

UNITED STATES  
NUCLEAR REGULATORY COMMISSION

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BRIEFING ON STRATEGIC PROGRAMMATIC OVERVIEW OF THE DECOMMISSIONING  
AND LOW-LEVEL WASTE AND SPENT FUEL STORAGE AND TRANSPORTATION

BUSINESS LINES

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TUESDAY,  
OCTOBER 18, 2016

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ROCKVILLE, MARYLAND

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The Commission met in the Commissioners' Hearing Room at the Nuclear Regulatory Commission, One White Flint North, 11555 Rockville Pike, at 9:30 a.m., Stephen G. Burns, Chairman, presiding.

COMMISSION MEMBERS:

STEPHEN G. BURNS, Chairman

KRISTINE L. SVINICKI, Commissioner

JEFF BARAN, Commissioner

ALSO PRESENT:

ANNETTE VIETTI-COOK, Secretary of the Commission

MARGARET M. DOANE, General Counsel

NRC STAFF:

VICTOR McCREE, Executive Director for Operations

MARC DAPAS, Director, Office of Nuclear Material

Safety and Safeguards (NMSS)

CHRISTINE LIPA, Deputy Director, Division of Nuclear

Materials Safety, Region II

MARK LOMBARD, Director, Division of Spent Fuel

Management, NMSS

JOHN McKIRGAN, Chief, Spent Fuel Licensing Branch

RAYMOND POWELL, Chief, Decommissioning and Technical

Support Branch, Region I

GREGORY SUBER, Chief, Low-Level Waste Branch, NMSS

JOHN TAPPERT, Director, Division of Decommissioning,

Uranium Recovery, and Waste Programs, NMSS

## PROCEEDINGS

9:31 a.m.

CHAIRMAN BURNS: Good morning everyone. Call the meeting to order.

The purpose of today's briefing is to provide the Commission with a discussion of strategic considerations associated with the NRC's Decommissioning and Low Level Waste Business Line, and the Spent Fuel Storage and Transportation Business Line.

We'll hear this morning from the staff panel consisting of the EDO as well as representatives from the Office of Nuclear Materials Safety and Safeguards, Region I office outside of Philadelphia, and our Region III office in Illinois. We'll conduct the meeting as two panels.

The first panel will provide a briefing on Decommissioning and the Low Level Waste business line, followed by questions and answers from the Commission or a session with the Commission. Then the second panel will move on to the Spent Fuel Storage and Transportation business line.

I look forward to today's discussion. I want to welcome everyone from the staff, the public who may be here in the room or listening in. Before we begin, do my colleagues have anything? Very good. Vic, I'll let you start the presentation and the introductions of the staff panel.

MR. McCREE: Good morning Mr. Chairman, Commissioner Svinicki and Commissioner Baran. We appreciate the opportunity to provide you with an update today on the current activities, priorities, emerging focus areas and future of the decommissioning and low level waste and spent fuel storage and transportation business lines, which primarily reside within the Office of Nuclear Material Safety and Safeguards, NMSS.

1           We'll provide you today's briefing with two panels, as you mentioned Mr.  
2 Chairman, beginning with the Decommissioning and Low Level Waste business line. The  
3 Decommissioning and Low Level Waste business line involves significant stakeholder  
4 engagement and complex issues. The business line had some recent successes and is also  
5 addressing a number of challenges, in particular reactor decommissioning.

6           This area remains a particularly dynamic area, and a potential near-term growth  
7 area as you know due to a number of known permanent reactor shutdowns. To address this  
8 increase, we're proactively planning and prioritizing our activities to respond to an uncertain  
9 environment.

10           While today's presentation on the Decommissioning and Low Level Waste  
11 business line will focus on the majority of activities in that business line, I do note that the  
12 management of licensing and the oversight of activities for operating uranium recovery facilities  
13 will not be discussed in the context of this briefing. Instead, uranium recovery will be discussed in  
14 the Commission meeting next month.

15           Next slide, please. The NRC staff and management from the  
16 Decommissioning and Low Level Waste business line who are here with me today will focus on  
17 their presentations on the following topics. We'll begin today's presentation with Marc Dapas,  
18 the NMSS office director who will discuss licensing and oversight successes and challenges.

19           Following Marc's presentation, we'll hear from John Tappert, who's the director  
20 of the Division of Decommissioning Uranium Recovery and Waste Programs. John will discuss  
21 the current decommissioning environment during his remarks, and after John Greg Suber, to my  
22 left, chief of the Low Level Waste Branch, will discuss the current low level waste environment.

23           Rounding out the Decommissioning and Low Level Waste business line, we'll

1 then hear remarks from Ray Powell, the chief of the Decommissioning and Tactical Support  
2 Branch in Region I on the accomplishments and challenges in the decommissioning inspection  
3 area. I'll now turn the presentation over to Marc Dapas. Marc. Next slide.

4 MR. DAPAS: Thank you, Vic. Good morning Chairman, Commissioner  
5 Svinicki, Commissioner Baran. As Vic noted in his remarks, I'll begin with an overview of the  
6 Decommissioning and Low Level Waste business line.

7 Next slide, please. As you can see from the topics on this slide, this business  
8 line encompasses a broad range of activities. Given the dynamic nature of the work associated  
9 with this business line, we remain focused on our top priorities, and that is safety and security  
10 through our licensing and oversight activities.

11 We continue to collaborate with our business line partners to ensure that we  
12 have the flexibility in both headquarters and the regions, to adjust our resources as necessary to  
13 support our safety and security mission. Our response to the increase in the reactor  
14 decommissioning workload is but one example that demonstrates our agility to shift resources  
15 between business lines, namely the operating reactor business line to the decommissioning and  
16 low level waste business line.

17 While the resources that are required for licensing and oversight of an operating  
18 reactor include the resources required for the same functions with respect to a shutdown reactor,  
19 the resources need to be shifted between these business lines. We have demonstrated  
20 organizational agility by ensuring that the appropriate resources are available, meaning right staff  
21 with the right skill sets to support decommissioning work.

22 As Ray Powell will address in his presentation, we are adjusting our qualification  
23 programs to ensure that our staff possesses the knowledge necessary to provide oversight for

1 upcoming decommissioning activities.

2 As you will hear from Greg Suber during his presentation, we are also working  
3 to respond to the changing landscape in the area of low level waste management by evaluating  
4 and adjusting, as necessary, the regulatory framework.

5 Recently, we completed an assessment of low level waste activities and we  
6 used that analysis to inform our priorities, which are identified in the latest update of the low level  
7 waste programmatic assessment, which I understand has been provided to the Commission.  
8 Gregory will also discuss our continued efforts to ensure safety through the NRC's assessment  
9 of the Department of Energy's Waste Incidental to Reprocessing determinations per the Ronald  
10 Reagan National Defense Authorization Act of 2005.

11 Next slide, please. The decommissioning and low level waste business line  
12 has realized significant successes over the past year. This is due in part to our continued  
13 coordination efforts with our federal and state partners. In the decommissioning programs, some  
14 of the major accomplishments over the past year include the completion of decommissioning  
15 license terminations at Stepan, Mallinckrodt and the Veterans Affairs Omaha Research and Test  
16 Reactor.

17 Stepan and Mallinckrodt license terminations represent the culmination of  
18 decades of decommissioning activities. Veterans Affairs Omaha is also a notable  
19 accomplishment that involved the resolution of allegations and oversight of licensee  
20 decommissioning activities under challenging time constraints.

21 Completion of these terminations required close coordination between the  
22 regions and the headquarters. Through extensive coordination and calibration with our federal  
23 partners at the Department of Defense, we successfully completed and implemented a

1 memorandum of understanding regarding oversight of military sites with radium contamination.

2 This accomplishment is the culmination of a five-year effort between the NRC,  
3 the Department of Defense, the Air Force, the Navy, and the Army. Finally, in the low level waste  
4 program we recently completed the Part 61 low level waste rulemaking proposal, which has been  
5 provided to the Commission for your consideration.

6 You will hear more about each of these accomplishments from the other NRC  
7 speakers during their respective presentations.

8 Next slide, please. Within the Decommissioning and Low Level Waste  
9 business line, we are also working to address several multi-faceted and complex issues, each  
10 presenting its own unique set of challenges. For example in the Material Decommissioning  
11 Program, we are working to implement appropriate regulatory oversight activities for non-military  
12 radium sites in a timely manner.

13 After identifying sites with suspected historic radium use, we coordinated with  
14 state and local governments to gather information about any past remediation activities. We also  
15 plan to conduct site visits to support subsequent scoping surveys, to determine the extent of any  
16 potential radium contamination at these sites.

17 Additionally, as directed by the Commission, we are proceeding with the  
18 development of a regulatory basis defining the appropriate criteria for disposal of greater than  
19 Class C low level waste through means other than deep geologic disposal. Our analysis will  
20 include whether disposal of greater than Class C waste presents a hazard, such as that the NRC  
21 should retain authority over its disposal.

22 If as a result of our analysis we determine that some or all greater than Class C  
23 waste is potentially suitable for near surface disposal, we will proceed with a development of a

1 proposed rule to include criteria for licensing the disposal of such waste under Part 61.

2 John and Gregory will provide more details about our efforts to overcome  
3 challenges associated with these issues in their remarks. I'll now turn the presentation over to  
4 John Tappert. Thank you. Next slide, please.

5 MR. TAPPERT: Thank you, Mark. Good morning Chairman,  
6 Commissioners. My presentation today will focus on the current decommissioning environment,  
7 which continues to support a number of priorities involving a broad range of stakeholders and  
8 licensees. I'll also highlight several ongoing activities, accomplishments and challenges within  
9 the Reactor Materials Decommissioning Programs.

10 Would you put the slide back up, the other slide? So I don't have a lot of  
11 pictures in my presentation, but this slide has pictures of Maine Yankee during operation  
12 decommissioning and after license termination, and kind of provides a nice visual summation of  
13 the decommissioning process.

14 Next slide, please. As the focal point for implementing the NRC's  
15 decommissioning program, the business line continues to focus on several priorities. Among the  
16 priorities are licensing and oversight activities for the decommissioning of complex material sites.

17 By complex, we mean those sites where the scope and nature of the  
18 decommissioning activities require substantial technical and administrative efforts. Examples of  
19 complex material sites include sites with groundwater contamination, sites containing significant  
20 soil contamination, and sites on which the owners are in bankruptcy.

21 We also oversee decommissioning of uranium sites on the Uranium Mill Tailings  
22 Radiation Control Act. Additional priorities are licensing and oversight at decommissioning  
23 reactor sites. Currently, we have project management responsibilities for 19 permanently shut



1 down power reactor units. This includes six power reactors in active decommissioning.

2 In addition, we provide oversight of decommissioning activities involving four  
3 research and test reactors. Finally, we are implementing actions to address the oversight of  
4 radium at both military and non-military sites.

5 The 2005 Energy Policy Act, NRC's 2007 Naturally-Occurring and Accelerator-  
6 Produced Radioactive Material or NARM rule, provide for NRC jurisdiction over discrete sources  
7 of radium and its contamination.

8 We continue to develop and implement a program to provide oversight of these  
9 sites. I will provide more details about this program later in my presentation.

10 Next slide, please. Let me spend a few minutes highlighting several ongoing  
11 decommissioning activities at material sites, and this figure depicts the wide geographic diversity  
12 at these sites. As Vic mentioned, uranium recovery oversight and licensing activities will be  
13 addressed in a Commission meeting next month.

14 However, responsibility for oversight of the nation's uranium mill tailings resides  
15 in our decommissioning program. One notable element with respect to oversight of uranium mill  
16 tailings is that it involves extensive consultation with the Department of Energy and other federal  
17 partners to address uranium contamination as part of the Navajo five-year plan.

18 Beginning in 2007, several agencies including the Department of Energy, the  
19 Environmental Protection Agency, the Bureau of Indian Affairs, the Agency for Toxic Substances  
20 and Disease Registry, and the Indian Health Service partnered to develop a coordinated five-year  
21 plan that outlines a strategy to gain a better understanding of the scope of the uranium  
22 contamination and associated risk on the Navajo land.

23 The NRC's role is to provide continued oversight of the uranium mill tailings

1 disposal sites on the Navajo Nation that have been transferred to the Department of Energy. In  
2 this capacity, the NRC reviews and provides comments on any documents governing Department  
3 of Energy activities at the sites, such as groundwater compliance action plans or long-term  
4 surveillance plans.

5 I would also note that through our licensing and oversight activities, we have  
6 continued to make progress toward the decommissioning of legacy sites. For example, there  
7 has been substantial progress towards the cleanup of the Hematite Facility near St. Louis. We  
8 are currently reviewing the groundwater remediation plan for the previously bankrupt Cimarron  
9 site.

10 Another unique activities in the materials decommissioning program is our  
11 involvement in the West Valley Demonstration Project. The West Valley site contains the first and  
12 only commercial reprocessing facility to operate in the United States. From 1966 to 1972,  
13 Nuclear Fuel Services reprocessed 640 metric tons of spent fuel under an Atomic Energy  
14 Commission license.

15 In 1980, Congress enacted the West Valley Demonstration Project Act, and  
16 under that Act the Department of Energy assumed exclusive possession of a 200 acre portion of  
17 the site, which includes the former reprocessing facility. In our regulatory role, we monitor site  
18 remediation activities to ensure that when remediation is completed, we can take actions to  
19 terminate the license as appropriate.

20 Next slide, please. There have been a number of accomplishments within the  
21 materials decommissioning program since we last discussed it before the Commission.  
22 Examples include issuance of an amendment to license for the U.S. Army Installation  
23 Management Command, to possess depleted uranium from Davy Crockett M101 spotting rounds

1 used in training through the 1960's among 16 Army installations in 14 states.

2 The license was unique in that we used a programmatic approach to include all  
3 these sites under one license. As Mark already mentioned, we completed license termination  
4 activities for the source materials licenses at the Mallinckrodt site near St. Louis, Missouri and the  
5 Stepan facility in Maywood, New Jersey. These were significant accomplishments that were the  
6 result of several decades of effort to oversee the safe and effective cleanup of these complex  
7 sites.

8 Finally, we completed activities associated with the AAR Corporation site, which  
9 had its license terminated by the Atomic Energy Commission in May 1971. In 1994 after  
10 reviewing the previously terminated license, we concluded that it did not meet our  
11 decommissioning criteria. We then worked with the new unlicensed owner to remediate the site,  
12 such that it could be released for unrestricted use last year.

13 Next slide, please. We are currently addressing some challenges involving  
14 groundwater issues and financial resources for site cleanup. For example, with respect to  
15 groundwater at uranium mill tailing sites. At the Homestake site in New Mexico we are providing  
16 oversight of the licensee's corrective actions to address groundwater contaminant concentrations  
17 that exceed the levels established in the license.

18 At the Split Rock and Umetco Gas Hills East sites in Wyoming, we are working  
19 to resolve groundwater modeling issues. With respect to limited financial resources, we are  
20 continuing to develop and implement unique arrangements that balance the need for cleanup with  
21 limited financial means.

22 A recent example is our work to develop and implement such an agreement at  
23 the Fansteel site, which has been in place for the last several years. However, these sites all

1 have unique circumstances, which are the subject of change, as we learned last month when  
2 Fansteel filed for bankruptcy.

3 We are adapting to these changed circumstances by working with our partners  
4 at the Department of Justice and the state of Oklahoma, to understand the implications of the  
5 filing with a focus on maintaining security of the site and advancing the remediation.

6 Next slide, please. Turning to ongoing activities and reactor decommissioning  
7 program, our principle focus is to provide effective project management support for the current  
8 inventory of reactor decommissioning sites. As I mentioned earlier, there are 19 power reactors  
9 in decommissioning of which six are undergoing active decommissioning. The remaining 13  
10 reactors are in SAFSTOR.

11 I would also note that ten power reactor licenses have been terminated upon  
12 meeting the NRC's criteria for unrestricted use. In addition, six reactors have announced that  
13 they are shutting down the next three years, and this includes Fort Calhoun in Nebraska, which  
14 will be permanently shutting down later this month.

15 Finally with uncertainties in the U.S. energy markets, it is plausible that there  
16 may be additional plants permanently ceasing operation before the end of their licenses.

17 Next slide, please. Similar to the materials decommissioning program, there  
18 have been several accomplishments within the reactor decommissioning program since we last  
19 discussed this with the Commission.

20 As Marc mentioned earlier, we completed the license termination for the  
21 Veteran Affairs Omaha research and test reactor in a timely manner. We also authorized partial  
22 site releases at Zion and GE Vallecitos.

23 In coordination with the Office of Nuclear Reactor Regulation and the Office of

1 Nuclear Security and Incident Response, we completed the reactor decommissioning transition  
2 lessons learned report, which will help improve efficiency of future licensing activities, as well as  
3 help inform our efforts on the integrated decommissioning rulemaking.

4 Finally, we recently completed an evaluation to determine whether a rule  
5 regarding proper remediation of contamination during licensed operation of nuclear reactors and  
6 material facilities as warranted, and our recommendation was very recently provided to the  
7 Commission for consideration.

8 Next slide, please. As for challenges in the reactor decommissioning program,  
9 we are working to ensure the timely planning and coordination of resources to support reactor  
10 decommissioning transitions. Resource needs for decommissioning licensing and oversight are  
11 less than those for operating reactor licensing and oversight.

12 So a premature reactor shutdown does not represent an agency resource  
13 challenge per se, but we are working to ensure good communications between the business lines  
14 to respond to changed circumstances in a natural manner.

15 While the Operating Reactor business line has the lead for the integrated  
16 decommissioning rulemaking, we are actively supporting the Office of Nuclear Reactor Regulation  
17 in evaluating the complex policy matters associated with that rulemaking activity. This includes  
18 evaluating what the role should be for state and local governments, as well as non-government  
19 organizations, determining whether the NRC should affirmatively approve post-shutdown  
20 decommissioning activity reports, and evaluating whether the three existing decommissioning  
21 options, namely DECON, SAFSTOR, and ENTOMB should be retained and whether the 60-year  
22 decommissioning period is still appropriate.

23 And as we continue to implement the program, we are likely to receive first of a

1 kind requests. For example, we have a request from a licensee to extend the decommissioning  
2 period for a reactor beyond 60 years, in order to decommission all the facilities on the site in an  
3 integrated manner. There may be additional requests of this kind as there are several shutdown  
4 first generation reactors that are co-located with operating reactors, some of which the licensee  
5 may pursue subsequent license renewal.

6 Next slide, please. Finally, I would like to discuss some of our activities to  
7 address our radium oversight responsibilities. First by way of background, the NRC was given  
8 the authority to regulate radium in the Energy Policy Act of 2005, which expanded the definition  
9 of byproduct material to include certain discrete sources of radium-226.

10 In order to implement the radium provisions of the Energy Policy Act, the NRC  
11 developed the naturally occurring and accelerator produced reactor material or NARM rule. The  
12 NARM rule does not apply to radium under the control of the Department of Defense or DoD, that  
13 is being used or available for use for military operations.

14 However, it does apply to DoD and other applications such as the use of radium  
15 and medical or research activities, or in a manner similar to a commercial activity. We worked  
16 with DoD for several years on the implementation of the NARM rule. As Marc mentioned, just  
17 this past year we completed a Memorandum of Understanding or MOU with DoD regarding the  
18 cleanup of sites with radium contamination.

19 The MOU addresses sites undergoing remediation of unlicensed contamination  
20 under the Comprehensive Environment Response Compensation and Liability Act known as  
21 CERCLA or Superfund, and more specifically the purpose of the MOU is to identify roles and  
22 responsibilities, as well as minimize the potential for dual regulation between EPA and NRC.

23 The MOU outlines a graded approach, whereby the NRC is kept informed of

1 EPA oversight activities to avoid the potential for dual regulatory oversight. The NRC has a more  
2 active monitoring role if EPA is not involved.

3 After resolving policy issues related to NRC's oversight role with respect to  
4 military radium, we have focused our activities on aspects of non-military radium. We have been  
5 in dialogue with the National Park Service in EPA Region II, to coordinate oversight of radium  
6 contamination at Great Kills Park, a former landfill that is now a national park. The National Park  
7 Service is in the process of characterizing the site for subsurface radiological and chemical  
8 contamination.

9 We've also been in dialogue with EPA Region I regarding coordination of our  
10 oversight role for portions of the Waterbury Clock Factory currently under EPA's Brownfields  
11 program. Based on these examples of sites with historic radium contamination, we  
12 commissioned a study of public records to determine what other sites may have potentially used  
13 radium.

14 Next slide, please. Our contractor identified a little over two dozen sites in non-  
15 agreement states where radium may historically have been used. We conducted an outreach  
16 campaign to share the information we developed regarding these sites with the relevant states.  
17 We have also gathered supplemental information from the states regarding these sites.

18 In addition, we have issued a letter to all the states at the beginning of this  
19 month communicating our path forward. Specifically, we're in the process of reaching out to  
20 property owners to obtain additional information. Our goal is to conduct an initial site visit at all  
21 properties within the next six months to conduct an initial assessment. Then we intend to conduct  
22 follow-on scoping surveys to further characterize the extent of any potential contamination.

23 In parallel, we have been thinking through some potential policy issues that may

1 arise, depending on what we find through our information-gathering activities. Issues such as  
2 how we might work with EPA to address remediation if necessary, when we might want to  
3 consider licensing, and how should Part 170 fees be considered are all topics that we are  
4 evaluating and plan to present with recommendations to the Commission for their consideration  
5 in the near future.

6 And finally, we are focused on the initial implementation of the Memorandum of  
7 Understanding with DoD, to ensure that the program is off to a successful start. Specifically, the  
8 NRC promulgated a regulatory issue summary, RIS 2016-06, NRC regulation of radium-226  
9 under military control to provide information about the MOU to stakeholders.

10 Additionally, we had our initial visit last month to the Navy's Treasure Island site  
11 in California, and that visit serves as an effective means for sharing site history and status  
12 information, which will inform further implementation of the MOU. We will continue to engage  
13 DoD on implementation of the MOU, to clarify jurisdictional boundaries for dual regulation, clarify  
14 the regulatory approach for remediation, and provide oversight consistent with the MOU.

15 That completes my prepared remarks. I'll turn the presentation over to Greg  
16 Suber.

17 MR. SUBER: Thank you, John.

18 MR. TAPPERT: Next slide, please.

19 MR. SUBER: Good morning Chairman Burns and Commissioners. As Vic  
20 and John noted during their remarks, I will discuss the current low level waste environment, as  
21 well as our efforts to overcome challenges associated with issues that we are working to address  
22 in the low level waste program.

23 Next slide, please. I'll begin my presentation today with the low level waste



1 mission-related areas of focus, some arising ongoing activities, and recent accomplishments, and  
2 focusing -- excuse me and closing with challenges that we are currently addressing.

3           Next slide, please. Similar to our approach with the decommissioning  
4 program, we are continuing our efforts to support a number of priorities involving a spectrum of  
5 stakeholders and licensees. Within the low level waste program, we are focusing on the  
6 following: Assessing the National Low Level Waste Regulatory Framework, to determine the  
7 appropriate strategic activities given the changing environment; providing oversight and support  
8 to the Agreement States, with respect to their regulatory oversight of low level waste disposal  
9 facilities; monitoring certain DOE disposal actions in accordance with the Ronald Reagan National  
10 Defense Authorization Act of 2005, and conducting extensive external outreach on low level waste  
11 policy and technical matters.

12           Next slide, please. As mentioned earlier by Marc, we are currently addressing  
13 several technical and policy issues. The first issue I will discuss is associated with the disposal  
14 of greater-than-Class C or GTCC and transuranic waste. On January 30th of 2015, the Texas  
15 Commission on Environmental Quality submitted a letter to the NRC requesting clarification on  
16 the ability of an Agreement State to license and to provide oversight for GTCC and transuranic  
17 waste disposal facility.

18           This request raised policy issues regarding whether an Agreement State can  
19 regulate this waste. In addition, it raised a question of whether this waste could be disposed of  
20 in the near surface. In response to these policy issues, the Commission directed the staff to  
21 respond to the letter from the Texas Commission on Environmental Quality, and develop a  
22 regulatory basis for the disposal of GTCC waste following the publication of the Part 61 rule.

23           We responded to the January 30th letter from the Texas Commission on

1 Environmental Quality. In that response, we noted that the regulatory basis for a possible  
2 rulemaking to address the disposal requirements for GTCC and transuranic waste would analyze  
3 whether the disposal of this waste presents a hazard such that the NRC should retain authority  
4 over its disposal.

5 We continue to coordinate with the Texas Agreement State regulators and the  
6 Department of Energy regarding the disposal of this waste. As directed by the Commission, we  
7 are developing a regulatory basis to define criteria for the disposal of this waste. We plan to  
8 complete this activity within six months of the Part 61 rule being published.

9 We have already begun a technical analysis to support the regulatory basis,  
10 and plan to conduct public workshops on this issue in early 2017. We are continuing our efforts  
11 to address long-standing issues related to financial assurance for the disposal of Category 1 and  
12 2 sources. This issue is of high interest to the states and other agencies, in terms of providing  
13 viable pathways to disposition disused sources in a timely manner.

14 Concerns have been raised about the long-term viability of orphan source  
15 recovery programs and the need for users to be accountable for the cost of disposal of disused  
16 sources. Similarly, the need for financial assurance to facilitate timely disposal was raised by  
17 several sources, including the President's Radiation Source Protection and Security Task Force,  
18 and the low level radioactive waste forum Disused Sources Working Group report.

19 I would also note that the NRC regulations in Part 30.35, Financial Assurance  
20 and Recordkeeping for Decommissioning, do not require decommissioning financial assurance  
21 for a majority of Category 1 and 2 radioactive sealed sources. In response to these concerns  
22 and as directed by the Commission, we conducted a scoping study and submitted an information  
23 paper to the Commission earlier this year, providing the results of the byproduct material financial

1 study and recommendations for next steps.

2 In September of this year, we provided a rulemaking plan SECY paper to the  
3 Commission to further evaluate potential changes to Part 30.35. In the rulemaking plan, we  
4 recommend further analysis to develop a regulatory basis. We continue to coordinate activities  
5 internally and with external stakeholders, including DOE, National Nuclear Security  
6 Administration, the Organization of Agreement States and the Conference of Radiation Control  
7 Program Directors.

8 The last ongoing activity I would like to highlight is the work with the Department  
9 of Energy in the remediation and disposal of waste incidental to reprocessing or WIR at the  
10 Savannah River site and the Idaho National Lab. Under the Ronald Reagan National Defense  
11 Authorization Act or NDAA, the DOE is instructed to consult with the NRC on its WIR  
12 determinations and the NRC is responsible for assessing compliance of the DOE disposal actions  
13 with the performance objectives in Part 61.

14 We are performing reviews as requested by DOE at other sites that are not a  
15 part of NDAA. Under NDAA, we have completed the consultation phase for two DOE tank farms  
16 at the Savannah River site, and are currently monitoring disposal activities through onsite  
17 observations and technical reviews. We are also continuing to monitor DOE disposal of salt  
18 waste and the salt waste disposal facility.

19 In 2012, we issued a Type 4 letter of concern to DOE, indicating that the NRC  
20 no longer had reasonable assurance that the salt disposal facility will meet the Part 61  
21 performance objectives pertaining to offsite dose.

22 In response to our concerns, DOE has performed field scale research to  
23 address the underlying technical considerations related to offsite dose due to technetium. The

1 NRC and DOE continue to work in a monitoring process to resolve all outstanding concerns that  
2 led to issuance of the NRC Type 4 letter of concern.

3 Next slide, please. Through the program activities, we have realized several  
4 accomplishments. Specifically, we published a Part 61 proposed rule and draft guidance  
5 NUREG-2175 in the *Federal Register* on March 26, 2015. During the comment period, we  
6 conducted seven public meetings and webinars to facilitate stakeholders' understanding and  
7 development of their comments on the proposed rule.

8 We received over 2,400 comment letters with over 800 individual comments.  
9 The number of public comments was substantive. After considering the public comments, we  
10 propose the following changes. Change the time of compliance from the three tier to a two tier  
11 approach.

12 Change the compatibility of the time of compliance from Category B to Category  
13 C, to provide greater flexibility to states, and revise the criteria for the intruder assessment to be  
14 consistent with activities at the time of the analysis, as opposed to expected activities at the time  
15 of closure.

16 As mentioned previously by Marc, we submitted the Part 61 draft final rule to  
17 the Commission in September. The rule represents the culmination of several years of work and  
18 reflects an extensive and comprehensive outreach effort. We also completed and issued the  
19 Branch Technical Position on concentration averaging and encapsulation.

20 In this position paper, we were able to clarify constraints around concentration  
21 averaging in Part 61.55(a)(8) to be more risk-informed. As we will discuss later, implementation  
22 of the concentration averaging, BTP, will optimize disposal of low level waste in existing facilities.

23 Next slide, please. As pointed out by Marc, we are also working to respond to

1 the changing landscape in the area of low level waste management, by evaluating and adjusting  
2 as necessary the regulatory framework. We are responding to this challenge by proactively  
3 projecting future work, and ensuring our priorities address the changing external environment.

4 We reviewed the first programmatic assessment of the low level waste program  
5 that was completed in 2007. That assessment was developed to proactively project future work,  
6 and ensure our priorities addressed the changing external environment. Recent developments  
7 in the National Program for Low Level Waste Management and Disposal, along with an evolving  
8 environment have led to new challenges and prompted the need for an update to the 2007  
9 assessment.

10 We started a new assessment in 2014, which included a series of public  
11 meetings and webinars to gather input regarding current and emerging issues. We also  
12 interfaced with Agreement States and other federal partners to gather input. We have recently  
13 finalized the updated assessment, which considers changes in priority of some of the tasks  
14 identified in the previous assessment, as well as identification of new tasks.

15 With respect to current tasks, the assessment reinforced the importance of the  
16 implementation of the concentrating averaging and encapsulation branch technical position. The  
17 revised constraints in the new branch technical position allow higher activity sources to be  
18 disposed of in currently operating disposal facilities.

19 This work is successfully addressing safety concerns related to disused  
20 radioactive sealed sources. We are working with regional and Agreement State inspectors to  
21 ensure consistent use nationwide. With respect to new tasks, we identified the need to conduct  
22 a low activity waste scoping study, to evaluate disposal options for the anticipated increase in low  
23 level waste due to an increase in reactor decommissioning.

1           This increase caused us to question whether some very low activity waste could  
2 be disposed of in conditions other than near surface disposal facilities. The study would define  
3 the conditions under which low activity waste could be disposed of, as well as the appropriate  
4 level of regulatory review and approval needed for such disposal.

5           As work progresses, policy issues identified will be raised to the Commission  
6 as appropriate. In conclusion, the low level waste program continues to support the agency's  
7 mission, by ensuring the safe disposal of low level radioactive waste while protecting people and  
8 the environment. We are committed to ensure that the program is effective in fulfilling its safety  
9 and security mission, and efficient in the use of agency resources.

10           We continue our commitment to engage external stakeholders, and to  
11 proactively engage the Commission as potential policy issues are identified. That concludes my  
12 portion of the presentation. I will now turn it over to Ray Powell. Next slide, please.

13           MR. POWELL: Thank you, Greg. Good morning Chairman Burns,  
14 Commissioners. This morning I would like speak briefly on the regional component of reactor  
15 decommissioning and complex materials site decommissioning. I will close by discussing two  
16 current regional challenges and how we intend to meet them.

17           Next slide, please. On this slide are photos of Zion, which demonstrates how  
18 our oversight process has continued to contribute to safe and secure licensing performance. Our  
19 oversight develops as the site continues through the decommissioning process. Zion was the  
20 first two unit decommissioning project of a Westinghouse four loop plant.

21           Following the permanent cessation of operations, the site entered a period of  
22 SAFSTOR for approximately 13 years, and the NRC inspection effort was reduced commensurate  
23 with the activities performed on site. When active decommissioning commenced in 2011, the

1 inspection effort increased to approximately one inspection per month through the major  
2 decommissioning activities period.

3 Additional inspections were performed in this period to provide oversight of the  
4 licensee's transfer of fuel from the spent fuel pool to drive fuel storage casks. Now that the major  
5 decommissioning activities are complete and a significant amount of the radiological source term  
6 has been removed, the inspection effort is focusing on ensuring the radiological release criteria  
7 for license termination is met.

8 These inspections performed by Region III inspectors and contractors from Oak  
9 Ridge Associated Universities, ensure the licensee is performing the final status surveys in  
10 accordance with the license termination plan and provides an opportunity for the NRC to obtain  
11 independent samples to confirm the licensee's survey results.

12 Next slide, please. The NRC's power reactor decommissioning program plays  
13 a key role in ensuring the safe and secure decommissioning of former power reactor facilities.  
14 The NRC has a clear focus on safety and security, as it implements the inspection manual chapter  
15 for IMC 2561 inspection program for decommissioning power reactor facilities.

16 We normally would not discuss manual chapters in a forum such as this, but  
17 there are changes to the manual chapter that I would like to highlight. As part of the response to  
18 the efficiency goals associated with Project Aim, the regions work collaboratively with the program  
19 office to enhance inspection efficiency, without adversely affecting effectiveness, and my slide is  
20 a picture of a co-located decommissioning reactor site, Millstone 1, and a picture of a stand-alone  
21 decommissioning site, Vermont Yankee.

22 The soon to be revised IMC 2561 will account for whether the decommissioning  
23 unit is co-located with an operating reactor, as well as other additional considerations such as

1 whether spent fuel is still in the spent fuel pool. When the unit is co-located, it is possible and  
2 prudent to leverage inspection insights from the operating power reactor inspection program, such  
3 as corrective action reviews to reduce the scope of decommissioning onsite inspections.

4 Next slide, please. With respect to complex material decommissioning sites,  
5 the NRC inspection program addresses all phases of decommissioning. That is, inspections  
6 before dismantlement, inspections during dismantlement and remediation, and inspections after  
7 remediation.

8 On this slide are three pictures from the former United Nuclear Corporation's  
9 New Haven fuel fabrication facility. The United Nuclear Corporation is one of the 15 complex  
10 sites identified in the 2015 status of the decommissioning program manual report. Currently,  
11 UNC is undergoing a supplemental characterization survey in the one remaining building, to  
12 identify the final required remediation activities.

13 UNC is just one example of a site where the regions and headquarters worked  
14 collaboratively to make progress at decommissioning complex sites. At UNC, once the final  
15 characterization is complete, regional inspectors will observe a sample of the additional  
16 remediation work, perform confirmatory surveys with personnel from Oak Ridge Associated  
17 Universities, and work with headquarters personnel in reviewing final status surveys.

18 Since the last Commission briefing on the decommissioning program, the  
19 regions have completed oversight activities which ultimately led to the termination of licenses at  
20 Mallinckrodt and Stepan.

21 Next slide, please. On this slide is a photo from the Hematite facility in Festus,  
22 Missouri. In exercising its oversight role, the Region III office provided an independent  
23 assessment of license actions to ensure public health and safety.



1                   On September 2nd, 2015, the NRC was conducting confirmatory surveys with  
2 Oak Ridge Associated Universities in a land survey area that had previously been released for  
3 unrestricted use and was ready for backfill.

4                   From the confirmatory surveys, 15 items were identified on the surface of the  
5 soil that were radiologically contaminated. An analysis identified the items were contaminated  
6 with uranium-235. The licensee stated that on or about August 30th, 2015, the facility had a rain  
7 event which produced significant quantities of storm water and transported the 15 contaminated  
8 items from the land survey unit area that was still undergoing radiological remediation to a land  
9 survey area that had been previously final status surveyed.

10                  The significance of this finding is that the licensee had failed to prevent licensed  
11 material from entering a land survey area that had already been released for unrestricted use and  
12 was ready for backfill.

13                  Without the NRC finding, that radioactive material would have been covered by  
14 several feet of soil and as such that material could not have been detected via a radiological  
15 surface scan.

16                  As a result of the finding, the licensee procedures were revised to ensure a  
17 walkover survey was performed within 72 hours prior to beginning backfill operations.

18                  Next slide, please. Before closing, I would like to briefly mention a couple of  
19 challenges the regions are addressing. The first regional challenge is the need to train and  
20 develop future decommissioning health physics inspectors. As the workload in decommissioning  
21 is likely to remain constant or increase, our need to staff these positions is clear.

22                  While many of the skills required for this type of position overlap with the more  
23 traditional health physics positions, there are training and skills which are unique to the position.

1 I have identified just a few of those on this slide, licensing and license termination being one  
2 example, as well as some computer codes such as MARSAME and RESRAD, which are  
3 frequently used by licensees.

4 Next slide, please. And we are taking actions to address this issue. The  
5 decommissioning health physics position was subject to the Office of Chief Human Capital  
6 Officer's pilot core competency modeling project, which involved assembling the more  
7 experienced inspectors from headquarters and the regions to define the specific key functions of  
8 the position.

9 This project, still in progress, will provide a tool for individuals moving into these  
10 positions, to self-assess their specific training needs and create individual development plans.  
11 The project proceeded in parallel with an effort by the program office to upgrade the applicable  
12 qualification journal. I have two inspectors in my branch who recently transferred over from the  
13 reactor program and they are already benefitting from the improved qualification journal.

14 The two new inspectors are shown on this slide being mentored by senior  
15 decommissioning health physics inspectors, one at Millstone Unit 1 and one at Vermont Yankee.

16 Next slide, please. The last topic I want to mention is the non-military radium  
17 project, which John spoke about. Shown here are two former clock companies, company  
18 facilities. I'll point out that in Region I and Region III there are a high number of initial site visits  
19 and subsequent scoping surveys that will need to be accomplished.

20 The regions and headquarters are prepared to address the increasing workload  
21 in this area. We will certainly keep the program office, the EDO and the Commission informed  
22 of our progress and results. This concludes my remarks. I'll turn the presentation back to Mr.  
23 McCree.

1 MR. McCREE: Thanks Ray. This completes staff's presentation of the  
2 Decommissioning of Low Level Waste business line. I appreciate your attention. As you  
3 noted, there's quite a bit of work ongoing in this business line, and there's been a significant  
4 amount of public outreach and participation as well. We remain focused on our safety and  
5 security mission. I hope that came through in the presentation as well.

6 At this point, we'd be pleased to take any questions you have.

7 CHAIRMAN BURNS: Thank you and Commissioner Baran, I'll call on him first  
8 to lead the questioning.

9 COMMISSIONER BARAN: Thanks, Mr. Chairman. Thanks for the  
10 presentations. I want to start by asking about NRC's efforts to address historic radium  
11 contamination at non-military sites.

12 The staff has taken some good first steps in this area, with outreach or  
13 beginning outreach to states with potentially contaminated sites and site owners. What kind of  
14 response are we getting so far from states and site owners?

15 MR. TAPPERT: Thank you, Commissioner. So as I mentioned in my  
16 presentation, we just began outreaching to the site owners themselves. Those letters went out  
17 about a week ago. We've gotten about a dozen or more calls back from them. So far, it's been  
18 very positive. They're interested in working with us and inviting us to their properties to look at  
19 their facilities.

20 It continues to be a work in progress, so if there are any challenges, it will  
21 probably go in the other tail distribution. So the people who will respond quickly are probably not  
22 going to be the problem. So we'll continue to work through that. So we're kind of in early days  
23 right now.

1 COMMISSIONER BARAN: Uh-huh. Well one reason -- oh sorry, go ahead

2 Marc.

3 MR. DAPAS: Just one thing to add. In our engagement with the Agreement  
4 States regarding sites that the Agreement States have exercised regulatory authority and been  
5 involved in decontamination, what was communicated to us is the site owners are generally  
6 cooperative because they want to understand the extent of any contamination, and then what's  
7 the appropriate action to remediate.

8 So we're hoping that those sites in the non-Agreement States, the site owners  
9 will similarly be cooperative and work with us.

10 COMMISSIONER BARAN: Okay, good. I mean one of the things that I think  
11 that makes this issue tough is that for a lot of these sites at least, the list of potentially  
12 contaminated sites is based on historical records, and for some of the sites, no one's been out  
13 there yet to take readings or actually survey the sites.

14 Of course that's a very important step, because we need to know if there are  
15 sites where the contamination is high enough to pose a health risk. John, you said that the goal  
16 was to conduct initial site visits in the next six months.

17 How quickly are you aiming to complete more detailed scoping surveys for the  
18 sites that require them?

19 MR. TAPPERT: It will be as soon as we can of course, and it will sort of depend  
20 on what we found in the initial site visits. But the program was sort of scoped out for about two  
21 to three years right now. So you know, it's kind of a methodical step-wise approach right, and as  
22 you indicated, we don't have confirmation that these sites are contaminated at all, right.

23 All we do is we have a contractor look at historical records, to see where

1 manufacturing of various radium items was done, and now we're taking the next step to  
2 investigate that.

3 MR. DAPAS: I'd just add one comment. We're looking at a graded approach.  
4 So depending on the extent of any contamination that is identified as a result of these scoping  
5 surveys, we'd engage. For example, where less than 25 millirem, which is consistent with our  
6 unrestricted site release criteria, there may be no action is required.

7 That could range, depending on the extent of contamination to the needs to  
8 potentially license or working with our federal partners, EPA, in terms of cleanup. So it really is  
9 a function of what is the extent of any contamination that we might identify at these sites.

10 COMMISSIONER BARAN: Well thank you for your efforts. I think it's really  
11 important that we've gotten, you know, active in this area. It's an important initiative. Let me  
12 turn to the staff's rulemaking for requiring financial assurance for the disposal of Category 1 and  
13 2 radioactive sealed sources.

14 Under our current regulations, many Category 1 and 2 sealed sources aren't  
15 required to provide financial assurance for decommissionings. They don't have to submit a  
16 decommissioning funding plan or have a financial instrument to cover the even disposal costs.  
17 That's because the regulatory threshold for this requirement is very high.

18 For example, one of the most commonly used radionuclides is cesium-137. 27  
19 curies of cesium-137 is the cutoff for it to be a Category 2 quantity, which subjects you to various  
20 requirements, including physical security and source tracking. But a licensee isn't required to  
21 meet financial assurance requirements unless it possesses 100,000 curies of cesium-137, and  
22 that's a much, much higher threshold than 27.

23 And this is, I guess, a question for anyone. Do you know what the original

1 thinking was behind this really big discrepancy in our regulations? Was it an affirmative choice  
2 that was made at some point, or did it just happen over time as different regulations evolved?

3 MR. SUBER: No, I'm not certain exactly why the thresholds were created the  
4 way they are, and we can get back to you on that. But one thing I would like to reiterate is that  
5 the passage of the issuance of the branch technical position on concentration averaging will  
6 address and minimize the expense or lessen the expense for cesium sources lower than 130  
7 curies.

8 So we are addressing some of the issue with the branch technical position on  
9 concentration averaging, which would make the cost for those sources a little bit more certain. I  
10 mean there's a level of uncertainty for higher level sources. But for that category of sources  
11 below 130 curies, there's now a disposal pathway for it number one, and more certainty  
12 associated with the cost.

13 COMMISSIONER BARAN: The various task forces that have examined this  
14 issue recommend addressing it, because the regulations don't provide incentive to promptly  
15 dispose of sealed sources that are no longer in use. Basically, if a licensee hasn't set money  
16 aside or planned financially for disposal, it may not have the funds to dispose of the sealed source.

17 That increases the risk that it will sit there year after year and eventually be  
18 abandoned. The staff mentions one case where the Department of Energy ended up footing the  
19 \$581,000 bill for disposing of sources that had accumulated at a bankrupt firm in Pennsylvania.

20 Are there other examples where licensees didn't end up bearing the cost of  
21 disposal and the state or the federal government had to pay for it? How large of a problem is  
22 this?

23 MR. SUBER: I'm sure there are other examples. I can't, I can't cite them to

1 you specifically. But there are two programs. There's a SCATR program run by CRCPD, that's  
2 picking up these sources and also of course the DOE has an orphan source recovery program  
3 that is addressing the exact concern that you're talking about.

4 The challenge that we have is that the funding for these programs are  
5 decreasing, and DOE has made it known that it doesn't believe that it will be able to fund these  
6 programs in perpetuity. So the urgency of trying to get some kind of mechanism to ensure that  
7 the people who are using these sources and benefitting from these sources are saving the money  
8 to dispose of these sources when they're done is paramount and the baton has been handed to  
9 the NRC.

10 COMMISSIONER BARAN: Well, it seems like the existence of these  
11 programs, the state program, the DOE program to go around and collect the orphan sources  
12 suggest that what we have right now in our regulations isn't creating an incentive really for the  
13 licensees themselves to dispose of them promptly, right, because we've got taxpayer funded  
14 programs going around picking these up because they've been there for who knows how many  
15 years and haven't been --

16 MR. SUBER: Correct, and that's part of the purpose of the rulemaking, is that  
17 the people who actually gained the benefit from utilizing these sources bear the cost for disposing  
18 of these sources, as opposed to transferring that burden on the U.S. taxpayers.

19 COMMISSIONER BARAN: Currently our regulations don't require a licensee  
20 to declare a source disused, or to dispose of a disused source within a certain time frame, and  
21 some stakeholders recommend that we require that.

22 Is the staff considering a requirement to declare a source that's used, and tying  
23 that declaration to an obligation to dispose of the source within a specific time frame? Is that

1 something you're looking at?

2 MR. DAPAS: Okay. So we're doing the rulemaking. We're constructing a  
3 rulemaking plan, and we can consider that in a rulemaking plan. The one thing we don't want to  
4 do is create the perception that long term storage of sealed sources is in any way unsafe. We  
5 do not believe that there is any problem with our regulations dealing with the long-term storage of  
6 radioactive sealed sources.

7 We don't want to create the illusion that they are by suggesting that we need to  
8 impose on the industry at this time a particular time frame in which a source has to be disposed  
9 of, because there's a safety or security issue associated with it.

10 MR. TAPPERT: Yes, and if I could add to that. So that -- and then we got  
11 some feedback on that through this process as well, that you want to be cautious about what you  
12 consider a disused source, because a source may be used infrequently, but it still may have future  
13 utility. You certainly wouldn't want to drive that to a disposal situation when it could be used for  
14 productive uses in the future. So this could be a balancing task if we go through with this process.

15 COMMISSIONER BARAN: So it sounds like that's part of the reason you  
16 focused more on this rulemaking plan, you know, for a potential rulemaking on the financial  
17 assurance side, rather than having a set time frame in which, you know, a disused source would  
18 need to be disposed of.

19 Okay. In 2010, a multi-agency working group recommended that NRC  
20 establish financial assurance requirements for all Category 1, 2 and 3 sealed sources. A working  
21 group with broader membership including Agreement States and industry made the same  
22 recommendation in 2014. Should we consider including Category 3 sources in this potential  
23 rulemaking?



1 MR. TAPPERT: And I think if the Commission approves the staff's proposal,  
2 as part of that process you're going to be exploring various options and getting feedback, and  
3 then certainly the level of sources that you would involve in this will be part of that dialogue.

4 COMMISSIONER BARAN: Okay. The way -- oh sorry.

5 MR. DAPAS: Just one question to add. I think as you recognized, the  
6 proposed rulemaking plan was a function of fairly extensive stakeholder outreach, you know,  
7 engagement with DOE that has Orphan Source program, Conference of Radiation Control  
8 Program Directors that oversee the program that Greg referenced, etcetera, views that the  
9 individuals that own the sources there should be some accountability in terms of cost for disposal.

10 So the rulemaking plan reflects, if you will, a compilation of those stakeholder  
11 views. Then I would offer if we went forward with rulemaking, as you know there would be  
12 additional opportunity for public stakeholders to engage in what should be the staff's approach,  
13 and potentially address Category 3. It may be something that's suggested from the stakeholders  
14 and then we would need to evaluate that.

15 COMMISSIONER BARAN: Okay. So if the rulemaking plan's approved, you  
16 envision that as part of that rulemaking effort, the staff would look at, explore the issue of whether  
17 you should go to Category 3 to financial assurance.

18 MR. DAPAS: I would expect it to be included within the scope of the  
19 rulemaking. What the staff's recommendation would be would be a function of the analysis.

20 COMMISSIONER BARAN: Thank you.

21 CHAIRMAN BURNS: Thank you, Commissioner. I'm going to focus on a lot  
22 of my regulatory history sort of flew before my eyes, places like Stepan, Stepan Chemical, United  
23 Nuclear Corporation, Mallinckrodt. We didn't mention Kerr-McGee West Chicago. But it goes

1 to -- it goes to a point, we talk about complex sites which I think in many ways also get the tag  
2 legacy sites.

3 One of the things, I think the observation in this area, that this is an area, I think  
4 particularly within NMSS, where we have what I will call non-traditional licensing, where we have  
5 sort of the normal expectation of a licensee gets an authorization for material. It manages that  
6 material. It's supposed to deal with it in a certain way.

7 It may or may not be requirements for its ultimate disposition. But much of  
8 what you -- I know what John was talking about and others have talked about this morning are  
9 really things that go way back or we assumed responsibility, for example, in the radium area about  
10 ten years.

11 I think in fact I remember working on a Kerr-McGee site outside West Chicago  
12 basically, an old tailings pile, and we could blame that on the Kaiser is what I was always told.  
13 Kaiser Wilhelm, before Germany fell apart at the end of World War I is because, with the outbreak  
14 of World War I, thorium exports from Germany were cutoff.

15 There was a need for thorium for gas mantles and things like that. It was  
16 available, so you started running around with rare earths piles, which eventually got to Kerr-  
17 McGee. But my point, let me come to after this digression, let me come to my point, is that when  
18 you talk a lot about these complex and legacy sites, with respect -- what confidence do I have  
19 with our current regulatory framework that we don't in effect create those same situations?

20 What's better about how we address the licensing aspects and the control  
21 aspects in the environment that we are in now, so that we don't have -- obviously things like  
22 radium were before the AEC and things like that? Before I know, for example, places like, and  
23 I'm not sure whether Stepan was one of them, but we have the old sites that the AEC cleared and

1 then we decided later weren't there. So I'll leave it open to anybody there that might want to  
2 address that.

3 MR. DAPAS: I'll just offer one perspective, and I'm sure John has some  
4 thoughts. But one of the things we're looking at is I know was there a requirement for remediation  
5 during operations, say an operating reactor. If you had a spill, you know, what is the licensee  
6 doing to address that during the operating phase, such that it doesn't become a challenge in trying  
7 to characterize any residual contamination that would exist?

8 What we've learned through the operating experience is that licensees are  
9 being very proactive in addressing that aspect. So I think that's an example of where the industry  
10 is taking actions to address some of the learnings regarding these complex sites. I spoke as an  
11 example with operating reactors. But in terms of materials sites, John may have some views on  
12 that in that regard.

13 MR. TAPPERT: Yes. So I would point to, I think we've strengthened our  
14 financial assurance regulation. So and I think our current licensees, I think we have good  
15 oversight to make sure that they're going to have the resources necessary to decommission or  
16 remediate the sites.

17 The ones, the inventory, the ones that we're kind of working our way through,  
18 pre-date those requirements, and that's where we have these financial challenges.

19 CHAIRMAN BURNS: All right, okay. Yes, and it seems to me again, and  
20 apart from, you know, financial requirements, but just so the framework of expectations of what's  
21 permitted. You know, we understand what's permitted. As Marc, I think, noted, this is what  
22 where we -- where there are problems, potential contamination and things like that, that they're  
23 identified, we understand it and that we have a framework under which we, you know, we have

1 robust criteria and the like to move through it.

2 I think that's important, because as you said, you know, and I applaud the staff  
3 on this, because these are extraordinarily complex circumstances. Stepan Chemical, actually  
4 there's -- I won't go into it, but there's a connection. Kim Howell here, there's a connection about  
5 the creation of OI in the Stepan Chemical site in the early 1980's, because of an unknown site  
6 and suddenly the place is discovered that had tailings under it and it says it takes -- it's about  
7 three decades since its rediscovery.

8 So it's important, I think that my point is it's important just to maintain the  
9 vigilance on this, and the vigilance is really about the robustness of the regulatory framework we  
10 have now, to assure that, you know, we're accomplishing what we're supposed to do in terms of  
11 our public -- our oversight in assuring public safety and the like.

12 Let me go on to a couple of other things. In terms of one of the transitions that  
13 I think you have to focus on in the reactor decommissioning is this transition between NRR and  
14 NMSS. John and Marc, you can speak to this. In terms of are you satisfied that the guidance  
15 or the clarity about that transition, the handing off the baton if you will, is clear, that the NMSS  
16 staff are prepared to take it and what things are you looking at or maybe looking at or thinking  
17 about in terms of improving that transition?

18 MR. TAPPERT: Yes. I'd say we're certainly satisfied with working with our  
19 operating reactor partners on that. As you're aware, you know, we had those five shutdowns the  
20 last -- the premature shutdowns over the last few years. We did a lessons learned report to kind  
21 of, you know, see what we could do to kind of improve that process.

22 A lot of it's going to help the licensing efficiency with the exemptions and also  
23 the handoff. So I think we have a checklist. We have procedures in both offices to articulate

1 when that chop over occurs and to my knowledge, I mean to my experience it's working well.

2 MR. DAPAS: Okay, and the other things I would just point out, as we indicated  
3 in the presentation, you know, it's not a resource challenge in terms of when you look at it overall  
4 as an agency. It's just a matter of shifting the work to others that have the skill set for the  
5 decommissioning, that formerly, you know, those resources were vested in say the operating  
6 reactors for operational oversight.

7 But from a resource standpoint, we're in a good place. Then as Ray  
8 mentioned, you know, the ongoing training and evaluation to ensure staff have the skill set.

9 So I think it's working well, and my experience in the two and a half months that  
10 I've been in NMSS, and in talking with John and company and getting briefed on the lessons  
11 learned that John referenced, I think we're working well to transition the experience from operating  
12 reactors to NMSS and the decommissioning oversight.

13 CHAIRMAN BURNS: Okay, thanks. Ray, I want to ask you a couple of  
14 questions. Can you help me out, maybe give me some examples where you think there's  
15 improvements to the management directives, in terms of co-located versus the single sites, where  
16 you see efficiencies being gained?

17 Maybe giving a couple more specific examples in terms of the observations  
18 you've seen.

19 MR. POWELL: Certainly sir. One example I didn't mention, I'll start with that  
20 one, the corrective action reviews. The reality is the resident inspectors are very diligent.  
21 Everything that goes on at the site they frequently will send to my staff condition reports or issue  
22 reports that they come across during their daily review.

23 So when we go out to the site, even though the program allotment maybe 10 or

1 12 hours for corrective action reviews, we don't need that amount of time and it's best to have the  
2 guidance reflect that, especially as we transition to all new inspectors. Someone that's been  
3 doing it for a prolonged period of time probably already has that in the back of their mind. But  
4 we need the guidance to be accurate for the next generation of inspectors.

5 Other areas, some of the radiological programs are shared. Some of the --  
6 with very few exceptions, some of the maintenance activities are shared. So unless there's a  
7 known problem or something very specific to the decommissioning unit, I think we are going in  
8 the right direction. We're shaping the manual chapter guidance.

9 CHAIRMAN BURNS: Okay, and the other thing you mentioned was in terms  
10 of getting the skill sets that we need. Let me expand that. Is this something in terms of the  
11 particular health physics type discipline that you see or that any of you see in terms of it being  
12 also an industry challenge with respect to, as we go through the decommissioning process?

13 MR. McCREE: So in this area of human resources, the health physics has  
14 come up before within various industry circles as an area that they need to invest, that is needed  
15 to be invested in, and they are across the board, both for the operating fleet as well as for  
16 decommissioning.

17 I've not heard of any specific unique challenges in the decommissioning area,  
18 but the fact is it is health physics in general is an area that industry's investing in. Again, across  
19 the board.

20 CHAIRMAN BURNS: Is this something that our, the university grants program  
21 can help us address, or I mean I don't know some of the specific programs that we are --

22 MR. McCREE: I think it could, you know. You're talking about an area that,  
23 you know, we can target. I don't know if we have, so I'd need to get back to you on that. But

1 it's certainly an area that those resources could be used for.

2 CHAIRMAN BURNS: Okay, all right.

3 MR. DAPAS: Just a quick comment. From my time in Region IV when I had  
4 the opportunity to visit San Onofre, I recall it wasn't so much a function of the possession of the  
5 skill sets. It's needing more individuals that have the skill sets.

6 The size of the workforce, given the decommissioning, because the radiation  
7 protection staff that's on-site for an operating reactor certainly is a much smaller scope than you  
8 would need for the decommissioning process, decontamination, remediation and you know, you  
9 can use contractor workforce as well.

10 But my recollection from talking to site leadership was, you know, having to look  
11 at having the appropriate numbers and then of course providing the contractor oversight.

12 CHAIRMAN BURNS: Okay, thanks Marc. Commissioner Svinicki.

13 COMMISSIONER SVINICKI: Well good morning, and thank you all for your  
14 presentations. There is quite a basket of activities that we've talked about this morning. I think  
15 I'll best approach this by sharing some of my observations or reactions to the status that you've  
16 provided, and I'll leave some time at the end for you to provide any sort of response that you'd  
17 like to to those observations.

18 First of all, I want to note that it's very commendable that for all of you who  
19 presented today, reflected in your presentation was a focus on continuous improvement of agency  
20 processes, of being NRC as a continuous learning organization. This is things like the low level  
21 waste programmatic assessment, which was initially done years ago. But that basket of issues  
22 has been looked at and relooked at.

23 We also have other rulemaking activities, where we're I think looking to better

1 risk-inform some of our activities, and I think that that's also part of NRC's continual learning here,  
2 is that we receive risk insights as say a complex decommissioning on the material side is  
3 completed. We learn from that. The person carrying out the decommissioning learns from it.

4 But we go back and try to reincorporate that into our regulatory framework. I  
5 think that there has been good mention this morning of risk-informing various activities. The  
6 revision to the branch technical position on concentration averaging, the kind of tentacles of that  
7 issue into other regulatory areas, I think, is a good, again evolution of our risk-informed process.

8 There are though cautions to keep in mind, one of which is that even if an activity  
9 is maybe the highest hazard of the activities within the business line, that does not make it in an  
10 absolute sense a high hazard activity. So I think for this particular set of activities that this panel  
11 has addressed, there is a need to be constantly focused on reasonable assurance of adequate  
12 protection and our overall mandate to be thinking about getting to adequate levels of protection.

13 Specifically I'll note there's been mention of the scoping study that was done on  
14 financial planning requirements for Category 1 and 2 sources. Also, to a certain degree, although  
15 I haven't really begun a detailed review of it, there is the staff's look at potential requirements for  
16 prompt remediation at reactor sites of releases that go on there.

17 I think that risk-informing really comes to the forefront on both of those issues.  
18 I was heartened when I got to page 37 of the 40 page scoping study to see that there was some  
19 discussion of the beneficial uses of radioactive material and the financial assurance scoping  
20 study.

21 It goes on here to say that offsetting the potential benefits of additional financial  
22 planning requirements are the possible negative effects on the beneficial uses of radioactive  
23 material. Information provided indicates that the cost of disposition of unwanted sources if a



1 pathway is even available can range of hundreds of dollars to hundreds of thousands of dollars  
2 per source.

3 And these costs for some licensees may be daunting and in some cases  
4 prohibitive. So it is absolutely imperative that we think about a couple of things here, one of  
5 which is are -- the commentary we have received in my view is dominated by our federal partners  
6 at DOE, NNSA, and with our all noting of their professionalism, I would state that the metric of  
7 success for the global threat reduction program is the removal of nuclear materials from all  
8 economic and commerce-related activities.

9 So the other strong voice in the commentary of the scoping study were disposal  
10 sites. I would note that if we impose a mandatory time of unused, disuse of a source, beyond  
11 which it has to be disposed of, I don't mean to sound cynical but disposal sites have a potential  
12 financial windfall there.

13 So you know, NNSA provided some specific examples of costs, and whether or  
14 not they desire to continue to request money from Congress for the collection of abandoned and  
15 orphaned sources. I might suggest that they may have to continue to do that. They have certain  
16 national security missions that are not optional for them.

17 They gave one example of a source in New Mexico that it was expensive for  
18 them to collect and dispose of. I haven't checked lately, but the people of New Mexico are among  
19 the most medically underserved people in the United States, and therefore the consequence of  
20 what we put in place to the availability and affordability of health care is part of the public interest  
21 that we have to balance when we look at something like this.

22 We may or may not receive comment or have individual U.S. citizens showing  
23 up at our public meetings on these topics. But their interest is our obligation to balance. So I

1 think that there are potential consequences to putting these types of requirements into place that  
2 I don't think are reflected in the scoping study beyond the three paragraphs that were there on  
3 the page.

4 I think that your obligation as NRC's experts on this topic is going to be to  
5 balance this public interest that may or may not be spoken to in the kind of written comments that  
6 we receive. So I think on that element -- the other thing that the staff concludes with in the  
7 scoping study is the NRC has regulatory requirements in place to ensure the safe and secure  
8 management of these sources.

9 I appreciate that in response to Commissioner Baran's very thoughtful  
10 questions, I think it was Mr. Tappert mentioned that we don't want to give any implication that  
11 the management of these materials is somehow -- that we're not confident in the management of  
12 them right now.

13 The staff goes on to say the staff recognizes that these financial planning  
14 requirements would be a best management practice. The imposition of best management  
15 practices, whether it be this one or prompt remediation at an operating facility is not our statutory  
16 mandate.

17 Our statutory mandate is reasonable assurance of adequate protection and  
18 best management practices, while a good idea, while virtuous, that can't be a basis for a  
19 regulatory requirement. So I think we've got more work to do, and I think there's a lot of interest  
20 to be balanced that may or may not be the people who show up the public meetings that we hold.  
21 But it doesn't absolve us of this broader obligation.

22 So you know, more to come on that. It's not really the topic of today's meeting.  
23 I should let you respond to that. Go ahead.

1 MR. DAPAS: I just would offer one response. I very much appreciate the  
2 perspective you offered. I think when you go through the rulemaking process, you are afforded  
3 the opportunity to clearly obtain input from the stakeholders. You did mention that we may not  
4 receive comments regarding some of the areas you mentioned.

5 I think that, you know, we need to look at that proactively and try to obtain  
6 insights from those that would be most affected by any type of financial assurance requirements,  
7 so that we can make the most informed decision. I appreciate your comment about reasonable  
8 assurance of adequate protection and ensuring the beneficial uses.

9 I think we need to balance that with, you know, is there a gap, is there a  
10 challenge, is there a problem with unused sources for which there's not financial assurance, and  
11 then collectively propose what we would offer would be the best solution via the rulemaking  
12 process.

13 COMMISSIONER SVINICKI: Have you evaluated whether or not there would  
14 be a kind of a massive turn-in of things, I mean, or perhaps a spike in orphan sources upon the  
15 imposition of this type of requirement? I also want to note that likely to assess that, you would  
16 need to also have made the determination about this notion of 24 months or some other period  
17 that something is disused and you would mandate the disposal of it.

18 I will tell you, you can go into any cabinet in my kitchen and ask me if I've used  
19 that particular serving bowl or platter, and if you told me if you haven't used it in 24 months, the  
20 government's going to take it from you? You know, there's a reason I think that Americans get  
21 frustrated with the general reasonableness of government.

22 So I know we've been offered cautions about when something is disused. But  
23 if we set an arbitrary date, I think there would be a wholesale spike in disposal, a spike in orphan

1 sources. So DOE better, in that instance, have requested a huge uptick in their budget for those  
2 programs. Is that the kind of coordination that we would be doing?

3 MR. SUBER: Okay though. Let me first say that examining whether there  
4 would be a spike in the sources was beyond the scope of what we looked at in this particular  
5 study. But are still coordinating very closely with DOE and I assume that if we -- if the  
6 Commission were to approve us to go and do the rulemaking, that specifically looking at whether  
7 we should -- whether it's prudent to try to dictate to our licensees, who are now currently safely  
8 storing these materials, that there is some arbitrary date on which they have to declare the source  
9 disuse would be part of what we do.

10 I think John Tappert raised that point, that you know, we did not have in mind  
11 to go out and to say hey, at this particular point the source is disused unless that is part of the  
12 scope that we're going to look at.

13 COMMISSIONER SVINICKI: And I think, you know, I think it's just part of the  
14 social engineering of people's behavior, that when we get to this point, my comfort with any  
15 proposal deteriorates rapidly.

16 The notion that -- because again, let's remember that while these people have  
17 these sources, we can inspect. They are inventorying. It's not as if there's no burden on them  
18 to have these things, but just to decide when it is they can no longer have something that they  
19 have, and that we want to incentivize behavior to get rid of something.

20 I don't know. We're into a kind of a psychological control of people's behavior  
21 that I don't even know what kind of basis we have for that.

22 MR. SUBER: Well, part of what we found out when we were doing our public  
23 outreach is that, you know, in a free market system, people come up with creative ideas, and part

1 of what we got was that the reuse and the recycle of some sources, a disused source to one  
2 particular licensee may be a viable source to another licensee.

3 So doing, in collecting information for this report, we saw a number of things  
4 emerge and a number of things that were considered that may have not been -- that may have  
5 not made it into the report because it was outside of the scope of what we said, of what we were  
6 trying to accomplish with the rulemaking plan.

7 But we did hear a lot from the public and we can consider that information in  
8 addition to other information that we collect as we move forward if the Commission approves the  
9 rulemaking plan.

10 MR. TAPPERT: So Commissioner if I could, you raise a lot of very valid points  
11 that we have to consider if we move forward. I would say that, you know, before we use the force  
12 and power of the state to impose new requirements, it needs to be consistent with our mission  
13 and we need to be convinced that it is not going to have any unintended consequences.

14 But we do have this body of work out there with these interagency task forces  
15 that have been looking at this issue over the past many years, and they've all advised the NRC  
16 to look at this issue in greater depth.

17 That's really what I think the proposal, the staff proposal to the Commission is,  
18 to let's take the next step to do the regulatory analysis, to look at this deeper, to explore what  
19 those unintended consequences might be and see if they are countervailing to a new requirement.

20 Or if there is a new requirement, how would you phase it in to not have any  
21 adverse impact? So certainly this is a -- this is not a slam dunk in my mind. But I think it's worthy  
22 of the next step of analysis, which is really what we're proposing.

23 COMMISSIONER SVINICKI: Well that's very well spoken, and I'd be wise to

1 let that be that last word, but I won't be wise. I'll just state that I appreciate that.

2 I've asked some really tough questions here, and please don't think that I  
3 haven't considered the other side of the question. I will say that this nation used to have a tire  
4 disposal problem with tires for vehicles, and now when you buy tires, you pay a fee and you know,  
5 I understand that.

6 So there may be -- so other sectors have dealt with this from maybe the more  
7 mundane like tires to this has some complexity, because these materials are used in various  
8 applications. The notion that you might pay some up-front costs when you purchase something.  
9 Maybe some of it is -- it gets really difficult when it's the retrospective look of all the materials in  
10 commerce right now in addition to new sources you might buy.

11 I think we'd have to widen the aperture substantially and think about innovative  
12 ways that this has been addressed, or maybe even just begin by addressing it on a going-forward  
13 basis as opposed to a current basis. But again John, you've stated it well, that there would be a  
14 lot more to come and a lot of thinking that would have to be done. With that, I thank you Mr.  
15 Chairman.

16 CHAIRMAN BURNS: Thank you. We'll take a five minute break and then  
17 we'll come -- we'll come back at eleven, and then we'll proceed with the second panel. Thanks.

18 (Whereupon, the above-entitled matter went off the record at 10:55 a.m. and  
19 resumed at 11:01 a.m.)

20 CHAIRMAN BURNS: I'll call the meeting back to order, and we'll have our  
21 second panel now on the Spent Fuel Storage and Transportation business line. Again Vic, I'll let  
22 you start the second panel presentation.

23 MR. McCREE: Thank you, Mr. Chairman. Good morning again. The staff

1 will now discuss the Spent Fuel Storage and Transportation business line.

2 As mentioned earlier, the workload for the Spent Fuel Storage and  
3 Transportation business line has the potential to grow, given the fact of life changes, including  
4 reactors that decommission before or at the expiration of the operating license, as well as the  
5 receipt of consolidated interim storage facility license applications.

6 One application for consolidated interim storage facility was submitted by Waste  
7 Control Specialists in April of this year, and another application is expected from Holtec  
8 International in March of next year.

9 This work is in addition to the steady baseline of work for this business line,  
10 which is expected to continue into the future. There's also an increasing level of internal and  
11 external stakeholder interests regarding consolidated interim storage facility reviews, as well as  
12 other business line activities.

13 In an environment of decreasing resources, we are continuing to focus on  
14 leveraging our creativity and demonstrating our agility by identifying and implementing process  
15 changes that will increase the efficient of business line activities, while still maintaining in our  
16 effectiveness in meeting our safety and security mission.

17 Next slide, please. With me at the table again is Marc Dapas, who will provide  
18 an overview of the business line's successes and challenges. He'll be followed by the NRC staff  
19 here with me today, Mark Lombard. To Mark's right, the director of the Division of Spent Fuel  
20 Management in NMSS will discuss the current spent fuel environment and changes to improve  
21 the licensing function.

22 Then John McKirgan to my left, the branch chief of the Spent Fuel Licensing  
23 Branch within NMSS will discuss current licensing activities for consolidated interim storage

1 facilities or CISF, reviews and dry cask storage system renewals. Christine Lipa, to John's left,  
2 the deputy director of the Region III Division of Nuclear Material Safety, will discuss oversight of  
3 independent spent fuel storage insulation or ISFSIs.

4 So with that brief introduction, I'll turn the presentation over to Marc Dapas.  
5 Next slide, please.

6 MR. DAPAS: Thank you, Vic. Good morning again Commissioners. As Vic  
7 indicated, we're now turning our attention to the Spent Fuel Storage and Transportation or SFST  
8 business line, and I'll provide a brief overview of the breadth and scope of this business line. My  
9 colleagues will then get into more specifics within their individual presentations.

10 Next slide, please. The scope of the SFST business line activities is diverse.  
11 It includes licensing the safe storage and transportation of spent nuclear fuel. It includes  
12 certification of radioactive material transportation packages, as well as preparation for future  
13 potential licensing with respect to alternative strategies for disposal and reprocessing.

14 There are more than three million shipments of radioactive material each year,  
15 and approximately a third of our licensing resources are used to certify the transportation  
16 packages used for these shipments. Our goal is to ensure that this business line is being well-  
17 managed and ready to handle the current workload, as well as prepare for future potential  
18 challenges.

19 We completed planned program activities and licensing process initiatives  
20 during fiscal year 2016, through optimizing available resources and collaboration with other  
21 offices. One example of the licensing process initiatives and consequent improvements to the  
22 program is the issuance of divisional instructions related to work prioritization, operational  
23 strategies and management expectations.



1 Another example is the continued progress made on the revised renewal  
2 regulatory framework for certificate of compliance and spent fuel storage sites, and then during  
3 his presentation, Mark Lombard will touch on examples of licensing process improvements that  
4 were completed in this last year.

5 As Vic noted, we received an application from waste control specialists or WCS  
6 for a consolidated interim storage facility or a CISF license. We are currently evaluating that  
7 application to determine if it is acceptable for NRC docketing and the associated safety review.

8 John McKirgan will provide more details of this important licensing review during  
9 his presentation, along with an update on the revised renewal regulatory framework activities  
10 previously discussed with the Commission.

11 The SFST business line also includes oversight of independent spent fuel  
12 storage installations or ISFSI operations. These operations include loading of spent fuel, transfer  
13 of the storage systems to the storage pad and inspections of the systems while in storage.

14 Christine Lipa will provide a regional perspective on our regulatory oversight  
15 program involving inspection activities. Let me now turn it over to Mark Lombard, who's going to  
16 provide an overview of the current spent fuel environment. Next slide, please.

17 MR. LOMBARD: Thank you, Mark. Good morning Chairman Burns and  
18 Commissioners. Shown on the slide are pictures of activities we regulate in the business line,  
19 including spent fuel storage systems and sites on the left, spent fuel transportation packages in  
20 the middle, and well logging source transportation packages on the right.

21 Today, I will give a brief overview of the spent fuel environment, including  
22 external factors and uncertainties.

23 Next slide, please. As Marc said, we have a diverse scope of activities in the

1 business line. As you can see in the slide, our spent fuel storage work spans from coast to coast.  
2 We have a solid baseline of spent fuel storage and transportation work for the foreseeable future,  
3 with a potential increase in workload involving CISF application reviews.

4 The surge in storage system and site renewal reviews, which John McKirgan  
5 will discuss in a few minutes, represents a significant increase in workload, as the associated  
6 certificates of compliance and licenses expire in coming years. As Vic and Marc mentioned, we  
7 received one application for a CISF license from WCS. This application is in the acceptance  
8 review phase.

9 If a CISF comes to fruition, we expect to see an increase in spent fuel  
10 transportation package application submittals to support the future transportation campaign.  
11 Holtec International expressed its intent to submit an application for a CISF license in the March  
12 2017 time frame.

13 Should we receive the Holtec application and determine it is acceptable for  
14 review, we could have two applications under review at the same time. Note we are only  
15 budgeted for one CISF review this fiscal year.

16 Next slide, please. If we do have two CISF applications under review this fiscal  
17 year, we would address this increasing workload by deferring some other work based on  
18 previously established priorities. In addition, in the vein of continuous improvement, we regularly  
19 conduct internal assessments and gather stakeholder feedback.

20 As a result of these assessments and feedback, we are modifying internal  
21 processes to be more efficient, while maintaining an appropriate level of effectiveness.

22 For example, we issued Division Instruction SFM 25, titled, "Review of an  
23 Application for a License for a Consolidated Interim Storage Facility for Spent Fuel and Greater-

1 than-Class C Waste," to describe an effective for conducting and managing review of a CISF  
2 application.

3 We issued Division Instruction SFM 26, titled "Operational Strategies and  
4 Management Expectations to Better Define Business Line Work Priorities," as well as  
5 expectations for key aspects of our operations.

6 This enables us to continue to implement pre- and post-Aim initiatives and  
7 optimize available resources, while maintaining development of high quality work products and  
8 ensuring safety and security requirements are met.

9 As part of SFM 26, we increased our attention on emerging issues, to resolve  
10 them quickly without impacting due dates. To meet this goal, we instituted what we call a prompt  
11 issue resolution process. John McKirgan will discuss this process in more detail.

12 Both SFM 25 and SFM 26 are publicly available, and we will be discussing them  
13 at our Spent Fuel Regulatory Conference in December. We began an initiative to risk-inform the  
14 dry cask storage regulatory framework, informed by probabilistic risk assessments or PRAs  
15 conducted by industry and the NRC in 2004 and 2006, respectively.

16 As we engage with stakeholders, use of the term "risk" inadvertently created an  
17 expectation for a quantitative, that is PRA basis for the approach. We had envisioned a  
18 qualitative approach that would not require licensees or certificate holders to conduct additional  
19 PRAs, due to the general relatively low risk of dry cask storage.

20 Consequently, we determined a better strategy is to develop a graded approach  
21 based on safety functions and defense in depth features of dry cask storage systems and sites.  
22 This process is currently underway, and we are collaboration with the Nuclear Energy Institute  
23 under their regulatory issue resolution protocol process, to gather information that we will use to

1 develop the draft regulatory framework and pick a pilot project to test drive the framework.

2 We will use lessons learned from the pilot to finalize the framework, document  
3 the approach and expand its implementation to all dry cask storage regulatory activities. We  
4 continue close coordination with the Office of Nuclear Security and Incident Response, to ensure  
5 the safety security interface is maintained, including utilizing them as an important partner in the  
6 review of the WCS application.

7 Next slide, please. The spent fuel world continues to have a lot of moving  
8 parts, with external factors and uncertainties influencing us today and into the future. These  
9 influences could result in increases in future workload, with the level of uncertainty as to the time  
10 frame and magnitude.

11 For example, as the National High Level Waste Management Strategy evolves,  
12 new activities may be initiated, such as a spent fuel transportation campaign. As mentioned  
13 previously, this action could result in an increase in business line workload to review new  
14 transportation package applications.

15 We continue to monitor these activities closely, and maintain our flexibility to  
16 adjust our strategies as necessary. There's a continued high level of public interest in spent fuel  
17 activities, with associated increased proactive outreach efforts, as well as significant industry  
18 interest in the time frames to complete licensing and certification safety and security reviews.

19 We embrace this interest through public meetings, to educate the general  
20 public, as well as industry, of our regulatory processes and any associated changes we implement  
21 in the context of efficiency and effectiveness. We expect a peak in independent spent fuel  
22 storage installation and storage certificate of compliance renewals in 2020.

23 The revised renewal regulatory framework, built over the last three years, not

1 only provides for increased efficiency in how the NRC conducts these reviews, but also enables  
2 the industry to focus on the most important elements of the associated applications, due to the  
3 pre-approved aging managing plans for systems required to be submitted for renewal.

4 This revised regulatory framework would not have been possible without  
5 extensive work conducted by a small team of NRC experts, as well as broad public stakeholder  
6 collaboration. I will now turn it over to John McKirgan, who will go into more detail on some of  
7 the topics I introduced.

8 MR. MCKIRGAN: Thank you, Mark. Next slide. Good morning Chairman  
9 Burns, Commissioners. This is an outline of what I'll be speaking to today. First, I'll discuss our  
10 activities in preparation for the receipt of the WCS application for a CISF, as well as provide an  
11 update on the current review activities with respect to the subject application.

12 Second, I'll discuss the anticipated surge of storage renewal applications and  
13 our activities to be more efficient, effective and agile in conducting the reviews of those  
14 applications, while maintaining our focus on safety and security.

15 Next slide, please. In advance of receiving the application for a CISF from  
16 WCS, the staff initiated a number of efforts to ensure we have a rigorous, consistent and  
17 predictable process for reviewing these types of applications. These include the issuance of a  
18 division instruction which describes expectations and best practices, such as conducting pre-  
19 application meetings with applicants, to provide a clear understanding of NRC requirements on  
20 the content and level of detail in the application.

21 These meetings can also enhance the NRC staff's understanding of the  
22 applicant's licensing request. The division instruction discusses the process for receipt of the  
23 application and the acceptance review process, including the request for supplemental

1 information phase of the acceptance review.

2 In addition, the subject division instruction provides high level guidance on  
3 requests for additional information, safety evaluation reports and the environmental review. As  
4 Mark said earlier, another important division instruction we issued is SFM 26. This document  
5 provides a prioritization framework for the ongoing activities in the SFST business line.

6 It is expected to play an important role should our workload exceed the capacity  
7 of the available resources. In documenting this prioritization framework and making it available  
8 to staff and stakeholders as a public comment, we are proactively communicating to enhance  
9 awareness of potential impacts, including deferring or suspending work on specific applications.

10 The division instruction also documents our prompt issue resolution or PIR  
11 process. The objective of the process is to ensure staff has a forum to engage management and  
12 obtain a decision regarding elements of the review, so issues can be resolved more quickly,  
13 thereby facilitating a more efficient review.

14 The PIR process has already been used successfully in a number of instances.  
15 These division instructions enable the staff to focus on their safety reviews, enhance  
16 communications with applicants, and to forward opportunities for prompt resolution of technical  
17 issues to enhance our efficiency.

18 Next slide, please. With respect to engagement with internal and external  
19 stakeholders, we use the full spectrum of regulatory tools to communicate guidance and  
20 expectations.

21 I'll speak to some of those items when I talk about the status of the WCS license  
22 application in a minute, but first I'd like to mention the staff's presentation at last year's Regulatory  
23 Information Conference, where we held a session on the licensing process for consolidated

1 interim storage facilities, and I'll also mention our Division of Spent Fuel Management Regulatory  
2 Conference, where we engage stakeholders on our process.

3 Graphics like the one show on this slide were used during these presentations,  
4 and have been very helpful in explaining the licensing process to our external stakeholders. In  
5 addition, we held a number of public meetings throughout the year to promote understanding of  
6 other aspects of our licensing process.

7 Next slide, please. Let me spend a couple of minutes discussing the current  
8 status of our review activities with respect to the CISF applications where we are employing our  
9 revised guidance. As I mentioned earlier, we used a number of communication tools in advance  
10 of receipt of an application.

11 Specifically with respect to WCS, we held four public pre-application meetings  
12 with the applicant, and conducted a pre-application readiness audit prior to the application being  
13 submitted.

14 Pre-application meetings and audits can be very helpful for the applicants and  
15 the NRC. The meetings provide a forum for the staff to communicate the requirements and  
16 expectations for the application in terms of content and level of detail. The pre-application  
17 readiness audit allows the staff to see the application in advance of its submittal, and provide  
18 feedback to the applicant regarding any issues identified.

19 In the case of the WCS application, the staff provided specific feedback on  
20 application quality and completeness, including the need for a clearly defined licensing basis.  
21 The audit was conducted on the date requested by the applicant that was only six weeks prior to  
22 their planned submittal date.

23 The applicant decided they would not delay their submittal date to allow

1 substantive changes to be made to resolve staff feedback. As a result, several NRC requests  
2 for supplemental information or RSIs were necessary.

3 The lesson learned for industry is to schedule pre-application audits early  
4 enough in their application development process, such that the NRC observations can be  
5 resolved in the application prior to submittal, potentially avoiding the need for RSIs.

6 WCS submitted their application on April 28th, 2016. The staff conducted an  
7 acceptance review and determined that additional information was needed before the application  
8 could be docketed. Following our process, the staff issued RSIs on June 2nd, 2016. In its  
9 response, WCS indicated it would need about four months to completely respond to the staff's  
10 requests, and proposed to submit the responses in four sets, with the final set originally expected  
11 on October 31st, 2016.

12 In a letter dated October 7th transmitting the third batch of responses, WCS  
13 indicated that they would take additional time to incorporate staff feedback, and proposed to  
14 revise the schedule, with the final sets of RSIs being scheduled for November 16th and December  
15 9th of 2016. Separately, WCS sent a letter on July 21st, 2016 requesting the staff proceed with  
16 the environmental review.

17 We replied on October 7th, 2016, stating that we would begin the review. In  
18 making this decision, the staff considered the important interactions with external stakeholders  
19 that need to occur as part of the environmental review. There were two RSIs on the  
20 environmental report.

21 Those RSIs were responded to adequately in the first batch of responses,  
22 enabling the staff to proceed. In proceeding with the environmental review, we're seeking to  
23 expand the time available for the public and other external stakeholders to engage on this



1 important topic.

2 In addition, as noted earlier, we received a letter from Holtec on September  
3 20th, 2016, indicating their intent to submit an application for a site-specific CISF license by March  
4 31st of 2017. We held two pre-application meetings with Holtec and will continue our  
5 engagement with them to share staff insights and encourage a more efficient process.

6 Next slide, please. So I'd like to update you on our activities associated with  
7 renewal of independent spent fuel storage installation licenses and dry cask storage system  
8 certificates of compliance.

9 Sorry, I'm on Slide 45. Next slide, please. Thank you. At last year's  
10 business line briefing, we updated you on our implementation of an operations-focused renewal  
11 and aging management approach in which inspection programs are adjusted over time as we  
12 learn from the associated inspections and pertinent operating experience.

13 We leveraged a great deal of the work and thinking that went into the operating  
14 reactor license renewal framework, and tailored it to fit our application and spent fuel  
15 management. In this portion of my presentation, I'd like to update you on our preparation for the  
16 anticipated surge in renewal activities, summarize the status of our implementation plan, and talk  
17 about the next steps we'll be taking in the near term.

18 Next slide, please. This slide depicts the number of renewal applications we  
19 have received to date or anticipate receiving in the coming years, both as specific licenses in dark  
20 blue and the renewals for certificates of compliance or COCs in light blue are depicted. At the  
21 bottom of the light blue bar for the certificate of compliance renewals, there is an indication of how  
22 many sites are impacted by the COC renewals in that year.

23 As you can see, there is a peak of activity in the 2020 time frame. We are

1 taking actions to address the surge in applications and increased workload this represents.  
2 These actions include completing the remaining pieces of the renewal regulatory framework, and  
3 continuing to seek process efficiencies challenging ourselves to enhance our efficiency while  
4 maintaining our safety focus.

5 Regular interactions with licensees and applicants help us estimate the future  
6 workload, as well as gain a better understanding of licensee and vendor design and operations,  
7 and the challenges they face with regard to dry cask storage system operations.

8 This supports continued compliance with our safety and security requirements,  
9 while integrating new aging management program requirements into existing licensee inspection  
10 and operating programs. We expect this work to pay dividends in the future and not require  
11 changes in business line resources, to handle the renewal surge through efficiency of the  
12 regulatory process.

13 Our early experience with the first few renewals showed us that while we were  
14 ensuring the safety and security of these systems, there were efficiencies that could be used to  
15 streamline the process.

16 Subsequent renewals reviews are showing, are already showing the positive  
17 effects of the new regulatory framework, as evidenced by the reduction in the number of license  
18 or certificate conditions, and a reduction in the number of requests for additional information.

19 Next slide, please. We are implementing a renewal framework that is stable,  
20 predictable and efficient at regulating age-related degradation. The approach is designed to  
21 ensure expectations for aging management are transparent and reliable, and it should be familiar  
22 to our licensees, since it was founded on reactor license renewal concepts.

23 The aging management programs also have a learning component which

1 ensures new information is factored into the process. As a result, the framework is sustainable  
2 into the foreseeable future without requiring changes to regulations. The framework is  
3 engineered to address the known age-related degradation mechanisms, and ensure an inspection  
4 and operating experience program is in place to detect and assess unforeseen mechanisms  
5 before they challenge safety functions.

6 Licensees and COC holders are expected to review operating experience and  
7 revise their aging management programs as needed. All of these activities are subject to the  
8 robust oversight of our inspection program. Later, Christine Lipa will provide a general overview  
9 of our current oversight activities.

10 Next slide, please. Let me discuss two key documents that support our  
11 renewal regulatory framework, NUREG-1927, the standard review plan for storage and renewals,  
12 and the Managing Aging Processes in Storage or MAPS report. We recently issued Revision 1  
13 of NUREG-1927, which provides clear guidance to the staff on key elements of renewal  
14 applications to guide their reviews.

15 The staff has also prepared to issue for public comment the MAPS report. This  
16 report is analogous to the Generic Aging Lessons Learned report for the renewal of reactor  
17 licenses. The NRC staff leveraged lessons learned and key information from the reactor renewal  
18 process to create a framework that easily integrates into existing licensee programs.

19 The report was presented to the Advisory Committee on Reactor Safeguards  
20 Subcommittee on Metallurgy and Reactor Fuels on September 20th. The next step will be for  
21 the document to be issued for public comment.

22 While elements of the MAPS report have been the subject of a number of public  
23 meetings, this will be the first time our external stakeholders will have an opportunity to provide

1 their comments and we're looking forward to their feedback.

2           Next slide, please. While those are significant accomplishments, we're not  
3 through yet. We will be working with the regions to develop the procedures to guide inspection  
4 of licensee aging management activities. We are also reviewing NEI-1403 format, content and  
5 implementation guidance for dry cask storage operations based aging management, for potential  
6 endorsement in a future regulatory guide.

7           By documenting acceptable approaches to meeting the regulatory requirements  
8 relative to aging management, we are confident we can greatly enhance the efficiency of our  
9 reviews for COC and license renewals. An associated and important related activity is the  
10 development and use of consensus standards as they apply to aging management.

11           The staff has represented on committees performing important work, such as  
12 the development of ASME Section 11 Code Case N-860, "Examination Requirements and  
13 Acceptance Standards for Spent Nuclear Fuel Storage and Transportation Containment  
14 Systems."

15           We anticipate development of these consensus standards will improve  
16 efficiency and predictability of the regulatory process if they are endorsed by the NRC and  
17 properly utilized by the applicants. So in closing, we think the revised regulatory process  
18 provides for a predictable, stable and efficient renewal process. This is evident in how the North  
19 Anna ISFSI application renewal is proceeding.

20           Thank you and at this point I'll turn it over to Christina Lipa. Next slide, please.

21           MS. LIPA: Thanks, John. Good morning Chairman Burns and  
22 Commissioners. I'm planning to discuss the regulatory oversight in independent spent fuel  
23 storage installations or ISFSIs, including cask vendor inspection, safety and security inspections,

1 pre-operational inspections and ongoing oversight of ISFSIs into the future.

2 Next slide, please. The ISFSI inspection program is implemented primarily by  
3 the regions with NMSS support, and is designed to ensure safety and security of spent fuels  
4 through independent verification of compliance with requirements contained in the NRC's  
5 regulations, the cask vendor certificate of compliance, technical specifications and license  
6 conditions.

7 NMSS inspectors perform vendor inspections related to design and fabrication  
8 of the cask systems. The ISFSI inspection program interfaces well with inspection programs in  
9 other business lines, such as wet spent fuel storage at operating reactors and at decommissioning  
10 reactors.

11 My presentation today will focus on how inspectors verify that spent fuel is  
12 safely moved from the spent fuel pool to the dry cask storage system, and that the loaded canister  
13 is safely processed and prepared for transfer to the ISFSI storage pad.

14 Another inspection area is ISFSI security, where the regional inspectors, with  
15 support from the Office of Nuclear Security and Incident Response, verify that the required  
16 security plan is in place and ready for implementation prior to storing fuel on the ISFSI storage  
17 pad.

18 Next slide, please. The ISFSI inspection program covers a wide range of  
19 activities, including pre-operational activities, then the actual loading of the licensee's first  
20 canister, and finally ongoing periodic inspections of ISFSI operations.

21 The pre-operational inspections are substantial, approximately 600 total hours  
22 of inspection, and include a review of selected aspects of a licensee's heavy loads program, the  
23 analysis and construction of the ISFSI storage pad, multiple specialized procedures for activities

1 such as fuel selection, dose monitoring, welding and backfilling with helium, and finally license  
2 dry runs of these procedures to demonstrate readiness to begin the site's initial loading campaign.

3 The regional inspectors are also on-site to observe the first canister that is  
4 loaded, processed and transported out to the ISFSI pad. Periodic safety inspections of  
5 approximately 100 hours are performed on-site every two to three years, depending on the timing  
6 of licensee's subsequent loading campaigns. Regional inspectors also complete ISFSI security  
7 inspections of approximately 40 hours every two to three years to verify compliance with the  
8 physical security plan and security regulations. These inspections will continue for as long as  
9 the fuel is stored at the ISFSI.

10 Next slide, please. Next, I will discuss three issues identified by the inspectors  
11 during recent ISFSI loading campaigns. At one operator reactor site, an NRC inspector was  
12 observing a non-destructive examination test of confinement welds on a dry cask storage system,  
13 and noted that the time it took for the quality control inspector to perform the test seemed  
14 unusually short.

15 After the licensee investigated, it concluded the NRC inspector was correct,  
16 which called into question the integrity of the confinement welds of six previously loaded casks.  
17 The six casks loaded with spent fuel were declared inoperable, requiring the licensee to perform  
18 additional testing and evaluation, to address continued storage while seeking NRC approval for  
19 use at the ISFSI.

20 The cause of this issue is that the licensee did not provide close contractor  
21 oversight of these activities. This situation was resolved by the licensee submitting an exemption  
22 request, including a detailed safety analysis, extensive NRC staff interactions and eventual  
23 approval of an exemption.

1           The NRC issued a non-cited violation for the licensee failing to conduct proper  
2 non-destructive examination tests on all the loaded canisters. At a decommissioning site, an  
3 NRC inspector was observing a licensee heavy loads demonstration dry run involving lowering  
4 and then removing an empty spent fuel canister from the storage overpack, when the licensee  
5 encountered difficulty during the lift of the empty canister back out of the storage overpack.

6           As a result, the inspector reviewed the design and licensing requirements for  
7 the lifting devices in use, and identified that a device did not meet the plant's licensing basis for  
8 the control of heavy loads. Specifically, the lifting device in use was not single failure proof as  
9 required per the plant's Part 50 license.

10           As such, the licensee could not preclude the possibility of a cask drop accident,  
11 an accident that was previously not considered credible in its licensing basis. The cask loading  
12 campaign is on hold until this issue is resolved. This highlights the importance for the licensee  
13 to fully understand the site's licensing basis when undertaking new activities. A non-cited  
14 violation was issued and the licensee has submitted a license amendment request to modify the  
15 licensing basis.

16           At another operating reactor site, an NRC inspector identified that the transport  
17 vehicle used to move spent fuel storage casks to and from the ISFSI pad and transfer a loaded  
18 canister of fuel between casks in the stack up configuration was not being inspected per design  
19 requirements.

20           Specifically, the licensee failed to perform the code required frequent and  
21 annual inspections for the transport vehicle, which is categorized as important to safety. Four  
22 casks were loaded with the performance of these required inspections.

23           Once identified, the licensee completed the necessary inspections prior to lifting

1 additional casks. This highlights the importance of contractor oversight in fully evaluating the  
2 licensing basis regarding the heavy loads program. This issue resulted in a non-cited violation,  
3 and the licensee promptly corrected the issue. The three findings I mentioned were all of very  
4 low safety significance.

5 Next slide, please. As operating reactors continue to offload spent fuel from  
6 the reactor, and spent fuel storage pools consequently become more full, the need for dry cask  
7 storage capacity increases. Sites originally had spent fuel pools designed with limited capacity  
8 and since then, most have already maximized storage in the pools through re-racking.

9 The ISFSI inspection area is growing as a result of more reactor sites moving  
10 to dry cask storage, and even those that already have an ISFSI in some cases change into a  
11 different cask system. This results in new heavy loads analyses, new procedures and other  
12 activities that create a need for a new set of pre-operational and initial loading inspections.

13 In addition, the licensees for some of the recent decommissioning sites have  
14 decided to expedite transfer of the spent fuel from the pool to the ISFSI, and in some cases have  
15 changed to a different cask system, resulting in additional inspections. Any increases in ISFSI  
16 inspection resources would be managed through adjustments in the business line.

17 As was mentioned earlier, if the NRC does approve a licensee to construct and  
18 operate a consolidated interim storage facility, CISF, NRC inspections will be required. These  
19 inspections would focus on pre-operation and operation of the CISF, canister inspections before  
20 transport and security of the facility.

21 Our inspection program for a CISF is under development, and is expected to  
22 be quite similar to existing inspection procedures for ISFSIs.

23 Next slide, please. Highly trained inspection staff provide oversight of ISFSIs.



1 The qualification programs require broad knowledge in areas such as spent fuel characteristics,  
2 welding, heavy loads, cask system design and processing, fire protection, external events and  
3 security. Flexibility with scheduling inspections is needed due to the actual licensee schedule of  
4 activities changing frequently and unforeseen delays.

5 The ISFSI inspection area is a small program within each region, and the  
6 regions and NMSS work together well to support each other when licensee schedules change.  
7 In addition, the regions have found it much easier to remain flexible if they have additional  
8 inspectors cross-trained in ISFSI inspection, as well as other areas such as decommissioning and  
9 operating reactors.

10 The regions have been successful in cross-training additional staff to provide  
11 for that flexibility. This way, we can make sure the inspector with the right experience and  
12 qualifications is available at the right time to do the necessary inspection. Thank you, and with  
13 that, I'll turn it back to Vic. Next slide, please.

14 MR. McCREE: Thanks, Christine. Mr. Chairman, Commissioners, that  
15 completes our presentation. As I listened to the presentations once again, I was impressed by  
16 the important work that's ongoing in this business line as well, and as I contemplate Project Aim  
17 and as you know one of the features or ethos of Project Aim we talk about agility, being able to  
18 anticipate, project, plan for new work and in this business line, we do anticipate an increased  
19 workload.

20 I'm impressed by the positive proactive steps that are being taken to prepare  
21 for that increased workload, and applying lessons learned from NRR, from the operating reactor  
22 business line in terms of license renewal is certainly a way to prepare for that as well.

23 Finally, as Christine mentioned, preparing people, you know, the flexibility and

1 cross-training is essential to us being a more agile agency in all areas, but certainly in this one.  
2 So with that, we'd be happy to answer any of your questions.

3 CHAIRMAN BURNS: Okay, thank you. Again, we'll start with Commissioner  
4 Baran.

5 COMMISSIONER BARAN: Thanks. Thanks for the presentations. I have  
6 some questions on consolidated interim spent fuel storage, and you all should just collectively  
7 decide whoever wants to answer any individual question. I won't direct them to any of you in  
8 particular. I want to start off with the waste control specialist application for a facility in Texas.

9 The NRC staff has started the environmental review, but hasn't yet decided  
10 whether to accept the overall WCS application for docketing, is that right?

11 MR. LOMBARD: That's correct.

12 COMMISSIONER BARAN: Okay. Does proceeding with the environmental  
13 review now imply that the staff anticipates accepting the application for docketing?

14 MR. DAPAS: I'll offer a perspective and Mark can chime in. No, it does not  
15 Commissioner. We will conduct a thorough review of the application once we receive all  
16 response for supplemental information and determine whether the application should be docketed  
17 for the safety review.

18 When you're looking at a licensing action of this scope, one of the longer term  
19 items is the environmental review process. You go through the scoping meetings that you have,  
20 obtaining stakeholder comments. There could potentially be some consultation activities  
21 associated with any Indian tribes that are affected and request consultation.

22 So the staff's view was it was important to begin that, and in proceeding with  
23 the environmental review, it does not mean a foregone conclusion regarding the safety review.

1 Quite frankly, and the licensee recognizes this, they proceed at their own risk.

2 They will continue to be charged hourly fees associated with the staff's  
3 resources used to conduct the environmental review, and if we subsequently conclude that the  
4 application is not suitable for docketing, that review work would still have been charged to the  
5 licensee.

6 We do think, in talking with Waste Control Specialists, they've spent a lot of  
7 effort on this and we do think they are committed ultimately to provide a complete response to the  
8 request for supplemental information, such that we can proceed with docketing, and I don't know  
9 if you wanted to add anything Mark.

10 MR. LOMBARD: Just a small piece to that, it's also we're taking lessons  
11 learned from the Crow Butte decision by the board, and one of their observations was that we  
12 didn't -- maybe we could have done a better job at consultation. So we want to have enough  
13 time for consultation. We want to do a complete job of that as we do the environmental review.

14 At the same time, we'd like to have a little kick start, get ahead of the safety  
15 review by a bit if we can, because we do know the environmental review typically takes a longer  
16 amount of time than safety review. So we wanted to make sure that once or if we do, not once  
17 but if we do decide to accept the application for review, we're able to complete it in three years.

18 MR. DAPAS: The only thing I'll add Commissioner is we did look at spending  
19 resources on that environmental review does not come at the expense of not conducting other  
20 work within the branch that needs to be conducted. So it wasn't that we're precluding ourselves  
21 from engaging in other activities in order to spend time on this environmental review. It was really  
22 a function of wanting to begin that public outreach and engagement process.

23 COMMISSIONER BARAN: And if the staff ultimately decided not to accept the

1 application for docketing, what would happen to the environmental review work that the staff had  
2 performed?

3 MR. LOMBARD: It would -- well, we would expect, where we've seen other  
4 applications, although we don't, have not received one of this magnitude for some time since  
5 Private Fuel Storage about 20 years ago. But we -- what typically happens, as Mark said, we  
6 have a strong indication that WCS is very committed to this application essentially going forward,  
7 in our conversations with DOE and other entities about deploying a CISF there in Texas.

8 Sometimes what we see is that entities will withdraw an application, take it back,  
9 get the quality up to the level that we would expect to see and hopefully that we would accept and  
10 then come back in and resubmit later on. So that work would not be for naught. It would still be  
11 -- we'd just hold onto it and then reengage later on.

12 MR. DAPAS: I was recently at the site, just last week, and the licensee, on  
13 more than one occasion, communicated their commitment to provide high-quality responses.  
14 The reason that they requested some additional time from the, you know, original last batch of  
15 responses being provided at the end of October until the December 9th time frame was because  
16 they recognized they need to devote some additional time and attention to providing complete  
17 responses to the staff's questions, and you did hypothetically -- clearly, if we did not accept the  
18 application to conduct the safety review, we would look at what work that we did relative to the  
19 environmental review, and is there any lessons learned from a programmatic aspect. But, you  
20 know, that would be ultimately a sunk cost by the licensee.

21 MR. LOMBARD: Yes. And note, the communities are very close. They are  
22 right across the -- when you look at the Holtec potentially submitting an application in March of  
23 2017, the communities are very close, so work that you do really does potentially apply to both

1 sites.

2 COMMISSIONER BARAN: And based on your pre-application discussions  
3 with Holtec, what is your sense about the likelihood of Holtec submitting its application by the end  
4 of March for the site in New Mexico?

5 MR. LOMBARD: We get the same feeling in our discussions with Holtec, that  
6 they are very serious about moving forward. We know that they have an effort ongoing now that  
7 -- and they do engage in phone calls for this periodically to ask questions. We also have a strong  
8 sense that they are following WCS's process very closely and are monitoring RSIs and their  
9 responses as they develop their application, and are taking those lessons learned into account.

10 COMMISSIONER BARAN: And have -- have we gotten a letter from an  
11 organization expressing interest in submitting an application for a site in South Carolina? What  
12 is the status of that?

13 MR. LOMBARD: The SFR Group did send us a letter expressing some intent  
14 to submit an application in the future. They also talked about re-processing and maybe some  
15 other activities in that letter. We sent them a letter back that I am sure you are aware of that we  
16 said we're ready to engage in pre-application meetings with you when you're ready. We may  
17 have some resource implications, obviously, going forward, if they do decide and prepare an  
18 application and submit it, but we are ready to engage in pre-application meetings with them to  
19 understand exactly what their intentions are and that they can understand what our expectations  
20 are.

21 COMMISSIONER BARAN: So far, have there been any substantive  
22 conversations?

23 MR. LOMBARD: Not at all, no.

1 MR. DAPAS: I'll just mention in the context of should we receive a Holtec  
2 application, as was mentioned during the presentations by the staff, we have a prioritization for  
3 any work, and we would be looking at, you know, what work is of sufficient priority in order to be  
4 able to continue with potentially reviewing that second CISF application because we're currently  
5 not budgeted for two in this fiscal year.

6 COMMISSIONER BARAN: I wanted to ask about that. Thanks for bringing  
7 that up. So we're budgeted for one review in fiscal year 2017. We're budgeted for two in fiscal  
8 year 2018. Based on what you know about the WCS application and those that may follow -- it  
9 sounds like primarily Holtec -- do you think you will have adequate resources to perform timely  
10 and effective reviews of all applications that are submitted? It sounds like that is the prioritization  
11 process you are talking about.

12 MR. LOMBARD: "All" is kind of open-ended, so I wouldn't say we're ready for  
13 any or all, but we are certainly ready to re-prioritize and shuffle resources to look at a Holtec  
14 application, should it be received in a March 17 time frame.

15 We -- we have looked at that. We have a prioritization scheme that you have  
16 probably seen in SFM-26, because we knew, we saw this coming down the pipe, the potential of  
17 increasing workload with the static resources that we have, or the level of resources that we have  
18 going forward, so we wanted to make sure that it was communicated. That's why we made SFM-  
19 25 and SFM-26 both publicly available, so vendors that would be submitting applications in the  
20 future would not be surprised if, all of a sudden, we tell them I am sorry, we're not going to do any  
21 work on your application because Holtec and WCS are a higher priority.

22 COMMISSIONER BARAN: Yes, well, so let's say Holtec does submit their  
23 application next spring. The plan would be, given the prioritization, re-prioritization of resources,

1 the staff would review both of those applications at the same time? Is that --

2 MR. DAPAS: That is correct, and I would just offer my understanding of the  
3 prioritization framework. It does not mean that you completely suspend activities on something  
4 that you are currently reviewing. It might take a longer time frame to complete that licensing  
5 action so that we devote resources, let's say, to that second CISF application from Holtec, but we  
6 do think that prioritization framework would allow us to expend effort in reviewing the Holtec CISF  
7 application as well as continue with some of the other licensing activities, although there may be  
8 an impact on the time frame for completing the other activities, or what we're able to complete in  
9 the 2017 time frame before we have the additional resource budgeting in 2018.

10 COMMISSIONER BARAN: Well, let me just ask a clarifying question on that.  
11 Do you anticipate having to make decisions about prioritizing staff resources among the two  
12 applications for consolidated interim storage facilities?

13 MR. LOMBARD: So one thing we did when we put together the review team  
14 for the WCS application is the primary reviewer on WCS is the backup reviewer for Holtec, and  
15 the backup -- and vice versa, so they are learning a little bit, although we are not having to be --  
16 not two people full time on each technical area, but they are learning about the process and the  
17 expectations and the mechanics of the application to help us get a little jumpstart if Holtec or  
18 another entity would submit an application in the future.

19 So we expect that we're not going to be robbing Peter to pay Paul going forward.  
20 We have a good strategy going forward, and also SFM-26 -- or, I am sorry, SFM-25 has the overall  
21 process of the licensing process that we would use, including RAI process and pre-application  
22 meetings and the rest of the process to help us be more effective in that going forward.

23 MR. DAPAS: I would just leave you, Commissioner, with the key point from

1 my perspective is that we would continue to engage in review of the WCS application, assuming  
2 of course it is accepted for docketing in the safety review, and we would be able to conduct work  
3 relative to the Holtec application, and it would not come at the expense of completing other high  
4 priority activities, so it is -- again, the message is not we'd have to wait until 2018 until we're  
5 budgeted resources to do anything with the Holtec application.

6 MR. LOMBARD: The beauty, as I was going to say earlier, the beauty of this  
7 is that -- or even in TN -- I'm sorry, or even in NAC are the primary partners in the WCS application.  
8 Holtec is the main partner in their application for Eddy Lea. Those are the three main vendors  
9 that are marketing and deploying storage systems around the country, so when you say to them,  
10 well, which do you want us to do -- and actually SFM-26 has a piece of it that has some of their  
11 input fall into and help us prioritize their work, so they can tell us.

12 Do you want to do WCS? Do you want to do another application? You know,  
13 tell us as we go forward --

14 COMMISSIONER BARAN: Thank you.

15 MR. LOMBARD: -- they have skin in the game, so to speak.

16 COMMISSIONER BARAN: Okay. Appreciate it, thanks.

17 CHAIRMAN BURNS: Thanks, Commissioner. Let me follow up a little bit. I  
18 am just trying to understand our process with respect to the reviewer acceptance of application.  
19 We talk about, at this point, with respect to -- and I understand the conservative response that  
20 Marc gave, we don't -- that Marc Dapas gave that with respect to pending further supplementation  
21 of information from the -- the applicant, WCS, that we are -- you know, we don't know whether we  
22 will accept the application or not.

23 What I think has emerged over the year, and I am not being critical of it, is that



1 we have perhaps a more in-depth application acceptance review than, let's say, 20 years ago,  
2 maybe 10 years ago, so we -- we have a dichotomy between now we have two acronyms, RSIs  
3 and RAIs, okay.

4 So what I am trying to understand is have -- help me understand, have we  
5 moved in effect -- moved the gate, so to speak, or moved the target in terms of when you get in  
6 the door? Because at this point, you know, I understand, an application needs to address all of  
7 the things that are -- that are expressed and set as standards, which is our obligation to do as  
8 regulators, standards for making an application. Acceptance of an application is not a guarantee  
9 of the granting of an application, but you hope you don't have people coming in the door either  
10 wasting their time or our time with respect to it. But, you know, their regulatory issues are going  
11 to come out.

12 So what I am trying to -- and my question really is do we really -- what is it the  
13 nature of what our RSIs have gone to with respect to the WCS application? Is it really a question  
14 of gaps in what should have been in the application to begin with, or is it really questions about  
15 ultimately whether such an application would be approved or not, which at some point is really a  
16 question for the consideration of the application?

17 And what I am trying to understand from the staff, because I don't look,  
18 obviously, at the individual applications and the details, I am trying to understand where that line  
19 is. And it is -- it is a question not I think only for NMSS, obviously, and I am not expecting you to  
20 answer NRR or NRO, but there's a similar question that comes up. And I -- let's just talk about  
21 in this circumstance here today.

22 MR. McKIRGAN: So if I could? Thank you, Chairman, I appreciate that  
23 question. It is one we discuss a great deal internally, and the fundamental difference between

1 RSIs and RAIs really stems to the finding the staff has to make.

2 In the case of RSIs, you are trying to get supplemental information to docket  
3 the application, so these are gaps of information that is not present in the application. RAIs, of  
4 course, you are trying to make a safety finding. And so there is a matter of judgment that -- that  
5 falls, and the staff does -- is trying to look forward in the event that it is docketed, so you will see  
6 some of those items discussed during our internal deliberations about RSIs, but we have a  
7 process whereby we screen those. We do ensure that the RSIs are really focused on the  
8 information necessary for docketability and not for the safety finding.

9 And really just to put a slightly finer point on it, if information is present that the  
10 staff disagrees with, that is not an acceptable RSI. That is clearly an item that we would discuss,  
11 hopefully through a public meeting and exchanges through RAIs, and so that is a very important  
12 distinction.

13 I would also offer that I don't believe the bar is changing. I think what the staff  
14 is trying to do is to enhance our efficiency. We are looking to ensure that the applications are  
15 complete and of high quality so that we don't have to go through multiple rounds of RAIs should  
16 we docket the application, and then that can take a protracted amount of time and resources on  
17 both our part and their part, and this is where I am very appreciative of the pre-application  
18 meetings we have with applicants so that the content and quality of the application is clearly  
19 understood.

20 In the case of WCS, for example, there is not a rich history of multiple CISF  
21 applications. We've had one historically. It has been some time since that has occurred. So it  
22 did not surprise us overly that the application would have some issues that the staff would seek  
23 to work through, so the RSIs were a valuable process in terms of getting the application to a point

1 where we would be able to, if we were to docket it, conduct an efficient review. Does that get to  
2 some of what you were asking about?

3 COMMISSIONER BARAN: Yes, go ahead, Marc.

4 MR. DAPAS: Yes, just one quick point. I think it was mentioned in John's  
5 presentation. You know, the renewal -- or the CISF framework, we talk about a pre-application  
6 meeting and a pre-application audit. We conducted a pre-application audit with WCS. We  
7 communicated the results. There were concerns about the description of the licensing basis, if I  
8 recall correctly. WCS chose to request that audit six weeks before they submitted their  
9 application and made a business decision, a decision to go ahead and submit the application  
10 without having in my view fully addressed the comments that were provided as part of that pre-  
11 licensing audit, so that does --

12 CHAIRMAN BURNS: Okay.

13 MR. DAPAS: -- result in some additional RSIs that potentially the need for that  
14 could have been obviated had they decided to spend more time incorporating the results of the  
15 pre-application audit.

16 MR. McCREE: Chairman, I think you noted in your question, which is very  
17 timely, that your question affects other business lines as well, and I think John's response, if you  
18 were to ask anyone in the Operating Reactor or New Reactor Business Line, you would have  
19 gotten a very similar response in terms of the standard, the expectation being applied to both pre-  
20 docketed applications in terms of use of RSIs as well as RAIs.

21 MR. LOMBARD: If I could provide clarification, examples, a couple of  
22 examples where an analysis is referred to in the application but not provided, so we don't have  
23 the opportunity to review it, that's an RSI. Another example is receipt of the inspection building,

1 the receipt of the inspection facility is extremely important to us as these systems, these canisters  
2 come off of transportation and they're going to get ready to go into storage again, the 72-71-72  
3 process, that we want -- we are placing a lot of attention on the receipt of the inspection facility.

4 We have the description that there's a facility provided. We don't have the size  
5 of the facility, we don't have a description of the detailed operations going on there or construction  
6 details of the facility itself. That's an RSI because, again, you start the review of that knowing  
7 how big it is.

8 CHAIRMAN BURNS: Okay. And I guess that actually -- Marc, you may have  
9 anticipated another question I have, which is so what's so different about a consolidated storage  
10 site? Is it those facilities -- because you've licensed 15 independent spent fuel storage facilities  
11 --

12 MR. LOMBARD: Very good question.

13 CHAIRMAN BURNS: And I'm not being facetious. I mean, what is the big  
14 deal from the standpoint other than capacity, or is it essentially you have more handling-type  
15 facilities, et cetera, and some of the ISFSIs under Part 72, we now have our orphans up in the  
16 northeast and other places, some of which may -- I don't remember what they're licensed under,  
17 but is that the primary difference between, say, one of the CISs and the ISFSIs that we have  
18 already licensed under Part 72?

19 MR. LOMBARD: If your application is put together in the right manner, you're  
20 taking systems that are already approved by the NRC.

21 CHAIRMAN BURNS: Yes.

22 MR. LOMBARD: That's the licensing basis of the --

23 CHAIRMAN BURNS: Yes.

1 MR. LOMBARD: -- systems to be stored. That is -- WCS had more of an  
2 open-ended licensing basis in the application --

3 CHAIRMAN BURNS: Okay.

4 MR. LOMBARD: -- they submitted to us, so it wasn't clear that they were only  
5 systems that we had previously approved and were sitting on the ground.

6 CHAIRMAN BURNS: Yes.

7 MR. LOMBARD: If you do that, then it becomes more simple.

8 CHAIRMAN BURNS: Okay.

9 MR. LOMBARD: Not --

10 CHAIRMAN BURNS: Okay.

11 MR. LOMBARD: -- completely simple, but more simple, and then it is just the  
12 transfer operations from transportation packages to the storage, the hauler that moves it out to  
13 the site. That is where the highest risk of spent fuel storage is seen when you look at the older  
14 PRAs from 2004, 2006, so that is -- we really are focused on that, plus also looking at what is the  
15 most important things you have to do putting it back into storage? You have to meet the COC,  
16 so what are you doing to make sure you meet the COC, the storage COC, before you put it back  
17 into storage?

18 CHAIRMAN BURNS: Okay. Well one of the -- let me focus a couple  
19 questions on the environmental review. I don't recall, maybe just inform me in terms of is there  
20 any other environmental review that has been done for this site in a federal EIS? Because it  
21 would not have been us, I don't think.

22 MR. LOMBARD: That I --

23 CHAIRMAN BURNS: Are they building off of any prior --

1 MR. LOMBARD: They are building off of the environmental work that they did  
2 for the low-level waste storage facility, yes --

3 CHAIRMAN BURNS: Okay.

4 MR. LOMBARD: -- and that is --

5 CHAIRMAN BURNS: Okay.

6 MR. LOMBARD: -- part of the environmental reports --

7 CHAIRMAN BURNS: So one of my question then goes to we decided to  
8 proceed with the environmental review, and it goes off I think a question Commissioner Baran  
9 had: at some point these things come together, and at some point, I would say that where you  
10 are in the safety review is going to inform the environmental review. What have you done to  
11 assure that that comes together appropriately? Because I don't think you're going to get out  
12 there and frankly finish your environmental review before you are far along on the safety review.

13 MR. LOMBARD: And we have a detailed schedule. John, do you want to talk  
14 about that?

15 MR. McKIRGAN: If I could, yes. There are points where the two schedules  
16 have to come back into alignment before we can complete them, and as we worked through the  
17 process for developing an environmental schedule, and as we thought through the potential for  
18 should we docket the safety review and proceed with the overall application, the two schedules  
19 that we worked do have some commonalities that will have to cross.

20 But you are absolutely right. We cannot complete the environmental review  
21 absent the safety review.

22 CHAIRMAN BURNS: Or at least sufficient process on the safety review?

23 MR. McKIRGAN: Yes --

1 CHAIRMAN BURNS: Okay.

2 MR. McKIRGAN: -- yes.

3 CHAIRMAN BURNS: If I could, one last question. I wanted to get into the  
4 renewal thing. John, if you could say, what have you -- could you give me some examples of  
5 what you think efficiencies you've gained in terms of the renewal process from the examination?  
6 Again, maybe a little more granularity in terms of what you think you've achieved.

7 MR. McKIRGAN: If I could, I think there are a couple of very key points in this  
8 framework, and I really need to take you back a few years to the very first renewals that were  
9 done, and there, there was a very broad scope of potential issues that the staff was trying to  
10 disposition, and there was not a common understanding between us and industry on what the  
11 significant mechanisms were and how to appropriately address them in terms of aging  
12 management.

13 So it was extremely open, and it led to rounds after rounds of RAIs to make sure  
14 that the staff had a basis. Now, with the framework and the guidance documents, including the  
15 MAPS report and the SRP, the NEI document, those things are now coming together so that there  
16 is a common understanding between the staff and industry on what is necessary to be submitted  
17 in the application, and the review can proceed.

18 And as an example of the success, I will tell you the North Anna application was  
19 submitted with zero RSIs, so I think that is really the hallmark of success in terms of efficiencies.  
20 I think that should be our goal across the board, but it is very gratifying to see that in this instance.

21 CHAIRMAN BURNS: Okay.

22 MR. LOMBARD: If you look at the two -- not the first four that I think John was  
23 referring to, but you look at Calvert Cliffs and Prairie Island, and you look at the license conditions

1 that were applied to each one of those as we completed the review and approved their renewal,  
2 Calvert Cliffs had a lot of license conditions. I think Prairie Island maybe had in the 80 percent  
3 range of license conditions because we were learning as we went and we were building this  
4 framework as we went, and the industry was working with us very closely in a collaborative  
5 manner to make sure we were all learning as we went forward.

6 So the application for Prairie Island was a little bit better. VSC-24 is the first  
7 COC to be renewed, and it was also a learning experience, and it ended up with fewer license --  
8 fewer certificate conditions than what even Prairie Island had, so we're learning a lot with North  
9 Anna. We are looking to get that done in a much faster time frame than we did the first three,  
10 the first two ISFSIs and the first COC.

11 CHAIRMAN BURNS: Okay. Thanks very much. Commissioner Svinicki?

12 COMMISSIONER SVINICKI: Well thank you all again for your presentations.  
13 John, I might just also add to your answer to the Chairman's question that your discussion of the  
14 development and use of consensus standards is another improvement, in addition to the  
15 framework and the guidance and the NEI documents that have been developed. I -- I think that  
16 gets glossed over or passed over as maybe a kind of mundane activity, but that can be a  
17 tremendous efficiency, and I know it is why many of NRC's experts participate on standard setting  
18 committees, and it's a very very important backbone to the technical work we do, and also to  
19 some of our process improvement that we undertake as an agency.

20 Just in general, I would like to again compliment the staff on the topics  
21 presented on this panel. I just hear a very consistent reintegration of lessons learned, growing  
22 operating experience with various licensing processes, the feeding back into the process of  
23 lessons learned.



1           It is my view that only -- excuse me -- only high-performing organizations really  
2 have a consistent focus on that kind of continual learning and improvement, so I compliment you  
3 all, as I noted with the previous panel, for adding that. And it is a smart thing to do because it  
4 helps you kind of occasionally get ahead of the curve. Otherwise, you are just constantly dealing  
5 with the growing inbox, so I know we do it somewhat of necessity, but I still think it is something  
6 that we should take some measure of pride in as -- as an efficient and effective organization.

7           And here also, through Christine's comments about cross-training inspectors, it  
8 is interesting, when Victor wrapped up the panel and he said I want to stop on that point and note  
9 that an aspect of Aim is agility, I had just written on my little card here "Inspectors cross-trained,  
10 benefits for agency agility," and then Victor went on to say that as I was finishing writing that down,  
11 so I agree. Agility is supposed to be a big part of Aim because we just don't, again, want to  
12 constantly be in a reactive mode. We want to be able to move qualified individuals in the NRC  
13 organization to where the work manifests, and I see us -- you know, it's -- it's a continual process,  
14 but I see us really instituting some measures there, and I want to compliment the staff on that.

15           Even with something like the request for supplemental information versus the  
16 request for additional information, the Chairman mentioned our growing body of acronyms, but I  
17 see that, again, as us being adaptive, which I think is difficult often for government agencies to  
18 exhibit that behavior. There was attention in Congress during this Congress, which was this year  
19 and last year, to having greater visibility on some of these regulatory reviews, how long they are  
20 taking, creating government-wide dashboards. An element of that before it was enacted was  
21 discussion of maybe we should just make regulatory agencies decide matters by a certain, you  
22 get 12 months, and you just decide it.

23           And in informal conversation with a colleague on the Hill, I was asked for a

1 reaction to that, and I said you can absolutely have that. What you will get is just disapprovals  
2 of everything at 12 months because we have to have the time to meet the other statutes which  
3 say you're going to make certain safety findings, you're going to make certain environmental  
4 findings under NEPA, so I said there is just a fundamental tension between those two.

5 So I -- I am always pleased when I see that we adapt a process like request for  
6 supplemental information. I think what we're doing there is, well, we could just keep throwing  
7 applications over the transom, and we could keep rejecting things, but I think that is not terribly  
8 gratifying, I think, at the end of the day, either to NRC or to the applicants. I think through pre-  
9 application engagement and then the ability to adapt as you did with the WCS process, which  
10 you're in kind of a novel thing right now, I view that as us wanting to, you know, serve our public  
11 mission, be reasonable, be practical about things, and I think, you know, that is all to the good,  
12 and we'll see where we end up on that when it has a ways to go.

13 I do worry a little bit. I think we talk a lot about projected time frames for  
14 centralized interim storage facilities that we say absent any public intervention. I just don't see  
15 that as a high probability outcome. I think we ought to talk about the time frames that include  
16 anticipated public intervention, which I think is likely.

17 And then the one question I had, and I think this was for John, this was your  
18 Chart 46 with the peak, so I have complimented you, and the Chairman asked quite a bit about  
19 adaptive processes that have allowed us to really maybe learn from operating reactor license  
20 renewal and have a more safety-focused risk-informed review, but even if you can shave that  
21 peak, that's a heck of a peak. Is there any -- has there been any exploration of things, like could  
22 some of the package certificate holders come in early, or is there any kind of shaving or load  
23 leveling that could be done?

1                   And I would note that we continue, whether it be on the financial assurance for  
2 radiological sources or anything else, we always receive public comment about the limited  
3 availability of certified packaging, and so could you talk a little bit about how that level of availability  
4 is going?

5                   MR. McKIRGAN: Gladly, Commissioner, thank you for the question, yes. So  
6 we are now moving to that stage where we do want to start to engage with the -- the new renewals  
7 that are coming in and talk about the timing in greater detail. We wanted to focus on the  
8 framework first and getting those efficiencies in place. We do want to move to that.

9                   There are certain regulatory requirements that must be met with respect to the  
10 submittal dates in order for them to be in timely renewal, and so we will of course encourage the  
11 applicants to adhere to those requirements, but in terms of the subsequent review that occurs  
12 once they are in timely renewal, there is significant room for discussion, and that's where we want  
13 to engage with them going forward.

14                   MR. LOMBARD: So I will say that Rancho Seco has been in for lease two pre-  
15 application meetings, and they are probably going to submit early. TMI-2 came in two years ago,  
16 and I think they expired in 2018, so we are engaging them early, and they do -- the two that we've  
17 talked to, two or three we've talked to, do plan to submit before they have to --

18                   COMMISSIONER SVINICKI: Okay.

19                   MR. LOMBARD: -- which is good. So that is the only way we could shave off  
20 the peak, so that's a good question.

21                   COMMISSIONER SVINICKI: And I would be remiss if I -- if I did not share this,  
22 is that when I think about the entire range of activities in -- well, I won't say the -- the spent fuel  
23 storage and transportation, I don't like that acronym, but early in my time of service on this

1 Commission, '07-'08, there was a lot of Commission focus on that set of activities, of how gains  
2 in efficiency, improvements could be made, and to John and others who presented on that this  
3 morning, I really was reflecting as I sat here and was taking that in.

4 That body of activities -- I know it is probably different people working on it now  
5 than were working on it 10 years ago, but these activities and processes have come a long, long  
6 way, and I hope that folks take some level of satisfaction in that because we -- it is impressive to  
7 sit here today, and my colleagues who sat with me in '08 are long gone, but I think they -- you  
8 know, Chairman Klein had a big focus on this, and I am just grateful that you have continued,  
9 whether or not it was on the Commission's radar, you've in an impressive way -- you have  
10 continued to really just plug away at that, and I think it really puts the agency in a stronger position,  
11 so thank you for that.

12 And with that, Mr. Chairman, I am done. Thank you.

13 CHAIRMAN BURNS: Well thanks. Anything else?

14 (No audible response.)

15 CHAIRMAN BURNS: Well thanks again for the opportunity to hear from the  
16 staff on both business lines this morning about the priorities and challenges that we have in  
17 undertaking and carrying out our responsibilities in decommissioning low-level waste, spent fuel  
18 storage, and transportation. Again, I thank you for the presentations today, and we stand  
19 adjourned.

20 (Whereupon, the above-entitled matter went off the record at 12:09 p.m.)