adding distractors for the staffs, the operators at these
17 plants, then we're doing the wrong thing.

18 It's very interesting, the questions that came up and I've gotten a
19 great pile of them and I thank you all for your questions. There's some terrific
20 questions here. Two of them relate to cumulative effects of regulation, and
21 they're very -- both of them are very specific, asking for what the NRC is doing in
22 a practical, meaningful way to address the issue. And I'm going to take a
23 moment and I want to address that. The staff had sent a Commission paper to
24 the Commission with some recommendations on how to handle cumulative
25 effects of regulation with regard to rulemaking processes, as Mike had alluded to,

1 and I understand that the staff requirements memorandum, the Commission's
2 direction to the staff, just came out yesterday. So, because I've been very
3 focused on the RIC, obviously, I haven't had a chance to read it yet, but that's
4 concrete example of something that the staff is going to have to implement going
5 forward.

6 Another example that I'd like to provide to you all, I know that we're
7 doing it in NRR, that -- I'll give you an example for one licensee that had five or
8 six major modifications going on at their site. My team met. We reviewed those
9 modifications and we performed a risk analysis of each one of those
10 modifications. And we sat down with the licensee in a public meeting and talked
11 about prioritizing those modifications based on the safety benefit to the site. And
12 the schedule that we had licensee implement for those modifications were
13 directly proportional to the safety benefit being gained by those modifications.
14 That's something that we can do now. And I think that's something that the NRR
15 staff will embrace, and so licensees that find that they have an awful lot on their
16 plate, you know, I encourage you to come in and talk to us about it. We're willing
17 to entertain that. We want to do the right thing for safety, and the bottom line is
18 every day these plants that are operated, the focus has got to be on the
19 operations of the -- the safe operation of those plants. So, thank you all, and let
20 me go on to another question, unless anybody else with another second.

21 No. All right. I'm getting to the questions that you all have sent up
22 here, so thank you for that. The question reads, "With discussion of exporting
23 U.S. small modular reactor technology, both for U.S. economic interests as well
24 as for the U.S. nuclear fleet, do you believe that the current review schedule for
25 SMR licensing documents can be approved to allow this furthering of the

1 technology for both domestic and international consumption?" And since it's
2 more directed at the NRC, I'll direct it to Mike.

3 MICHAEL JOHNSON: Sure. I'll start with that. First of all, from a
4 regulatory perspective, safety regulator perspective, our interest is going to be to
5 make sure that whatever applications we get as we work through those, that
6 those designs that we are ultimately approve our -- meet our requirements so
7 that they will be safe. We've looked at -- in terms of getting ready for this -- the
8 small modular reactor applications that will come in, taking advantage of all of the
9 lessons that we've learned through our licensing process, through our most
10 recent activities and working through Part 52 to look at large light water reactor
11 applications. And we're applying those, if you will, to the process that we're
12 using -- that we use to review small modular reactor applications. A specific
13 aspect of that has been to develop a design-specific review standard for those
14 applications as they come in. So, we've looked at -- if you think about the
15 standard review plan in its entirety, we've looked at that standard review plan,
16 and we've built a design-specific review plan for the small modular reactor
17 application. We think that that will help us be more efficient and be more
18 focused, more safety focused, if you will, in terms of how we'll do that particular
19 review. So, we are anticipating that we're going to be able to do the process that
20 we implement, review those small modular reactor applications, if you will, while
21 we are maintaining our focus on safety, ensuring that at the right -- at the back
22 end we get the product that provides that protection for public health and safety
23 on the defense and security and that we are efficient -- more efficient in terms of
24 how we execute those reviews.

1 TONY PIETRANGELO: Let me take a shot at that one. First of all,
2 SMRs have great promise. You know, the technology has evolved. We're still
3 looking at light water reactors as well as other designs, but certainly the benefits
4 have -- of SMRs I think have gotten a lot of people's attention. The key question,
5 though, is can you operate and maintain them economically as -- where it's a
6 business case for the SMRs? And if part of that hinges on how some of the
7 regulatory issues are going to cut, our role with NEI's then to try to focus on the
8 generic issues associated with SMRs, control room staffing, security, for
9 example, defense in depth, given the advantages that the technology has. So,
10 the sooner we can work through those kind of generic issues, I think we can start
11 putting some better numbers around the O&M case. And then I think that utilities
12 operating companies, both here and abroad, can make decisions on whether to
13 go forward. So, we've made a lot of progress so far, but it's a very promising
14 evolution of our industry and certainly there's going to be a role for these. If we
15 can get these down to manufacturing versus construction environment and
16 incrementally add capacity, that just has tons of advantages commercially.

17 MICHAEL JOHNSON: Yeah. I should note I spent a little bit of
18 time in a session on small modular reactors yesterday afternoon and the room
19 was packed. There was tremendous interest in that session. And we talked
20 about -- the stakeholder panelists talked about preparations that have been
21 made looking at, for example, policy issues and getting those issues up in front of
22 the Commission, working with applicants in terms of helping them understand the
23 process. So, there's been a lot of work in terms of making sure, certainly from a
24 regulatory perspective, that these will be able to move forward in a manner that is
25 appropriate. So, again, it's an area -- we'll see what happens. I understand that

1 the first applications are coming in next year. Certainly we've been linked up with
2 the Department of Energy in terms of the Department of Energy's 50/50
3 government/private cost share effort to sort of incentivize that. We've been
4 linked up with the Department of Energy because we want to make sure that
5 we're ready to move forward on the applications they -- on the projects that
6 they're supporting. So, we think we're in a good position with respect to that.
7 So, I think that the picture's rosy; of course, as with most things, there's work
8 ahead.

9 ERIC LEEDS: Thank you both, and Mike, I'm glad you mentioned -
10 - the SMRs session I understand was standing room only and also the session
11 on construction, on new construction, was standing room only, so I want to thank
12 you all for not just milling about out in the hallway and actually coming to the
13 technical sessions. Obviously they -- we've picked some good ones, so thank
14 you all for that.

15 All right. The last question was more aimed at the NRC, but I really
16 appreciate Tony, you adding your perspectives. This next one is more aimed at
17 the industry, although I think Mike and I could add our perspectives because I
18 think this is universal. The question reads: "Given economic realities, how can
19 the industry respond to Commissioner Magwood's challenge to improve utility in-
20 house engineering capability. What role does NEI have to play in this area?"

21 TONY PIETRANGELO: NEI? I'm not sure --

22 ERIC LEEDS: That's how the question reads.

23 TONY PIETRANGELO: Right. Yeah. I'm not sure NEI can do a lot
24 of in-house capability for any -- our member companies, but we do try to take on
25 generic things and leverage the entire industry technical expertise on a given

1 issue. I think that's where we add value to the process. I think Commissioner
2 Magwood's admonition was to not get complacent with regard to any of the
3 disciplines we need to operate these plants safely and reliably, both on the
4 regulatory side and on the commercial side. And I think it's good advice.

5 ERIC LEEDS: Dennis, anything?

6 DENNIS KOEHL: Yeah. I would add, you know, when you really
7 look at the facilities, you've got the equipment and then you have the people that
8 operate them. We need to continue to invest in the people that operate them. I
9 don't know about utility out there, but I can speak for mine. We face a cliff edge
10 of retirements, and if you look at this industry through the '80s, we right-sized, I
11 think that was the term we were using back then. And by doing that, our
12 demographics are skewed way to the right. So, we definitely need to replace
13 those engineers. I think we see it today when we have a new engineer that
14 doesn't understand, you know, why something is the way it is and then we're
15 spending time trying to back over engineering judgments, decisions that were
16 made, you know, by a group of people that made those decisions 20 years ago.
17 And if we don't invest, and we don't spend the time mentoring and educating our
18 newer workforce, I think they're all going to be faced with shortcomings when
19 those retirements start to happen. And so, to me, what I keep my focus on is to
20 make sure that we're keeping that pipeline there. We can look for opportunities,
21 and I know everybody has a budget, but we've got to look for opportunities where
22 we can, you know, inject new people into the process to get them educated and
23 brought up to speed, even if that means we start leveraging our vendors. I know
24 there's a lot of vendors. I saw, you know, the raising of the hands when
25 Commissioner Magwood was speaking, you know. We've got to leverage our

1 vendors as well to get some of those new individuals in so that they can start to
2 be educated and potentially move into different branches of our business.

3 MICHAEL JOHNSON: I like the fact that their questions touches on
4 the area of expertise and knowledge management. So, just if I can, just expand
5 a little bit from a regulatory perspective what we are doing. Certainly, as was
6 indicated by the commissioners, we are heavily dependent on the ability of the
7 staff to be technically capable. We need engineers, we need highly skilled
8 engineers, highly experienced engineers, and we continue to work that -- do a lot
9 of training programs or knowledge management programs, for example. It's
10 currently -- about a third of the staff has been on the staff for less than six years.
11 [unintelligible] the staff, on the staff for less than six years. So, that should tell
12 you how important it is, how -- emphasize how important it is for us as an agency
13 to make sure that we are focused on having a vigorous knowledge management
14 program. Mike Webb, I don't see him in the room right now, is a deputy
15 executive director who has -- who is sponsoring our knowledge management --
16 leading our knowledge management activities. Mike -- and with efforts of the
17 knowledge management steering committee, senior managers, really shepherd,
18 if you will, the activities of the agency and making sure that we both are able to
19 capture knowledge, translate that knowledge, transfer that knowledge to
20 individuals going forward. We've got tools and techniques in place to capture
21 that knowledge, make it available to the staff. We've got a knowledge
22 management center. We've got communities of practice where staff can share
23 with staff insights, again, all focused on making sure that you get folks on board,
24 technically capable folks on board, we transfer knowledge to them so we can

1 continue to meet the challenges so that we can deal with challenges as we go
2 forward. So, it's just an important, really valuable area for us to work on.

3 ERIC LEEDS: Thank you. Thanks all. One thing that I'll add that
4 the NRC also does that I think has worked well for us in the recent past, is that
5 we're focused on bringing two types of folks in. Certainly we focus on people
6 with experience, people that have been out in industry or in related industries that
7 can bring a wealth of knowledge to us. We also find it very valuable to bring
8 people in directly from college. And we've found that we've been getting very,
9 very high quality folks in, you know, completing their bachelors and masters and
10 even Ph.Ds. and then putting them through our training programs and our
11 knowledge management type programs. The enthusiasm, the mix that we get on
12 our staff I think just makes the staff that much stronger, having the experience
13 and the young folks coming in. I know that the industry is doing some of the
14 same.

15 We move on to the next question, and this one is aimed more at the
16 NRC, but I'm going to ask Tony and Dennis to give their perspectives as the
17 recipients of regulation. The question is, "What can countries that are building
18 large numbers of nuclear power plants learn from the NRC about safety and
19 regulation in the United States?" So, Mike, I'm going to ask you to take a first
20 crack at that.

21 MICHAEL JOHNSON: You didn't want to take a first crack at one,
22 Eric? Just kidding.

23 ERIC LEEDS: If you'd like.

24 MICHAEL JOHNSON: I'm just kidding. That's an interesting -- it's
25 interesting in the way that that question is posed because actually as I view it, we

1 learn -- we give as good as we get in terms of our interactions with other
2 international regulators, recognizing that in areas like construction oversight, for
3 example, I think it was Commissioner Magwood who talked about the hiatus in
4 terms of construction in this country and the fact we are learning. We learn from
5 international regulators with respect to their experiences and how they oversee
6 those. I'm looking at John Persapnio [spelled phonetically] in the front row and
7 thinking about the French in terms of what we've been able to learn through just
8 those interactions, for example. So, again, we do get -- value tremendously our
9 interactions with international stakeholders. We also, though, I think are
10 tremendously proud of what we've been able to accomplish in terms of the way
11 we approach regulation. We think it's tremendously important. I think Bill, in his
12 opening, talked about the principles about regulation. We think it's tremendously
13 important that the regulator -- that we have as principles that we live those
14 principles, that would be independent, that would be open, transparent, that we
15 interact with external stakeholders.

16 We think, actually, that there is a role for the regulator to interact
17 with the industry in terms of the -- be independent -- but we also value that
18 interaction. And we think, actually, in terms of approaching regulation that you
19 end up with better regulation when you make sure that the regulated entity
20 understands the intent of the requirement, factors in ways then to developing
21 those requirements, and so on and so forth. So, those are things that I think that
22 we do really well. I think this talk -- the question that we answered previously
23 about expertise, we value -- NRC values, again, indigenous, technical expertise,
24 also expertise on the staff. We think it's important that we not have to go outside

1 of our organization to get that expertise. So, I think that's something that I would
2 point to.

3 And then, you know, I would -- I think -- I would point to the
4 vigorous role of oversight in our process, the vigorous role of oversight, as it's
5 implemented so well by our regional offices, for example, and our processes
6 across the facilities. I think that's one of the things that is a strength -- a
7 noteworthy strength of the way in which we, as a regulator, approach regulation
8 in our country, so...

9 ERIC LEEDS: Thank you.

10 TONY PIETRANGELO: I just got back from a trip to Japan a
11 couple weeks ago, and they're going through kind of an upheaval for obvious
12 reasons with a new regulator, a new regulatory -- proposed regulatory
13 framework. They separated out the regulation from their advocacy just like we
14 did in here in 1974. So, all I could do was tell them what we do here and why.
15 And Michael's covered some of it. But on the industry side, and it took us a long
16 time to learn this ourselves, is that it's not good enough to just complain and
17 whine about stuff. All right? If you don't like what the regulator's doing, don't just
18 complain, put a constructive alternative on the table. I can cite numerous
19 examples from the ROP and even construction ROP to even some of the things
20 on Fukushima. So, it's not enough just to say, "I don't like this." You got to get in
21 there and -- and that's what makes a regulator strong is the ability to take view
22 points and perspectives from all the different groups in a transparent way and
23 make a fully informed decision going forward. And so, I think that's worked for
24 us. We've learned our lesson the hard way sometimes. But it does work overall,
25 and that's the promise going forward is to work through these issues. We're in

1 the middle of a huge implementation effort on the Fukushima items that was
2 added on top of the plate when cumulative impact was there before Fukushima.
3 So, that's what we're going through now. But we're working through it,
4 sometimes painfully, but we're getting there. And in the transparent, open
5 process where, again, we don't just complaint about things, we're trying to put a
6 constructive alternative on the table for some of these activities.

7 ERIC LEEDS: Thank you, Tony. I really appreciate that. Dennis,
8 did you --

9 DENNIS KOEHL: Yeah, I just view it as a little bit of a -- it's a
10 different form of operating experience. I mean, we always think operating
11 experience has to be from what's happening at the physical utility or at the end
12 device. In here it's a different type of operating experience that's from the
13 regulatory side of the house. What are the lessons learned? What are some of
14 the things that have occurred -- I mean, we do have new construction going on
15 here and there are items that are going to come up through that new construction
16 and we can learn from what's going on overseas as well as they can learn from
17 here. And one of the items that -- from INPO and WANO, we have done well is
18 the ability to share all that operating experience and to get it out there. But it
19 does no good if we get it out there if we don't use it ourselves or take advantage
20 of it.

21 ERIC LEEDS: Thank you. Thank you all for this. Mike, you
22 wanted to add something else.

23 MICHAEL JOHNSON: I did. The other thing I should have pointed
24 out -- you hear me -- the other thing I should have pointed out is I pointed to the
25 role in the industry. I should also have pointed to the role of other stakeholders.

1 I remember as we were talking, as Tony was talking, I was remembering back on
2 the days before the ROP actually and the vigorous input that we had from UCS,
3 for example, what they'd locked on in terms of insights regarding that prior
4 process. And we got to a point as an agency where we found, for example,
5 where we were in a position with respect to our beliefs about how that oversight
6 process was working, and the industry and UCS and other external stakeholders
7 were aligned that that process needed to change. That was good insight for us.
8 I think one of the things that we value as a regulator that has helped
9 tremendously, contributed to our ability I think to move forward, has been the act
10 of engagement actively -- us actively engaging other external stakeholders and
11 including trying to bring them into our regulatory process -- provide input to our
12 regulatory process as we move forward. So, I think that's another important
13 ingredient.

14 ERIC LEEDS: Thank you all. This is another subject I feel very
15 strongly about, so I want to add my opinions to this. I agree with what all the
16 panel has said. And I'm interpreting the question being directed very U.S.-
17 centric. I agreed with what Mike had to say; there's things that very valuable out
18 in the international community that you can learn from all different regulators, and
19 we learn from all regulators. There's a number of very good international
20 standards for how a regulator should be set up. Certainly the IEA principle is a
21 good regulation. And I know, that the NEA, the Nuclear Energy Agency, is
22 currently working on the green booklet on the effective habits of good regulators.
23 It's something that's just gotten underway. But if you look at three things
24 distinctly American that I would advise a country that's starting out on a new
25 nuclear program, I'm going to mention three items. Mike mentioned the one: in-

1 house technical expertise, I think that's just paramount. You have to be -- have
2 that technical credibility to be a good regulator. It's just so important.

3 A second attribute that I find at the NRC that I think is very
4 important and I'd advise any foreign country to try to adopt and it's very difficult,
5 is you've got to instill a safety culture in your staff that values diverse opinions.
6 You've got to allow the staff and encourage the staff to raise diverse technical
7 opinions. It makes the process take longer. It makes it cumbersome. It can be
8 very painful. But that's how you get to the best technical answers, by hearing all
9 the different diverse opinions on specific technical issues.

10 And the third, and I think that this is very distinctly American as far
11 as I understand the international community of regulators, that I think is very
12 valuable, is the NRC's inspection program. I'm especially proud of the inspection
13 program. I'm especially proud of our regions and how they implement that
14 inspection program; and our resident inspectors, the folks that live and work
15 every day at each one of the plants. I think when the local public understands
16 that we're there at the plants every day, that we have our own people there
17 watching every day, I think it provides a lot of credibility. It's also -- I don't know
18 how to regulate without it. I think our resident inspector staff is just that valuable.

19 So, I'll get off my soapbox on my three, and we'll move on to
20 another question. This question's directed at the NRC, but since Mike answered
21 the first one -- the last one first, I'm going to direct this at our -- at NEI and the
22 industry to answer first, Tony and Dennis. "With respect to NFPA805 -- we have
23 about 50 plants that are in the queue for NFPA805. Can you talk to us a little bit
24 about what might be thwarting adoption of NFPA805?" And Tony, in light of what

1 you said before, what can the industry do to help even out the process, make the
2 process better, how can we get more folks through the NFPA805 process?

3 TONY PIETRANGELO: My understanding is that the -- part of the
4 dilemma here is how we're using PRA for fire. It's a new frontier in that spatial
5 interactions associated with areas and [unintelligible] sources, et cetera. Some
6 of the early efforts that both the industry through EPRI and the Office of
7 Research participated in -- I forget the NUREG number, 5750, I believe it is -- I
8 think was a good effort. But it wasn't benchmarked against anything. It wasn't
9 piloted by anybody. And we're learning as we go with this now, but you see, and
10 this is I think also going to be instructive when we look at, you know, seismic
11 PRAs and other areas that when you take a lot of conservatism in a PRA, you're
12 going to get a pretty drastic answer. So, let's say the initial applications of 5750,
13 if you believe what came out of that, was we should have had three core melts
14 and 50 significant fires over the first, you know, 30 years of operation. Obviously
15 that didn't happen. So, there's some benchmarking that needs to be done and I
16 think we're still in an area where -- the peer reviews I think have been questioned
17 to some extent where there are still additional questions by the staff on the
18 technical adequacy of the models being used, that is slowing progress down.
19 Now, they may be very good questions, okay. But the whole effort that I
20 remember was you have to put your faith in the peer review process such that
21 that model adequacy is not the issue. It's the application you're looking at in the
22 review is what's important. They're still hung up in model adequacy issues and
23 that's what's slowing it down. So, I think it offers still great promise. I think we're
24 still learning from it after the first two pilots. We need to do another lessons
25 learned, I think, on this to make sure that we're still on track. But, again, I think

1 with probabilistic risk assessment, it's an area you learn with time. I just
2 remember from the Level 1 PRAs how long it took us to really understand what
3 we had in that, we had a lot of data on, and operating experience to draw on.
4 So, I think the same thing will happen with fire over time. It's just a slow process.

5 DENNIS KOEHL: I would just like the second what Tony said, is
6 we do have to keep confidence in the peer review process, but the other item,
7 because not every person is the perfect PRA analyst, we need to make sure that
8 we keep the right resources working on it and the right resources assigned to the
9 review, because the more we would change either -- whether it's at the utilities
10 side or on the regulator side, that consistency of that review can help us get them
11 through the process because, you know, go on risk-informed and having that
12 analysis, it takes a little bit of expertise, definitely, to fully understand all those
13 pieces of it. So, I think from the regulatory side, as much as we can keep those
14 reviews being done by a, you know, consistent group that has that understanding
15 and then continue to leverage the peer reviews, I think we can expedite the
16 process.

17 MICHAEL JOHNSON: Well, I just -- thanks for the opportunity,
18 Eric. I, again, I appreciate the premise of the question and I don't have -- you
19 probably have better insights about how it's going. I would just say I think the
20 spirit of the comments that Tony and Dennis made are dead on in terms of an
21 NFPA805 is so important -- is important because it provides a performance-
22 based risk informed approach for us to be able to do what 5048(b) provides in
23 terms of a deterministic approach to making sure that plants are safe in the event
24 of fires. And, of course, the elegant part of 5048 is -- biggest [unintelligible] of
25 5048(b) didn't have the benefit of PRA, didn't have the benefit of some of the

1 more modern, more recent fire modeling insights that we had. And so, it is worth
2 us making sure that whatever the impediments are, if you will, whatever we need
3 to address with respect to issues, that we work through those issues. And, of
4 course, there at the end you want to add to that based on your --

5 ERIC LEEDS: This is another one I'm not going to sit back on. I
6 think this is so important. I think NFPA 805, there are so many different safety
7 benefits that licensees can gain from implementation of NFPA 805, that I think it's
8 very important to address, and I agree with you 100 percent, Tony. I think we've
9 got to take -- continue to take the learnings that we're getting from these current
10 plants that are going through and incorporate them into our process, make the
11 process more effective, more efficient. I know I was speaking with the licensee
12 for Cook Plant. Cook should be finishing up their NFPA 805 in the next four or
13 five months. We should be getting out a safety evaluation on that. And I told the
14 licensee I want to meet with them and get constructive feedback once the
15 process is over. We need to get that constructive feedback to the staff to see
16 how we can improve the process going forward. I know Joe Giitter's holding
17 monthly calls with all the site management for everyone who's got NFPA805
18 submittals in-house right now, providing what we're learning, what the staff is
19 learning. I'm very sensitive to the comments on PRA and how we're using our
20 resources on PRA and how we can be more efficient in doing that. So I think,
21 Dennis, you make a very good, strong point there. For the members of the public
22 that are here, I just want to emphasis NFPA805 is not a paper work exercise.
23 The modifications that plants are making at the site is costly them millions and
24 millions of dollars; and what I see from a regulator's standpoint is that it's
25 improving the site, it's improving safety, getting rid of operator manual actions,

1 putting in these modifications are significant improvement to plant safety, and I
2 want to keep going down this path. So, we're going to do everything we can at
3 the NRC to make sure that we make it an efficient process and improve it as we
4 go forward.

5 The next question, and I'm going to direct this more to the industry,
6 although I'm sure Mike and I have an opinion, and I think this is an industry
7 initiative in response to one of the orders from the NRC involving Fukushima for
8 mitigating strategies. It involves the flex initiative that the industry is in the
9 process of implementing. And it has to do with -- the question's very specific, but
10 I'm going to ask the panelists to answer it on a more general basis because I
11 think you can take this question a lot of places. The question has to do -- it very
12 specifically asks, "Is flex equipment that's stored off-site operated on a regular
13 basis? Can we be sure that it will be operable as intended when called upon?"
14 And I think you can take that question and talk about equipment on-site as well
15 as off-site and all the things that licensees are doing to implement the flex
16 initiative.

17 DENNIS KOEHL: I'll start with that one. From the standpoint of the
18 equipment, yes, it's flexible, it's diverse, it's portable; but at the same token, we
19 are putting in place preventative maintenance programs for that equipment. Now
20 some of that equipment is going to be preventative maintenance programs and
21 such that, yep, it's going to be periodically run and we're going to ensure that it
22 operates. There's other pieces of equipment that the answer may be, you know,
23 we replace it on a set frequency because the cost of doing the maintenance, it's
24 actually more economic to just purchase a new, you know, a new component
25 after a set shelf life. But the intention is that all that equipment will be able to

1 deliver the function that we're asking it to do at the time and at the need. And
2 that's both on-site equipment that will be stored throughout the plant, as well as
3 the equipment that's actually going to be at the regional response center. Part of
4 our contract with the regional response center is to physically perform the
5 maintenance on that equipment and to actually, as part of our response there,
6 we're also going to demonstrate that we have the capability to deliver that
7 equipment, and once that equipment is delivered to a site it can be attached and
8 started and run to deliver its function.

9 TONY PIETRANGELO: I'm going to take this in maybe a little
10 different area than Dennis did. One of the questions one of the commissioners
11 got earlier this morning was about when we did the walk downs of the B5B
12 equipment after Fukushima, we found some deficiencies. And there wasn't any
13 programmatic requirement associated with the B5B order for the testing and
14 maintenance of that stuff. So that was a shortcoming, I think, on our part as well
15 as maybe the regulator's part. But where I want to take this is recommendation
16 one, because I think this is what the task force found primarily when they looked
17 at efforts in the past to treat beyond design basis things, they found inconsistent
18 treatment. And so, that wasn't an opinion. That was a fact. Okay? And going
19 forward, I think one of the benefits we'll get out of recommendation one is we
20 need to define what the treatment should be for beyond-design basis, and do we
21 value regulatory stability and predictability going forward. So if we do not define
22 what this treatment is, we'll all fall back on what we've been doing for the last 35
23 or 40 years. We'll treat it just like we treat all the safety-related design basis
24 stuff. And I would argue that that's not the right safety approach for this
25 equipment. All right? You have to be able to allot your resources and attention

1 commensurate with the risk significance. These are much more low probability
2 events. We should not pay the same level of attention to these things. And
3 we're not taking a qualification approach to the purchase of this equipment. It's
4 the redundancy and diversity of equipment and where we stage it is where we're
5 going to get the benefits. So, unless we'll define what this area is, I think we're
6 always going to be in this quandary about what to apply, what kind of
7 programmatic treatments. I trust the rulemakings going forward will have a
8 programmatic requirement on whatever we implement per the order. We
9 thoroughly expect that. We've already laid out some requirements for ourselves
10 and our own guidance on how to treat this stuff. But I think that's one of the
11 lessons learned from the early efforts after Fukushima is that this is an area
12 where I think we can add some real benefit.

13 MICHAEL JOHNSON: Yeah, I think -- thanks Tony. I think the
14 points that you made cover the territory with respect to how we ought to
15 approach this. Certainly from a regulatory perspective, we do with respect that
16 mitigating strategies order requiring that licensees develop, implement, and
17 maintain capabilities for the plant to restore, maintain our ability to core-to-core
18 containment, spent fuel pool in the event of a beyond-design basis external
19 event. It sounds like I read this recently, doesn't it? Read it all the time. It's an
20 important order. And that maintaining is a part of it, and we'll provide provisions
21 to make that happen. The rulemaking and looking to do that rule will codify that,
22 make it generically applicable going forward. Tony's point is dead on about
23 making sure that at the end that licensees have current standards about what we
24 think in terms of maintenance of those capabilities and that as a regulator we go
25 back and we continually periodically at the appropriate frequency, appropriate

1 amount of effort, oversee licensees' implementation of that -- those requirements.
2 So, again, we've got the order in place, we've got plans, we've got a rulemaking
3 that will come capturing those aspects and we'll build into the oversight process
4 for implementation assurance that that capability is being maintained. I guess I'll
5 wait and talk about recommendation one to see if there's a question on
6 recommendation one. Otherwise I'll remain silent.

7 TONY PIETRANGELO: Right on.

8 [laughter]

9 ERIC LEEDS: None here yet, huh? Not on recommendation one.

10 TONY PIETRANGELO: It was a clue.

11 ERIC LEEDS: Thank you all. Let me move on to another topic.

12 This is emergency preparedness. The question reads, "In case of a nuclear-
13 related emergency, how does the NRC regulate the complex interface between
14 on and off-site emergency response and how does the industry manage to
15 improve this interface?"

16 Any volunteers?

17 TONY PIETRANGELO: Want to go first? I think Michael should go
18 first on this one.

19 [laughter]

20 MICHAEL JOHNSON: Well, I'll start with an answer and then, Eric,
21 if you want to weigh in. So, I'm focusing on the interface. I mean, I think it's
22 clear the responsibilities for emergency preparedness are clear in terms of the
23 role of the NRC making an overall call with respect to the adequacy of programs
24 and their implementation. Of course, we focus on-site, we work very closely with
25 FEMA. FEMA understands they're responsible for making sure that off-site plans

1 exist, what state and local decision-makers and their first plans can be
2 implemented. There's a process, well understood in terms of how that gets
3 exercised, how, in fact, the state and locals play in that process. And so I think
4 actually those interactions work very well from all indications. We've had a
5 number of instances -- we routinely through, for example, weather-related
6 events, hurricanes that we've had recently, including as recently as Hurricane --
7 Superstorm Sandy, however we refer to that, that gave us an opportunity, I think,
8 to exercise that capability, our capability, our interfaces with FEMA, our
9 interfaces with states and locals. And from all accounts I think that worked
10 particularly well.

11 So I guess the bottom line is I believe these interfaces are working
12 well. We continue to look for lessons learned. We get an after action report as a
13 result of Superstorm Sandy to see if there were things that we could do in terms
14 of how we approached that activity we've identified. Even though there were
15 successes, there are areas that we can build on. So it's an area that is deserving
16 of attention that gets our attention. I think we're making significant progress.

17 DENNIS KOEHL: I think from the industry's aspect of, you know,
18 when we do run our exercises and we do participate in different drills, that that
19 interface with the local community, state, and local officials, it can't stop just
20 there. It's, you know, yeah it's -- we have that exercise to deal with. But from
21 beyond that I think the more interaction we have with state and locals, what the
22 capabilities are, making sure that they stay educated to some of the things and
23 changes that we're making, some of the items that are coming out of Fukushima
24 and the things that we're doing in the changes. If we don't take the time to
25 educate them or to work with FEMA, I think the regional response centers, we

1 spend time talking here in Washington to FEMA because of transportation of that
2 equipment. We may get to a point that, yeah, we've got a private means to get it
3 to the place, but now we've got regulations that are in place that say they can't
4 land at this airport.

5 So, you know, we had to interact with FEMA to make sure that we
6 understood what the protocol was going to be so that equipment could be
7 accessed and made available at the different facilities. So it's a constant
8 dialogue that needs to go on and I think with every opportunity we make
9 improvements.

10 ERIC LEEDS: Yeah.

11 TONY PIETRANGELO: My concern on emergency preparedness
12 is that we may be pushing too much change too fast. Prior to Fukushima, we're
13 already implementing -- in the process of implementing a revised EP rule that is
14 part of the Tier 1 requirements. We've got staffing and communication
15 requirements associated with EP. And there was others -- and the rest of the
16 tiers on -- you know, we talked [unintelligible] and dose assessment, et cetera.
17 Hostile action based drills is another part of the interface with the security
18 element. And now, I mean I was in a session yesterday looking at changing the
19 16 planning standards on EP. How much -- this is -- you want to talk cumulative
20 impact, let's just focus on EP for a second. That's a lot of change in a short
21 period of time that I think we've got to pay particular attention to. There has to be
22 time to be able to hone and execute your strategies and get better at those and
23 not push so much change that you can't, you know, do that adequately.

24 So I think that's an area we got to pay particular attention to. We're
25 lucky to have very good management here at the NRC with Mark and Jim and

1 their openness to have a dialogue with our working group and task force. And
2 kudos to my own staff at NEI and Sue and company, both from Tom Joyce, our
3 working group chairman who has kind of shouldered the effort for us and brought
4 that back to the CNOs on the inside SAIC and stressed the importance of EP, the
5 ownership of EP, and the need to support your EP folks. But I think we need a
6 little help on this one and I'm assuming the state and locals do too. Their
7 budgets are squeezed. There's only so much change that they can handle in a
8 given amount of time. So this is one where I would advise, you know,
9 management, attention, and sensitivity to, you know, how fast we implement
10 change here.

11 ERIC LEEDS: Thank you all. I appreciate your responses to the
12 question. It's interesting because the question on emergency preparedness
13 came from one of our international visitors, and I just want to reach out to the
14 international community and the person who wrote this and make sure that they
15 know that here in the United States we require all of our licensees to practice
16 emergency preparedness every year. Every second year the NRC practices
17 along with the state and local responders; so it's a constant practicing. We've
18 been doing it since Three Mile Island. I think the rule was actually promulgated
19 in 1980. So if you'd like more information on how the NRC and how the United
20 States practices emergency preparedness, I urge you to come and contact us
21 here at the NRC so that we can -- and we'll spend some time with you and
22 explain to you what we do and why we do it. We've had a lot of learnings over
23 the past 30 years --

24 TONY PIETRANGELO: Yeah.

1 ERIC LEEDS: -- and I think that we're pretty far advanced. Not
2 that we don't have more learning from Fukushima.

3 MICHAEL JOHNSON: Yeah, I do want to just pick up on a thought
4 that Tony made, which I think is a good point regarding the focus of Fukushima,
5 some of those actions that deal with EP and, you know, there's really a whole
6 suite of recommendations related to EP, and we have been making, again, as
7 [unintelligible], but also with full participation on the part of the industry. Progress
8 in terms of tiering, if you will, those items; making sure that we move forward first
9 on the items that need to be moved, that we need to move for the first time. And
10 we've done I think, to date, a good job in terms of looking to see where are the
11 things that we're already doing as it relates to other actions, for example. Where
12 are there other things that we don't need to do much on because the industry's
13 already doing something considerable on it? And we've had some successes in
14 the EP area. And so I'll take Tony's point regarding the need to make sure that
15 we watch this area carefully. I think we are, but it's always such an important
16 area, of course, is one that we need to focus on -- continue to focus on going
17 forward.

18 MALE SPEAKER: Well thank you. Since we've got the spotlight
19 on the Office of Nuclear Security and Incident Response, I think I'll keep it there
20 with this next question.

21 [laughter]

22 Please provide a perspective on progress to date with respect to
23 cyber security initiatives and the challenges moving forward.

24 [laughter]

1 DENNIS KOEHL: Well I'll start out. You know, we've made a lot of
2 progress with the items that we had to complete last year. But I think where the
3 real challenge is going to come now is with the physical implementation and
4 making sure the devices that we have today and if, you know, if I think it was
5 Commissioner Magwood this morning, you know, he's trying to go here and can't
6 because of cyber security. I think where we're going to run into the biggest
7 challenge is as we implement the items that we put in place last year and some
8 of the programs, they're going to be slow, and we're going to find that certain
9 items we're going to have to eliminate in the future. Whether that be, you know,
10 definitely as we go into some drives and those type items that they're going to go
11 away, that we're not going to really end up being -- utilizing those. But at the
12 same token I think we've got to keep revisiting what's the real threat and can we
13 look for means to minimize the impact that equipment so that we don't create a
14 new larger overall impact. Because now we'll be focusing on every electronic
15 device that's out there, and that can become in itself a cumulative impact to us
16 and a distractor from the standpoint of, is it really interfacing with the equipment
17 or the plant?

18 MICHAEL JOHNSON: Just --

19 TONY PIETRANGELO: Go ahead.

20 MICHAEL JOHNSON: Thanks, Tony. So with respect to cyber, I
21 just wanted to make the point that I think this is an area, like many areas, that
22 we're actually making tremendous progress on, with respect to 7354, 2009, and
23 that rule that provides for protection of computer and communication systems in
24 that works from cyber threats. I think that rule was an important milestone and,
25 in fact, I think that puts us out in front of many other sectors in terms of our

1 approach to cyber, this industry. That will, of course, require cyber plans,
2 licensee submitted cyber plans. We've reviewed those cyber plans. The
3 industry -- milestones, milestones one through seven. Milestone seven being
4 accomplished at the end of last year. The industry did a lot of heavy lifting in
5 getting through the implementing, if you will, those milestones, and I think that
6 goes a long ways towards providing that high assurance that that rule is intended
7 to provide that those systems' critical visual assets, refer to them, are capable to
8 withstand a cyber threat.

9 So there's been a lot of work done to date. Of course we're off
10 now, out inspecting. We've had a number of inspections that has been
11 conducted. Most of those inspections -- there's four inspections, the one came
12 back clear. There are -- were some issues with the other three, but in general, I
13 think while we would point to some issues, maybe some programmatic areas in
14 those inspections where we, again, need to do additional work in making sure all
15 of the expectations are clear, in general I think our perspective is that we've
16 made tremendous progress and we're on the right track.

17 We are reliant on -- have put in place -- are using the security
18 frequently asked questions process as a way to be able to make sure that we
19 flesh out -- raise up and flesh out, if you will, issues where there are differences,
20 lack of understanding or lack of alignment with inspecting perspectives, and
21 those are things that will continue. But again, I think we're making good
22 progress. Of course you would have had to been asleep I guess and not pick up
23 on the fact that the president issued an executive order on cyber. That executive
24 order provides for the establishment of a cyber framework. We haven't seen that
25 framework. It also will provide for us and compare ourselves against that

1 framework. We think that given the work that the industry's already done in
2 response to the rulemaking talked about and the plans and their implementation,
3 I think we'll be -- we think we're in a very good position moving forward with
4 respect to cyber.

5 TONY PIETRANGELO: I'm where Michael's at on this. 2012 was
6 a busy year for cyber in terms of getting through the milestones. There's been
7 some interpretational issues with the inspection. Just got to keep the dialogue
8 going on this and work through this.

9 Cyber threat is real. This is not Y2K all over again, so we take it
10 seriously. We know there's bad guys out there doing stuff. I mean we see it in
11 the news every day. So we have to take it seriously. I think, you know, we're --
12 we got through it last year. We're into implementation and inspection now. Just
13 have to make sure the communication's good on this and we're all aligned on the
14 right things.

15 ERIC LEEDS: Thank you. Thank you. Go to a very -- I think this is
16 a very interesting question. Not that they haven't all been very interesting but --

17 [laughter]

18 -- I don't usually get questions like this, or see questions like this.
19 And I think that this is directly related to what the -- we saw the accident over at
20 Fukushima. The question's to all the panelists. I would like to hear each
21 speaker's perspective on how to interpret NRC's mission on protection of the
22 environment, specifically with regard to land contamination. So the issue has to
23 do with land contamination, and it's directed at the NRC, but of course, licensees
24 have quite a role to play with what they do every day at their plants to ensure that

1 we don't have inadvertent releases and that releases are monitored and
2 measured and reported.

3 So if you'd like, Dennis, I'll ask you to take the --

4 DENNIS KOEHL: Yeah, I'll start with that. From the standpoint of
5 emergency procedures, right into our severe accident mitigating guidelines, into
6 how we train and how we actually go about our day-to-day business, I believe we
7 keep and really do try to protect that one item and take it very seriously, the
8 health and safety of the public, and that includes land contamination. We do
9 rigorously review our procedures and processes. We had quite a bit of dialogue
10 when the issue came up on filtered vents from the standpoint of how we looked
11 at all the different filtering strategies that we've incorporated here in the United
12 States. The making use of our water inventory in scrubbing the contaminants out
13 before we would actually make releases. When we make releases, why we
14 would do that. So I think from the industry standpoint we do take it very seriously
15 and we look for the different opportunities and we look for the new better
16 technology that may be able to be deployed. That not always being a specific
17 component but a reevaluation of our severe accident mitigating guidelines and
18 how we as a team, and I do mean it's a team at the site, actually works their way
19 through a severe accident. And works to minimize what would be released to the
20 environment.

21 ERIC LEEDS: Thank you, Dennis.

22 TONY PIETRANGELO: I'll go back to ground water protection, of
23 what we do for tritium. We weren't required to do what we're doing. We took an
24 industry initiative to do this. And it wasn't cheap, and it's ongoing. So we take
25 land contamination very seriously from the minute that really doesn't have any

1 safety significance. But I think everyone concluded was undermining public
2 confidence in what we do on a day-to-day basis. I think there's not a good
3 understanding of all the different measures we take per the existing requirements
4 on sampling around the site, et cetera, to assure that we're protecting the
5 environment.

6 In an accident situation we've always said that prevention's the best
7 medicine for that, and a large portion of our actions are slated for prevention. But
8 we're also seeing areas where we can significantly enhance our capabilities with
9 severe accident management by what we're doing with the new equipment on
10 prevention. So I think that's kind of the next area we see going forward. I -- we
11 await the Commission's decision obviously on the filter issue, but I expect we'll --
12 our dialogue is only just beginning on this.

13 MICHAEL JOHNSON: Yeah, actually I don't know that I have
14 much to add beyond what Dennis and Tony had mentioned. And Commissioner
15 Ostendorff's comments, I think, and in terms of taking up the economic
16 consequences issue that we raised, that the Commission's deciding on, the
17 Commission will weigh in with respect to how they want us to move forward with
18 respect to that issue. We do focus, of course, on protection of public health and
19 safety. We do, in terms of protecting the environment, protect people. And we
20 are mindful enough of regulatory processes about the effects of land
21 contamination we consider in our regulatory analysis, and sort of repeating all of
22 the points that we raise for the Commission on the economic consequences
23 product that we sent to them. The Commission will ultimately have to decide
24 whether they want us to in a more formal way consider land contamination, if you

1 will, and then I've got a decision in front of them with respect to field events. So
2 we'll wait to see, I think, where they come out with respect to those issues.

3 ERIC LEEDS: All right, thank you. You all have been sitting
4 through very, very well. I really want to thank you all for the wonderful questions.
5 I'm going to give our panel one last question, and I'll remind them that they stand
6 between you and lunch.

7 [laughter]

8 The last question has to do with public education and outreach, and
9 if -- I'll leave this question as open as possible. Let the panelists take it wherever
10 they'd like. But with regard to public education and outreach for -- with regard to
11 nuclear matters, if they had their way, what types of issues, what types of
12 outreaches would you all practice or recommend going forward with regard to
13 public education on nuclear matters?

14 DENNIS KOEHL: Well I'll start if you want. You know, shortly after
15 9/11 for utilities that had information centers or visitor centers where you can
16 come in we actually closed down. If you can remember back in the days we
17 used to do a lot from the standpoint of doing tours at nuclear facilities. I think we
18 are going past the original reaction to 9/11, and we've now gone back to being
19 more open and also working and reaching out with the communities to educate
20 them.

21 My belief is the more that we can educate the community as well as
22 the individuals around the plants or even other individuals that may live even
23 further away, the better off we are. Because I think sometimes it's the fear of the
24 unknown that really gets the community to have questions or bring questions. So
25 I think the more that we can be open, bring them in, let them see everything

1 that's going on definitely from the standpoint of the security of the facility --
2 anybody that's gone and done a tour of a nuclear plant today will find that it's a
3 lot different than it was 20 years ago, and walking in from the standpoint of how
4 secure it is and those measures. And I think from the defense in depth, it also
5 gives us the opportunity to educate the community on the amount of defense in
6 depth that we have. So every bit of our business, whether it be on the electrical
7 side, whether it be on the water side, we have quite a bit of defense in depth, and
8 educating them does help reduce that anxiety.

9 TONY PIETRANGELO: Dennis is exactly right. Marv likes to say
10 we always win when we get people to the sites to see it, the physical nature of it,
11 to see the professionalism of the people who work there, the regulators who
12 oversee the sites. That's certainly a huge part of it that, again, we always like to
13 take advantage of.

14 I'd also point to the industry's response right after Fukushima. We
15 actually did some lessons learned on the BP disaster in the Gulf about what
16 happened there. We didn't run and hide the first weekend. We were out there.
17 We had to explain what was happening and what we were doing with respect to
18 our plants. And I think that transparency has helped us recover some -- most of
19 the public confidence we had prior to Fukushima. I think we were 71 percent
20 favorable in February of 2011. That dipped down to 46 percent in April of 2011.
21 And now I think we're back up to 68 percent. So we try to be very open and
22 transparent about the actions we're taking. We appreciate the agency doing that
23 as well because we're in this together, right? Our confidence in nuclear energy is
24 directly tied to the confidence in the regulator, so we need a strong, credible

1 regulator. The more we get out there and explain what we're doing and why, the
2 better off we'll be.

3 MICHAEL JOHNSON: I think all of the points are good points. And
4 I would -- I love the question actually. And in fact, one of the things I'm going to
5 do is -- there's a regional administrator panel after lunch. I'm going to take that
6 question to them, and that'll be a question I ask the regional administrators to
7 respond to and our other industry panelists to respond to after lunch. I think it is
8 such an important question. We've had a number of discussions internally about
9 that very issue. So I just -- shut up and let you do lunch and let you hear from
10 them afterwards.

11 ERIC LEEDS: Okay, please join me in thanking the panelists for
12 the session. Hope you enjoyed it.

13 [applause]

14 [Whereupon, the proceedings were concluded]