

UNITED STATES OF AMERICA
U.S. NUCLEAR REGULATORY COMMISSION

STRATEGIC PROGRAMMATIC OVERVIEW OF THE
SPENT FUEL STORAGE AND TRANSPORTATION, AND
THE FUEL FACILITIES BUSINESS LINES

OCTOBER 23, 2012

9:30 A.M.

TRANSCRIPT OF PROCEEDINGS

Public Meeting

Before the U.S. Nuclear Regulatory Commission:

Allison M. Macfarlane, Chairman

Kristine L. Svinicki, Commissioner

George Apostolakis, Commissioner

William D. Magwood, IV, Commissioner

William C. Ostendorff, Commissioner

APPEARANCES

NRC Staff:

Bill Borchardt
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Cathy Haney
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Mark Satorius
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Regional Administrator, Region II

1 PROCEEDINGS

2 CHAIRMAN MACFARLANE: This morning -- first of all, let me
3 welcome you all here. Welcome to the -- our staff, the media, members of the
4 public and industry, for today's meeting we are going to hear presentations just
5 from the staff today, the NRC staff, on a broad range of activities in the spent fuel
6 storage and transportation and the fuel facilities business lines. And similar to
7 the last meeting like this that we had, we're going to do this in two sessions with
8 a break in between. The first panel will discuss topics related to spent fuel
9 storage and transportation, and then we'll have a period of Q&A from the
10 Commission, and this will be followed by a panel discussing the important areas
11 related to fuel facilities and again, Q&A with a break in between, as I said. So I'm
12 looking forward to the staff's presentations on this. Let me first check with my
13 colleagues to see if anybody has any remarks before we begin. No? Okay,
14 great. Well then why don't we begin? I'll turn it over to Bill.

15 BILL BORCHARDT: Good morning. As you mentioned, this is the
16 fourth in a series of strategic program reviews that we've been conducting. Our
17 focus today will be similar to the previous briefings in that we will be evaluating
18 the strategic vision over the next two or five years for these two programs. Both
19 business lines we're discussing today remain quiet dynamic, particularly in
20 response to external drivers such as the international expansion of the nuclear
21 fuel cycle and the National Program for Spent Nuclear Fuel. Before I turn the,
22 briefing over to Cathy, I just wanted to reiterate one comment, and that is relating
23 to the Waste Confidence decision.

24 Per the Commission order, the NRC will not issue licenses
25 dependent upon the Waste Confidence decision or the temporary storage rule

1 until the court's remand is appropriately addressed. However, I'd like to just
2 remind all entities interested in our licensing activities that this just has to do with
3 the final issuance, and that all licensing reviews and proceedings, including new
4 reactor applications, renewals for operating reactors, and renewals for storage
5 installations will continue to move forward. In the meantime the spent fuel
6 storage and transportation business line has the lead and is working on resolving
7 the defects identified by the court, and reestablishing the waste confidence. So
8 with that, I'll turn it over to Cathy.

9 CATHY HANEY: Thanks, Bill. Good morning Chairman,
10 Commissioners. This morning I will be sharing with you a strategic look at the
11 spent fuel storage and transportation business line. I will also be emphasizing
12 the degree of interconnectivity we have with the operating and new reactor
13 communities, and with the international community. I'm joined at the table today
14 by Brian Sheron, the office director for the Office of Regulatory Research, Mark
15 Satorius, the office director for the Office of Federal and State Materials and
16 Environmental Management Programs, and Jim Wiggins, office director of the
17 Office of Nuclear Security and Incident Response. I'm also joined in the well by
18 Mark Lombard, Lawrence Kokajko, and Keith McConnell, who are all division
19 directors in the Office of Nuclear Material Safety and Safeguards and help me
20 with the day-to-day leadership of this business line. Finally, I have Scott Moore,
21 my deputy office director in the well with me also.

22 Our work in this area assures adequate protection of public health
23 and safety through licensing, rulemaking, international interactions, research, and
24 oversight activities. Currently this business line has approximately 103 FTE and
25 just over \$9 million for contract support. For fiscal year '14, our resources are

1 essentially the same. I've structured the briefing today to touch on the strategic
2 goals and business line priorities. I will then be describing our product lines and
3 close with our forward focus.

4 Turning to slide five, with our strategic goals. As we have looked at
5 this business line, we see a very dynamic situation where spent fuel capacities
6 in the United States are diminishing with time, leaving only a few viable options
7 beyond dry storage. We know that we must have an efficient and effective
8 regulatory program to be able to adjust to this rapidly evolving situation. Public
9 concern about leaving spent fuel in pools was heightened after 9/11, and again
10 after the Fukushima Dai-ichi tragedy. We are mindful of these concerns, and
11 spent fuel strategies being considered and are examining our program to make
12 certain we are fully prepared to address potential changes to industry strategies.
13 Beyond the dry storage option, through our relationships with the offices of
14 Nuclear Reactor Regulation and New Reactors and our direct involvement with
15 industry, we are seeing many utilities shifting to high burnup fuel levels which
16 helps limit the volume of spent fuel. Through our interactions with the
17 Department of Energy, we are aware of efforts to develop new fuel designs which
18 could also contribute to limiting spent fuel volume. While these are potentially
19 useful strategies for the future, the industry has a today challenge, and we are
20 seeing advances in the technologies and materials used for dry storage systems.
21 These systems are the mainstay of the spent fuel management strategies.

22 As we implement our regulatory program, we remain attentive to
23 this dynamic situation and are confident that we will be fully prepared to address
24 the technical issues and industry proposed changes to spent fuel management.
25 We are sensitive to the changes in the national policy for disposal of spent fuel.

1 We have seen national disposal policies evolve with time and changes in the
2 administration and congressional direction. The Blue Ribbon Commission's
3 recommendations have the potential to significantly affect our nation's direction
4 on disposal. We have established and maintained a regulatory framework which
5 accommodates a variety of disposal options, anticipating the associated technical
6 and regulatory challenges and preparing to enhance the regulatory framework to
7 address them is key to achieving our mission.

8 We have found that an open and active dialogue with all parties
9 that have an interest in our work is very important in gaining their trust and in
10 getting from them comments and ideas that help us build a stronger program.
11 We are best informed by regularly engaging members of the public, special
12 interest groups, other government agencies, and international partners in
13 discussing our regulatory processes. Good communication and understanding
14 with industry and other stakeholders are key for regulatory effectiveness.

15 While I do feel we have a strong program, we can always to better.
16 Through our interaction with the Commission, other members of the staff, the
17 public, and others in the government, we find areas where improvements and
18 enhancements can be made, and our strategies and utilization of NRC and
19 contract resources. Slide six please.

20 As I have looked at our priorities, assuring the continued safety and
21 security of storage and transport operations, including dry storage loading and
22 radioactive material shipments is very clearly our first and foremost priority.
23 Once you move beyond safety and security, completing our work on waste
24 confidence in accordance with the Commission direction is a driving priority.
25 Finally, we have a significant responsibility to be able to respond to the evolving

1 national policy on waste. We have structured our work to implement the
2 business line priorities through the six product lines depicted on this slide. Our
3 success relies on close coordination with virtually every headquarters office and
4 the Regions. Our successes are truly group successes.

5 Licensing is of course our primary tool in ensuring safety and security, and
6 represents the bulk of our work. Some of our major accomplishments during the
7 past fiscal year include the license amendment for spent fuel transfer from the
8 Indian Point Unit 3 to the Unit 2 spent fuel pool, and the first standalone safety
9 evaluation report for an Independent Spent Fuel Storage Installation physical
10 security plan for the Lacrosse boiling water reactor dry-storage facility. We also
11 issued two security exemptions at decommissioned Independent Spent Fuel
12 Storage Installations to address security requirements.

13 During the past fiscal year, the staff completed approximately 15
14 storage licensing actions and more than 50 transportation certification actions,
15 including those that support reactor waste shipments, gamma-knife medical
16 isotope shipment, U.S. foreign fuel return program, and shipment of transuranic
17 waste from DOE facilities to the waste-isolation project plant. From these few
18 examples you can see we've had a very busy year, and we anticipate a similarly
19 heavy workload this year.

20 Licensing involves detailed engineering and analysis, and is often
21 effected by difficult technical questions that sometimes need to be explored so
22 licensing actions can proceed. On slide nine, you can see that industry
23 proposals to use high burnup fuel have caused us to focus on a specific technical
24 issue that is affecting licensing actions. This picture depicts the phenomenon of
25 hydride-reorientation, a mechanism that can potentially embrittle and weaken

1 spent fuel cladding. Under the current regulatory framework, if cladding integrity
2 cannot be demonstrated during storage, mitigating strategies may be needed to
3 ensure retrievability of high burnup fuel assemblies. This impacts storage
4 renewals for these fuels. Likewise, it impacts transportation certification for high
5 burnup fuel, in that the fuel would need to either be repackaged before
6 transportation or its transportation package be certified for damaged spent fuel.

7 As we address these issues and the licensing implications, it is
8 possible that they may present policy decisions for the Commission. We are
9 engaging the industry and public to solicit their formal input on the issue and
10 potential resolution proposals. We will of course keep the Commission informed
11 as the potential resolution of this issue matures and would provide a policy paper
12 for Commission consideration if the resolution rises to a policy level.

13 On-site inspection activities are perhaps our most effective tool in
14 ensuring licensees are in compliance with the regulations and their licensing
15 basis. Our inspections range in scope from verifying quality assurance
16 requirement procedures to visually observing cask loading activities. In fiscal
17 year 2012 we performed 19 inspections and 23 inspections are planned for this
18 fiscal year. We have had significant accomplishments in the inspection
19 enhancement initiative. We have been communicating with the Regions, revising
20 office instructions, inspection procedures, and manual chapters, and engaging
21 interested parties on a variety of topics including operating experience.

22 We have a strong operating experience program, but this is an area
23 where we feel we can do better, consistent with our goal of strengthening
24 organizational excellence. We are revising the procedure for documenting,
25 analyzing, and resolving concerns identified from operating experience. We

1 believe these improvements better endure that the immediate and long-term
2 safety concerns identified from operating experience are documented, analyzed,
3 resolved, and disseminated. Moving to slide 11.

4 From the previous slide, I mentioned that we support the Regions
5 in conducting inspections of Independent Spent Fuel Storage Installations. An
6 Office of Inspector General audit report from 2011 identified a weakness in our
7 ISFSI training program, so we developed a qualification program and associated
8 training for ISFSI inspectors. I'm very pleased to report that the first training
9 session occurred last week in the Executive Boulevard building and was well
10 attended. Moving to slide 12 and international activities.

11 The safe and secure storage, transportation, and eventual disposal
12 of spent nuclear fuel is a concern in every country that has a nuclear power plant.
13 We have engaged the international nuclear community through variety of venues,
14 including the International Atomic Energy Agency, the Nuclear Energy Agency,
15 and the International Commission on Radiological Protection, to name a few. We
16 are actively engaged and provide significant leadership in these groups. Two
17 such examples are Bill Brock's leadership of the IAEA Transportation Safety
18 Standards Committee, and my participation on the bureau of the NEA's
19 Radioactive Waste Management Committee. Staff and management
20 involvement includes technical committees, research activities, and the
21 development of safety standards. NRC's active participation and leadership has
22 yielded benefits to our program in terms of specific products from the groups that
23 support our program and contribute to achieving our goals. Moving to slide 13.

24 Rulemaking is one of the vital activities regulatory bodies
25 perform. It sets the standards that, if met, assure safe and secure uses of

1 nuclear materials. While my staff in NMSS is primarily responsible for developing
2 the regulatory basils for the rulemakings, we are partnered with the Office of
3 Federal and State Materials Environmental Management Programs that provides
4 the rulemaking project management, and where needed the Office of Nuclear
5 Regulatory Research provides the technical underpinnings for our rules.
6 Depending on the specific subject matter, the Offices of Nuclear Reactor
7 Regulation and New Reactors also contribute to our effort. Our rulemaking
8 efforts provide a very strong example of our degree of interconnectivity this
9 business line enjoys.

10 In the past fiscal year, we completed a revision to 10 CFR Part 73,
11 for physical protection of spent nuclear fuel and transit, which partially responded
12 to a petition for rulemaking submitted by the State of Nevada. This petition
13 requested that NRC amend its regulations concerning safeguards for shipments
14 of spent nuclear fuel against sabotage and terrorism. We also completed
15 revisions to 10 CFR Part 71 and 73 for advanced notification to Native American
16 Tribes of transportation of certain types of nuclear waste. These rulemakings
17 contribute to our goals of regulatory effectiveness and continued outreach.

18 As you are well aware, waste confidence has great importance to
19 NRC and as a topic of stakeholder interest. With strong support from the other
20 business lines across the agency, we have taken some important steps that will
21 lead to successfully addressing this issue. I am very pleased to report that the
22 Waste Confidence Directorate is now fully staffed. The Directorate staff has
23 rapidly begun its work. One of the Directorate's two branches is currently
24 developing a robust schedule of scoping stage public outreach, while the other
25 branch is developing preliminary outlines of the draft Environmental Impact

1 Statement. Both branches are in close coordination with the contractors who will
2 support the staff's efforts over the next two years.

3 Finally, I'd like to note that the staff is confident that it will meet the
4 Commission's 24 month target for the Environmental Impact Statement and the
5 final rule. And I look forward to providing updates of the staff's progress in
6 coming months.

7 Looking forward, we are leveraging our leadership in IAEA's
8 Transportation Safety Standards Committee by engaging on a Part 71
9 harmonization rulemaking to more closely align our regulations with the IAEA's
10 safety standards TS-R-1 Regulations for the Safe Transport of Radioactive
11 Materials. We are revising 10 CFR 71 for both international and domestic
12 regulatory compatibility. This rule is expected to be published in the Federal
13 Register in early 2013.

14 The rulemaking petition process is a very important part of NRC's
15 overall rulemaking process. In that vein, we recently received a petition from the
16 Nuclear Energy Institute to update Part 72, which is the licensing requirements
17 for the independent storage of spent nuclear fuel, high-level radioactive waste,
18 and reactor-related greater-than-class-C waste. The petition seeks several
19 changes to Part 72 and we are actively evaluating the petition. It's too early to
20 draw conclusions about the merits of the petition, but we find these types of
21 engagements useful as we pursue our goal of continued outreach and
22 engagement with our stakeholders.

23 Moving to slide 14. I have repeatedly stressed the benefit this
24 business line receives from the significant interconnectivity with our partner
25 offices. I've just noted the value we derive from the rulemaking petition process.

1 The security rulemaking for Independent Spent Fuel Storage Installation
2 illustrates both of these points. This rulemaking is designed to improve the
3 consistency and clarity of the security regulations for site-specific and general
4 Independent Spent Fuel Storage Installation licenses, establish generic
5 applicability of security orders, and establish a risk-informed and performance-
6 based structure in updated security regulations. Our recommendation on the
7 rulemaking scope is due to the Commission in May of 2013.

8 Moving to slide 15. We enjoy a very close and productive
9 relationship with our partners in the Office of Nuclear Regulatory Research; they
10 are a significant contributor to our goals on regulatory effectiveness, flexibility in
11 responding to an evolving national policy on disposal, and continuing our
12 outreach and engagement with stakeholders. In my discussion of technical
13 issues that it can affect licensing, and that may result in policy matters, I use the
14 example of hydride reorientation and high burnup fuels. In support of this and
15 other business lines, our research partners have completed research on the
16 properties of high burnup fuel and the development of a unique testing
17 instrument to be used in research of fatigue testing of high burnup fuel, which is
18 show in the photograph. For this business line, this research supports transport
19 certifications, storage renewals, extended storage and transportation project that
20 I will describe in a moment.

21 Moving to slide 16. Research plays a vital role in both our ongoing
22 and forward-looking efforts to support extended storage and transportation. This
23 slide shows corrosion found at a Point Beach cask in 2019, and cracks in the
24 storage modules in the Three Mile Island ISFSI in 2000. Although such
25 conditions are rare, these examples underscore the importance of the extended

1 storage and transportation considerations, especially with regards to aging
2 management. The challenge for us and industry is what to do about it. We have
3 issued a draft report for public comment that identifies and prioritizes the
4 technical information needs for dry storage systems to address aging concerns in
5 support of extended storage and transportation. Some technical areas identified
6 as important for extended storage and transportation are also relevant in near-
7 term licensing and renewals.

8 The long-term research activities we are pursuing under this
9 business line are well-coordinated with our research efforts from the domestic
10 industry, as well as the international community. We are pursuing independent
11 evaluations of the degradation mechanisms and possible in-service methods for
12 monitoring storage systems and components. Through these efforts, we are
13 confident that we will be able to address the challenges to the long-term
14 effectiveness of storage and transportation strategies proposed by the industry.

15 In closing, I want to emphasize that the staff and management who
16 make up the spent fuel storage and transportation business line work in a very
17 dynamic environment. As we move forward, our unwavering focus will continue
18 to be on the safety and security of storage and transport operations, including the
19 focus on extended storage and transportation. Waste confidence is a priority to
20 the business line and the agency. And, lastly, we will focus our work on ensuring
21 that the agency is positioned to respond to the evolving national policy for
22 disposal. I am confident that we have the knowledgeable, dedicated staff and
23 management resources necessary to ensure success. This concludes my
24 presentation and we would be pleased to take questions.

25 CHAIRMAN MACFARLANE: Okay. Thank you very much, Cathy,

1 that was very good. We are going to start questions off with -- well,
2 Commissioner Magwood is the one who is going to start questions off this
3 morning.

4 COMMISSIONER MAGWOOD: Of course, start off with the jet-
5 lagged Commissioner, or not. First of all, thank you for the presentation, Cathy.
6 It was very comprehensive, covered a lot of ground. You stressed the issue of
7 hydride reorientation. Because you mentioned that specifically, I wonder, do you
8 see that as one of the most significant potential vulnerabilities in long-term
9 storage?

10 CATHY HANEY: I would say it is -- I don't know if I would say it's
11 the highest, but it is one of the big considerations that we are looking at. And I
12 guess I would call for my first life-line, too, if you want to go into a deeper
13 discussion of some of the other items that we're looking at.

14 COMMISSIONER MAGWOOD: Yeah, please.

15 CATHY HANEY: Okay. Mark, do you want to --

16 MARK LOMBARD: Mark Lombard, director of Spent Fuel Storage
17 and Transportation Division. At this point, Commissioner, there's some
18 information that is evolving, emerging on high burnup fuel and a potential
19 embrittlement, as the spent fuel cools off, below 400 degrees. So we're at a
20 point where we don't know, specifically, if it's going to be an issue, but we're at a
21 point, of also looking at it very closely, working with Research -- with our partners
22 in Research, and, also, some Oak Ridge National Lab studies that are going on
23 now. There's also, I'm sure you saw, on the one pager on this issue, the DOE
24 demonstration project that the industry is working on.

25 So I guess my answer is the information is still emerging, it's very

1 young in its process, so we're not sure yet if it's going to be even a potential, but
2 we're looking at it very closely because some of the early information that's out
3 there, indicates that there is hydrogen embrittlement of the spent fuel cladding as
4 it cools off.

5 COMMISSIONER MAGWOOD: While your lifeline is still standing
6 up --

7 [laughter]

8 Brian, you may want to weigh in on this as well. Can you give us
9 just sort of a summary of what you think the major vulnerabilities are likely to be,
10 when you think of storage for, perhaps, decades in dry casks? Where should we
11 really be focusing our attention from a safety perspective?

12 MARK LOMBARD: This is one of the issues, as Kathy says, we
13 are pursuing. And we're also looking -- special corrosion cracking is probably the
14 next on the list of the canisters themselves looking forward into long, long term
15 storage, up to, you know, the 300 year timeframe. That's probably in our top
16 three list. And also you see, from the pictures in the presentation, cracking of
17 concrete for those types of spent fuel storage installations is also a big concern.
18 So those are probably the top three on the list right now.

19 BRIAN SHERON: Yeah. I would just add that, you know -- I guess
20 my concern is that, fuel does become embrittled and the like, and then we do
21 have to move it at some time in the future. It's the transportation part, putting it
22 on a truck or a train and, you know, does it fall apart? And so that's something, I
23 think, we're trying to look at, is what are the effects of this embrittlement, if it does
24 occur over the long-term, and how it affects future transportation.

25 COMMISSIONER MAGWOOD: That actually moves into another

1 question I was going to ask, because I think you're right, because we're talking
2 about the integrity of the spent fuel, the physical integrity. So, if it does fall apart,
3 so what?

4 MARK LOMBARD: That's exactly it, does it become a safety issue
5 or not? And that's another piece of the high burn-up fuel issue that we're looking
6 at. Is it really a safety issue if you have gross cladding failure? Initial indications
7 are probably not, but we want to look at that very closely to make sure we don't
8 have a safety issue.

9 BRIAN SHERON: Yeah, or -- I mean, is there any special
10 packaging or anything that we would need to do further before we did allow it to
11 be moved, you know, to ensure that you don't have a pile off pellets, for example,
12 when it reaches its destination.

13 COMMISSIONER MAGWOOD: Cathy, when you think about -- I
14 think you and I have had some of this conversation in this past, when you think
15 about the packaging that currently exists, where the spent fuel is currently stored,
16 are -- what does our infrastructure look like? Are we in decent shape, as far as
17 being able to move the spent fuel when the time comes? Or are we looking at
18 major repackaging of spent fuel when the time comes to move it to a centralized
19 storage or repository in the future?

20 CATHY HANEY: I would say it's -- we're in good shape on the
21 timeframes that we're working towards right now. As you start to look out toward
22 the 100 to, you know, 200 year storage, then it does call into question some of
23 the aging management, touching on what Mark has said already. And that's
24 some of the areas where my staff is continuing to look and engaging industry in
25 discussions, as well as other outside -- other government agencies, primarily

1 Department of Energy. So from, you know, right now, today, yes, but as we look
2 on further it's something that I think we need to closely monitor.

3 COMMISSIONER MAGWOOD: When you're asking -- I think you
4 can sit down if you like -- we know where you are if we need you -- when you
5 think about these questions, is the program configured and, is it staffed in a way
6 that we can answer all these questions? Or are there any gaps in terms of our
7 infrastructure and being able to attack these questions?

8 CATHY HANEY: No, I don't -- we have no gaps with regards to
9 attacking the topic. I think we have clear support, strong support from the Office
10 of Research on those activities. Also, within Mark's division, we have those
11 individuals that are working on what we call the day to day licensing and
12 inspection of the facilities, but there's very strong ties within that division, and
13 across division lines, to those that are looking at the extended storage and
14 transportation, that is the focus of one of Lawrence's division. So we have been
15 very successful in matrixing within the Office of Nuclear Material Safety and
16 Safeguards to address those issues, and I think are very well positioned as we
17 gain new information through outreach activities, where, I think, -- again, the
18 infrastructure is there.

19 COMMISSIONER MAGWOOD: Including all the questions on high
20 burnup fuel?

21 CATHY HANEY: Yes.

22 COMMISSIONER MAGWOOD: There's a lot of research, I think,
23 that needs to be conducted in that area. Are we planning to conduct that
24 research, or are we going to rely on DOE -- how is that going to get
25 accomplished?

1 CATHY HANEY: We are working through some, within our office,
2 but I would say it's just a strong that we have ties to Department of Energy for
3 that activity, and then, also, working with the knowledge that's coming out of the
4 industry. We have to be careful, NRC is the independent regulator, and it's not
5 our job, necessarily, to do that research, but we are very closely linked with those
6 groups that are. And then, also, would use that, through a lot of the international
7 committees and organizations that we work with, we're leveraging knowledge
8 that's coming out of the international community for all the extended storage and
9 transportation work.

10 COMMISSIONER MAGWOOD: Recognizing that we do have to
11 remain the independent regulator, I trust you're familiar with all the aspects of
12 that particular issue. Nevertheless, there are limited federal dollars to go into this
13 research, and we do have to have some coordination with DOE as they go
14 through their efforts. Can you characterize how we're approaching DOE in this?
15 Are we simply looking at what they plan to do and looking to see where we can
16 leverage when they have results? Or are we really coordinating a program to
17 investigate some of these questions? How would you characterize it?

18 CATHY HANEY: I would maybe not go so far as to say that we're
19 coordinating, because we are recognizing DOE's role in the federal government,
20 but we do have -- several members of my staff are on committee, DOE
21 committees, where they're planning the path forward with regards to this activity,
22 extended storage and transportation. And by being a member of that committee,
23 we have an -- we're playing -- we're influencing outcomes. But, yet, recognizing
24 it is a DOE organization and, again, I would call Mark up, if you want to go down
25 into some examples of what's referred to as the escape group that's coming out

1 of DOE. If you'd like that we can do that.

2 COMMISSIONER MAGWOOD: Sure. Why not? Maybe there is
3 something I haven't heard.

4 MARK LOMBARD: See, I should have stayed here. Just so you
5 know, we are staying closely coupled with DOE on many levels. And one level is
6 -- lets' see tomorrow we're continuing our quarterly meetings with Jeff Williams of
7 DOE, who is, really, -- there has been kind of some realignment in DOE on this
8 topic, so Jeff is really the one closely tied to us, as far as activities going forward
9 on extended storage and transportation. And, again, those -- that's our next of
10 quarterly meetings that we're having with him to just make sure that we
11 understand what direction they're going, as they determine that direction, and
12 that we're not going to make any regulatory decisions in our space that may
13 cause them some problems down the road.

14 COMMISSIONER MAGWOOD: But we're not actively trying to --
15 maybe this is, sort of try and interpret what Cathy just said -- are we giving them
16 advice as to what we think the technical questions are, or are we giving them
17 specific information on what our needs are, from a research perspective?

18 MARK LOMBARD: I wouldn't term it as advice, necessarily, but
19 maybe, a soft influence of what they're looking at going forward, and working with
20 some of the challenges that we have now, like retrievability, retrievability on a
21 fuel assembly basis or a container basis. That's really something that could
22 affect them long-term, as they look toward a final disposal method and location,
23 so those are things we want to make sure, that decisions we make, the
24 regulatory changes that we make interpretations of our regulations going forward,
25 don't invalidate or cause them harm down the road, and that they're not surprised

1 in the end of, "Oh, why did you make this decision or that decision?"

2 COMMISSIONER MAGWOOD: Brian, did you want to add
3 something?

4 BRIAN SHERON: Well, I would just point out, a lot of the research
5 we do is confirmatory. Some of it, though, is, some may call it exploratory, as
6 well, where we look to try and identify where problems may exist and, where we
7 see there's issues, I mean, we would relay that information to NMSS and I would
8 presume they would, then, alert the industry of, you know, "Here's an issue
9 you're going to have to deal with." We normally don't do that, if we don't -- you, if
10 it's merely speculation, but if we do have, you know, experimental evidence that
11 there's an issue, that helps substantiate when we go to the industry and we say,
12 "You have a problem," because a lot of times, they may push back a little bit and
13 say, you know, "Why," why do you think we have a problem?" Well, if we have
14 the experimental data, then, it's kind of hard to refute. So, for example, we're
15 looking at, for example, the effects of salt corrosion on casks, any stress
16 corrosion cracking, any other degradation mechanisms that we think might affect
17 the integrity of casks or the fuel, and this is the type of information that we would
18 forward to the industry.

19 COMMISSIONER MAGWOOD: Thank you. Thank you, Chairman.

20 CHAIRMAN MACFARLANE: All right. On to Commissioner
21 Ostendorff.

22 COMMISSIONER OSTENDORFF: Thank you, Chairman. Thank
23 you all for your participation here today. Cathy, I thought your briefing was very
24 helpful, thank you. I just want to make a comment real quick, in reaction to your
25 comments on the waste confidence status. I wanted to express my thanks and

1 appreciation for quickly staffing up the Directorate, Cathy, you and your
2 colleagues here, that's very important. I was pleased to hear of your confidence
3 in the ability to move forward on the 24 month time period. I think I'll just say, I
4 think probably all the Commissioners would join this statement, that if the staff
5 needs any additional guidance or direction to amplify or supplement the SRM
6 from early September I know we're happy to provide it; so I'll just throw that
7 marker out there, but thank you for the efforts, here, to move forward quickly.

8 I'm going to stay with Cathy and Brian, I'd like to go to the topic of
9 the expedited movement of spent fuel just for a moment or two. And there's a
10 recent EPRI study that's come out, that I think we've all been briefed on the EPRI
11 view points. And I'm just curious as to what the staff's viewpoints are on that
12 study. And however you want to handle that question, Cathy, Brian?

13 BRIAN SHERON: Well, I haven't read through the whole study
14 completely, but you know, my understanding is that they're reaching pretty much
15 the same conclusions we are and I think they're also recognizing that it's a very
16 extensive proposition to do that. From what we've looked at, and I think I have
17 said this before at meetings, what we're seeing from expedited is that from a
18 public health standpoint there's not a lot of benefit because of the amount of time
19 that's available to effect an evacuation if there was an accident or something.
20 And so from a public health standpoint there's really not a lot of difference.

21 It also -- we're looking right now -- we haven't really done it, is
22 looking at the competing risks. Obviously, if you move a lot of fuel to dry casks
23 and at some point have to move it back into to transportation canisters to some
24 interim storage, that's a substantial amount of additional fuel-handling that would
25 come with, obviously, certain risks, with either a dropped cask or dropped

1 assembly or something, and so we're trying to look at that and the human
2 reliability aspects of it. So that's something that we're still looking at.

3 CATHY HANEY: And if I could add one thing onto it, in looking
4 forward, if you were to move sooner, one of the things that we need to do is go
5 back and look at the existing cask designs and what's been approved because
6 we have certain basis that we approve our casks on the storage containers right
7 now. If those assumptions were to change it could have a long-term impact on
8 our program.

9 COMMISSIONER OSTENDORFF: Staying with this question, as a
10 follow up to either or both of you -- Cathy, you had mentioned in your briefing the
11 international cooperation of you and your team with counterparts elsewhere, is
12 there anything else, are there any best practices or other approaches to be
13 gleaned from you interactions with international counterparts on this topic of
14 accelerated movement of spent fuel out of the pools?

15 CATHY HANEY: I'm aware that it's been discussed and we have
16 had some discussion on it in the Radioactive Waste Management Committee and
17 then on sidebar conversations with some of the countries. I would say at this
18 point it's, from my perspective, it's more something that we are staying aware of
19 and listening for. But I am not aware that any have come to light.

20 COMMISSIONER OSTENDORFF: Okay. Thank you. Let me go
21 on to a different topic. And Cathy, in your presentation, I think, Commissioner
22 Magwood hit on this point as well, that, you know, in the spent fuel storage and
23 transportation area, it's a very dynamic environment, and while it's important to
24 be flexible given that we had not pinned down a national strategy, we also realize
25 that it was difficult and challenging. So I wanted to ask a couple of questions in

1 this area. I think Commissioner Magwood's line of questions got into the need to
2 repackage or not, that kind of question.

3 But let me talk just for a moment and ask a question on the central
4 storage, interim storage facility. Because I think that's one where the Blue
5 Ribbon Commission comes out strongly recommending that. There's been a lot
6 of talk about this around the country. And I'm just curious, you know, if there are
7 initial staff thoughts, pros and cons, of a centralized interim storage approach in
8 the United States.

9 CATHY HANEY: I would say we have not had conversations on
10 pros and cons. We haven't approached it from that topic.

11 COMMISSIONER OSTENDORFF: Or areas that require further
12 evaluation.

13 CATHY HANEY: Right, so from that standpoint we have had
14 conversations about it. We feel fairly confident the regulatory framework is in
15 place for centralized storage because we were able to license Private Fuel
16 Storage years ago. So from the standpoint of do our regulations, do our
17 guidance documents support that approach, we do have that in place.

18 I think from the critical skill set that it would need, again, I have the
19 staff either within the Office of Nuclear Material Safety and Safeguards or have
20 access to it in other offices. We would, potentially -- we would get into competing
21 priorities within the agency. In addressing that issue, obviously we would work
22 that up through the Executive Director of Operations and as need be to the
23 Commission. So from a resource standpoint, we would need to address
24 resources to support that. But if you look at the technical skill set in the regs, we
25 believe that we have what it would take to license a centralized storage facility.

1 Obviously we would need to do -- there would be a lot of outreach involved with
2 that as we would do similarly with any other significant licensing action. But
3 again, we're able to do that, and I think we have the skills to do it.

4 COMMISSIONER OSTENDORFF: Are there any particular, Cathy
5 or Brian, any particular research areas that would need to be explored more fully
6 than is currently documented to approach a centralized interim storage
7 approach?

8 CATHY HANEY: I'm not aware of any.

9 BRIAN SHERON: No, I'm not. I mean, obviously, transportation
10 questions would come up. We are doing testing in Germany on the impact of
11 dropping casks and making sure we understand the structural integrity and that
12 we can calculate that, but I'm not aware of anything else.

13 COMMISSIONER OSTENDORFF: Let me turn to Mr. Wiggins
14 down there, other end of the table here. Jim, let's talk just for a moment if you
15 can about the ISFSI security rule and if I can just ask a question as to what can
16 you say about any areas of technical concern, or research, you know, and Brian
17 can certainly join in here as appropriate with -- trying to understand what
18 technical issues need to be resolved prior to reaching a position.

19 JIM WIGGINS: I could answer the easy part that certainly to pick
20 up the more administrative natures of the security orders and memorialize them
21 in rules so you don't have to issue orders to subsequent installations is certainly
22 a necessary item to clean up the regulatory process. Beyond that, as you're
23 aware, we're taking a look at casks more specifically from the security point of
24 view. We do have some testing that we are planning to do, either later this
25 month or in the next month, it's a start along the line of deciding things like --

1 what can I say about it -- timelines and the potential for success of some attack
2 vectors at these things. I would offer, there's also a spin-off from this and
3 hopefully we could get a reasonable answer when you're looking at reactors that
4 you would have to say well if you had a centralized storage facility what you have
5 is the same thing only larger? I mean, you would have to take another look at it.
6 Part of what we're going to look for is not just at reactor storage but away from
7 reactor type environment also, this central storage would become a large version
8 of an away from reactor. So we would have to see where we end up in this and
9 what, if any, additional requirements would be necessary to secure the facility or
10 provide for a -- let's say, a public response to a problem, like an EP emergency
11 planning type level of response.

12 COMMISSIONER OSTENDORFF: Okay, and just one follow-up on
13 that. What kind of feedback are you getting from any of our licensees on the
14 project?

15 JIM WIGGINS: The positive side is that we -- on this test program
16 we discussed, we made a decision to allow some cleared stakeholder
17 observations of the process. Frankly, it's a survival move on our part. We expect
18 we'll get a lot of comments to the contrary if these tests work out a certain way.
19 We'll get a lot of pushback with regard to additional rules. We think it's better that
20 they have a factual basis on the pushback, rather than just make general broad
21 statements about how this would be so bad or whatever. So we've asked that
22 and we're getting a response through NEI, from the industry. Not just the plants
23 but also some vendors. We're more than happy to have them come observe and
24 interact with us during the test, at least know what the test is and give some
25 commentary on whether the test specimen is a good replica of what a cask would

1 be. Obviously, we don't have a cask to test, so we got a mock-up.

2 But I think frankly that I would be remiss not to say they're very
3 concerned about the direction this could end up going depending on the results.
4 There's a significant -- if the results work out a certain way there would be a
5 significant increase in the amount of security necessary to protect the facility's
6 and that's a pretty high bar for them. And it's a high bar for us too, we need to
7 make sure that, as with anything, you put the right level of regulation on it not
8 excess regulation. These tests were fairly important from that regard.

9 COMMISSIONER OSTENDORFF: Thank you. Thank you,
10 Chairman.

11 CHAIRMAN MACFARLANE: Okay. All right, my turn. First of all let
12 me say this is a really good discussion and especially because it's emphasized a
13 number of these back end issues, which is actually a topic that many of you know
14 is very near and dear to my heart, so I'm very excited about this discussion. And
15 I appreciate all of your work on all of these issues because they are very
16 important. And I want to pick up a little bit on one of Commissioner Magwood's
17 questions on high burnup fuel, you know, and he asked what does it matter if the
18 spent fuel falls apart or if the cladding falls apart; and it matters because you're
19 going to put in a repository one day, and if you don't have that cladding, you've
20 lost one of your engineered barriers. And so that really bears on your
21 calculations, of radionuclide release and everything. So this becomes very
22 important.

23 And so I'm wondering in terms of that, especially with the high
24 burnup fuel issues, if you have been working with your international partners on
25 this issue, and also in terms of performance of dry casks over the longer term,

1 you know, we're not the only ones with dry casks, we're not the only ones
2 thinking about having high burnup fuels or moving toward high burnup fuels, what
3 are -- what's France doing, what's Germany doing, what's South Korea doing,
4 what are these, you know, -- they're all thinking about these issues too, how are
5 we working with them?

6 CATHY HANEY: Well, I would ask Mark or Lawrence if they'd like
7 to go to the podium to -- because they've been involved with a lot of activities
8 with the international community. I can say yes, we have been doing that. And
9 they can give you a better description of those activities.

10 MARK LOMBARD: Actually, a lot of the information that's coming
11 out, the initial information that I talked about in response to Commissioner
12 Magwood's question is coming out of the European and Japanese counterparts
13 that we work with very closely. And we're looking hard at those studies. They
14 are limited in nature because they're only looking at a very small cross-section of
15 cladding materials and the information that is coming out of those studies hasn't
16 been really validated or vetted by experts from around the world. Again, it very
17 preliminary but we're working very closely with international partners on those
18 issues.

19 CHAIRMAN MACFARLANE: Do we work with university folks on
20 these issues, I mean, offering grants or whatever to -- yes? Mike is nodding.

21 MARK LOMBARD: My second lifeline.

22 CHAIRMAN MACFARLANE: Yeah, right. [laughs]

23 MARK LOMBARD: Yes, I'm not aware of the specifics of those, but
24 Brian may.

25 [talking simultaneously]

1 RICHARD LEE: Richard Lee from the Office of Research. I want
2 to follow up with what Commissioner Magwood and the Chairman asked about
3 what the staff thinks about when the things degraded. It happens that between
4 NMSS and us we are assessing the scenarios. Actually we are defining what
5 you may end up with and what is the consequence, the consequence being the
6 criticality, shielding, containment, retrievability, all of those things being assessed
7 at this time, and sometime by middle of next year we'll have some answer on
8 that.

9 CHAIRMAN MACFARLANE: Okay, good.

10 RICHARD LEE: So we don't know the answer to that. NMSS a
11 long time ago, they did look at it but it was a very limited evaluation, was only on
12 criticality; so at this time we're expanding the scope. About international what
13 does the international arena do about transportation on casks. I did ask -- have
14 the opportunity to discuss it with the French on one of my trip. It's that the
15 French, because of reprocessing, they don't really have much dry cask storage,
16 very limited.

17 CHAIRMAN MACFARLANE: But they have high burnup fuels.

18 RICHARD LEE: They have high burn-up fuel, but all their fuels go
19 to reprocessing.

20 CHAIRMAN MACFARLANE: Yeah.

21 RICHARD LEE: So each year they have 4,000 transportations of it,
22 which they monitor very closely and the emphasis on there is security of
23 something attacking their transport casks.

24 CHAIRMAN MACFARLANE: They have spent MOX fuel that is not
25 being reprocessed.

1 RICHARD LEE: Yes, right. But the processing the UO2 fuel they
2 transporting to the Le Harve plant.

3 CHAIRMAN MACFARLANE: Right, understood.

4 RICHARD LEE: So they, in general, don't have dry casks, too
5 many dry casks, that's what I was told. The reason I discussed with them
6 because we interested in the aspect that -- because we're doing work for NSIR
7 happened to be on the dry cask security rulemaking, so the Office of Research is
8 doing work, Division of Engineering is looking at structure of the dry casks. My
9 group is looking at the releases from the radionuclide point of view, suppose
10 something happens to the cask.

11 CHAIRMAN MACFARLANE: Okay.

12 RICHARD LEE: So did I answer all the questions?

13 CHAIRMAN MACFARLANE: Okay, let me ask another couple of
14 questions on totally different topics. First of all, in the background information I
15 received there was discussion on the transportation packages, expired
16 transportation packages. And it seems to me that the NRC staff has been more
17 than generous in giving licensees time to purchase new packages. Eight years
18 seems plenty. So at what point should we stop giving these extensions?

19 CATHY HANEY: Well, we have a -- we're coming up against, I
20 guess a stop in the very near term. We do have a couple packages that have not
21 been renewed, or other arrangements made for those packagings. It's a
22 challenge for us because the ones that are outstanding support things like
23 medical treatments, we may be close to that point with those cases where we
24 have allowed them to go over the date, we made sure that there were
25 compensatory measures in place for any shipments that would take place. And

1 we're very focused in trying to get that down to where there are no expired
2 packages. It's been a challenge for us; we work closely with the industry. But
3 there are some things that we need to consider, which when it comes to stopping
4 medical shipments, it's fairly significant for us as well as anything that would
5 support the defense programs. So there may be a time when we come to the
6 Commission with regards that we have reached the time to say no, we can't
7 continue. I'm not sure we're there yet but it's something that we were giving a lot
8 of focused attention to.

9 CHAIRMAN MACFARLANE: Okay. And now for another
10 completely different topic. So in following your point that you made really early
11 on about being prepared, at what point do we consider starting a new Part 60
12 rulemaking to revise our generic standards for a geologic repository? What
13 precursors are we looking for and do you see a multi-agency effort working with
14 EPA and when would you see beginning such activities?

15 CATHY HANEY: Let me start with the last question. It definitely is
16 across agency lines, we would need to work very closely with the Environmental
17 Protection Agency on moving forward with a rulemaking in that area and again,
18 the side benefits of being on some of these other international committees, there
19 are other government agencies. For example, EPA has a representative on the
20 Radioactive Waste Management Committee. So at these meetings you have the
21 opportunities to have the side bar and just exchange information on where we
22 are in regard to a Part 60 rulemaking. So at a very informal level, we've had
23 those conversations. Both agencies are aware that we will need to work closely
24 on a rulemaking such as that.

25 I would say the significant trigger for us would be direction from the

1 Commission to go forward. We did, several months ago provide the Commission
2 with some information on what staff believes would be needed for budgeting to
3 move forward with a Part 60 rulemaking. Currently I do not have the resources in
4 the business line that are devoted to that. Of course if, as we see DOE's
5 response to the recommendations from the Blue Ribbon Commission go forward
6 and moving through Congress if there are some indications from external
7 stakeholders that it would be time to move forward, staff could provide a
8 recommendation to Commission or the Commission could direct us to move
9 forward with the rulemaking.

10 CHAIRMAN MACFARLANE: Okay, and speaking of those external
11 stakeholders in the spent fuel storage and transportation business line, which
12 areas -- and so, this is just a broad question. Which areas receive the most
13 attention from non-industry organizations and from the public, and then which
14 areas receive the most attention from industry?

15 CATHY HANEY: I would say if I only had one to pick on each topic,
16 I would say from the public it's the transportation of waste receives a lot of public
17 interest, and because you're crossing state boundaries, you have material going
18 through someone's back yard. So, you'd have that interest from there. I would
19 say in the area from the industry, there's clearly a concern for where is the waste
20 going, but that is not something that's within the NRC's decisionmaking, but I
21 think on some of the technical issues that you've heard raised with the extended
22 storage and transportation, and us looking into that a lot of the technical
23 discussion that's gone on so far this morning is where there's a lot of the industry,
24 once you get beyond the where is the waste going to go, and having to store it
25 onsite, because it's a very -- there's a big expense.

1 CHAIRMAN MACFARLANE: Okay, great, thank you, Cathy. On to
2 Commissioner Svinicki.

3 COMMISSIONER SVINICKI: Well, good morning, and thank you,
4 Cathy, for your presentation. I think you have shown remarkable restraint in
5 calling from the well, because if I had to give the whole presentation, I think after
6 the break you're giving the whole prepared presentation as well. You'll have to
7 think more liberally, be calling the very capable set of individuals behind you to
8 the microphone. I would just like to follow up briefly on the Chairman's question
9 about special authorizations for expired transportation packages. Now, this is an
10 area that is regulated in concert with the Department of Transportation, is it not?
11 And I'm less familiar with what the DOT does. In order for continued use of any
12 of these packages, is it that both NRC and DOT would need to provide some sort
13 of exemption or approval, or are some of the packages solely regulated by us,
14 and is there someone -- maybe you want to call on someone to help you.

15 CATHY HANEY: Sure, I'm going to ask Mark to go back up there,
16 and while he's moving up there, there is a special relationship between the
17 Department of Transportation and NRC. The packages that NRC is focused on
18 are the ones that we would certify, but yet in this whole process that we've been
19 going through for several years now, we've been, in partnership with DOT and
20 one agency has not been going out without talking to another agency. So, I'll
21 leave it to Mark to go to the next level down.

22 COMMISSIONER SVINICKI: And could Mark also indicate what
23 we know about DOT's willingness to look at any exemptions going forward?

24 MARK LOMBARD: Actually, it's interesting, because we're working
25 very closely with DOT. It almost seems seamless; we've had meetings just in my

1 short tenure with SFST with licensees, like the University of Missouri came in for
2 a request to extend their packages, and DOT was right there with us, and when
3 they're not there in person, they are there by telecom, so we're working
4 extremely closely with them. Typically, we would review the package request and
5 provide the approval, and DOT would issue a special authorization. So, it's really
6 hand-in-hand as we go forward on those. And I think -- Cathy I'm not sure if you
7 spoke to -- there were 39 packages that were expired in 2008, we're down to, I
8 think, three now. So, to go to Chairman Macfarlane's question, there is a lot of
9 work that has gone on to limit the number of expired packages out there now,
10 and we really do look at them on a case by case basis, and we -- if you were
11 present at some of those meetings, especially since the beginning of my short
12 tenure in SFST, we do give them -- we push back very hard on each one of
13 those, and look very closely at their mitigating measures, the types of materials
14 that are going to be shipped and what the end use is, and what the impact would
15 be if not approving the extension. So, each one of those is really looked at very
16 closely.

17 COMMISSIONER SVINICKI: Is there -- and, again, I think Cathy
18 gave this in her response to Chairman Macfarlane, is that we will certainly be
19 asked to balance the competing public goods here. Of course the safety of these
20 packages, which is, as Cathy, you mentioned, where we've permitted use, we do
21 have additional compensatory requirements that we've put in place, but also of
22 course medical needs and things like that, and so I, again, I appreciate the level
23 of coordination that you're doing. The progress that's been made to date, which
24 is significant, I remember sitting at a similar meeting a few years ago where
25 Chairman Jaczko was asking about how we can get to having none of these

1 expired packages in use, and I think that a lot of progress has been made along
2 those lines. But I think that we will be asked to strike the right balance here and
3 we're talking university users and others. Is it primarily cost, and I'm not saying
4 per university, obviously that's not a trivial issue. Is it cost that is the thing that
5 deprives them of these newer packages, and are there any ways for them to
6 lease packages or do things that would be less expensive, that would allow them
7 to have the updated packaging? Is that possible?

8 MARK LOMBARD: It's a combination of cost and timing, because it
9 takes a long time to get a new package designed, certified, and built for use in --

10 COMMISSIONER SVINICKI: In some instances is there -- there's
11 not an updated package that's approved for use? Is that true?

12 MARK LOMBARD: In some cases. There's not one on the market
13 currently, yes. That's correct

14 COMMISSIONER SVINICKI: Okay, thank you.

15 MARK LOMBARD: Yes, it is cost, because I know in one case the
16 individual we met with a few months ago actually were pursuing a package for I
17 think two years. It wasn't coming in, in the timeframe that we needed to cancel
18 their certification for the package. So, they actually spent a lot of money to go
19 with another package vendor, and that's what they're pursuing now to help meet
20 our timeframes.

21 COMMISSIONER SVINICKI: Okay, we appreciate those answers
22 and it sounds like we're being sensitive to all of these competing needs as we
23 can. So, I appreciate your work on that.

24 In the area of the spent fuel storage and transportation inspection,
25 in the years past there have been questions asked about the consistency of the

1 inspection program, not as it's documented but as it's applied across the
2 Regions, the NRC Regions. I know that this inspection enhancement initiative
3 was undertaken. It is a very comprehensive set of, I think it's 12
4 recommendations that came out of that. A steering committee met, endorsed
5 those recommendations, only one of which was stated that it should be
6 reevaluated after the other recommendations are implemented, but if you were to
7 give NRC a grade in terms of the consistency of the inspection program as
8 applied across the Regions, prior to these recommendations, and then if you
9 were giving a grade to that, will these set of recommendations, when fully
10 implemented I think by the end of fiscal year 2013, would those bring us up to
11 kind of an A grade in that area?

12 CATHY HANEY: Yes. Yes, they would. Clearly, when you have
13 multiple individuals, multiple Regions going out and doing the same activity, you
14 know, people's interest where they focus differs somewhat slightly, but in some
15 ways I think we can capitalize that as a positive thing in the program, because we
16 have fresh sets of eyes looking at different things.

17 With that being said, I think it's very important that we overlay that
18 with the consistency across the Regions and across the inspectors. By
19 improving our inspection procedures and by, you know, just as the training
20 program that we had last week, bringing everyone to the same level, having
21 dialogues with people to try to normalize in on key issues and things that we
22 should look for. I think that's the strength of the program and that's why I think it
23 was easy to give you a quick yes when we finish with all of this, and I think even
24 if you look over the last year or so, that consistency has improved somewhat.

25 COMMISSIONER SVINICKI: Do you think this set of

1 recommendations when implemented will also get at any issues with issue
2 resolution or potential findings and having them addressed and resolved? I know
3 that that's always a pretty complex thing to do, is to make sure that we look at the
4 issue generically, and then have a resolution that can be applied across
5 inspection or enforcement space.

6 CATHY HANEY: Yes, I think it will add to it, but I also think that the
7 increased engagement that we've had with the industry through NEI, and working
8 towards a generic resolution of these key issues once they've been identified,
9 whether it's through a licensing process or through an inspection process,
10 bringing it into that dialogue where we can engage at the industry level helps with
11 the generic nature. And I also think over the last several years, the NRC staff
12 has become more sensitive to asking that question, is it a generic issue and do
13 we need to treat it as a generic issue. So, I think just overall awareness of the
14 need to consider things from a generic issue have improved, and will continue to
15 improve on questions that we ask ourselves. Also, I think as we started looking,
16 focusing in more on the operating experience, because there are items out of the
17 operating experience program that we can use to ask yourselves the same
18 questions. Is this specific to one facility or is it something we need to consider
19 across the entire fleet?

20 COMMISSIONER SVINICKI: And I did note, I know your time is
21 limited for your presentation, that there was also some additional information
22 about the work you're doing and operating experience. I think that's really
23 commendable when I think I fall prey to the same thing that many of us do a lot of
24 the time, is that there's such a vibrant and mature program for operating
25 experience in the reactor side that we forget that not every sector benefits from

1 that same level of a mature program. So, I appreciate what the staff is doing
2 there, and the industry as well.

3 The last area that I wanted to touch on briefly, which does it no
4 justice because it's been an area of such extensive staff activity over I'd say at
5 least the last year, and that's the licensing program improvements the staff did,
6 what I think were a commendable set of stakeholder meetings. I think a lot of
7 them occurred in August and that's going to form some of the basis of you're
8 going to go out for public comment on some other proposed improvements, but
9 in looking at one of the presentations that was made in one of these stakeholder
10 meetings, I think it was Dairyland Power on behalf of the decommissioning plant
11 coalition. But this was interesting and I wanted to get your reaction to it. One of
12 the potential impacts as identified by this external presenter of these efforts to
13 relook at the storage and transportation regulatory framework was that -- this is
14 their quote. They said, "We see increasing tendencies to apply issues raised
15 regarding the 100 to 300 year period to regulatory tasks for the 20, 40, 60 year
16 periods." So, that was their observation. Do you think that there is a danger of
17 the NRC doing that and taking the issues from the 300 years, and applying them
18 to our near term framework, and I don't know if you have anyone you want to call
19 on who's in these workshops, maybe they can give another perspective on that?

20 CATHY HANEY: I guess let me say this. I'll respond at a high level
21 and then I can get Mark or if someone from the staff wants to go to the
22 microphone, that would be fine. When we're looking at our near term licensing
23 issues as well as looking at the extended storage and transportation, as you
24 heard me say, and Mark to a certain extent, there are some issues that it's very
25 hard to say this is solely a near term issue, and therefore we don't consider it

1 under the extended time period, and vice versa. So, there is some overlap and I
2 think we need to be considering these issues. We need to be thorough in our
3 conversations with internal and external. With that being said, at the end of the
4 day staff is very mindful that we regulate to the existing regulatory framework that
5 we have, and that's what the final product that comes out, but yet, you know,
6 we're going to be continually asking ourselves questions as we're going through
7 the licensing process. And I don't -- when I say questions, I don't mean it in the
8 form of formal request for information from licensees. I mean it as continually
9 maintaining a questioning attitude that we pride ourselves on, but yet at the end
10 of the day, we have the existing regulatory framework that we do license to.

11 COMMISSIONER SVINICKI: I appreciate that, and again I just
12 raised the comment because I think it points out something that is very obvious,
13 but it's not -- these materials exist now and they have to be safely regulated and
14 managed right now. So, we can't take everything about 300 years or 500 years
15 and apply that to the now. It may be that there will be additional measures
16 needed in the future, but we also have to manage them now. So, thank you very
17 much. Thank you, Chairman.

18 CHAIRMAN MACFARLANE: Okay, Commissioner Apostolakis.

19 COMMISSIONER APOSTOLAKIS: Thank you. You just talked
20 about operating experience with Commissioner Svinicki and you mentioned,
21 Cathy, that when you see something or you find something, the question is
22 whether this is indication of a generic problem or maybe something that
23 happened at that facility. Can you give us a couple of examples of issues that
24 you found recently, that you had to face that question?

25 CATHY HANEY: I think I'll call the lifeline on that one. So please,

1 Mark or Eric, if you would help me on that one.

2 ERIC BENNER: Eric Benner from spent fuel storage and
3 transportation, and I'm going to start with a little preamble as to why we have
4 some challenges in the spent fuel program, it's because we have what's called
5 the general license process, and what happens is for spent fuel storage, we
6 certify a cask, and then any reactor licensee can basically, you know, pick that
7 cask off the shelf and use it at their facility. But, what that results in is for them to
8 use that cask, they do an evaluation under part of the regulation called 72, 212,
9 in the year of 72, 212 evaluations all the time. So, they do a lot of site specific
10 evaluation and development of procedures and analysis, and then our inspection
11 program looks at that. That's not a licensing review, but there's a lot of stuff in
12 that evaluation that looks like licensing. So, we've essentially put the inspectors
13 in a role that they're not used to being in. Usually they have a clear licensing
14 basis and they go out and inspect to ensure that the facility is in compliance with
15 the licensing basis. Here they're looking at information, licensing basis type stuff
16 that the NRC has never reviewed. So, that's a little preamble. Some of the
17 issues that have come up, they're a lot in the handling and loading activities, and
18 vacuum drawing. Like, there are requirements for these systems and for thermal
19 profiles to demonstrate that, because of the site specific wind conditions, they
20 have to do an analysis.

21 One of the Regions identified that they had some questions as to
22 how that analysis had been done, even though it had been done by the cask
23 vendor. So, they came to us and we immediately articulated that, you know, this
24 could potentially be a generic issue. So, we parched out that issue to say,
25 "Okay," you know, because they were referencing what was done by another

1 licensee. So, we had three sets of questions. One was on what the initial
2 licensee did. The second was what the second licensee did to say that that initial
3 analysis was bounding for their site, and the third set of questions was for the
4 vendor, who is really supposed to be for providing oversight to all of this. So, that
5 was a recent example.

6 Another recent example would be one that I'm sure you're all
7 familiar with, is what's called the stack up configuration for vertical storage
8 systems. They have a transfer cask that they take out of the pool. Then they
9 stack it on top of the storage over pack, and they lower the canister. Now, in this
10 particular certificate, it said that that configuration wouldn't tip over, and we were
11 finding that there is a period of time where that configuration is not on a crane,
12 and not constrained in any way. So, we were looking at, you know, how are you
13 demonstrating that that won't tip over, and that was identified at an individual site,
14 and we had some issues with how we managed that, but we quickly got to a
15 point where we determined there was generic applicability there, and there were
16 differences in how the Regions were looking at that. But we put information out
17 to all the Regions to say "Hey, here are the questions, you know, you should be
18 asking on this configuration to get, you know, assurance that they are showing
19 that this configuration won't tip over. So, well those are the two big examples
20 recently.

21 COMMISSIONER APOSTOLAKIS: Thank you very much. Thank
22 you. On Slide 13, Cathy, you mentioned harmonization with the IAEA. Is this
23 harmonization a result of a practical need or is it because harmonization in
24 general is deemed to be a good thing to do, or both?

25 CATHY HANEY: It's both. There's a practical need in that a lot of

1 the packages that we are certifying are used for international shipments, and if
2 from the user's end point, if they know that it's a particular package could be
3 used within the United States and also shipped internationally, that helps for the
4 import/export requirements. So, there's a practical aspect from it. There's also a
5 need from the standpoint of the IAEA group that is developing these standards.
6 They're looking at -- it's a group of international experts that are coming together.
7 There's ways that we can benchmark from those, using a benchmarking term.
8 We can learn best practices from these other groups. We want to bring that back
9 into the United States, into the regulations. Again, is that a harmonization or is
10 that a practicality? It's kind of hard to judge the difference, but it's really a little bit
11 of both.

12 COMMISSIONER APOSTOLAKIS: Thank you. Thank you,
13 Madam Chairman

14 CHAIRMAN MACFARLANE: Okay, I want to thank the staff again.
15 Thank you, Cathy, and the rest of the staff who contributed to the discussion. I
16 think it was a very fruitful discussion. What we're going to do now is take a short
17 five minute break and come back to it.

18 [break]

19 CHAIRMAN MACFARLANE: All right, folks, shall we get going?
20 Okay, while everybody's taking their seats, we will press on so that we can all eat
21 lunch in a timely fashion. Meals are important so I will turn it over now to Bill
22 Borchardt.

23 BILL BORCHARDT: Cathy didn't have enough chance to talk in the
24 earlier session. She's going to go right into it.

25 CATHY HANEY: Yes, I'd like to thank you for the opportunity to talk

1 this much.

2 [laughter]

3 Good morning, again. Now, I'd like to turn to our fuel facilities
4 business line and the important work that's being done to assure the safety and
5 security of the facilities addressed under this business line. I'm now joined at the
6 table by Vic McCree who is the Region II Regional Administrator, and I'd also like
7 to recognize John Kinneman, who is in the well; he is the division director in the
8 Division of Fuel Cycle Safety and Safeguards, in the Office of Nuclear Material
9 Safety and Safeguards, and John provides the day to day leadership of this
10 business line.

11 In the previous briefing, I described our efforts in addressing spent
12 fuel storage and transportation, which is near the end of the fuel cycle. As we
13 turn to the fuel facilities, we're talking about work that is near the beginning of the
14 fuel cycle. The fuel cycles play a role in taking the yellow cake from the mines
15 and processing, enriching the raw material into forms that are useful as fuel for
16 nuclear power plants.

17 The facilities that we regulate are diverse with technologies and
18 processes that are different from one another. Some of these facilities have
19 been operating for decades, but there are a few facilities we have recently
20 licensed, and are now or soon will be under construction. Safety and security are
21 significant elements of our regulatory program, with a large international
22 component to these elements. In fiscal year 2013, our staff effort is 139 FTE in
23 just over \$7 million for contracts support. In fiscal year 2014, our staff effort
24 increases to 144 FTE, and the contract dollars remain essentially the same.
25 These resources support licensing and oversight of fuel cycle facilities, event

1 response, rulemaking and research and security and safeguards activities.

2 Moving to Slide 21, I will discuss our strategic goals and business
3 line priorities, touch on selected product lines, and conclude by describing our
4 focus going forward. With regards to strategic goals, we have four specific
5 strategic goals that are critically important for success in the business line in
6 future years. These goals are generally similar to the goals for the spent fuel
7 storage and transportation business line. Ensuring regulatory effectiveness is
8 always a goal we strive to achieve. Working toward that goal and the dynamic
9 environment we have today brings about some significant challenges. The
10 changing environment includes a number of factors such as the future
11 reprocessing technologies for the back end of the fuel cycle. New licenses for
12 enrichment facilities to meet the global demand for enriched uranium
13 hexafluoride, changes in demand for fuel in response to the event at Fukushima
14 Dai-ichi, an inadequate world supply of medical isotopes, and a need to license
15 small amounts of special nuclear material to allow for testing of shipboard
16 containers.

17 As we look to the future of non-light water reactor fuel designs, we
18 believe our regulatory foundation is adequate to support the Office of New
19 Reactors, as they conduct licensing reviews for these technologies. However,
20 we anticipate significant implementation challenges, particularly in the material
21 control and accounting area due to the possible new reactor design such as
22 aqueous homogeneous, pebble bed and metal cooled reactors, and their fuel
23 forms, and handling processes, and the potential mobility of small modular
24 reactors. Being an effective regulator is critical to success in ensuring safety and
25 security in this changing environment.

1 All supporting this business line are fully committed to supporting
2 our national interests in limiting the proliferation of nuclear weapons. We
3 established strong U.S. non-proliferation elements as a critical strategic goal for
4 this business line. It is vitally important to ensure that our activities to secure
5 special nuclear material and source material at domestic fuel facilities set the
6 right example for the international community. We continue to be challenged by
7 the large volume of export and import materials and goods, many with extremely
8 short deadlines, the addition of new fuel cycle facilities and technologies, the
9 implementation of our security, and material control and accounting, or MC&A
10 requirements at domestic fuel cycle facilities, and maintaining accuracy and
11 diligence in tracking of special nuclear materials with the national database.
12 Meeting these challenges reinforces the need for us to be fully engaged with the
13 Office of International Programs and other federal agencies.

14 I firmly believe that as a regulatory body, we are strengthened by
15 having an open, and active dialogue with those parties outside the agency that
16 have a vested interest in what we do. This includes our licensees, other
17 members of the federal family, the international community, and the public. We
18 have established as a critical strategic goal to continue outreach and
19 engagement with stakeholders. This strategic goal directly impacts each of our
20 business line products, and it's vitally successful to virtually everything that we
21 do.

22 It is particularly challenging for the fuel cycle facilities, because so
23 much information about them cannot be shared publically. Still, we do invest
24 considerable thought and effort into our communication and public outreach. For
25 example, at a recent Nuclear Fuel Services public meeting, we were able to

1 share our licensing decision regarding the renewal and environmental
2 assessment, which did further public understanding of the decision and permitted
3 a dialogue on the basis of our regulatory position.

4 As I noted in the earlier briefing, we do have a strong program, but
5 we can always do better. That holds true for the fuel facilities business line.
6 Some of the specific activities we have undertaken to support this include
7 continuing improvements to our technical reviewer qualification process, ongoing
8 training to maintain and improve our skills, training on new technologies and
9 processes, improving communication with all of our partner offices, effective
10 knowledge management, implementation of the fuel cycle regulatory framework,
11 and stress a careful resource utilization in an austere environment. Slide 23.

12 I believe we have one overriding priority in all that we do, and that
13 is to assure the safety and security for operating facilities. I take that as a given,
14 and then look to the other work in the business line in terms of how each element
15 best supports safety and security for the operating facilities. In that context,
16 working with our partners in Region II, assuring the effective construction
17 oversight of the new fuel facilities is critical to assuring their safety and security
18 as they move from construction to operation. In pursuing our work for the fuel
19 facilities, we have a very clear domestic focus. However, we must always
20 address our international obligations. We regularly engage the international
21 community and take leadership roles in the many groups that are relevant to the
22 fuel cycle safety and safeguards. I think we have done the hard job of striking a
23 good balance between a domestic focus and supporting our international
24 obligations. In striking this balance, I believe we need to continue to support the
25 International Atomic Energy Agency, or IAEA, and other countries in export and

1 import of source and special nuclear material and in safeguarding our domestic
2 facilities. Slide 24.

3 To meet the business line priorities, we have structured our work
4 around seven product lines depicted on this slide. The most significant
5 resources are found in the oversight and licensing product lines. Oversight
6 consumes 54 percent of our budgeted FTE and licensing consumes another 27
7 percent. I firmly believe that success in our business line demands significant
8 interconnectivity and effective coordination and communication with our major
9 partners in Region II, the Offices of Nuclear Security and Incident Response,
10 Federal and State Materials and Environmental Management Programs, General
11 Counsel, Nuclear Regulatory Research, and Office of International Programs.
12 We also have interactions with the Office of Nuclear Reactor Regulation and the
13 Office of New Reactors, and I would be remiss if I didn't mention the support that
14 we received from the corporate offices. Slide 25.

15 Licensing of fuel facilities is critical to ensuring the safety and
16 security of those facilities. During the last fiscal year, we completed and issued
17 significant new licenses at two enrichment facilities, AREVEA-Eagle Rock, and
18 GE-Hitachi. In support of the licensing process, we and our business line
19 partners successfully supported mandatory hearings for both facilities.

20 In addition to licensing the enrichment facilities, we also issued a
21 new license to authorize a de-conversion facility to turn depleted uranium
22 hexafluoride into high purity fluoride compounds for commercial sale, and
23 depleted uranium oxide for disposal. Over the last five years, we have received
24 and completed an increasing number of routine licensing actions. However,
25 during the last two years, it appears we are reaching a steady state of

1 approximately 120 actions a year, including license renewals, amendments, and
2 terminations. I have been particularly focused on the changes we are making in
3 our processes to ensure and improve regulatory effectiveness, and to strengthen
4 our organizational excellence to meet this increasing workload demand. We
5 continue to conduct lessons learned on each major licensing activity. Those
6 lessons are and will be applied to enhancing our licensing process, just as we
7 implemented improvement actions from a Lean Six Sigma review a few years
8 ago. Some of the specific actions learned were to start drafting the safety
9 evaluation report early in the licensing process, and to approve coordination
10 within the licensing team.

11 Acting on the lessons learned ensures that we continue to conduct
12 high quality safety reviews, focus our first priority on safety and security, and still
13 meet our timeliness metrics for routine actions. We continue to look for and
14 implement improvements in licensing guidance documents and licensing
15 processes. We are engaging our licensees and the public to identify process
16 improvements, as well as potential changes to the regulations that could address
17 recurrent licensing amendment or exemption requests.

18 Part of our licensing process and budget activities include
19 discussions with Region II on anticipated new construction activities, and
20 modification of operating facilities. These discussions support allocating the
21 necessary future inspection resources required for our oversight product line.
22 Moving to slide 27, 26 please.

23 As I noted earlier, our oversight activities consume 54 percent of
24 our annual budget. Our core inspection effort resulted in completing over 300
25 inspection modules last year. These are carried out primarily by Region II, with

1 smaller portions in the Division of Fuel Cycle Safety and Safeguards within the
2 Office of Nuclear Material Safety and Safeguards, and within the Office of
3 Nuclear Security and Incident Response. We continue to use administrative and
4 management controls within the oversight program to assure that both inspection
5 and licensee performance assessment activities are conducted in a timely
6 fashion, and in a high quality manner.

7 Based on the results of our inspections which have included value
8 added findings in the fuel cycle facility performance areas and our performance
9 assessments, I'm pleased to tell you that we continue to implement an effective
10 oversight program. This program allows us to determine whether fuel facilities
11 are being operated safely and in accordance with NRC regulations. However, we
12 continue to test ourselves on how to make it better.

13 One of our significant accomplishments under this product line was
14 the completion of the post-Fukushima inspections at seven operating fuel cycle
15 facilities. We identified unresolved items at the facilities. These items require
16 further evaluation to determine if the facilities are in compliance with current
17 regulatory requirements regarding accident sequences from certain natural
18 phenomena events. At one of the facilities, it was found that the emergency plan
19 was nonconservative as it related to a seismic induced event. We took prompt
20 action by issuing a confirmatory action letter followed by a confirmatory order.
21 These require specific licensee actions to address the safety significant issue.
22 Working with our partners in Region II, I'm confident that we have taken
23 appropriate actions to address this issue.

24 Recall that one of the priorities I noted for this business line is to
25 manage the transition from construction to operation for new fuel facilities. We

1 have the benefit of a number of years of construction oversight. That experience
2 has provided valuable insights into construction activities and the development of
3 a construction inspection program that cuts across the fuel facility and new
4 reactor business lines.

5 In the next five years, a number of new facilities such as the
6 AREVA-Eagle Rock, GE-Hitachi Laser Enrichment, International Isotopes, and
7 Shaw- Areva MOX facility will likely complete construction and begin operation.
8 We are working with Region II to plan and be ready to implement the
9 construction and operating inspection programs for these facilities. As we move
10 forward, we need to carefully plan for the inspection resources and develop the
11 skill sets that will be necessary during the transition from construction to
12 operation. These skill sets include construction quality assurance, structural
13 engineering, and broad systems operational readiness experience. We have
14 developed and expect to implement the project plan for revising the fuel cycle
15 oversight processes. As we implement the plan, we will provide the Commission
16 with annual progress updates, and come back to the Commission for direction on
17 certain key milestones.

18 In addition, we are strengthening the programmatic oversight of our
19 inspection and licensing programs. This includes working with our partner offices
20 to ensure clarity on our respective roles and responsibilities, and to conduct
21 routine updates to our inspection and assessment program. These efforts are
22 needed to ensure efficiency and effectiveness in our oversight of the safety and
23 security of the operating fuel facilities, and the proper construction of new
24 facilities. Most of the activities and decisions affecting this business line are
25 within the staff's control. However, I want to note one upcoming policy issue

1 where we will seek Commission direction. Specifically, we plan to request
2 Commission direction on the approach for sight access requirements at the MOX
3 facility. A notation vote paper to address this issue will be forwarded to the
4 Commission in early fiscal year 2013. We will continue to provide status updates
5 on implementation of the revised fuel cycle oversight program project plan, and
6 post Fukushima response actions highlighting those that might result in
7 regulatory framework changes. Slide 28.

8 Turning now to rulemaking. We are pursuing two rulemakings
9 related to fuel facilities and have made good progress. We completed the draft
10 final rule on revisions to material control and accounting regulations found in Part
11 74. We will continue to work with external stakeholders on understanding the
12 potential implications of the rule. Five guidance documents will accompany the
13 rulemaking package for external stakeholder feedback. We have also been
14 working on a change to Part 40, to incorporate integrated safety analysis
15 requirements. We have provided a proposed rule to the Commission that adds
16 these requirements for conversion and de-conversion facilities. Our ongoing
17 activities in support of rulemaking also include research on different reprocessing
18 technologies. We also are working to enhance security of fuel facilities in such
19 areas as access control, fitness for duty, material characterization, and
20 incorporation of past security orders.

21 Finally, we are working to enhance security by explicitly addressing
22 cyber security. A road map was provided to the Commission earlier this year that
23 described our approach for evaluating the need for cyber security at NRC
24 regulated facilities. We are making progress consistent with the road map and
25 are evaluating licensee initiated measures, and potential cyber security threats at

1 fuel facilities. As we move forward with these rulemaking activities, we will
2 actively engage our stakeholders who include states, industry, and other
3 interested parties. We expect to expand these interactions as we work toward
4 our goal of outreach and engagement with stakeholders. Slide 29.

5 Our work addressing fuel facilities has a significant international
6 component. We are emphasizing our work to support U.S. non-proliferation
7 elements, and our international agreements in this area require close
8 coordination with the Offices of International Programs and Nuclear Security and
9 Incident Response. We have a leadership role in one interagency working group
10 and participate in a number of others. We chair the interagency sub-group on
11 IAEA safeguards in the U.S. and our members of the subcommittee on
12 safeguards and international monitoring and the subgroup on safeguards
13 technical support. These interagency groups were established in response to the
14 U.S. IAEA additional protocol agreement. Slide 30, please.

15 As I mentioned earlier, the fuel facilities regulatory environment is
16 diverse and dynamic, but our mission and our focus on safety and security is
17 unwavering. As we move into the future, we will continue to stress the safety and
18 security of our operating facilities, which means having licensing and inspection
19 programs that are transparent, effective, and predictable in engaging staff that is
20 well qualified to support all activities in this business line. We also will focus on
21 the oversight of facilities under construction to ensure that they are constructed in
22 accordance with their licensing basis, which will support their safe operation.

23 Finally, we will continue to support the U.S. government's
24 nonproliferation activities and to meet our international obligations on securing
25 and safeguarding source and special nuclear material. This concludes my

1 presentation and we are ready to take your questions.

2 CHAIRMAN MACFARLANE: Great, thank you very much, Cathy.

3 Well, okay. Starting off again is Commissioner Magwood.

4 COMMISSIONER MAGWOOD: Thank you, Chairman, and Cathy,
5 thank you again, a crisp, informative presentation, well done, thank you. Before
6 starting, I wanted to echo something Commissioner Ostendorff said earlier in his
7 remarks in the first round of discussion, and that related to waste confidence, and
8 just thanking the staff for moving out so quickly to establish the framework to get
9 that work done in a 24 month period. Just wanted to emphasize that's very
10 important to us and we're watching it very closely. So, I appreciate your efforts in
11 that.

12 Regarding fuel cycle facilities, you did mention the inspections that
13 we implemented after Fukushima. One thing that I'd like to hear you talk about,
14 maybe this is more philosophical. Obviously the Commission has not approved
15 any changes to the regulatory framework based on Fukushima for fuel cycle
16 facilities we have for reactors, not for fuel cycle facilities. In your view, how has --
17 what insights have you gained from Fukushima that impact how you look at these
18 facilities and how the staff is assessing issues like the emergency planning
19 issues that came out of the inspection you talked about earlier, or other issues
20 related to fuel cycle facilities? How has Fukushima informed and altered your
21 view of these facilities within the framework, not beyond the framework, within
22 the framework?

23 CATHY HANEY: I'll make a few comments and then I think it would
24 be great if Vic also commented, because he's from the inspection perspective
25 where I would say it more from the licensing perspective. I would say when we --

1 from my involvement with the Fukushima steering committee, as that committee
2 has moved forward and how they've been reacting to the event, I've been able to
3 learn from that, and take it back to the office, and then take those lessons
4 learned, and apply it to the fuel cycle area. So at a very high level, we have been
5 really learning from what's been done in the reactor area. Most recently, NMSS
6 staff, working with Region II, briefed the steering committee on a proposed path
7 forward for looking at the fuel cycle facilities, and we approached it, from the
8 standpoint of the results of the temporary instruction, and that really drove us
9 more to looking at our current licensing basis versus something that, in the
10 reactor world, would be referred to as a "beyond-licensing basis," but in the Part
11 70 and 40 world, we look at things a little bit differently. But with that, that's taken
12 us to the current licensing basis, where we briefed the steering committee on
13 looking at a generic letter to gather more information from the licensees, and that
14 would allow us the time to look at our licensing guidance at the same time that
15 we're proposing to go out to gather more information from the licensees. So I
16 guess I can go back to your original question. It's caused us to look at -- where --
17 what we're currently doing. But then we've also, separate from that, stepped
18 through all of the near-term task force recommendations and asked ourselves
19 the question of, does this apply to us? There are some, clearly, that don't.
20 Station blackout really doesn't have a meaningful role in fuel cycle facilities,
21 because of multiple things that I won't take the time up right now. But some of
22 the other items -- command and control, instrumentation, what's our knowledge
23 base on external hazards such as seismic and tornado. So we're really -- we're
24 learning, and we're going back and forth, but the focus is a lot on the current
25 licensing basis versus something beyond that, and then Vic and, I guess,

1 actually, Jim is on the committee also, on the steering committee. You have
2 some -- you guys can decide.

3 VIC MCCREE: Good morning. Just wanted to reiterate what Cathy
4 indicated. The temporary instruction that we completed at the seven fuel cycle
5 facilities was focused primarily on the current licensing basis and making sure
6 that the strategies and the measures that were in place to mitigate emergencies
7 that might result from a credible natural hazard were acceptable and that the
8 plants were safe. And overall, what we found was that, in general, the strategies
9 and measures were effective, that they would protect the plant, the facilities.
10 There were a number of examples where the analytical basics that the
11 documentation to support the structure systems and components that would be
12 relied on in an emergency to mitigate the impact of it were not available, and the
13 generic communication that Cathy referred to would be focused on gathering that
14 information so that we can confirm that the performance requirements of those
15 structure systems and components would be -- would be available and that the --
16 that the basis would be validated. So, in general, the TI was successful in that
17 we did get information that confirmed the adequacy of the strategies and the
18 measures at each of the facilities that we've evaluated.

19 JIM WIGGINS: And I just want to add on the one specific matter
20 that you pointed out on the facility, and you characterized it as an EP issue. One
21 of the things that we applied, and Cathy, Vic, and me, as also a member of the
22 steering committee, is if you look at that confirmatory action letter, you'll see both
23 -- you'll see actions that bear on prevention and actions that bear on mitigation
24 and the actions that bear on EP. That's the defense in depth, although it's an
25 unsettled issue in the task force, that's part of the recommendation one type

1 strategy, is to look at things as a defense in depth. And that's what we did in this
2 matter. So Vic and Cathy knows this, whenever anyone refers to the NFS issue
3 as an EP issue, that I tend to get alerted; it isn't an EP issue. It's -- EP is an
4 element of it. It has to do with where the enforcement is coming down, but really,
5 when you look at it, we're looking at -- you had degradation and the prevention or
6 the presumed failure of the prevention piece, and you'll see that the licensee's
7 corrective action works on prevention by strengthening the plan. It works on
8 mitigation by handling the problem if the first level doesn't prevent it, and then EP
9 comes in at its appropriate third-tier spot.

10 CATHY HANEY: Commissioner, could I add one more comment?
11 What you've heard as described is a work in progress. We do have an IOU to go
12 back to the steering committee and do plan to keep the Commission informed
13 and -- as we make that next step, which will probably be after January of next
14 year.

15 COMMISSIONER MAGWOOD: Appreciate that. Let me -- let me
16 follow up a little on this, because I think that -- to summarize what I think I've
17 heard is that while you're looking at the insights of Fukushima, that they haven't -
18 - they have not changed the regulatory landscape for the facilities post-
19 Fukushima from what it was before Fukushima. Basically, you're in the same
20 place. And I have to say, it doesn't feel that way. It doesn't feel that the world
21 hasn't shifted somewhat. For example, when you look at beyond-design-basis
22 events, you look at accident sequences, because the conversation that Jim had,
23 are you -- are you -- I just want to pin you down a bit. Are you saying the staff is
24 not looking at those issues any differently today than they would have looked at
25 two years ago?

1 VIC MCCREE: Commissioner, the -- if I could add on to my
2 comment about Temporary Instruction 2600-15. It had three phases. The first
3 phase was an in-office review for each of the seven facilities to confirm what the
4 licensing basis requirements are for natural events. And once we had completed
5 that, we began on-site visits at the seven facilities. That second phase focused
6 on the ability within the current licensing basis for the licensee to mitigate a
7 natural event like a seismic event or high winds. The third phase, which we
8 gained valuable insights on, was the extent to which each of the facilities could
9 handle a beyond-current-licensing-basis event. And what we discovered at many
10 of the facilities, particularly Part 70 and 76 licensees, was that there is margin
11 within the facility to handle beyond-design-basis events. What we did not find,
12 again, was the detailed documentation, actually, to support that. And that's what
13 we would need to, one, confirm their ability to withstand the current licensing
14 basis, which, in general, we believe, based on the robustness of the facility and
15 the processes and procedures, the training that they have in place, that they
16 would be able to meet, so we do have confidence in that, but we do need the
17 additional information to confirm that for both Part 2 and Part 3, which is the
18 beyond the licensing basis aspect of the issue.

19 COMMISSIONER MAGWOOD: Can you elaborate, in the 18
20 seconds we have left? What is -- I mean, beyond-design-basis is beyond-
21 design-basis. So when you're looking at the ability of a facility to respond to a
22 beyond-design-basis event, what, from a regulatory standpoint, are you looking
23 for?

24 VIC MCCREE: And that's a very good question in which we had a
25 number of conversations on prior to the development of the TI. It's like, what is --

1 how do you define that? And there were interactions that we had with each
2 facility, and between Region II and NMSS, to postulate, what would that be? Is it
3 -- is 110 percent of the evaluation basis wind loading? Is it 110 percent of the
4 seismic horizontal ground motion? What is that? And for each of the facilities,
5 we had that information before we conducted the inspection, and we had
6 confidence that in -- specifically for the Part 70 and 76 licensees, that there is
7 margin available at those facilities.

8 JIM WIGGINS: I just need to revise my remarks I named the wrong
9 facilities, it's not NFS. I got about 9,000 plans going through my head about
10 other things.

11 COMMISSIONER MAGWOOD: Thank you, thank you very much.
12 Thank you, Chairman.

13 CHAIRMAN MACFARLANE: Okay. Commissioner Ostendorff.

14 COMMISSIONER OSTENDORFF: Thank you, Chairman. Thank
15 you all for your presentation. I want to kind of pick up with where Commissioner
16 Magwood was, because I think I share his view that perhaps the world has
17 changed in the area of these fuel facilities with respect to how they're being
18 looked at from Fukushima. And I'm where you are, and I'm not saying that's right
19 or wrong, but I think it is different from where we were pre-Fukushima.
20 Victor and I had a chance to visit earlier this month the Metropolis facility with
21 you, and that was a very insightful visit, and just -- I continue to be struck
22 whenever we go to one of these fuel facilities, much like many of the DOE
23 facilities, how truly one-of-a-kind they are as far as the chemical processing, the
24 materials, the hazardous materials, et cetera. Very, very different from our
25 experience as a Commissioner visiting nuclear power plants. Tremendously

1 different. And so to kind of in line with Commissioner Magwood's question, at a
2 very high level, I realize there's a lot of things specific to the Honeywell facility.
3 I'm not going to try to explore that, necessarily, but it provides a context because
4 of our visit there a couple of weeks ago. But how do we get to a point where we
5 have some regulatory certainties, some predictability and stability in the fuel
6 facility area for these one-of-a-kind facilities? And it's kind of a philosophical
7 question, but it's very different from the reactors, so that's why I'm trying to -- you
8 have a lot of experience, and so does Cathy and others at the table. I'd just
9 appreciate any thoughts you have on that, because I am concerned about us
10 being able as an agency to have some predictability as to what we are requiring.
11 And I know you are as well.

12 VIC MCCREE: Well, the first thing I would say is that we are
13 holding licensees accountable to the current licensing basis. There is no
14 regulatory creep ongoing here. The temporary instruction was for the purpose of
15 confirming facility compliance within the current licensing basis and gathering
16 additional information that would allow us some insights on the abilities of
17 facilities to prevent or mitigate emergencies if the event -- the natural event were
18 beyond the licensing basis. Having said that, Cathy alluded to the discussions
19 we've had recently with the Fukushima steering committee on a path forward,
20 and the first step, I believe, we were successful in moving forward is, we need
21 additional information. And from that, of course, we would engage the steering
22 committee and the Commission on perhaps the need for any additional changes.
23 But what I would like to do, if John is willing to provide some additional insights
24 on that.

25 JOHN KINNEMAN: Sure. I'm John Kinneman. I guess the insight

1 I'd like to add is, as Vic said, we're very aware of regulatory creep at the existing
2 facilities, but I'd like to turn for just a few seconds to the newer facilities. As
3 Cathy mentioned earlier, we've licensed a number of facilities recently, and I think
4 one of the things that struck me about that -- I've only been doing this particular
5 job for about two years -- is how evolutionary the process has been, and I think
6 that's one of the things that we're finding as we look at the Fukushima results.
7 When we look at the licensing process for the more recent facilities, especially in
8 the area of natural phenomenon, the staff was very engaged, very focused. If
9 you read those SERs, there's a very clear assessment, which I won't go into now,
10 just for time, and so I think the staff has a really clear regulatory basis there.
11 When you look back at the existing facilities, the areas where the licensing basis
12 is a little less clear and perhaps a little less uniform, some of that comes out of
13 two things, as I see it. One is these facilities were built well before the ISA
14 process and were, as you pointed out, Commissioner, very, very one-of-a-kind;
15 and as we moved into the ISA process, which is in the decade of about 2000 to
16 2007 or 2008, there was a lot of focus on internal IROFS, the items relied upon
17 for safety to prevent accidents inside of the facility, and I would say that the
18 licensing process didn't get as much detail about natural phenomenon and didn't
19 develop as clear a basis. I think, as Vic said, we're -- coming out of this process,
20 we're going to have a better understanding of how the facilities will respond, and
21 that will allow us to answer the question that you -- that was asked about where's
22 the margin. When the facilities come back to us with a better understanding of
23 how they'll respond to natural phenomena, then you can more easily see, well,
24 what happens if you move it 10 percent or 20 percent more?

25 COMMISSIONER OSTENDORFF: Okay. Thank you, John. I

1 appreciate that. I'm going to stay on this theme for the one-of-a-kind facilities.

2 And I don't want Mark Satorius to be here today and not have a chance to speak.

3 MARK SATORIUS: I'm ready to go.

4 [laughter]

5 COMMISSIONER OSTENDORFF: So I want to acknowledge and
6 thank FSME for their significant role in conducting the rulemaking portion in
7 concert with their partners in NMSS, because I think that's a real strength of the
8 crosscutting interoffice relationships that you all have. I think that's just a very
9 positive aspect. Mark, you've got a great background. You've been a Regional
10 Administrator and spent a lot of time in the reactor business when you were out
11 there in Lisle, Illinois, and I want to kind of maybe ask a similar question to you
12 that I asked for Vic. Do you see anything different in our rulemaking in these
13 one-of-a-kind facilities in fuel facilities, for instance, that causes us to -- should
14 cause us to pause as to how we do business compared to your experience in the
15 reactor area?

16 MARK SATORIUS: Well, yes, I do, and I -- and one of the features
17 that I see is, when you conduct some of the environmental work associated with
18 these one-of-a-kind, you get into a one-of-a-kind environmental assessment, so
19 to speak, or an environmental impact statement, so sometimes you can use
20 lessons learned from other environmental studies that you do when you're in the
21 reactor side, you know, more of a pattern, so to speak. These one-of-a-kind do
22 provide some challenges with respect to the environmental work that's necessary
23 to conduct license reviews and other sort of regulatory activities.

24 COMMISSIONER OSTENDORFF: Okay. Thank you for that. And
25 I guess that was just a comment on how much -- how important I think it is for

1 people to get out to visit these facilities. I know the UF6 process at Honeywell,
2 which I was not very familiar with before I visited -- a PowerPoint presentation is
3 not a substitute for a site visit there. And I really appreciate Vic hosting that. And
4 just so important, because these things are very, very different. Jim, let me turn
5 to you for a minute here. You know you're not going to get away without a cyber-
6 security question. Certainly, the cyber-security topic has been very prominent in
7 the U.S. news and world news here in the last few months, and successful cyber-
8 attacks on banks. Secretary of Defense Panetta has made comments
9 expressing his concern on the lack of a process to share information on cyber-
10 security threats to affected entities as a national security threat. And I just
11 wanted to ask in this forum, how is the NRC staff, how is NSIR addressing this
12 issue as far as sharing of cyber-threat information with the fuel facilities?

13 JIM WIGGINS: Well, let me just say -- if I can start off by saying, as
14 you know, we have what I would call a rather robust cyber program that applies
15 to operating and new reactors, and through a paper that we sent to the
16 Commission recently that we refer to as the roadmap, we're rolling that out to
17 other types of licensees. First in line were the fuel facilities. And Cathy's staff did
18 an outstanding job working. If you read that paper, you'll see they set the pattern
19 for how you do the evaluation, as you try to address the question, what, if any,
20 requirements need to be applied to these other instances? I won't sugarcoat it.
21 It's a difficult issue to share the information with these folks. There's a -- there's a
22 level of information that they can get that is the OUO -- official use only. We try
23 to put that out on our protected web server. Right now that's a push exercise, we
24 put it. We need to work harder to get the other side pulling. And I think as you
25 work your way through the next stop on the roadmap, which is the fuel facilities,

1 and we'll be working with the Commission, sending to the Commission a
2 proposal on how to approach that. That'll give us at least a beginning or a
3 platform to start to get the industry interested in pulling that information that's
4 provided.

5 COMMISSIONER OSTENDORFF: Let me, if I can, because I'm
6 going to run out of time here, but I want to make a point and ask you to agree or
7 disagree with this. It's my sense that industry, perhaps the fuel facilities -- I'm
8 using that in the context for this question -- needs to perhaps elevate in their
9 organizations the importance of more senior management paying attention to this
10 and understanding the threats. Is that a fair statement?

11 JIM WIGGINS: Yeah, but I wouldn't single them out. I have similar
12 concerns on the operating reactor side. We've been launched on an endeavor
13 here with NSIR, NRR, and others in the Regions to try to raise the level of cyber-
14 sensitivity at the facilities. This is part of an evolution and maturation process,
15 and if anything, like I said, the operating reactors are further ahead than anyone
16 else, but if you look at what's happening there, the cyber protections that are
17 being installed are being done as projects and being managed classically like a
18 project. It's typically a group. That's different from the site organization comes in
19 and puts it together and turns it over to the site. We've been working to get the
20 site more interested in it. I presume, and assume that it will certainly play out at
21 fuel facilities the same way. We're currently working with the fuel facilities in
22 convincing them that it's necessary at this point. That's what we're working on
23 now, is making sure they see why we see that there's something that's
24 necessary. Not the operating reactor full-fledged program, but it kind -- I keep
25 calling it a consequence-driven decision process that needs to be applied to fuel

1 facilities. The difference between the two, between a reactor and a fuel facility, is
2 the fuel facility has to deal with information security, material control and
3 accountability, criticality controls, along with system security and EP, where the
4 others don't. But what they get in terms of additional scope, they can get back in
5 terms of looking at what the real consequences are. There's not a lot of
6 consequences that come out of system issues that you would see, say, similarly
7 on a reactor.

8 COMMISSIONER OSTENDORFF: Thank you. Thank you,
9 Chairman.

10 CHAIRMAN MACFARLANE: Okay. Just a comment, first, on some
11 of the discussion that we've been having, and then some questions, and my
12 comment is that -- just a reminder that our understanding of natural phenomenon
13 is constantly evolving, and as you've all pointed out in this discussion, some of
14 these facilities that we're talking about here are very old. In fact, they were --
15 some of them were constructed long, long before the geosciences experienced a
16 paradigm shift towards the understanding of plate tectonics and how
17 earthquakes, et cetera, evolve, so it seems to me that we need to ensure that
18 we're using the most up-to-date information in our licensing basis to assure that
19 these facilities are safe. And these facilities need to be able to withstand what
20 we know they could experience. This, to me, is one of the most significant
21 lessons from Fukushima. So just a point on that.

22 So, you know, I'm going to sort of bring both parts of this morning's
23 discussions together in this question, because you did mention the MOX fuel
24 facility, and it seems to me that -- I just sort of was thinking about spent MOX fuel
25 from previous discussion and wondering if there's any work that has been done

1 on spent MOX fuel. So this is probably just a question for you, Cathy. And, you
2 know, are we -- are we prepared to deal with it? Are we going to understand its
3 behavior in dry casks, et cetera?

4 CATHY HANEY: And I think I'll go to either Mark or John,
5 whichever wants to take that question. Nobody?

6 [laughter]

7 MIKE WEBER: Neither.

8 [laughter]

9 LAWRENCE KOKAJKO: I don't have a good answer. Oh, excuse
10 me. Lawrence Kokajko, director of Spent Fuel Alternative Strategies. I don't
11 have a good answer for you on that yet. This is an area that's still evolving for
12 us, and we have been engaged with our partners both in fuel cycle as well as in
13 spent fuel storage and transportation. This is an area that I think we're going to
14 see a little bit more of in the future. We feel that, in terms of the cask designs,
15 that it will remain more or less the same. However, you know, we are open to
16 any number of new technical challenges that may arise, and we're very sensitive
17 to that, and I think Mark did a good discussion on some of the stuff that's on the
18 more traditional understanding of the fuel systems.

19 CHAIRMAN MACFARLANE: Okay. All right. Thanks. It just
20 seems -- it's clearly coming down the pike, and we need to be prepared for it. All
21 right. On a completely different topic now. So you guys recently issued a license
22 for International Isotopes Fluorine Products for a new de-conversion facility, and I
23 wondered if you could talk a little bit about plans for the uranium oxide waste
24 stream. Where is it going to go?

25 MARK SATORIUS: Well, I can start with that, Chairman. First of

1 all, depleted uranium, which will be an outflow from that, along with fluorine gas,
2 which is going to be commercially marketed by the company, that will have to go
3 to a licensed facility that can accept that type of waste, which is Class A waste in
4 this case. Not presuming to say whether it will go to WCS in Texas. If they -- if
5 the state of Texas who licenses that facility would permit that waste to come there
6 because it's involved in a compact, as you know.

7 CHAIRMAN MACFARLANE: [affirmative]

8 MARK SATORIUS: Or it would have to go to Energy Solutions or
9 somewhere else, but that would be -- that would be the flow that that waste
10 stream would go to, is to a facility that's licensed for that type of waste.

11 CHAIRMAN MACFARLANE: So just to -- for my understanding, so
12 looking at the waste stream and planning ahead for that waste stream was not
13 part of the license evaluation or anything.

14 MARK SATORIUS: I can't answer that piece, ma'am.

15 JOHN KINNEMAN: Chairman, in the licensing process and the
16 environmental impact process, there was an assessment that there -- in trying to
17 keep our -- remember our separation from the actual process, we looked at
18 whether there was a place for it to go and whether there is a regulatory, what I'll
19 call, opening for it, and I think we've concluded in both the environmental impact
20 and the license that there's storage on-site that's adequate to manage the output
21 of the plant as they go forward, and that there are places, as Mark said, that it
22 can go, and that they will have adequate financial assurance for whatever they
23 have on the site. So those are the elements that we looked at. How they
24 actually manage the waste within those parameters of storage until they choose
25 a disposal site, and as long as they maintain within their financial assurance for

1 the eventual disposal of it, those will be our focuses. Where it actually goes in
2 the context of some of the rulemaking that's going on and some of the decisions
3 that have to be made by other regulators, it's really a decision that we believe
4 there's adequate -- each of the areas is adequately covered.

5 CHAIRMAN MACFARLANE: Okay. All right. Another completely
6 different question, for Jim. So I understand that you guys have issued -- or
7 maybe for Cathy -- you guys have issued a security advisory to some of the
8 licensees as a result of the Y12 incident, and maybe you could talk about which
9 licensees received this advisory and why, and whether there would be a benefit
10 of sending it to all the licensees.

11 JIM WIGGINS: Well, essentially, Chairman, we sent the advisories
12 to a fairly broad distribution. We need to work out some details in Mark's
13 organization, his area in the materials community -- and who gets it there -- but
14 anything that you would construct as a facility, or view as a facility got it --
15 operating reactors, reactors under construction, research and test reactors, Cat-
16 1, Cat-3s, GDPs, we sent it to the --

17 CHAIRMAN MACFARLANE: What are GDPs?

18 JIM WIGGINS: Gaseous diffusion plants. Independent spent fuel
19 storage installations.

20 [laughter]

21 Sent it out to the Agreement States, gave it through the Regional
22 State Liaison Officers. We made a rather broad distribution of the security
23 advisory and a subset of that group. We did a separate kind of an informal
24 distribution of a DOE -- Department of Energy's Inspector General's report came
25 out earlier, so we got it out, and Cathy's people got it out too, and immediately

1 impacted people, which are basically the fuel facilities.

2 CHAIRMAN MACFARLANE: Okay, great. Great. That's good
3 news. All right. Maybe for Cathy, or whoever -- or maybe Vic. You spoke about
4 the importance of the staff's transition from licensing work to inspection work, and
5 you mentioned gaining experience from some of the perspectives in some of the
6 Regional offices. So I wondered if you'd considered other sources of experience
7 outside of NRC, either international or other industries, et cetera.

8 VIC MCCREE: Well, I guess the short answer is yes, and we need
9 to do more. In the process of training and orienting our inspectors that are
10 involved in the construction oversight, fuel cycle facilities, for example, we sent
11 several inspectors to the Amalo facility in the Netherlands to get a better
12 appreciation for centrifuge technology. Of course, as part of the general
13 proficiency training, all of our inspectors have to complete the uranium --
14 conversion, uranium enrichment qualification course, so they receive that basic
15 training and qualification, but -- so augmented that knowledge that they gain. We
16 also sent inspectors to the MELOX facility in France associated with the mixed-
17 oxide conversion, construction, inspection activities. One of the challenges that
18 we have and we're already working on is building and operating an inspector
19 training module, if you would, or factoring that into our qualification process so
20 that those inspectors who will be the resident inspectors, and the Region-based
21 inspectors, inspecting at MOX and ultimately in Wilmington at the facility there,
22 as well as International Isotopes, have that difference training that they need to
23 be effective.

24 CHAIRMAN MACFARLANE: Okay. Great. All right. I will stop
25 there and turn it over to Commissioner Apostolakis. Sorry, Svinicki.

1 COMMISSIONER SVINICKI: Thank you. Cathy, thank you for your
2 second presentation. Victor, welcome. Thank you for your responses to the
3 questions of my colleagues that represent the important work that the Region is
4 doing to support these programmatic areas. And since this is a program brief,
5 indulge me. I am going to be programmatic for a moment and think about
6 program execution here. Cathy, you had a statistic. It was 54 percent of the
7 budget goes to oversight of existing licensees, 27 percent to licensing. Was that
8 just from the fuel cycle activities? And did you -- I couldn't find a similar metric for
9 the spent fuel storage and transportation. Would it be about the same split, do
10 you think, like approximately half or a little bit more for oversight and maybe a
11 quarter for licensing?

12 CATHY HANEY: If you give me a second I can -- I think I can tell
13 you. I would -- I guess the best thing is for me rather than to take a quick look at
14 my notes here -- is to get back to you on the exact percentages, but I will tell you
15 that there is a larger amount for oversight in the fuel cycle area than there is in
16 the spent fuel storage and transportation.

17 COMMISSIONER SVINICKI: Oh, okay. No, that's good. I just --
18 yeah, I just needed kind of a rule of thumb there.

19 CATHY HANEY: I can get you an exact number.

20 CHAIRMAN MACFARLANE: Well, we can look it up as well in the
21 budgetary documents in my office, but you had also talked about -- I thought it
22 was a good insight early in your presentation. You said that the budget in these
23 areas of the program is executed stressing careful resource utilization in an
24 austere environment. So, you know, stepping back and looking at the diversity of
25 the activities that we've talked about this morning and the presentations, the two

1 presentations that you've given -- well, I'll begin by saying, you know, let me state
2 for the record that I am a strong proponent of the United States' selection of a
3 Commission structure for regulating the complex topics of nuclear safety and
4 security, but one of the outgrowths of that kind of Commission decisionmaking is
5 that we're asked to decide a lot of matters one by one, you know, like do you
6 want to proceed with this activity? Do you think that the following things should
7 be undertaken by the agency? And I would say with the exception of our vote on
8 the budget, we don't have an opportunity to look at the breadth of activities and,
9 you know, not all of which can have the same level of priority.

10 So, do you feel that you have the ability, if at some point you were
11 assessing and then to use your word, an austere environment, or if there were
12 further budget reductions for the agency, would you feel that you could propose
13 on your own activities that you felt in that budget level didn't add as much value?
14 And I would point as a positive example the Office of New Reactors, it might've
15 been as long as a year ago now, sent a paper to the Commission and they
16 proposed a certain periodic report, some things were maybe not adding value or
17 the information could be received by the Commission in some other way, and
18 they proposed that some things be discontinued. Do you ever think about doing
19 that given this big diversity of activities? Are there any historic types of reports
20 and things that you have to do that, you know, as busy as you are you probably
21 don't have time to sit and think about things that maybe aren't adding as much
22 value anymore? But I would just say I thought that was a very productive thing
23 for new reactors to have done, and I think as an agency as we get into this kind
24 of fiscal environment, it might be the kind of thing that more programs need to
25 think about. Mr. Borchardt, you seem eager to say something.

1 BILL BORCHARDT: Yeah. I'm going to jump in front of Cathy just
2 for a second. We're doing this agency-wide, so all the offices, all the programs
3 have been asked to look at all recurring reports that we prepare for the
4 Commission and even outside the agency and challenge as to whether or not
5 they still fulfill the original intent and purpose.

6 COMMISSIONER SVINICKI: And I think Commissioner Ostendorff
7 would recall this as well, but when I was Armed Services Committee staff in the
8 Senate, the Pentagon, I think nearly annually when we were doing their
9 authorization bill, would submit a list of recurring reports and activities that they
10 would respectfully request that the Congress maybe think about discontinuing.
11 So I don't think there's anything particularly bold about this type of activity.

12 BILL BORCHARDT: Yeah. We made a few revisions recently, but
13 we're doing it agency-wide, so we'll be interacting with the Commission on that.
14 And then I think I heard early on in your statement some thinking about
15 reprioritizing work within these products or within these business lines as it
16 compares to the work done in other business lines throughout the agency. And
17 within the last year what we've started doing is our quarterly performance reviews
18 are now done on an agency-wide basis. We pull all of the business line owners,
19 in fact, all the Office Directors together. We dedicate a day to go through all of
20 the agency metrics and performance across all business lines so that we can do
21 just that kind of thing. So if there's a pressure point in one business line that we
22 can make an informed decision of whether or not we'd want to shift resources
23 from an entirely different business line if the skill sets match up. Of course, you
24 have a lot of, you know, restrictions, but -- so that we can do that on an agency-
25 wide basis. And that's, I think, going to prove to be a very effective way of doing

1 business.

2 COMMISSIONER SVINICKI: And you were correct in that that was
3 another prong of what I mentioned. Again, I think it's a little bit more difficult to
4 address, and I do think that the Commission's deliberative process and
5 deliberative decisionmaking adds a lot of value on the topics of nuclear safety
6 and security; however, it does mean that we are making our decisions generally
7 topic by topic, and we don't have as many opportunities to look across the
8 agency. So, as you and your leadership team are doing that I think that a
9 consideration of some of those things could be helpful to us. I mean, I don't think
10 of it in any more sophisticated way than if I told you you had \$100 to go out to
11 dinner. You might pick certain restaurants -- you'd look at -- if I told you you only
12 had \$20 you'd probably -- you might pick a completely different set of restaurants,
13 and so you know, it does make -- the Commission makes these decisions, but
14 yet if resources are constrained then it would, I think, influence -- we need that
15 feedback to know yeah, I think in isolation this is an important task, but what if it
16 competes with three or four other tasks. So, I thank you for doing that and for
17 addressing that. I just had a couple of other comments that I wanted to make.
18 You can respond, any of you, if you'd like, but you don't have to.

19 There was a very, very passing reference to -- that the staff plans to
20 request Commission direction on use of the NNSA's human reliability process in
21 regards to MOX, and I'm not going to say a lot about this. I think I'm singularly on
22 the side of the table someone who has had this come before me already as a
23 member of the Commission. It has come before previous Commissions and I've
24 studied their consideration of it, and I think it's always useful, again, to relook at
25 things and present new circumstances and situations, but I will say that the

1 Commission historically, in my study of the issue, has guarded very zealously, of
2 course, our independence, and it's hard to say that subjecting NRC staff, you
3 know, submitting them to access or reliability programs of other agencies, it's
4 hard to look at that and say that that does not impinge on our independence.
5 And so I think it's nothing to do with whether or not we have staff that can pass
6 this program. Of course we do. But when we start saying that we're -- in order to
7 carry out our regulatory authorities and responsibilities we're going to submit to
8 something over which we have no control. Again, I don't know the right answer.
9 If you come to the Commission again I will assess that within the four corners of
10 what you submit, but I appreciate and know the staff is also acquainted with the
11 long history of the Commission's consideration. That being said, it's very
12 complex and very tricky, and I understand that as well.

13 The other thing that I'm going to make a comment on, just because
14 this is such a convenient time to kind of alert you to this is that we mentioned the
15 MC&A proposed rule. The Commission looked at that, approved its publication in
16 the Federal Register, but did request that a number of areas be supplemented
17 and revised. We also asked that that come to the Commission for five days prior
18 to being submitted to the Federal Register. I am, as I'm sure all my colleagues
19 are, looking closely at the staff's responsiveness to the Commission's direction,
20 and I just want to say in one instance the staff is indicating that the Commission's
21 direction is not applicable, and you know, again, I'm all for differences of opinion
22 and will look closely at what the staff puts forward here, but in my view the time
23 for the staff to indicate that the Commission's direction on supplementing the rule
24 was not applicable would've been when the staff has an opportunity to review the
25 draft staff requirements memorandum. That's a key time when we look for that

1 input of whether or not our direction is going to be relevant to what we're putting
2 forward. So it may be that I'll be asking for a supplemental briefing on the
3 response to the Commission's direction on this particular rule. It is a very, very
4 complex matter and I just want to understand fully what the staff has done. But I
5 am concerned that in one instance the staff is indicating that they're -- that the
6 Commission's direction was irrelevant. So, thank you, Mr. Chairman.

7 CHAIRMAN MACFARLANE: Now, finally, Commissioner
8 Apostolakis.

9 COMMISSIONER APOSTOLAKIS: Thanks.

10 CHAIRMAN MACFARLANE: Apologies, again.

11 COMMISSIONER APOSTOLAKIS: Cathy, you mentioned that a
12 strategic goal of your office is to support U.S. nonproliferation elements. That's
13 something that's not very clear in my mind. What exactly is the NRC's role in
14 nonproliferation activities? Because that's obviously an issue of national
15 importance. You have higher ups who worry about it. So, what exactly do we do
16 here? How do we support the effort?

17 CATHY HANEY: We support it in many ways. I'll touch on one or
18 two and then ask either John or Tom Grice, who is most active in that area to
19 come to the microphone. One of the areas is -- ways is that we are a good
20 liaison with our licensees in that some of our regulations, some of the
21 requirements of our regulations actually support the nonproliferation that has --
22 primarily with information security making sure that the licensees are protecting
23 information of national security.

24 Another way is through the interfaces that we have with the IAEA
25 as far as recognizing some of the facilities that are eligible. We're working with

1 Department of Energy on the database that's used to track material through the
2 United States and imports and exports, and that information is going -- it helps us
3 meet treaty obligations -- the U.S. government treaty obligations beyond NRC.
4 So those are a couple of really quick hits, and then I would leave it to Tom if he
5 would give you a little bit more of an answer.

6 THOMAS GRICE: Tom Grice, I'm a team leader for the
7 International Safeguards Team within the office of NMSS. We play kind of an
8 interesting role in a broad scope. We support the U.S. nonproliferation efforts
9 through a myriad of various avenues. One of the most significant is our domestic
10 physical security program. The establishment of those programs, which the IAEA
11 referred to as the state system of accounting and control, that sets the
12 international standard for other countries to try and match. We participate in the
13 establishment of international standards, representatives from the Office of
14 Nuclear Security and Safety Response. Just a couple of years ago we were
15 involved in a major revision to INFO Circ 225, which addresses the physical
16 protection of [unintelligible] materials. We have a gentleman in our branch that
17 has served on a consultancy, Mr. Thomas Pham, on establishing international
18 standards for domestic material control and accounting programs. There's
19 probably an IAEA working group on the interaction between MC&A standards,
20 physical security protection standards, and the safety standards to see how those
21 three -- they refer to it as the three Ss, how those three Ss integrate, and how
22 they complement one another.

23 COMMISSIONER APOSTOLAKIS: Well, in the safety arena, for
24 example, in the case of reactors, people do all these things. They participate in
25 meetings and work with other groups, but then there is also -- there are also

1 requirements when the license is issued, and I can go to a particular chapter of
2 the safety evaluation report and read about, you know, what requirements they
3 have met.

4 THOMAS GRICE: Certainly.

5 COMMISSIONER APOSTOLAKIS: Is there such a thing here? I
6 mean, do you have a separate section when you issue a license that addresses
7 proliferation issues?

8 THOMAS GRICE: There are. And again, it's not something that
9 will be clear and crisp, but what you'll find is that in the agreements that we have
10 with the international community, both with the Atomic Energy Agency through
11 our safeguards agreement, and through the 123 Agreements for Peaceful
12 Cooperation with other countries. Australia and Canada are two very good
13 examples. Those agreements require us to track their material while it's in the
14 United States, and to get assurances before it's retransferred outside of the
15 United States. So, in order to meet those commitments, again, we tie that with
16 our domestic safeguards program. So, if a facility such as Westinghouse or GE
17 receives material that has -- that's come from Australia. Let's make the
18 assumption that yellow cake comes from Australia and that material has what we
19 refer to as obligations on it to Australia. Australia requires us to track that
20 material especially for them because of our agreement with the Australian
21 country. That material is recorded domestically because of our domestic MC&A
22 programs to a national database, and we use that same information to extract the
23 information that we need to send back to Australia so we meet our international
24 obligations and support the assurance that that material is used strictly for
25 peaceful purposes in combination with our domestic material control and

1 accounting program.

2 COMMISSIONER APOSTOLAKIS: Thank you. I've heard over the
3 years there are many human errors in fuel cycle facilities, not of great
4 significance, but first of all, is that true? Do you find that human error is prevalent
5 or it depends on what you call human error, but let's say --

6 VIC MCCREE: Commissioner, thank you for your question. I
7 would need to -- the short answer is not to my knowledge. Having said that,
8 there is an operating experience element to the fuel cycle facility oversight
9 process just as there is in the reactor area and new construction area, and we
10 provide that feedback. In our inspection program, particularly where we have
11 resident inspectors, we are very alert to human performance, operational
12 performance issues, and provide that feedback to licensees, and even for those
13 facilities where we don't have resident inspectors, that's a component of our
14 inspection program as well. Cathy mentioned that we conducted over 300
15 inspections just last year, so that is a component of it. But we've not seen a trend
16 that's noteworthy in the area of human performance.

17 COMMISSIONER APOSTOLAKIS: The issue of ISA. I noticed in
18 general and again, that may be the wrong impression, but there is this apparently
19 prevailing view in the industry that nothing's broken, so why do anything? Why,
20 for example, worry about the standard for ISAs and I'm wondering what your
21 views are on that. Do we do things only when things break down? Or do we try
22 to improve on things? Of course these are subjective judgments sometimes
23 whether an improvement is a real improvement, but I've heard that many times.
24 So, I'd like to know -- I mean, we talked about strengthening organizational
25 excellence, more generally strengthening excellence -- if you can strengthen

1 excellence -- but what are your views on that? Why -- I was surprised that the
2 industry said oh, we don't need to do that. We don't need a standard, when in
3 the reactor side we are forcing everybody to issue standards.

4 CATHY HANEY: A couple of comments, and then if John would like
5 to complement my comments that would be fine. The -- I think first to take on the
6 no we want to be proactive in -- whether it's in trying to do the best thing that we
7 can do to improve our program. I think from the standpoint of the ISAs and the
8 fuel cycle facilities, I mean it's been challenging over the years. We've been
9 working with ISAs for awhile now. Part of the challenge is there is, again, the
10 diversity between facilities, so we can -- well, we can conceptually agree on an
11 approach, how you apply that at the different facilities is something that we need
12 to basically look at each one individually.

13 From the standpoint of the industry commenting on do they need
14 the guidance? Do they not need the guidance? If you look at our facilities right
15 now, with the exception of a small number, they all have ISAs in place now, and
16 the effort -- it takes resources to work on developing standards for ISAs. It would
17 be industry resources that would be used to do it. And there would be also some
18 resources from NRC that would go towards that. And to reflect back, I think
19 Commission Svinicki had pointed, there's a lot going on in the fuel cycle area
20 right now, and I think across the board the licensees, as well as on a day-to-day
21 basis I look at it, my management teams look at it. Where can we get the best,
22 you know -- put in on a return on investment type of approach to looking at
23 things. So there's a concern about, you know, is this the right place that
24 collectively we should all be putting our resources? And, I've heard that from the
25 fuel cycle industry that's not a comment from my side of the table. It's more from

1 what I've heard. I think that given that we have the direction from the
2 Commission to move forward on developing the standard for ISAs we have
3 reached out to the American Nuclear Society. So we're going forward with doing
4 that. We'll keep the Commission informed as we make progress on doing that,
5 but we are set down the path of that.

6 COMMISSIONER APOSTOLAKIS: One last question. I will ask
7 now the question I asked Mr. Satorius when he was here defending his business
8 line. Do you have a protocol that determines when you are going to the Advisory
9 Committee on Reactor Safeguards? I mean, you used to have the ACNW, of
10 course, which was exclusively yours. Now you don't. I remember reading the
11 first document on the ROP for fuel cycle facilities, which was fairly technical, and
12 then I found out that the ACRS had not reviewed it. I understand afterwards we
13 did go to them. Is there a process that you follow to decide what issue deserves
14 or what document deserves to go to that committee so they can write a letter to
15 us? Or is it an ad hoc process where, you know, somebody decides yeah it's a
16 good idea to have here and there.

17 CATHY HANEY: Let me answer that question from the standpoint
18 of both business lines. I think the high ranking document is really the charter for
19 the ACRS where it identifies what areas of the regulations that they would be
20 interested in addressing. So with that as our highest procedure the items under -
21 - the parts of the regulations that pertain to both business lines actually fall within
22 the purview of the ACRS. So, from that document, that level, we have routine
23 interfaces with ACRS staff. In fact, every Monday morning I have a management
24 meeting and one of the members of the ACRS staff comes over and sits through
25 that meeting and is hearing firsthand the products that we're working on, and

1 then we'll use that to go back to the committee and say, for example, NMSS is
2 working on this aspect, or FSME is working on this rule for NMSS, is this
3 something that you would want to be interested in in hearing?

4 Over the last I would say probably two to three years we've started
5 some specific outreach on topics that we know would be of interest to ACRS, so I
6 think we're actually going beyond what the charter is where my division directors
7 will go over and meet with the subcommittee on an informal basis and raise this
8 topic. So our level of interaction with the ACRS has actually increased over the
9 last several years. So, we have the formal process of the charter, but then we
10 also have the informal interactions that we have on a weekly basis with them.

11 COMMISSIONER APOSTOLAKIS: Glad to hear it. Thank you.

12 CHAIRMAN MACFARLANE: Okay. So let me check with my
13 colleagues and see if anybody has additional questions or comments. No?
14 Okay. Well, then I will thank you again. Thank you, Cathy, for being here the
15 whole time and talking the whole time. Much appreciated. And thanks to all the
16 rest of the staff for all their answers and discussion. It was very informative. So,
17 I think that's about it and at this moment we'll adjourn. Thank you.

18 [whereupon, the proceedings were concluded]