

UNITED STATES OF AMERICA
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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THURSDAY

OCTOBER 1, 2015

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The Commission met in the Commissioners' Hearing Room, White Flint One, 11555 Rockville Pike, Rockville, Maryland, at 9:00 a.m., Stephen G. Burns, Chairman, presiding.

COMMISSIONERS PRESENT

STEPHEN G. BURNS, Chairman

KRISTINE L. SVINICKI

WILLIAM C. OSTENDORFF

JEFF BARAN

ALSO PRESENT

BRADLEY JONES, NRC Acting General Counsel

ANNETTE L. VIETTI-COOK, Secretary of the Commission

STAFF PRESENT

VICTOR MCCREE, Executive Director for Operations

AL CSONTOS, Chief, Renewals and Materials

Branch, Office of Nuclear Material Safety and
Safeguards

CATHY HANEY, Director, Office of Nuclear Material
Safety and Safeguards

MARK LOMBARD, Director, Division of Spent Fuel
Management, Office of Nuclear Material Safety
and Safeguards

DREW PERSINKO, Deputy Director, Division of
Decommissioning, Uranium Recovery and Waster
Programs, Office of Nuclear Material Safety and
Safeguards

MARK SHAFER, Director, Division of Nuclear
Materials Safety, Region IV

REBECCA TADESSE, Chief, Radiation Protection
Branch, Office of Nuclear Regulatory Research

8:58 a.m.

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CHAIRMAN BURNS: Good morning everyone. I want to welcome the staff and the members of the public who are here either in the room or listening in remotely.

The purpose of today's briefing is to provide the Commission with a discussion of the strategic considerations associated with the NRC's decommissioning and low-level waste business line and the spent fuel storage and transportation business line, including and among today's topics will include how implementation of Project Aim will enhance these programs.

We'll hear from an NRC staff Panel consisting of the Executive Director for Operations and representatives from the Office of Nuclear Material Safety and Safeguards, the Office of Nuclear Regulatory Research in our Region IV Office in Arlington, Texas.

We'll have two panels this morning. The first will provide a briefing on the decommissioning and the low-level waste business line followed by questions. And then, the second panel will address the spent fuel storage and transportation business line.

We look forward to today's discussions, but before we move on to business, I want to recognize Vic McCree, our new EDO. This is his first official day as EDO was this past Monday and this is his first Commission meeting as EDO and, as I mentioned at the All Employees Meeting on Monday, Vic's been around since 1988 with the NRC and has seen firsthand a lot of what we do from a variety of vantage points.

And I know he's eager to become fully engaged in all

1 the aspects of his new position, so I want to welcome him to this first of
2 many Commission meetings as the EDO.

3 Would any of my colleagues like to say anything?

4 Commissioner Svinicki?

5 COMMISSIONER SVINICKI: Just also a note, I
6 welcome Victor as our new EDO. But, I want to note that seated to his
7 right is Cathy Haney and she was also part of a number of
8 announcements that were made this week.

9 Cathy, for anyone who is tuning in and is not aware,
10 Cathy has agreed to take the very important position of Region II
11 Regional Administrator which is the position vacated by our new
12 Executive Director for Operations.

13 But, I want to note that I've had the pleasure of working
14 with Cathy as Director of NMSS and I think that it's just a positive
15 attitude that she models in terms of her willingness to contribute, take
16 on a new role and contribute in a new capacity and to make a
17 geographic move, which I know is part of her commitment as a Member
18 of the Senior Executive Service.

19 But, I think, you know, it's the thing that has impressed
20 me since I came here and continues to impress me is the strong
21 devotion that individual NRC employees have to this institution as a
22 whole. And I think that Cathy's willingness to take on this new
23 challenge is just a walking demonstration of that.

24 So, thank you, Cathy, and I wish you every continued
25 success there.

26 MS. HANEY: Thank you.

1 COMMISSIONER OSTENDORFF: I add my
2 congratulations and well, best wishes to both of you.

3 I was in Region II just the last two days and I spoke to
4 all the employees down there Tuesday afternoon and, as sad as they
5 were to see Victor leave, they're very happy to have you coming in,
6 Cathy. So, I think you are going to a group that's really looking forward
7 to your coming in.

8 And so, again, congratulations.

9 MS. HANEY: Thank you.

10 CHAIRMAN BURNS: Well, thank you.

11 COMMISSIONER BARAN: I don't think there's
12 anything more to be said other than now I have to say something.

13 I think you're both going to be terrific in your new roles.
14 So, congratulations.

15 CHAIRMAN BURNS: Thanks. Vic?

16 MR. MCCREE: Mr. Chairman, Commissioners, thank
17 you so much for welcoming us this morning. It's certainly an honor to
18 be in this role once again and on behalf of Cathy and all represented
19 here, it's a pleasure to brief you this morning on the decommissioning
20 and low-level waste business line which resides in the office of Nuclear
21 Material Safety and Safeguards.

22 While it's the smallest of the business lines, it faces
23 many challenges and the evolving nuclear arena. Today, we will
24 provide current and emerging activities from the NRC staff's
25 perspective.

26 We'll also discuss several related activities associated

1 with Project Aim.

2 So, with that brief introduction, I'll turn it over to Cathy
3 Haney, Director of the Office of Nuclear Material Safety and
4 Safeguards.

5 MS. HANEY: Thank you, Vic. And good morning,
6 Commissioners and Chairman.

7 I am here at the table joined by Drew Persinko, who is
8 the Deputy Director, current -- well, actually, as of yesterday, he was
9 the Deputy Director and today with Larry Campers' retirement, he is the
10 Acting Director in the Division of Decommissioning Uranium Recovery
11 and Waste Programs.

12 I'm also joined by Mark Shaffer who is the Director of
13 Region IV's Division of Nuclear Material Safety and Safeguards,
14 Rebecca Tadesse, Branch Chief of the Radiation Protection Branch in
15 our Office of Nuclear Regulatory Research.

16 And, this is just to show that all these offices are our
17 partners and contribute very significantly to all of our activities and
18 accomplishments in this area. And, for that, I thank all of them.

19 The decommissioning and low-level waste business
20 line has significant breadth and scope. The business lines covers four
21 major areas, one being decommissioning of reactors, material sites and
22 uranium sites, another uranium recovery operations and new licensing,
23 a third, low-level waste matters and then fourth, support in the area of
24 waste incidental to reprocessing.

25 And, as I said, we work very closely with headquarters
26 as well as regional offices as we plan for and execute business line

1 activities.

2 In addition, we work very closely with the states and
3 the Agreement States, particularly in the areas of uranium recovery and
4 low-level waste disposal.

5 The majority of the resources in this business line
6 reside in the our licensing and oversight product lines with some
7 resources in rulemaking, research and international product lines.

8 We've had significant accomplishments in two main
9 product lines in the past year, including the completion of 90 licensing
10 actions.

11 During this fiscal year, we issued the license
12 termination for two research and test reactors, issued a SECY paper on
13 Greater Than Class C Waste, led two major public meetings associated
14 with San Onofre Nuclear Generating Station and Vermont Yankee
15 reactors decommissioning.

16 We played a key role in developing the U.S. National
17 Report for the Joint Convention and made significant decommissioning
18 progress at Humboldt Bay and Hematite as well as renewed the Crow
19 Butte Uranium Recovery License.

20 We also have various challenges in these areas.
21 Examples of key initiatives to design, to optimize available resources,
22 our distribution of workload across branches and augmenting certain
23 technical areas with staff from other offices as well as moving staff
24 within NMSS.

25 At this time, I'd like to focus now on two areas, the
26 decommissioning and uranium recovery.

1 If we turn to slide six, we continue to successfully
2 implement the materials power and non-reactor decommission
3 programs.

4 This graph provides information on the number of
5 facilities that have decommissioned since the license termination rule
6 was issued in 1997.

7 Key process improvements such as the development
8 of the decommissioning guidance showed a great return on investment
9 as evidenced in the increased number of terminations beginning
10 around the 2004 to 2005 time frame.

11 The decrease in the number of completions post-2009
12 is due to many factors such as many of these sites were more complex
13 sites for decommissioning which the more complex sites tend to take
14 more time and more of our resources.

15 Moving now to the uranium recovery program growth
16 area, we have been focusing attention there and this is one of the areas
17 where I would like to increase our attention over the next coming fiscal
18 year.

19 As you can see from this chart, our workload has
20 continued to increase over the years and I want to call your attention to
21 the purple and pink bars which show the number of major licensing
22 actions as well as the number of operating facilities that we are
23 currently focusing a lot of our attention on.

24 Moving now to the low-level waste program in toto, I
25 think this graph does a great job at depicting many of the major actions
26 that are going on in this area although it's not all of the actions.

1 But, to name a few of the more major actions that we
2 are working on is a rulemaking to revise Part 61 and we recently had
3 engagement with the Commission on this topic as well as recent
4 engagement on Greater Than Class C Waste.

5 And, we're also working on topics such as Waste
6 Incidental to Reprocessing where we have a monitoring role at the
7 Savannah River and Idaho National Lab site. And, we're also focusing
8 on a byproduct material financial scoping study and we'll continue to
9 engage the Commission on those areas as we move forward.

10 Moving now to our next slide, consistent with Project
11 Aim, we've identified ways to enhance the NRC's ability to plan and
12 execute our mission more efficiently while adapting in a timely and
13 effective manner to a dynamic environment.

14 The staff is in the process of completing a
15 programmatic assessment of the low-level waste program which will be
16 used to develop a prioritized list of work to support the re-baselining
17 efforts.

18 This assessment will help us with strategic workforce
19 planning and identify guidance documents and programmatic
20 enhancements that will need to be updated and some that may actually
21 benefit from a business process improvement effort.

22 At this point, I'd like to turn the presentation over to
23 Drew Persinko who will provide more specifics on this business line.

24 MR. PERSINKO: Thank you, Cathy.

25 Good morning Chairman Burns. Good morning
26 Commissioners. A pleasure to speak with you this morning and I'm

1 going to build upon the remarks made by Vic and Cathy.

2 I will cover the business lines current and future
3 workload, factors and uncertainties that could affect the future workload
4 of the business line and strategies to optimize available resources.

5 Next slide?

6 We currently have project management
7 responsibilities for 18 permanently shut down power reactor units that
8 are in various stages of decommissioning.

9 Recently, the project management responsibility for
10 Kewaunee, San Onofre 2 and 3 and Crystal River were transferred from
11 NRR to NMSS.

12 Vermont Yankee will be transferred later this calendar
13 year.

14 Prior to transfer, NMSS assisted NRR with public
15 outreach activities, most notably, playing a lead role for the public
16 meetings at San Onofre and at Vermont Yankee.

17 We terminated -- this year, we terminated the licenses
18 for two research reactors at the University of Michigan and Worcester
19 Polytechnic Institute.

20 We still have project management responsibility for five
21 other research and test reactors.

22 In the materials area, currently, we oversee the
23 decommissioning of 16 complex material sites, all of which have some
24 type of challenge.

25 In the materials area, we are also working on depleted
26 uranium and radium.

1 With respect to depleted uranium, around 2007, the
2 U.S. Army Installation Command determined that the Davy Crockett
3 Weapons System had been used at 17 Army installations and that the
4 amount of depleted uranium present at each of these installations was
5 a sufficient amount that, under the Atomic Energy Act and NRC
6 regulations, the Army was required to have a materials license for each
7 of these installations.

8 Two of these sites were licensed in 2013. The
9 remaining 15 sites will be added to the license as required by license
10 condition.

11 The Army is electing to use an innovative
12 programmatic approach to licensing.

13 With respect to radium, the 2005 Energy Policy Act
14 provided NRC with jurisdiction over discrete sources of radium and its
15 contamination. Staff is following the Commission's direction to stay
16 informed at certain military sites and are working to resolve
17 implementation issues with other federal agencies at non-military sites
18 contaminated with uranium.

19 We also oversee the decommissioning of uranium
20 sites including 11 Title II UMTRCA sites, that are in active
21 decommissioning under NRC license and 28 Title I and Title II
22 UMTRCA sites under DOE -- Department of Energy Long-Term Care.

23 UMTRCA is an acronym for the Uranium Mill Tailings
24 Radiation Control Act of 1978.

25 As far as the pictures you see in those slides, the top
26 picture there is a picture of the Hematite -- the materials site, the

1 Hematite sites located in Missouri. You see the excavation there.
2 The excavation is now backfilled.

3 Below that is the Zion Power Reactors. What you see
4 there are the two containments. If you look closely, you can see that
5 the post-tension cables are being detensioned in that front reactor --
6 front containment vessel.

7 And on the left, at the lower left is a Title I Mill Tailing
8 site. It's located outside of Durango, Colorado.

9 Next slide, please?

10 Since the mid-2000s, the uranium recovery program
11 has grown in licensing actions. We currently oversee five uranium
12 recovery operating sites. And an additional site is in construction.

13 Staff currently has ten major licensing actions in
14 various stages of review that are either major expansions, license
15 renewals or new applications.

16 We also have five sites that are in various phases of
17 adjudicatory hearings.

18 As you are aware, NRC has a non-regulatory role in
19 the Waste Incidental to Reprocessing, or WIR, which is waste resulting
20 from reprocessing spent nuclear fuel that can be managed as low-level
21 waste.

22 We were directed to do WIR by Congress in the Ronald
23 Reagan National Defense Act of 2005.

24 We continue to perform monitoring at Savannah River
25 and Idaho National Lab as directed in the Act. And also, we perform
26 WIR evaluations as requested by the Department of Energy at other

1 sites that are not part of the Act.

2 The pictures you see in this slide, the left picture is a --
3 it's the part of the Waste Incidental Reprocessing to Saltstone Disposal
4 structure at Savannah River. It's under construction.

5 Just to give you an idea of the size that is -- it's a
6 cylinder 375 feet in diameter, 43 feet high and it contains 32 million
7 gallons -- it will contain 32 million gallons.

8 On the right is the CAMECO Smith Ranch In Situ
9 Recovery site that's located in Wyoming.

10 Next slide, please?

11 NRC has a successful regulatory infrastructure which
12 is also used by the Agreement States to ensure the protection of the
13 public and safety regarding low-level waste disposal in the U.S.

14 Staff recently briefed the Commission on two major
15 low-level waste efforts, Part 61 rulemaking and the Greater Than Class
16 C Waste.

17 Another low-level waste effort in progress is the
18 byproduct material financial scoping study. This study will evaluate
19 the need to revise byproduct material financial planning to account for
20 total life cycle costs of sealed sources.

21 A Federal Registry Notice was published on August
22 3rd and we plan to hold a public meeting on October 7th to solicit
23 stakeholders perspectives on this topic which will be considered in the
24 development of a Commission paper.

25 With respect to international activities, the staff
26 maintains awareness of technical issues and progress in international

1 programs and continues to contribute in the international arena.

2 Working with the Office of International Programs, we
3 provide consultation to the IAEA on waste standards and guidance
4 documents used by member states and assist countries working to
5 implement or improve programs for the management of radioactive
6 waste or decommissioning.

7 Of the areas I just described, low-level waste, WIR and
8 international activities, the workload has been relatively steady.

9 The low-level waste program continues to be in a
10 maintenance mode as directed by the Commission back in 1996.
11 However, as you are aware, for the past few years, it has been a very
12 active area dealing with policy issues such as Part 61 and Greater Than
13 Class C Waste.

14 The uranium recovery licensing and oversight, radium,
15 depleted uranium and power reactor decommissioning workload is
16 expected to increase as I will describe in the next few slides.

17 Like all programs, the business line has and continues
18 to be affected by several internal and external factors.

19 First, staff is currently following Commission direction
20 on the Part 61 rulemaking and we understand that the Greater Than
21 Class C Commission paper is with the Commission.

22 The Commission also directed the staff to provide a
23 Commission's Assistant Note on the need for a second rulemaking
24 effort for the waste classification tables upon completion of the Part 61
25 rulemaking.

26 For reactors, for power reactors, Oyster Creek has

1 announced that it is planning to shut down in 2019. Staff is preparing
2 for any additional units that may move into decommissioning.

3 Staff is in the process of determining the number of
4 sites containing commercial radium and the extent of findings.

5 Currently, we are working with a contractor to firm up
6 this information and then we will develop a plan to address the situation.

7 Next slide?

8 With respect to the uranium recovery, the current
9 market conditions are dynamic and have influenced private interest into
10 the development of new uranium recovery facilities.

11 Uranium recovery licensing requires National
12 Environmental Policy Act reviews and National Historic Preservation
13 Act Section 106 consultations.

14 Sections 106 consultations require a significant
15 amount of time and effort, depending on the amount of Tribal interest.

16 In addition, hearing support for uranium recovery
17 activities is resource intensive. The number of contentions vary,
18 depending on the site specific interest.

19 On February 27th, Wyoming expressed its plan to
20 become an Agreement State. We are working to effect this transition.
21 If Wyoming becomes an Agreement State, which is expected to take
22 approximately four to five years, we anticipate that seven uranium
23 recovery operating sites, along with any licensing reviews in progress
24 will be transferred to Wyoming.

25 Next slide?

26 In order to respond to these factors and to plan for the

1 future, we have implemented new approaches to resource
2 management and knowledge management.

3 As Cathy mentioned, in the spirit of Project Aim, to
4 more efficiently use our resources, we distribute workload across
5 branches, primarily for technical disciplines and that's based on the
6 staff's skills, experience and availability.

7 As a result of the FSME and NMSS merge, one branch
8 was integrated into the existing branches based on staff skills and
9 experience and considering current and future workload.

10 We also augmented current staff in certain disciplines
11 from staff from other offices. For example, two health physicists from
12 NRO rotated into NMSS to support uranium recovery. A project
13 manager from NRO is also on rotation to NMSS to support radium
14 activities. And this person will permanently transfer to our group in the
15 near future.

16 We've identified critical skills and tried to maintain them
17 via internal transfers and hiring and we also maintain a good mix of
18 junior and senior staff.

19 Developmental assignments in which newer staff work
20 alongside more experienced staff help to facilitate the knowledge
21 transfer.

22 Next slide?

23 Prior to Project Aim, but in its spirit, we undertook two
24 programmatic evaluations, one in the reactor decommissioning area
25 and one in low-level waste. As a result of a programmatic evaluation,
26 the reactor decommissioning program showed that a number of our

1 guidance documents needed to be updated. So, we undertook that
2 effort.

3 For example, staff is currently updating NUREG-1628
4 which is Power Reactor Decommissioning Frequently Asked
5 Questions.

6 Other areas, such as knowledge management training,
7 inspection procedures and communications related to
8 decommissioning were also identified where enhancements could be
9 made to the decommissioning program.

10 We are also supporting NRR as they develop the
11 decommissioning rule.

12 We are in the process of updating our qualification
13 training so that newer staff become qualified as reactor
14 decommissioning project managers and are ready to assume project
15 management responsibilities.

16 To be in a better position to project future low-level
17 waste work, staff conducted a low-level waste programmatic
18 assessment by soliciting comments from various stakeholders on what
19 changes, if any, should be made to the current low-level waste
20 programs regulatory frame work.

21 Staff is currently finalizing a Commission paper
22 describing the results of that programmatic assessment.

23 In the uranium recovery area, staff is evaluating the
24 uranium recovery program in order to increase efficiency through
25 guidance development and review of licensing duration, which is
26 currently ten years.

1 Staff is exploring ways to manage the impacts of the
2 licensing program should Wyoming become an Agreement State.

3 This concludes my presentation. I'll now turn it over to
4 Mark Shaffer who will speak about the oversight program.

5 MR. SHAFFER: Good morning. I'm very pleased to
6 be here this morning on behalf of the Regional Offices to provide you
7 with an overview of our inspection activities related to decommissioning
8 and uranium recovery.

9 Can I have the first slide, please?

10 As you know, Regions I, II and IV are responsible for
11 decommissioning inspection activities that involve a wide variety of
12 facilities and with a varying degree of complexity.

13 The photos shown on this slide sort of show you
14 firsthand, this is boots on the ground, get your hands dirty kind of work.

15 Seen in the picture at the top are Region I and State of
16 Connecticut collecting samples at the ABB Windsor site.

17 The picture on the bottom is some excavation activities
18 at the University of Buffalo.

19 As Drew mentioned, there are 18 power reactor sites
20 which are in different stages of decommissioning right now. Twelve of
21 those are in safe store while seven are in active decommissioning.

22 The three most recent facilities to transition to
23 decommissioning are Vermont Yankee, Crystal River and SONGS
24 Units 2 and 3.

25 While SONGS is projecting completion of their
26 decommissioning effort in approximately 20 years, Crystal River and

1 Vermont Yankee are currently in safe store condition.

2 I'd also note that four of the sites still have spent fuel in
3 the pools.

4 With regard to complex material sites, the Regions
5 have quite a variety of sites and I'll provide just a few examples in the
6 upcoming slides.

7 Next slide, please?

8 In addition to the safety inspection activities, we're
9 continuing to focus on security at some of these decommissioning sites.
10 Specifically, ones with special nuclear material and those power
11 reactors with fuel still remaining in the spent fuel pools.

12 Additionally, we continue to perform inspections to
13 review applicable emergency planning activities to evaluate the
14 emergency plans which incorporate some of the exemption requests
15 until which time the licensee no longer has fuel on site.

16 The photos shown on this side are the inspector at the
17 West Valley Demonstration Project during some open air demolition at
18 buildings at the site.

19 The picture below it is a Public Affairs Officer from
20 Region IV answering questions from a television reporter in California
21 at San Onofre's Decommissioning Activities Meeting.

22 As you might expect, decommissioning activities
23 continue to have a significant amount of public outreach and interaction
24 with the local communities. The Regions work extensively with the
25 Program Offices to handle public requests for changes to the regulatory
26 programs and provide information to interested stakeholders.

1 A large number of decommissioned power reactor
2 sites have implemented some form of community advisory groups.

3 For example, during the past year, Region I completed
4 public outreach efforts associated with decommissioning of Vermont
5 Yankee through hosting a public meeting and also attending community
6 hosted meetings.

7 Region IV staff supported public meetings in the State
8 of California related to GE-Hitachi's license amendment to request the
9 free release of 610 acres for unrestricted use.

10 The Region also supported NMSS during a public
11 meeting in October of last year in California related to San Onofre's
12 post-shutdown decommissioning activities report.

13 Can I have the next slide, please?

14 Let me now give you a few examples of the activities in
15 the various stages of decommissioning.

16 In the area of transition oversight, since the time of our
17 last briefing on the business line, Region I has implemented oversight
18 activities associated with the post-operational transition of two
19 permanently shut down reactors to a safe store status, that being
20 Crystal River III and Vermont Yankee.

21 As Drew mentioned, Region I also supported
22 Headquarters with infield inspection activities associated with the
23 decommissioning and license termination of two research and test
24 reactors.

25 Region III inspectors have worked closely with
26 Headquarters personnel as Kewaunee has transitioned from an

1 operating reactor to a unit in safe store. Throughout the process,
2 inspectors have reviewed changes made to the physical plant and the
3 staffing levels as well as changes to the site specific plan, the security
4 plan, emergency preparedness plan and the technical specifications.

5 Region IV has worked extensively with NRR and
6 NMSS staff to address SONGS requests for changes to its regulatory
7 programs and to provide information to interested stakeholders located
8 in California.

9 The primary focus right now is decommissioning
10 planning and modifications to support change in the plant conditions.

11 SONGS is also established a community engagement
12 panel of citizens and elected officials to serve as a conduit of
13 information and ideas between the owner and the public.

14 Both Region and Headquarters staff have been
15 actively engaged in outreach and informational support for these
16 community groups.

17 With regard to active decommissioning and
18 terminations, Zion submitted its license termination plan for NRC
19 approval in the first quarter of this year.

20 Various decommissioning work is being conducted in a
21 parallel in an effort to complete the project in 2018 within the ten year
22 initially forecasted time frame.

23 Humboldt Bay has performed significant demolition
24 and is in the process of constructing a subsurface retention wall to allow
25 removal of the reactor caisson in 2016.

26 Let me switch now to complex material sites.

1 In 2014, Region III provided inspection oversight to
2 authorize the termination of significant portions of the Lake City Army
3 Ammunition Plant that have used depleted uranium rounds.

4 Region I completed oversight of licensing activities
5 associated with decommissioning, and again, license termination of the
6 ABB Windsor site for unrestricted use.

7 The FMRI site in Oklahoma formerly known as
8 Fansteel is continuing its decommissioning work. There continues to
9 be extensive interactions with the licensee, the state and other
10 government agencies with regard to two specific ponds on site which
11 are not lined.

12 This involves significant amount of time and effort and
13 has caused a ten-year schedule delay to 2024.

14 Next slide, please?

15 Let me change gears here a bit and highlight some of
16 the inspection activities in the uranium recovery area.

17 This slide is a map of the NRC licensed uranium
18 recovery facilities in the U.S. As Drew mentioned, there are multiple
19 sites in various stages of operations or decommissioning in both NRC
20 states and Agreement States.

21 As you can see on the slide, all the NRC licensees are
22 located in Region IV. Although the Region is the lead for inspection
23 activities, we've received support from NMSS on a number of
24 inspections.

25 Drew's group provides us with technical advice in the
26 area of groundwater hydrology and with team members for several

1 inspections. This is a collaborative effort that I see going well.

2 Next slide, please?

3 So, in addition to the routine inspections at these sites,
4 the staff also performed pre-operational inspections at multiple
5 facilities, most recently at Lost Creek and at the Nichols Ranch site.

6 Based in part on those inspections, NRC was able to
7 issue Authorization to Operate Letters in 2013 for Lost Creek and in
8 2014, at Nichols Ranch.

9 This month, the staff is scheduled to perform their
10 pre-operational inspection at the Strata Energy site and it's anticipated
11 that site will be operational soon as well.

12 I also want to note that the Region led a reactive
13 inspection last year at a uranium recovery site in response to the
14 licensee's notification to NRC of overpressurization of a drum
15 containing yellowcake that resulted in area contamination and
16 exposure to an occupational worker.

17 Next slide, please?

18 So, on this slide, I've just listed a couple of items that
19 are on our radar screen.

20 Although there's some uncertainties due to the ever
21 changing market conditions, our workload in the decommissioning and
22 uranium recovery area, including support for hearings, continues to
23 increase.

24 Nonetheless, the Regions are well prepared to handle
25 that workload.

26 For example, in Region IV, we're addressing this

1 challenge by assigning additional staff who are being trained in the
2 uranium recovery area while we also have inspectors who are qualified
3 in multiple disciplines including decommissioning.

4 This provides us with a flexibility to address some of
5 the uncertainties that are ahead of us.

6 And, I'm please to say, we're able to provide support to
7 NMSS and the State of Wyoming as they go forward with trying to
8 become an Agreement State.

9 This concludes my remarks and I'll now turn it over to
10 Rebecca.

11 MS. TADESSE: Thank you, Mark.

12 Good morning, Chairman Burn, Commissioners. I'm
13 here to give you an overview of research activities that supports the
14 decommissioning low-level waste area.

15 Next slide, please?

16 Research provides support to business lines where the
17 user needs to request process.

18 Currently, we're working on updating a number of
19 decommissioning codes and uranium recovery computer codes. The
20 codes include RESRAD, MILDOS-Area, visual sample plan as well as
21 maintain the decontamination and decommissioning code.

22 In addition to code development, research also
23 provides technical support in the area of engineering cover design,
24 groundwater modeling and geochemistry review.

25 Next slide, please?

26 RESRAD stands for residual radioactivity. RESRAD

1 family of computer codes include RESRAD online, on site, RESRAD off
2 site, RESRAD builds and a number of other specialty codes.

3 This code is developed by Argonne National Lab to
4 support a number of federal partners including NRC, DOE and EPA.

5 NRC uses RESRAD to calculate radiation dose from
6 various media to meet the licensing termination rule as outlined in 10
7 CFR Part 20 Subpart E.

8 Since some of the RESRAD models and parameters
9 are over 30 years old, we are reexamining the various models and
10 parameters to ensure that it's using state of the art dose modeling
11 methodology and using realistic assumptions.

12 In addition to updating models and parameters, we'll
13 also be updating the software quality assurance program and perform
14 benchmarking to validate and verify the code.

15 Next slide, please?

16 MILDOS computer code is also developed Argonne
17 National Lab. MILDOS calculates radiation dose from air affluence to
18 meet the licensing requirement for new uranium recovery.

19 Currently, we're in the process of verifying and
20 validating that the current computational models are consistent with the
21 updated regulatory guides and is meeting the NRC technical
22 requirements.

23 Once we've done the V&V, we plan to enhance the
24 code capability by incorporating probabilistic models to improve the
25 uncertainty analysis.

26 Next slide, please?

1 Visual Sample Plan Code is developed by Pacific
2 Northwest National Lab. VSP is a statistical and data quality
3 assessment tool to help determine the type, the quality and the location
4 of survey samples used to support confirmatory survey for license
5 termination.

6 Currently, we're incorporating approved survey
7 methodology guidance into the code as well as developing a
8 methodology for site characterization in order to ensure defensible
9 sampling plan when doing site characterization.

10 Next slide, please?

11 Now, I'm going to switch from current code
12 development activities to give you an overview of research technical
13 support in the area of engineering cover design, groundwater modeling
14 and geochemistry.

15 Research has been providing technical leadership in
16 areas such as evaluating effectiveness of covers in the uranium mill
17 tailing sites, identifying degradation of structural properties of
18 engineering waste covers, assessing the viability of bioremediation and
19 in situ uranium recovery, license application review in the area of
20 geochemistry as well as giving support for uranium recovery licensing.

21 Next slide, please?

22 The main challenge we face in the core development
23 areas is continuous resource need to maintain and update various
24 codes. The strategies we're using to address our challenges are
25 leveraging resources across federal agencies and international
26 organizations when updating these codes.

1 For example, we meet quarterly with DOE
2 management to discuss RESRAD resources and work priority to
3 ensure that we're using our resources efficiently and effectively.

4 We're also utilizing our new Radiation Computer
5 Protection Computer Code Analysis and Maintenance Program known
6 as RAMP to share experiences and resources when using and
7 updating computer codes in the radiation protection areas as well as
8 participating in benchmarking the codes to verify and validate these
9 codes.

10 Thank you. That concludes my remarks and now I'll
11 turn it over to Vic for closing remarks.

12 MR. MCCREE: Thank you, Rebecca.

13 This concludes the staff's presentation on the
14 decommissioning and low-level waste business line. We'd be pleased
15 to take your questions at this time.

16 CHAIRMAN BURNS: I'll begin this morning with
17 Commissioner Ostendorff.

18 COMMISSIONER OSTENDORFF: Thank you,
19 Chairman. Thank you all for your presentations.

20 Cathy, this may be the last meeting you have in this
21 capacity, so I wanted to just take this opportunity to thank you for your
22 leadership. And it's been a pleasure to work alongside you, with you
23 the last five and a half years that I've been on the Commission. So,
24 thank you.

25 I appreciated all of the presenters tried to incorporate
26 into the construct of your remarks the fact that we have Project Aim

1 underway. So, I just want to comment in a very positive manner that I
2 think that's very important to provide a context for looking at Aim-type
3 issues.

4 So, I'm going to kind of have that questions or that
5 background will frame some of the questions I'm going to ask here.

6 I'm going to start with Cathy. I know that we'll be
7 getting a paper here in the near future on any lessons learned from the
8 NMSS-FSME merger and I'm just curious as, you know, from a high
9 level senior leader position in the Agency, as we look at other potential
10 mergers in the context of Project Aim elsewhere in the Agency, are
11 there any takeaways you have at this point that are worth sharing with
12 the Commission from your experience? Either good or bad?

13 MS. HANEY: Thank you.

14 I would say one of the probably biggest one is
15 communication, which really isn't a surprise. And it's the early and
16 frequent communication.

17 When we began planning for the FSME-NMSS merger,
18 or really even at the stages of considering should we merge, we really
19 reached out to our staff very frequently. We engaged -- I had a team of
20 division directors from each office that were leading the effort and then
21 they brought in branch chiefs and staff in to help to contribute to that.

22 And, as some of the -- we've started to get the
23 feedback because we are preparing that paper. There's a tremendous
24 amount of feedback on the early engagement being very positive and
25 appreciated.

26 And then, the need to continue that feedback as we go

1 through the process.

2 One of the big concerns as you go to the larger branch
3 size as well as a larger division size, is the opportunity to engage with
4 management and that's for the staff to engage with their first line
5 managers is that, as well as for engagement at the office director level.

6 That has been a challenge. One of the things that
7 Scott and I do is, or try to do, is at least once a week get out and meet
8 with a different branch so that we're actually able to sit down in a group
9 of 12 to 15 people and discuss issues of the day.

10 And, we gain a tremendous amount from that. We
11 were doing that before the merger and then we've continued it on to the
12 merger.

13 One of the other areas, and Drew mentioned this in his
14 presentation, was the ability to move staff. To a certain extent, we've
15 almost created some you could refer to them as sub-Centers of
16 Expertise.

17 By the way, we were able to leverage and move the
18 environmental group as well as some of the hydrologists and
19 seismologists that are with the new organization. And, it was the
20 willingness of the managers and the staff, again, being willing to move
21 to support the mission.

22 Some -- and it's always good to start out with the
23 positive. Again, we have gotten some negative feedback.

24 One of our initiatives was to question staff on, you
25 know, if they have any issues, suggestion boxes. We've probably not
26 been as good as we could have been in providing written comments

1 back as we've gotten questions at All Hands Meetings. I've tried to
2 answer those questions.

3 But, we are getting some feedback that written
4 responses would have been appreciated.

5 So, again, you know, I began with communication and
6 it ends with communication. And we'll have that paper and we're also
7 chatting with NRR and the team that's working at NRR and NRO to
8 consider the mergers there.

9 COMMISSIONER OSTENDORFF: Great, you
10 already answered a second question I was going to ask about the
11 transferability of personnel. So, I appreciate you providing some
12 examples in the presentation on that.

13 I think just as a comment, I'm just speaking just for
14 myself as a Commissioner, I'm probably less familiar with the
15 transferability of skill sets within your organization than I am in the NRR,
16 NRO arena.

17 So, I think to the extent that that paper can comment on
18 just from an education standpoint for the Commission on the
19 transferability of skills between health assist, whatever other type of
20 backgrounds, that'd be very helpful.

21 Drew, let me pose this question to you and Cathy may
22 want to chime in here as well, I'll leave it to you all to determine.

23 But, again, in the Project Aim spirit, we've had some
24 visibility as a Commission in the operating reactor business line on the
25 status of licensing actions and metrics associated with NRC processing
26 of licensing actions.

1 Can you comment, and I'll leave this kind of flexible for
2 you, and in some fashion it makes sense on how the organization is
3 doing on meeting licensing metrics?

4 MR. PERSINKO: As far as power reactors, we
5 received the Project Manager responsibilities after NRR completes a
6 number of the exemption approvals and the de-fuel technical
7 specifications are put in place. So, when we receive the reactor, it's in
8 a in safe store active decon.

9 As far as metrics, we don't have specific metrics that
10 say we need to have this many done at X number of times and once it's
11 given to us in reactors.

12 I mean, as you know, the only -- there's regulations that
13 require that the decommissioning be completed within 60 years. But,
14 that's the only real metric that I guess I know of.

15 COMMISSIONER OSTENDORFF: Well, you do have
16 metrics though for uranium recovery licensing, right?

17 MR. PERSINKO: Well, uranium recovery licensing in
18 the uranium recovery licensing area, there's no metrics that say
19 complete X number of licensing actions in a certain amount of time.

20 But, we do have -- there are a couple of metrics, one is
21 in the -- actually, one is one of the documents that says that we want to
22 improve the amount of time for our completion of safety evaluation
23 reports by ten percent through the use of pre-application audits.

24 And so, in the uranium area, we conduct, if the
25 applicant requests us to, a review of the application before it comes in
26 so that the application is of good quality when it arrives.

1 So, our metric there is to improve the safety evaluation
2 time by ten percent.

3 Now, we've done a number of pre-application audits
4 already, but we've only had one that really completed it through
5 completely so that we did the application and then we licensed the
6 facility.

7 That one showed that there was an improvement in the
8 amount of time it took to complete the safety evaluation report. But, it's
9 only one data point at this point.

10 COMMISSIONER OSTENDORFF: Okay. Cathy,
11 did you want to say --

12 MS. HANEY: I would like to, yes.

13 As in my opening remarks, I referred to, you know,
14 wanting to focus a little bit on the uranium recovery area. Over the last
15 year, you know, we have been looking at the different areas.

16 And the uranium recovery area is one that I would like
17 to look at and consider whether we do need some additional licensing
18 metrics.

19 Typically, what you see in the reactor area is -- and
20 you'll also see it in the next business line areas -- completing so many
21 licensing actions with, you know, a 100 percent within two years or, you
22 know, they vary across the different business lines.

23 We don't have something as specific that in the
24 uranium recovery area. I'm not convinced that we need something like
25 that, but I do think that it does need to be reviewed and that's something
26 that we'll be doing over the next year, next months, few months.

1 COMMISSIONER OSTENDORFF: Okay, thank you.

2 I want to turn to decommissioning for a minute. I'm
3 going to direct this question to Mark, but it's going to have a nexus,
4 obviously, with NMSS leadership.

5 So, when the Office of Nuclear Reactor Regulations
6 established the decommissioning branch, I guess, maybe two years
7 ago, fall of 2013, there's a process for NRR to work on this and then to
8 hand off to NMSS. How's that going from your perspective down in
9 Region IV, since you're on the --

10 MR. SHAFFER: Well --

11 COMMISSIONER OSTENDORFF: -- future stage in
12 the field?

13 MR. SHAFFER: I'll tell you, I somewhat anticipated
14 the question, so I did -- I checked with our branch chief in the Region,
15 Ray Keller, and talked with folks in NMSS and some in the Regions as
16 well.

17 And really, it's gone quite well. There hasn't been any
18 major hiccups. There continues to be a dialogue between NRR and
19 NMSS even after the transfer. There are periodic meetings with the
20 branches to talk about how things are going, issues with scheduling,
21 issues with requests from the licensee for exemptions and all that.

22 So, it really, at least from my standpoint, I think it's
23 been going quite well.

24 COMMISSIONER OSTENDORFF: Okay.

25 Rebecca, we miss you on the 18th floor. Good to see
26 you.

1 I appreciate your telling us about the code status as it
2 applies to research activities in support of the business line.

3 Let me ask a question looking forward to, let's say, the
4 next ten years, are there areas in the Office of Research where we do
5 not have the skill sets we need to meet projected workload for this
6 business line?

7 MS. TADESSE: No, I don't feel there is a case. I
8 think we have a good group of people and we're bringing new staff that
9 is learning the new decommissioning as well as other areas in the
10 business line. So, I don't think there is an issue in that area.

11 COMMISSIONER OSTENDORFF: Okay.

12 Thank you. Thank you all.

13 CHAIRMAN BURNS: Thank you, Commissioner.

14 Commissioner Baran?

15 COMMISSIONER BARAN: Thanks.

16 As you all know, the Commission is currently
17 deliberating on the Grater Than Class C Waste paper. The paper
18 mostly focused on whether NRC or the Texas Council on
19 Environmental Quality should do the licensing of a GTCC waste
20 disposal facility.

21 But, I think regardless of which agency ends up doing
22 the licensing, we're going to need to establish standards for such a
23 facility, and we're going to need to establish criteria for approving a
24 non-repository disposal option.

25 Separately, of course, NRC just finished taking public
26 comment on a Part 61 low-level waste rulemaking.

1 Drew or Cathy, if NRC were to set GTCC and
2 transuranic waste disposal standards through a rulemaking, does it
3 make sense from your point of view to re-propose the Part 61 rule and
4 include these topics in that rulemaking or should we keep the two
5 separate? What are the pros and cons of addressing the GTCC and
6 true waste issues in the ongoing rulemaking?

7 MS. HANEY: That's a great question.

8 I can -- we can probably provide a Commission paper
9 with pros and cons, not that I am volunteering to provide one, of course.

10 I would say, you know, with the top of the head sort of
11 answer, the Part 61 rulemaking as it is right now, we're set to finish it in
12 the next few months, the beginning -- I'd like to say the beginning part of
13 next year. I think the actual take it to the Commission is May of 2016,
14 but we are working to try to get it done sooner.

15 So, we have been working on that. We're very close
16 to finishing it. We have public comments on it. There is the argument
17 of let's move it forward and I think to quote a retirement party yesterday,
18 "Get her done."

19 So, now, at the same time, if you step back and say, is
20 there a burning desire that we have to get it out there? Is there a
21 safety issue that we need to address? Is there a security issue we
22 need to address right now? That, if we delayed finishing the rule,
23 would it be detrimental?

24 To the best of my knowledge, the answer to that
25 question is no. So, it is feasible that we would step back, include the
26 Greater Than Class C, any criterion standards in that rulemaking and

1 then move forward at that time.

2 So, either way, it's possible. Staff's prepared to do
3 which ever approach the Commission directs.

4 I do worry that it may take us a little while to develop
5 some of those standards because, to date, staff has not been working
6 on those standards. The regulatory framework is there and that we
7 would start with the performance assessment and move down from
8 there.

9 But, we would want to take the methodical look at what
10 are the best standards. And, as you said, regardless of whether the
11 state is using those criteria or NRC is using that criteria, we do want to
12 make sure we have the right ones in place.

13 COMMISSIONER BARAN: And so, what -- I mean
14 what is your sense of the timing? So, with the understanding that staff
15 isn't really that far along on the standard piece, standard development
16 piece for GTCC waste disposal facility, how long do you think it would
17 take before you're at a point where you could either re-propose the Part
18 61 rule or if you were doing it as a separate rulemaking, get to the point
19 of a proposed rule?

20 MS. HANEY: I would say, again, we're somewhere
21 probably more than six months and less than a year.

22 And, I base that on the fact of it would be equivalent to
23 developing a technical basis for rulemaking. Now, whether the
24 Commission would want a technical basis, whether you would want a
25 rulemaking plan.

26 Of course, if we get into those developing a rulemaking

1 plan first going to the Commission, that would take longer.

2 But, when I say the more than six, less than 12, I'm
3 really focused on what would it take for the technical staff to sit down
4 and come up and strategize on what those criteria should be.

5 COMMISSIONER BARAN: Okay.

6 And, I think you partly answered this question just in
7 discussing it, but, from your point of view, do you think we can develop,
8 is it feasible to develop a GTCC standards rule in a way that is neutral
9 on the question of what agency does the licensing?

10 MS. HANEY: Yes, I think we can.

11 COMMISSIONER BARAN: Okay.

12 MS. HANEY: Of course, realizing in developing that
13 we would be reaching out to the states. We would not be developing it
14 in isolation. And, when I say interacting with the states as well as other
15 key stakeholders in developing that.

16 COMMISSIONER BARAN: Okay, great. Thanks.

17 I wanted to ask about an issue I worked on before I
18 came to the Commission which is the Northeast Church Rock Mine, the
19 most contaminated former uranium mine in and around the Navajo
20 Nation.

21 EPA's proposing that the mine waste be placed above
22 the existing tailings impoundment at the nearby mill site, the Church
23 Rock mill site. This requires NRC to consider a license amendment
24 request for the mill site.

25 Can someone give me an update on the status of our
26 interactions with EPA on this issue?

1 MR. PERSINKO: I'd be happy to do that.

2 By the way, I testified in front of you twice in your
3 previous position --

4 COMMISSIONER BARAN: I remember that.

5 MR. PERSINKO: -- on this subject.

6 COMMISSIONER BARAN: Here we are again.

7 MR. PERSINKO: Currently, the EPA has created an
8 initial design report and we provided comments on that initial design
9 report for taking the mine waste and putting it on top of the mill tailings.

10 And we meet with EPA and DOE and other parties
11 monthly on monthly design group calls with the intent that when the
12 amendment arrives to us to approve doing that, because we regulate
13 the mill tailings pile, not the mine waste, the mill tailings, as you know.

14 So, we meet with DOE and EPA monthly to review
15 design reports with the intent of approving that design with the
16 application when it arrives.

17 As far as the Church Rock application is concerned, we
18 expect to be getting the amendment in house either late 2016 or early
19 2017 and then, after that, we would begin our review and it will take
20 anywhere between two to five years is what we estimate.

21 COMMISSIONER BARAN: Okay. So far, it does --
22 have the interactions been going well and things are moving along?

23 MR. PERSINKO: Yes, I have no -- yes.

24 COMMISSIONER BARAN: Okay.

25 And then, I just had one last question about new
26 Agreement States, and maybe this is a question for Mark or whoever it

1 makes sense to answer this one.

2 For uranium recovery licensing, if NRC is the middle of
3 a licensing review when a state becomes an Agreement State, it
4 sounds like we would transfer that application or review to the state.

5 How does that handoff work? I mean if we've spent,
6 you know, months or years reviewing something and now it's time for
7 Wyoming or whatever other state to take over, what happens?

8 MR. SHAFFER: Well, I can attempt to answer it and I
9 think Cathy can maybe follow up.

10 I mean, it does, in fact, on the day of the agreement
11 where ever we're at and whatever stage of the application transfers to
12 them.

13 Now, I would say, and Wyoming in particular, although
14 they're not involved in licensing actions during this period, they do
15 accompany us. They'll accompany us out on inspections so there is a
16 dialogue where they know where we are on some of these actions.
17 They have a continuing dialogue with the licensees now, even with the
18 environmental issues.

19 So, it's not that it would come cold to them. But, yes,
20 in fact, the day that the agreement is signed, everything goes to them
21 and it's theirs.

22 MS. HANEY: And, I would just add, too, Mark alluded
23 to it, but to say it more explicitly is, as we get closer and closer to the
24 date, the licensing staff starts the dialogue and it's a continuous daily
25 ongoing dialogue with the Agreement States.

26 Well, no, we haven't done it before specific to just

1 uranium recovery, it's typically the entire program that's going or more
2 the material side of the program that's going.

3 So, as an agency, we have a lot of experience in that
4 handoff from NRC to an Agreement State. And it's gone seamlessly
5 before and I would see it going that way should we go forward with
6 Wyoming.

7 COMMISSIONER BARAN: Thank you.

8 CHAIRMAN BURNS: Thanks.

9 Maybe I'll follow up, I had a couple of questions, too, in
10 terms of the hand over -- the potential hand over to Wyoming as an
11 Agreement State.

12 What we talk about at process that could be as long as
13 five years, what are the pacing items that with respect to the transfer to
14 the agreements as an Agreement State?

15 MS. HANEY: One of the pacing items is development
16 of their regulatory structure. That structure needs to come into us.
17 We need to review it, be comfortable with it, reviewing it from a
18 standpoint of what we call compatibility.

19 Also, there's the engagement within the state with their
20 Governor. Since we do have the letter from the Governor, we know
21 that there is support within a state.

22 And then there's the opportunities to -- that we engage
23 with you on that approval.

24 So, the time to prepare the papers, do the reviews and
25 also for the state to meet the staff to make sure that they have the
26 critical skill sets needed to go forward with that.

1 But, from some discussions as recently as just a
2 couple of weeks ago when I was at the Organization of Agreement
3 States meeting, a representative from Wyoming was at that meeting
4 and I had the opportunity to speak with him about are they working on
5 getting their staff and what's their plan for doing that. And the answer
6 was yes, they were already working on training skills.

7 So, it's really it's the regulatory structure, the skill set
8 and then the engagement with the principals.

9 CHAIRMAN BURNS: Okay, thanks, Cathy.

10 Well, you've talked about, you know, various aspects
11 of the research program that -- to support this area and one of them is
12 an area of uranium recovery.

13 How do we make results of our research available or
14 available to Agreement States or how do we transmit that kind of
15 information so that it can inform their programs?

16 MS. TADESSE: Most of the time we do a NUREG
17 series that is available publically. We also have training that we give,
18 for example, for the MILDOS program, we have training that we give for
19 the codes.

20 And, anything that is produced for the program office,
21 we usually share it with the states as well.

22 So, but the most is the NUREG process that we follow
23 that's available.

24 CHAIRMAN BURNS: Okay. Okay, thanks.

25 Drew, I want to talk about a couple programs in your
26 area. One we worked on at some point earlier which is the Davy

1 Crockett. This is, Again, I will go put in the category of legacy-type
2 issues that become part of our responsibility.

3 You talk -- describe for me a bit more in terms of the
4 process because I realize this is, you know, quite frankly, a slow go in
5 terms of the number of sites ultimately that the Army has that will
6 ultimately, I guess, come under licensing. So, give me perhaps a little
7 more detail in terms of what you see in terms of coming down the road
8 with respect to that.

9 MR. PERSINKO: With respect to the Davy Crockett
10 depleted uranium, we have licensed two sites already, both sites in
11 Hawaii.

12 The plan, though, is we have 17 more sites in the Davy
13 Crockett area.

14 We, you know, we came up with a -- we discussed with
15 OGC and discussed with the Army and instead of licensing all 17 sites
16 via 17 separate licenses, we developed what we call the programmatic
17 license approach. So, there's going to be one license for all 17 sites.

18 So, we'll amend the current license, the Army will come
19 -- the amendment to the current license and the amendment will be
20 what we're calling a programmatic license. It's going to apply to all 17
21 sites and it will specify certain requirements. You should have
22 Radiation Safety Program. You need to have a security program,
23 whatever kind of programs you need with some level of specificity in the
24 license.

25 But then, the Regions will actually then do the
26 inspections of these 17 sites against the one license.

1 So, we believe that we've actually really improved the
2 ability, the time it would take by going to this approach whereby we'll
3 amend the license and have one license rather than having 17 separate
4 reviews for 17 sites.

5 CHAIRMAN BURNS: How is it different? I mean the
6 thing that comes to my mind maybe is sort of like the master materials
7 license like, you know, VA and some of that. How does it differ? Or
8 how is it the same? Either way there.

9 MR. PERSINKO: Yes, I'm not -- I really don't know
10 enough about the difference between the master materials license, but I
11 think it's -- the materials license are probably -- I think they're more
12 easier, they're more simplified than the reviews we're going to do as far
13 as the DU is concerned.

14 I think the reviews we're going to do as part of the
15 programmatic license will be probably more detailed than a master
16 materials license review would be.

17 CHAIRMAN BURNS: Another area in terms of the
18 basic UMTRCA sites, and I'm mixing up which is which, which is the
19 Title I versus the Title II.

20 But a historically, with some of the sites under
21 UMTRCA that we're still under, you know, still under license to NRC or
22 AEC at the time UMTRCA was passed, because they were still under
23 license, or I'm actually thinking, for example, Atlas Moab which really
24 required a legislative solution because the intractable financial problem.
25 It was the, you know, the chicken and egg in effect problem.

26 You can't give a transfer to DOE because it hasn't been

1 cleaned up and it can't be cleaned up because there's not enough
2 money to clean it up. And, ultimately, there was a solution.

3 Are there -- with respect to those still under our
4 oversight, how, I mean, do we see there in terms of an adequacy of
5 funding or particular challenges with respect to, in effect, their
6 decommissioning to the point that they can be transferred to the
7 Department of Energy?

8 MR. PERSINKO: That's the path we're going down.
9 And, we think we'll be successful in that. We've transferred six of the
10 Title II sites already in addition to DOE.

11 There is a site that may pose challenges to us
12 financially and we're working with the State of Wyoming trying to see if
13 there's ways of additional funds for this particular site and manage the
14 existing funds that are available to put the site in a good position if the
15 funds start getting low until a time that we can come up with a solution
16 to obtain additional funds.

17 But, I'm really only aware of that at really at one site
18 right now.

19 CHAIRMAN BURNS: Okay.

20 But, in the meantime, from our standpoint, there's
21 stabilization and control --

22 MR. PERSINKO: Absolutely.

23 CHAIRMAN BURNS: -- over the site? Which I know
24 that was a problem as I recall with the Atlas site long ago.

25 Let me talk a little bit more on recovery. For the most
26 -- in terms of hearing process, and I'm not getting into particular, you

1 know, particular issues that may be pending or whatever, but how
2 would you characterize the bulk of the issues that are raised in the
3 hearing process?

4 MR. PERSINKO: Many of the contentions that are in
5 the hearing process have to do with environmental, the Environmental
6 Impact Statements, the environmental reviews. And the other area
7 that gets a lot of attention is groundwater and the groundwater issues.

8 So, I think those two areas are the ones that get the
9 majority of the attention in the hearings.

10 CHAIRMAN BURNS: Okay. And, with respect to the
11 -- I know we issued some recent guidance on Tribal consultations and
12 things like that that National Historic Preservation consultations, an
13 important aspect to it.

14 Have we seen any sort of lessons learned from our
15 engagement in that area?

16 MR. PERSINKO: Well, we have a number of
17 initiatives that try to improve that process. It is a challenging process
18 and it's challenging primarily because the location of the sites are in
19 areas where it gets significant Tribal interest, 12 to 20 Tribes show
20 interest in most every application.

21 I don't have any data to say this has improved yet, but
22 we have a number of initiative. For example, we employ use of
23 experts more so now in our Section 106 consultations.

24 As you mentioned, we also had the -- we have a
25 guidance document for doing the Section 106 consultations.

26 And, we've developed I think a close relationship with

1 the Advisory Council on Historic Preservation who oversee the
2 implementation of the NHPA.

3 We have a person at the Advisory Council who
4 basically is a liaison for us. So, we've gotten to the point we have one
5 person giving us close attention.

6 So, additionally, I'll mention all the staff in our -- all the
7 staff in the environmental review branch who do the 106 consultations
8 have taken training that the Advisory Council offers.

9 So, with all that put together, we're hoping that we can
10 improve upon the consultations. But, it is a very challenging activity.

11 CHAIRMAN BURNS: All right, thanks very much.

12 Commissioner Svinicki?

13 COMMISSIONER SVINICKI: Well, good morning and
14 thank you all for your presentations.

15 Perhaps I'll pick up where Chairman Burns concluded
16 his questioning, but I'll ask it a little differently.

17 It's my observation that the National Historic
18 Preservation Act Section 106 consultations have become both much
19 more time and resource intensive. Is that observation generally true?
20 And, if so, what's contributed to that?

21 I think, Drew, you talked about the level of Tribal
22 interest and we've made some changes in process perhaps for
23 ourselves.

24 But, could you generally respond to that observation?
25 Is that true across the consultations? And, if so, what have been the
26 major contributors to that increase in time and resource intensiveness

1 in the last few years?

2 MR. PERSINKO: In my opinion, I believe that they
3 have been research intensive right from the get go, right from the
4 beginning. When I was involved in that when I first came to the group
5 five years ago, I was specifically involved in that. And, I think they
6 were very intensive even five years ago.

7 So, I don't know that they've even got more intensive
8 but -- or whether they've just continued at the same level they were, but
9 they are very resource demanding.

10 And, I think, like I said to the Chairman, that I believe
11 that the reason for that is primarily because the Tribes have a very
12 strong interest in this area and there are many Tribes who are
13 interested. So, it's not just a couple of Tribes, it's many.

14 So and, the process itself is not one that's a structured
15 process such as a hearing where you've set dates, the Hearing Board
16 sets dates and all parties do that. It's a consultation with another
17 nation basically.

18 So, it's a kind of a free form kind of consultation, so that
19 makes it a challenge.

20 COMMISSIONER SVINICKI: Okay, I appreciate that.
21 I was just asking you to react to that observation, so I think that that's
22 very fair that, in your experience, this is something that has been
23 persistently complex for us.

24 On the issue of uranium recovery licensing metrics, I
25 appreciate, Cathy, your response that there is some appetite perhaps
26 to look at that. Because I think, you know, a couple of things are

1 absolutely true.

2 The first is that they don't exist to the extent that they
3 exist for reactor licensing actions before the Agency. So there is that
4 disparity that exists.

5 And then, I think the other thing that is absolutely true is
6 that if we were to go to the Division of License Renewal and NRR and
7 ask them do your licensing actions, are they subject to the same
8 uncertainty and complexity that a uranium recovery license is? They
9 would say absolutely, but I've got a licensing metric.

10 So, I think whether or not we establish them, we need
11 to be able to explain why they don't exist if we're not going to establish
12 them.

13 And so, I think it's fruitful whether or not we decide to
14 establish a similar metric just to explore that and find out what the
15 differences truly are.

16 On Agreement State establishment, I would just like to
17 share that I know that we use this three, four or five year general time
18 frame.

19 I spoke at an energy conference in the West a year -- a
20 little more than a year ago and, as a side bar, I was approached by a
21 Western state official who asked me, you know, well how long does it
22 take? And I said our general answer is four to five years.

23 But, I don't think that there's anything magic about that.
24 It's simply, again, you know, it's a time frame that we give based on
25 experience.

26 The other thing that I responded is I think the time

1 frame is likely more dependent on the pacing that the agreements -- the
2 Agreement State applicant pursues rather than us.

3 How do you react to that? Do you think that was a fair
4 answer?

5 MS. HANEY: Yes, I do think so.

6 COMMISSIONER SVINICKI: Okay.

7 So, if an Agreement State, you know, had a crisp
8 scope and really explored it and was in a state or preparedness to move
9 forward, they really are more the pacer of how long it takes than the
10 NRC.

11 That's my sense, it's not if they want to proceed
12 methodically and slowly, they can do that and it's going to take longer.
13 They really want to have a concentrated effort within their state to get
14 the program in place and propose it to us, then it could possibly move
15 faster.

16 MS. HANEY: Yes, I agree, it could move faster. But
17 there are even internal with our procedures, there are some certain
18 interactions with the Commission that we need to do and we will fall into
19 a process within NRC. So, to go to an extreme, if the state said we
20 want it in, you know, six months, then we would become the pacer.

21 COMMISSIONER SVINICKI: Yes, yes.

22 MS. HANEY: Because we could not do it that quickly.

23 COMMISSIONER SVINICKI: I was thinking more
24 about, you know --

25 MS. HANEY: Certainly, we would --

26 COMMISSIONER SVINICKI: -- shaving a year or 18

1 months off of it or something.

2 MS. HANEY: Yes, certainly.

3 COMMISSIONER SVINICKI: That seems in the
4 realm of the possible to me. But that, Again, principally, that's going to
5 be driven by the Agreement State preparedness.

6 And, Rebecca, you talked a lot about maintaining,
7 updating codes and standards and, of course, then verifying updates.
8 That's another important step there.

9 Is the process that you described on your slide 31, you
10 talked about kind of strategies for NRC being current on maintaining
11 and updating codes and standards and we have strategies that help us
12 manage kind of the resource that we apply to that.

13 Would you generally say that that's consistent across
14 the approach to maintaining and updating codes and standards for the
15 Agency as a whole or are these on your slide 31, are those strategies
16 unique to the codes and standards that you're talking about?

17 MS. TADESSE: Predominantly, it's similar, but
18 there's different programs within research.

19 For example, there is RAMP which is related to the
20 radiation protection. But there is CSARP for codes that are
21 reactor-based and MELCORS and CAMP which is thermodynamics.

22 So, we do have programs that maintain the -- to update
23 the codes. We use these resources from international agreements
24 and be able to support changes and benchmarking as well as using
25 federal and other federal governments.

26 I mean some codes are used by other agencies, so we

1 try to make sure that we are utilizing our resources appropriately and,
2 you know, what improvements need to be made and who's doing it at
3 this time.

4 And so, I think it's throughout the research code
5 development program that we do try to address that issue.

6 COMMISSIONER SVINICKI: I know that there are
7 also, in essence, users groups for various codes of where practitioners
8 in that area come together. Do we tap into those groups in terms of
9 things, updates that are needed or I think those groups can also
10 occasionally suggest improvements or identify deficiencies or gaps in a
11 code?

12 MS. TADESSE: Yes, yes. That's the program. I
13 mean the CSARPs and CAMPs and RAMPs are those programs where
14 we're sharing users are -- we have a user's forum where they're
15 providing inputs and, you know, some of the changes that they want to
16 do.

17 For example, right now, we're working with the
18 Canadians to put the CANDU reactors in and they're providing
19 resources to do such a thing and would help us address some of the
20 issues that we have here as well.

21 So, there is a way to do it and we're just starting as a
22 new program, but that's what we're looking to grow and be able to
23 support the maintenance and updates of the codes through that
24 process.

25 COMMISSIONER SVINICKI: Okay, great. Thank
26 you for that.

1 Thank you, Chairman.

2 CHAIRMAN BURNS: Thank you, Commissioner.

3 We are going to take a very brief break, a five minute
4 break and so, we'll resume at 10:15 strictly enforced.

5 (Whereupon, the above-entitled matter went off the
6 record at 10:10 a.m.)

7 CHAIRMAN BURNS: We're going to come back to
8 order for the second half of today's meeting, and I'll turn it back over to
9 Vic.

10 MR. McCREE: Good morning again Chairman,
11 Commissioners. At this point we're pleased to provide a brief on the
12 spent fuel storage and transportation business line, which also resides
13 in the Office of Nuclear Material Safety and Safeguards, and similarly,
14 we'll provide current and emergent activities from the NRC's staff
15 perspective, as well as efforts associated with Project AIM.

16 So with that brief introduction, I'll turn it back over to
17 Cathy.

18 MS. HANEY: Thanks Vic and good morning, again.
19 So I would like to discuss the important work that's being done under
20 this business line, to ensure the safe storage and transportation of
21 spent nuclear fuel and radioactive material.

22 We last briefed you on this business line in October
23 2012. So I'm very happy to be back again, and I'm joined at the table
24 now by Mark Lombard, who's the director of the Division of Spent Fuel
25 Management. Also Al Csontos, who is the chief of the Renewals and
26 Materials Branch within the Office of Nuclear Materials, Safety and

1 Safeguards, and then Mark Shaffer is joining us from Region IV again
2 for this briefing.

3 As we turn to spent fuel storage and transportation,
4 we'll be discussing the current spent fuel environment, and the
5 associated external and internal influences on this environment, our
6 current licensing and research activities, and oversight of the
7 independent spent fuel storage installations.

8 Next slide, please. If you look at this, we intend to
9 give you an overview of the overall allocation of resources for this
10 business line. In this slide, you can see that the green sections of the
11 pie chart reflect the business line enacted budget for the fiscal year
12 2015.

13 As the business line lead, we work closely with many
14 NRC headquarters and regional offices, again as we plan and execute
15 these business line activities.

16 Next slide. The majority of the resources in the
17 business line reside in the licensing, oversight, research and
18 rulemaking product lines, with some resources in the generic homeland
19 security and the international product lines. We had significant
20 accomplishments in the afore-named product lines in the past year,
21 including completion of approximately 100 licensing actions, and key
22 initiatives designed to optimize available resources.

23 During this fiscal year, NMSS issued the Calvert Cliffs
24 independent spent fuel storage installation license renewal. The Part
25 71 rulemaking was issued to harmonize with IAEA standards, and good
26 progress was made to resolve key technical issues such as

1 chloride-induced stress corrosion cracking, high burnup fuel and
2 thermal modeling.

3 In addition, resources were included in this business
4 line for following national and international transportation and disposal
5 activities, to include serving as the NRC's focal point for interactions
6 with the U.S. Department of Transportation with regards to
7 transportation issues.

8 Next slide. Even before Project AIM and as part of our
9 continuous self-assessment, we anticipated challenges, defined
10 strategies and improved our agility while developing products that save
11 resources. Along with our business line partners, we have been
12 focused on developing and implementing strategies that will make us
13 more efficient and effective.

14 We are doing this by prioritizing our work and by
15 assuring we have access to individuals with the critical skills needed to
16 complete our mission. Initiatives that we touched on in this briefing,
17 that we will touch on in this briefing include licensing process
18 improvements, building a new renewal regulatory guidance framework
19 that was used for the Calvert Cliffs, Prairie Island and the VSC-24
20 certificate of compliance renewals, and efforts to risk-inform our storage
21 regulations.

22 This business line has continued to further its goal of
23 connecting the front end and the back end of the fuel cycle, as
24 evidenced by the close collaboration that continues to occur between
25 NRR and NMSS, and within NMSS in the development of the renewal
26 aging management guidance framework that AI will discuss in more

1 detail in a few minutes.

2 Our licensing program improvements or LPI continues
3 with good progress. Over the next year, we plan on completing our
4 review of LPI issues related to the administration of certificates of
5 compliance for general licensee use, regulation of independent spent
6 fuel storage installations at decommissioned reactor sites, and
7 compatibility of specific and general license requirements for storage.

8 Additionally, we're working on the LPI issue related to
9 the compatibility of storage and transportation regulatory framework.
10 As a result of our efforts, over the past year we sent a memorandum to
11 the Commission regarding our plan to expand the definition of spent
12 fuel retrievability from the one established in 2001, based on the
13 paradigm shift of longer storage periods and the robust aging
14 management guidance framework that was developed.

15 As part of our effort, and anticipating the ISFSI and
16 COC renewal search, we developed a new and more efficient
17 regulatory guidance framework for renewals, focusing on material
18 aging management. Our effort continues in fiscal year '16, to develop
19 the next level of guidance documents to reduce agency and industry
20 resource burden and provide a predictable, stable, learning and
21 sustainable framework for future use.

22 This has been a tremendous effort conducted by a
23 handful of business line resources with extensive collaboration with the
24 Office of Nuclear Reactor Regulation and Nuclear Regulatory
25 Research, as well as our public stakeholders. Again, Al Santos will
26 discuss this in greater detail.

1 We continue to resolve technical issues. A great
2 example is our approach to provide continuous support of our
3 regulatory position, that long term storage and eventual transportation
4 of all cladding types approved to date is safe.

5 We are cooperating with and leveraging DOE
6 resources in this regard, including our work at the Oak Ridge National
7 Laboratory that is demonstrating the robust nature of high burn up fuel
8 cladding in normal conditions of transportation.

9 We started an initiative two years ago to begin building
10 a risk-informed framework for spent fuel storage, based on our
11 self-assessment and vision for the future of spent fuel regulation. As
12 part of this initiative, we've considered the recommendations in
13 NUREG-2150, which is a proposed risk management regulatory
14 framework, as well the industry's petition for rulemaking, 72-7, to inform
15 our efforts.

16 We're in the process of finalizing proposed storage risk
17 metrics, and will engage the public soon to solicit their input. We've
18 held two public meetings on this topic so far. We also maintain close
19 coordination with our Office of Nuclear Security and Incident Response,
20 to maintain and support the security and safety interface at the
21 independent spent fuel storage installations.

22 Specifically, the safety security interface was
23 considered during the staff's evaluation of the best technical approach
24 for the ISFSI security rulemaking. Recently, we recommended to the
25 Commission that this rulemaking be delayed up to five years, to meet
26 current agency needs.

1 The staff believes the current safety and security
2 regulations, along with the post-9/11 security audits and the triennial
3 ISFSI inspection requirements provide high assurance of adequate
4 protection to public health and safety. In addition, we continue to
5 closely coordinate with NSER, as discussion begin next week with
6 waste control specialists regarding interim consolidated storage facility
7 security measures.

8 With that, and to get into more details, I'll turn it over to
9 Mark.

10 MR. CSONTOS: Thank you, Cathy. Next slide,
11 please. Good morning Chairman Burns, Commissioner Svinicki,
12 Commissioner Ostendorff, Commissioner Baran. It's a pleasure to
13 come before you this morning to describe the spent fuel storage and
14 transportation environment.

15 First, I want to point out that a good portion of our work
16 is related to radioactive material transportation. As part of this work,
17 we review and certify transportation packages for a wide variety of
18 radioactive materials, including medical sources used for cancer
19 treatments and radiography devices.

20 This work represents about a third of our licensing
21 product line resources, and 75 of the 100 or so cases that we complete
22 every year.

23 Next slide, please. Over the years, we have had not
24 one but two paradigm shifts in the spent fuel storage and transportation
25 area. It was initially believed that the current dry storage strategy
26 would only be required for 20 years or so. Now we are not as sure

1 exactly how long it will be before the first spent fuel and dry storage will
2 be transported.

3 The second paradigm shift is due to renewed interest
4 in away from reactor storage facilities called interim consolidated
5 storage facilities and ICSFs. As a result, there is now a plausible
6 storage transportation scenario or 10 C.F.R. Part 72-71-72 scenario.
7 The latest paradigm shift comes with its own set of regulatory and
8 technical challenges.

9 Next slide, please. The spent fuel world has a lot of
10 moving parts, with a myriad of external and internal factors. Two
11 entities have expressed interest to submit applications for interim
12 consolidated storage facilities in April and June of 2016. Since the
13 operation of one or two ICSFs involve the eventual movement of spent
14 nuclear fuel, we anticipate an increase in the submittal of transportation
15 packages as a result.

16 The Department of Energy has expressed their intent
17 to develop and submit a topical safety analysis report for an ICSF.
18 This effort is in the early stages and the timing of a planned submittal
19 has not yet been set.

20 Bills have been introduced to Congress that address
21 spent fuel storage and disposal activities, one as recently as this week,
22 and if any of these bills are passed, they could have an impact on our
23 workload.

24 Next slide, please. The National High Level Waste
25 Management Strategy continues to evolve, and that was issued in
26 2013, January 2013 by the Department of Energy, with two future

1 potential ICSFs, as I just mentioned. As we plan and implement our
2 research activities, we interact with the Department of Energy regularly
3 to leverage government research resources, resolve issues that could
4 impact regulatory strategies and ensure that the NRC is aware of any
5 potential DOE activities that could impact our role as independent
6 regulator.

7 Our interactions with members of the public have
8 increased significantly over the past few years. It is a priority to
9 communicate to our stakeholders who we are, what we do, how we do
10 it, our mission to maintain public health and safety, as well as how we
11 resolve technical and regulatory challenges, while giving them
12 opportunities to interact on the work that we do.

13 We held more than 50 public meetings in fiscal year
14 2015, many of them Category 3. We invited members of the public to
15 attend and speak at our 2014 regulatory conference, and you'll see a
16 picture of that conference there on the slide, and plan to do the same
17 thing in our 2015 RegCon, as we call it.

18 It is important for us to engage frequently with industry,
19 who closely monitors each one of our licensing actions, and hear their
20 viewpoints regarding our mission to maintain safety and security while
21 minimizing regulatory burden and cumulative effects.

22 We're also aware of potential future NRC actions to
23 develop regulations and conduct review for the disposal of defense
24 waste, which was the subject of a March 24th, 2015 Presidential
25 memorandum.

26 With regard to resources, NRC regulations require

1 certificate of compliance and specific licenses to be renewed on a
2 regular frequency. These renewals create a surge of licensing case
3 work starting this year, in 2016, and peaking in 2020.

4 As Cathy mentioned, we developed and are
5 implementing a strategy to handle these applications, while
6 economizing resources and remaining agile in the spirit of Project AIM.
7 Al Csontos will discuss this topic in more detail in a few minutes. You
8 notice we're kicking a lot of things over to Al, so he's going to have a
9 pretty exciting presentation.

10 When the fiscal year 2016 budget was being
11 formulated, we did not know that we would have two potential ICSF
12 applications this year. As a result, the resources to conduct the
13 associated reviews are not included in the 2016 President's budget.

14 In addition, Project AIM set a target to reduce the
15 number of agency employees in 2016, I'm sorry, by the year 2020, and
16 we are working hard to meet this target. We developed a
17 sequestration plan for fiscal year 2016, and have a plan for fiscal year
18 2017 in response to Commission direction that involve further
19 reductions in resources.

20 While we are able to reprioritize our work activities to
21 meet the associated targets, certain activities will not be able to be
22 conducted, or will have to be conducted at lower activity levels in
23 current and future fiscal years. This results in not having the proper
24 skill sets in certain positions, as well as not having other skill sets
25 available should these activities be restarted or expanded in the future.

26 We're in the process of implementing mitigating

1 measures to minimize these impacts. In addition, there are associated
2 impacts to resources such as the Center for Nuclear Waste Regulatory
3 Analyses. We're addressing the dynamic nature of the spent fuel
4 environment by taking the actions that Cathy described earlier as well
5 as others, such as encouraging cask vendors to decrease the number
6 of submittals by developing applications with broader scopes.

7 While this can reduce the number of applications, it
8 could result in the reviews taking incrementally longer times to
9 complete due to their complexity. As I said, there's a lot of moving
10 parts to the spent fuel world and I only touched on a handful of them. I
11 will now turn it over to Al Csontos, who will go into detail into some of
12 the topics I introduced, as well as other business line activities.

13 MR. CSONTOS: Thank you, Mark. Good morning
14 Chairman Burns, Commissioners. As Mark mentioned, the storage
15 paradigm shift with no disposal option increases the likelihood for
16 longer expected periods for dry storage, resulting in the need for
17 renewals.

18 I'll be speaking today about our efforts in creating a
19 more efficient and effective storage renewal process to address the
20 upcoming surge of storage renewal applications.

21 Next slide, please. This is an outline of what I'll be
22 speaking to today. First, I'll speak to our current regulatory framework
23 for dry storage renewals. Second, I'll discuss the upcoming surge of
24 storage renewal applications and our streamlining of efforts to address
25 it by revising the storage renewal guidance framework.

26 I'll finish by showing how operational experience and

1 confirmatory research were used in the development of our revised
2 guidance.

3 Next slide, please. NRC's initial licensing renewals
4 and inspection oversight ensures safe operations during the initial 20
5 year term. As dry storage continues beyond this, effective aging
6 management ensures that the storage systems continue to safely store
7 spent fuel for the extended periods of performance.

8 We do this through the storage renewal provisions in
9 10 C.F.R. Part 72.42 and 72.240, which were modeled after the reactor
10 renewals in Part 54. In 2011, the Commission revised Part 72 with two
11 major changes. First, the initial renewal terms increased to a period
12 not to exceed 40 years, up from the original 20.

13 Next slide, please. And two, added a requirement
14 similar to the reactor renewals, that storage renewal applications must
15 include aging management programs or time-limited aging analyses.
16 The new rule was accompanied by staff guidance, NUREG-1927 Rev
17 0, "SRP for Renewal of Spent Fuel Dry Cask Storage System Licenses
18 and Certificates of Compliance."

19 Fundamentally, licensees must demonstrate that
20 applicable aging effects for dry storage systems can be safely managed
21 and addressed, so that those systems will continue to perform their
22 intended functions for the period of extended operations. Since 2011,
23 staff and industry implementation of this regulatory framework identified
24 numerous issues that were not clearly addressed in NUREG-1927 Rev
25 0, and as a result, staff identified that changes were needed.

26 Next slide, please. We also identified resource

1 challenges with the upcoming surge of renewal applications through
2 2024, which is shown on this graph. This surge chart identifies when
3 the NRC is expected to receive the applications for review.

4 It is slightly different than the bow wave chart that you
5 may have seen previously, which showed a license and certificate of
6 compliance expiration dates. Regulations require that specific license
7 applications be submitted two years prior to expiration, and CoC
8 applications be submitted 30 days prior to expiration.

9 The CoC is a general license option at reactor sites
10 with an existing Part 50 or 52 license, using an NRC approved dry
11 storage system design. As a result, CoCs can be located at numerous
12 sites, as shown by the number on the graph. Since the updated rule,
13 the first 40 year site-specific renewal application was submitted by
14 Calvert Cliffs in 2010, followed by Prairie Island in 2011.

15 Our first CoC renewal came in 2012, with VSC-24 for
16 three sites, and a second in 2015 for the AREVA TN Standardized
17 NUHOMS System at 17 sites. Between 2016 and 2024, we will
18 receive 17 additional applications, with a spike of six in 2020 covering
19 36 sites.

20 These applications are in addition to our normal
21 baseload of traditional storage and transportation case work, along with
22 the potential interim consolidated storage facility submittals in 2016.
23 As a result, both staff and industry identified the need to develop a more
24 efficient, reliable, streamlined and effective renewal review process to
25 address the existing and upcoming surge of renewal applications.

26 Next slide, please. Before Project AIM, we identified

1 efficiency needs to the storage renewal process and began an initiative
2 in October 2013 to develop a more stable, predictable and efficient
3 storage renewal framework. In late 2013, we searched the agency for
4 talented, cognizant staff to support this goal. In early 2014, we
5 launched the intra-agency storage renewal team, with a charter to
6 assess the current regulatory framework for storage renewals, and
7 determine what changes were needed to create a more nimble and
8 agile process to handle the surge.

9 The team included staff from the Division of Spent Fuel
10 Management, with close coordination with the regions, and to draw on
11 the experience from the reactor renewals, staff from the Division of
12 License Renewal in NRR and Division of Engineering in Research.
13 The team also included legal staff from OGC.

14 The team discussed the issues identified with our
15 renewal review experience and reflected on, learned from and
16 leveraged the reactor renewal experiences. In addition to reviewing
17 NUREG-1927 Rev 0, the team reviewed a number of industry, DOE
18 and NRC-sponsored technical reports, storage and reactor operational
19 experience, applicable consensus codes and standards, and NEI-1403,
20 entitled "Format, Content and Implementation Guidance for Dry Cask
21 Storage Operations-Based Aging Management."

22 NEI-1403 is a parallel guidance for storage renewal
23 applicants, which complements the NRC staff review guidance in
24 NUREG-1927. For full openness and transparency purposes, we
25 engaged extensively with the affected stakeholders on a variety of
26 renewal topics over this time, to include over 20 public meetings since

1 2014.

2 In the end, the team concluded that a change to the
3 regulations was not warranted, but recommended a revision to
4 augment and clarify existing guidance in NUREG-1927, and develop
5 additional guidance in the Managing Aging Processes for Storage or
6 MAPS report, which is comparable to the NUREG-1801 GALL or
7 Generic Aging Lessons Learned report for reactor renewals.

8 The team developed an operations-focused aging
9 management framework that is learning, proactive and responsive to
10 operational experience, research findings, and focused on achievable
11 operational metrics and methodologies to perform its monitoring. The
12 core of the operations-focused approach are the aging management
13 programs that are designed to detect, assess and address the effects of
14 age-related degradation, which may require replacement, repair or
15 replacement actions if unacceptable aging effects are detected.

16 We published a draft NUREG-1927 Rev 1 for public
17 comment in July, and are currently developing a MAPS report which will
18 include the generic aging management programs approved by the staff.
19 Along with NUREG-1927 Rev 1 and NEI-1403, the MAPS report will
20 clarify the staff's expectations to reduce the NRC and industry burden
21 long term, with a sustainable forward-looking operations-focused
22 process that will increase regulatory stability, predictability and
23 transparency for the upcoming surge of renewal applications.

24 As proof this approach works, we proposed and gained
25 support to apply this framework with the industry and affected storage
26 renewal applicants in July 2014. We approved the Calvert Cliffs

1 site-specific renewed license in October 2014. We're anticipating the
2 Prairie Island renewed license to be issued this month, and are nearing
3 completion of a technical review for the VSC-24 renewed CoC.

4 Additionally, this robust and effective framework is
5 applicable to potential interim consolidated storage facility reviews.

6 Next slide, please. The next couple of slides provide
7 examples of how we used the operational experience from dry storage
8 inspections in the development of NUREG-1927 Rev 1. This slide
9 focuses on concrete system inspections, which demonstrate that they
10 are, in general, performing adequately.

11 The interior and exterior visual inspections of the
12 concrete overpacks have shown degradation. The top left image
13 shows the impaction routes for an interior inspection of a Calvert Cliffs
14 system in 2012. The lower left photo is from a voluntary inspection
15 conducted in early 2014 at Diablo Canyon.

16 Observations include concrete cracks, as seen on the
17 top middle photo from a VSC-24 overpack at Palisades, which was
18 subsequently repaired. The bottom middle photo shows the interior of
19 the Calvert Cliffs HSM showing water ingress and leaching.

20 The photos on the right are a great example of how this
21 operations-based aging management process works. They're from
22 the Idaho National Laboratory Three Mile Island 2 horizontal storage
23 module, which shows freeze thaw cracks on the roof and sides. The
24 licensee determined that repairs were needed to ensure that the
25 shielding and structural functions of the system were maintained.

26 We used this operational experience to create the

1 reinforced concrete structures AMP in NUREG-1927 Rev 1. This
2 aging management program supported current licensee practices and
3 referenced the appropriate American Concrete Institute code, to
4 provide clarity for the staff expectations regarding inspection,
5 assessment and actual acceptance criteria for corrective action.

6 Next slide, please. This slide focuses on visual
7 inspections of canister and interior canister support structures. In
8 general, dry storage canisters and canister support structures are
9 performing adequately.

10 The upper left photos are from the Three Mile Island 2
11 system, showing anti-corrosion coating degradation and non-safety
12 significant corrosion of a canister with near pristine canister support
13 structures. The other images show corrosion, water intrusion, staining
14 and atmospheric deposits on a canister and canister support structures
15 at Calvert Cliffs.

16 Although these photos may look like significant
17 corrosion, it was determined that the observed corrosion had no
18 immediate safety impact for corrective actions. We used this with
19 relevant reactor operational experience and research results to develop
20 the localized corrosion and stress corrosion cracking aging
21 management program in NUREG-1927 Rev 1 for stainless steel
22 canisters near chloride sources, such as marine sites, salted roads,
23 discharge from cooling towers, etcetera.

24 Stainless steel canisters account for greater than 85
25 percent of the U.S. fleet, and may be susceptible to these aging effects.
26 We're working with the industry and DOE experts through the American

1 Society of Mechanical Engineers to leverage their extensive expertise,
2 to develop a consensus codes and standards to address those
3 potential aging effects.

4 Next slide, please. While maintaining our
5 independence, we're leveraging technical expertise by optimizing
6 limited resources to address several key technical issues, as Cathy
7 mentioned. As previously mentioned, we're leveraging industry and
8 DOE experts to inspect and address potential chloride SCC, stress
9 corrosion cracking, on stainless steel canisters through the consensus
10 codes and standards process.

11 As Cathy mentioned, we're leveraging DOE and
12 industry resources to address the issue of high burnup fuel
13 performance, for continued storage and eventual transportation. For
14 storage, we developed a high burnup fuel monitoring AMP, aging
15 management program, which provides the regulatory expectations and
16 acceptance criteria for a surrogate surveillance program, currently the
17 Department of Energy's high burnup demonstration research and
18 development program.

19 For transportation, we're cooperating with DOE to
20 evaluate the performance of high burnup fuel at Oak Ridge National
21 Laboratory. Thus far, the program is demonstrating that the robust
22 nature of the high burnup fuel cladding, during normal conditions of
23 transportation, and reaffirms our regulatory position that transportation
24 of high burnup fuel is safe.

25 We're also benchmarking our thermal models to better
26 predict the temperatures experienced internally and on the canister

1 surfaces, while also participating and providing international support on
2 a number of technical and regulatory issues.

3 Next Mark will talk about our inspection program.

4 MR. LOMBARD: Well good morning again. May I
5 have the first slide please? So the ISFSI inspection oversight program
6 is designed to ensure compliance with the requirements contained in
7 NRC's regulations, license conditions and technical specifications.

8 The region, with input and assistance from NMSS,
9 develops an inspection plan as early as possible in the process, with
10 the goal of issuance well before the licensee or the applicant intends to
11 begin storage of spent fuel in the ISFSI. Our inspections focus on
12 design, construction, fabrication, pre-operational testing and then
13 operations, which will include quality assurance, security, emergency
14 planning and radiation protection.

15 Headquarters leads the inspections related to design
16 and fabrication with regional support, while the regions have the lead
17 for the other inspection activities. In this particular slide, you can see
18 at the top it's a cask movement evolution, while at the bottom is a
19 picture of ISFSI out at Calloway.

20 A key aspect of the inspection program is our response
21 to events or situations that require further review. The regions
22 completed follow-up activities for multiple issues over the last couple of
23 years, to ensure safety and security of dry cask storage programs.

24 I'll give you an example of just a couple of those. At
25 Sequoyah, one of the events involved the improper operation of the
26 spent fuel transfer cask neutron shield, which led to elevated radiation

1 levels adjacent to the cask. This particular event involved substantial
2 coordination with the program office, and resulted in the agency issuing
3 an information notice, IN-2015-003.

4 At North Anna, the region conducted an inspection to
5 assess and verify the licensee activities, to repair the ISFSI dry cask
6 storage system were adequate to ensure they're still capable of
7 performing their required safety functions after the seismic event on
8 August 23rd, 2011.

9 Just recently in June of 2015 at La Crosse, Region III
10 issued a notice of violation for the licensee's failure to follow their
11 approved emergency plan regarding plant staffing, and for failing to
12 follow approved emergency plan for conducting exercises and drills.

13 These are just a few examples, but in all cases in these
14 inspections and event responses, all of the outcomes are shared and
15 discussed between the regions and with headquarters for awareness
16 and consistency with implementation of the inspection program.

17 Next slide, please. There were a number of
18 construction and initial operational inspections conducted over the last
19 two years, which highlight the importance of a detailed pre-operational
20 inspection.

21 Some of these include Nine Mile Point, Pilgrim, Beaver
22 Valley and Calloway. The picture you see up here on the slide is an
23 ISFSI out at Pilgrim. That's the picture at the top. The picture at the
24 bottom is the transport equipment, loading a cask into a horizontal
25 storage module at Limerick.

26 All sites completed pre-operational inspections. Due

1 to the in-depth inspection activities associated with these types of
2 inspections, the initial loading and operations proved to be very
3 successful. That being said, ISFSI pre-operational and initial
4 operations inspections rarely go as planned.

5 The staff scheduled the inspections based on the
6 licensee's planning schedule, but there's a lot of coordination that goes
7 on. As in the case with many construction projects, scheduling delays
8 including setbacks for weather and for equipment problems are not that
9 uncommon.

10 That being said, a couple of examples. Zion is a good
11 example of a successful operational campaign. The licensee safely
12 removed all spent fuel from the spent fuel pool and completed their 61
13 dry fuel storage cask campaign in January of this year.

14 The project was completed in 52 weeks and without
15 significant issues, and well below the radiological dose projections.
16 Catawba successfully spent, excuse me. Catawba successfully
17 stored spent fuel using NSC's MAGNASTOR system for its ISFSI.
18 That acronym stands for Modular Advanced Generation Nuclear
19 All-Purpose Storage System. This is the first use of the MAGNASTOR
20 system.

21 At ANO, the licensee discovered that the location
22 where the spent fuel canister stack up operations occurred was
23 inadequate to support the load during a design-based seismic event.
24 The licensee then had to construct a cask transfer facility located
25 outside the fuel handling building, to perform the canister transfer to the
26 concrete storage cask.

1 In December of 2013, regional inspectors reviewed the
2 construction and dry run activities associated with installation of ANO's
3 new cask transfer facility. At Calloway, Region IV inspectors
4 completed inspection activities associated with the first of a kind
5 underground storage Holtec UMAX system.

6 This particular ISFSI construction related activity
7 started in July of 2014, and was finally completed in March of 2015.
8 The inspection included nine separate trips to the licensee's facility, to
9 observe various stages of construction of the UMAX ISFSI.

10 Can I have the next slide, please? Now as is the case
11 in our inspection program in other technical areas, we continue to learn
12 from our experiences and look for opportunities to improve the program
13 where we can. The regional offices work closely with each other and
14 collaborate with the program offices to share our experiences.

15 Some of those discussions result in generic
16 communications with the industry as I mentioned earlier, while others
17 simply help us with inspection scheduling. Either way, we continue to
18 look for opportunities to use our resources, both human capital and our
19 travel dollars as efficiently as possible, while maintaining a robust
20 inspection program, from the design phase to pre-operational
21 inspections, construction and ultimately to fuel loading operations.

22 I fully expect that the inspection program will continue
23 to evolve, as we see more facilities and as new designs come onto the
24 market. As Mr. Lombard mentioned in his remarks, ISFSI licensing
25 and inspection activities continue to have a significant amount of public
26 outreach.

1 The regions will continue to participate in interactions
2 with the local communities, to help explain our regulatory oversight and
3 provide information to interested stakeholders. With that, I'll turn it
4 back to Mr. McCree.

5 MR. McCREE: Thanks Mark. This concludes our
6 presentation of the spent fuel storage and transportation business line.
7 We'd be pleased to answer any questions you may have at this time.

8 CHAIRMAN BURNS: Okay. Thanks again for the
9 presentations, and again we'll begin with Commissioner Ostendorff.

10 COMMISSIONER OSTENDORFF: Thank you all for
11 your briefings here. Very helpful. Cathy, I just want to comment. I
12 applaud the staff's sending up to the Commission their
13 recommendation to delay the independent spent fuel storage
14 installation security rulemaking. I think that was appreciated, the
15 chance for the Commission to comment and act on that. So thank you.

16 Mark, I'm going to start out with you if I can on your
17 Slide 43. We talked about two paradigm shifts. I want to make sure
18 that I'm understanding the Part 72-71-72 scenario comment you made,
19 and that I think you used a phrase that "this paradigm shift may
20 involve some regulatory and technical challenges."

21 Can you help? I want to make sure I understand what
22 your comments are. Are there concerns with the existing Part 71 and
23 72, as to their adequacy for addressing an, you know, an interim
24 consolidated storage facility?

25 MR. LOMBARD: Not at all. Part 72 is adequate as
26 written to license an interim consolidated storage facility. It's more the

1 transportation itself and what, if any, activities need to be conducted
2 before those packages are moved off site.

3 COMMISSIONER OSTENDORFF: Okay. There's
4 not any -- is there a need for us to look at changing any of our rules,
5 existing rules for this subject matter?

6 MR. LOMBARD: No sir, not in 72 or 71.

7 COMMISSIONER OSTENDORFF: Okay, good. I
8 just want to make sure I understood that. Al, let me shift to you for a
9 minute here, and I want to -- a couple of questions associated primarily
10 with aging and renewals. So aging just to begin with.

11 I know there's big differences on the reactor side
12 between a boiling water reactor and a pressurized water reactor. I am
13 less familiar personally with the differences between cask, containers,
14 etcetera.

15 So a couple of questions relating to aging
16 management specifically. Are there any key subject areas that have to
17 be explored in the container cask aging arena, that are not already
18 explored in the reactor aging management arena?

19 MR. CSONTOS: Well, what we've used is we've used
20 a lot of the reactor operational experience for passive system, systems
21 that are the same materials, same environmental conditions, and used
22 them to inform our aging management programs on our side of the
23 house.

24 We have examples that we have to be aware of on our
25 side, that there were certain degradation mechanisms that were active
26 on reactor systems, the same materials. So that's where I was going

1 with some of our aging management programs.

2 We're working with DOE and the -- and the industry,
3 and EPRI and the whole -- and a large international group as well, to
4 look into more of these. When are these effects possibly going to
5 happen in canisters, and where and which locations are the most
6 susceptible?

7 The more we're looking, the more we're finding out that
8 there are -- it's more than just Marine sites, locations near oceans.

9 COMMISSIONER OSTENDORFF: So let me -- I
10 know in the late 70's, I was dealing with a steam generator inspection
11 when I was an operating engineer on a submarine, and at that time, we
12 had a chloride stress corrosion crack and it was a big concern. I'm not
13 an expert in this, but I'm familiar with it from an operating engineering
14 perspective, that are the mechanisms for chloride stress corrosion
15 cracking, for instance, that different between the reactor world and the
16 container world?

17 MR. CSONTOS: The only real difference is that we
18 have a unique application with the heat loads that are in our canister, as
19 compared to sometimes there is refueling water storage tanks, things
20 like that, that are not as warm or hot as our systems. So the
21 mechanisms, the technical issues are a little bit different but similar, and
22 so it's comparable.

23 COMMISSIONER OSTENDORFF: Okay. So let me
24 go to -- that's helpful. Thank you. Let me pause the following then.
25 Let me go into really looking at license renewal. From one site, you
26 know, comparing one site to the other, can you talk about -- you know,

1 the Commission goes and visits nuclear power plants that have ISFSIs
2 on site, which most of them do.

3 We all look at them, and they don't look a whole lot
4 different quite frankly, one to the other. I'm not trying to downplay the
5 technical construction or design of those, but they don't look a whole
6 lot -- I don't see a lot of variations.

7 So when you're looking at an ISFSI license renewal
8 from one site to another, are they very different in approaches that you
9 have to look at from the NRC staff perspective?

10 MR. CSONTOS: Well, we have -- it's about the active
11 degradation or potential active degradation. It's similar to what a
12 famous Secretary of Defense once said. There's known knowns,
13 known unknowns and unknown unknowns. Right now, we have
14 several known knowns, and those are things that we've gotten from the
15 reactor operational experience, our own storage operational
16 experience.

17 There are some of the known unknowns, which are
18 those that we have seen on the reactor side, but we haven't either
19 looked for or found yet on our side. It may just be an incubation time
20 before they do happen.

21 COMMISSIONER OSTENDORFF: Can you give us a
22 hypothetical one of these?

23 MR. CSONTOS: It's the chloride stress corrosion
24 cracking that we mentioned. That one is common for stainless steels,
25 and in sheltered environments that these are, for those that are out
26 there, we've had events at Koeberg, at St. Lucie.

1 We have -- I looked into some of our databases and it's
2 been in the hundreds of examples in the reactor world, where we have
3 conditions that are similar to our reactor colleagues in their systems,
4 and we're just trying to see -- we're trying to determine when we would
5 expect this to happen.

6 Our research, our data, EPRI's work and their data,
7 industry's work and data look to this being a decades problem, not a
8 near-term problem. But that why it impacts us on renewals.

9 COMMISSIONER OSTENDORFF: Just my reaction,
10 having been around this on the Navy nuclear propulsion plant side for
11 many years, I'm not sure it's rocket science is my experience. So I'm
12 just curious as to, you know, I could imagine there might be some who'd
13 say let's go study this for another 10 or 20 years on an R&D project.

14 I think we need to -- just my personal view is we need
15 to be very careful about making something more complicated than it
16 needs to be, because there's tremendous experience in this one
17 corrosion mechanism, and there is volumes and volumes of Ph.D.
18 dissertations, scientific journal articles on corrosion.

19 MR. CSONTOS: Absolutely.

20 COMMISSIONER OSTENDORFF: And so I just
21 caution us that we should not try to make this too challenging, because
22 I'd say that we probably have 85 percent to 90 percent of the knowledge
23 level we need in order to dress this particular -- that's my point.

24 MR. CSONTOS: We completely agree. We
25 completely agree, and that industry -- in fact Chris Cummings, who is
26 here for NEI and myself have brought up the issue to the Department of

1 Energy, as well as to the industry as a whole. We're focusing on
2 inspection programs. We just got back from Palo Verde, where there
3 is an effort by EPRI to look at robots, robotic systems that would go in
4 and just inspect.

5 We don't necessarily need to research this to death.
6 What we need to do is just get the operational piece, and that's the
7 whole effort in the aging management programs. All the things that
8 we've done and the renewal strategy is to create it as an operations
9 approach.

10 COMMISSIONER OSTENDORFF: So an operating
11 experience carryover to inform future inspections. So I want to give
12 Mark a chance to perhaps comment on this.

13 MR. LOMBARD: I'll admit, I can't -- I can't top Al. He
14 is truly the expert in this field, and what I've learned over the short time
15 being back to the region is that the issue he's talking about, the stress
16 cracking erosion and I'm coming up to speed on those issues. But I'm
17 certainly not at a position I could answer any better than Al can.

18 COMMISSIONER OSTENDORFF: Oh no. I'm
19 not -- I'm not asking you to be -- to comment on the technical aspects.
20 But as far as the approach, to use operating experience to inform future
21 inspection activities, as opposed to embarking upon a ten year
22 research project. Can you comment on that piece?

23 MR. LOMBARD: No, no, absolutely. I mean as I
24 mentioned in the previous business line, we have periodic calls to
25 discuss those very issues after inspections. If we identify issues, if we
26 identify aging management issues in particular, there's a -- there's a

1 dialogue between the regions.

2 But that dialogue with the regions and with Al and his
3 group is all right, are we learning from this? Is this something we see
4 at one site that we would expect to see at another, in the same vein that
5 Al is talking. I don't think we need to research it to death, but there are
6 also new systems coming on, continue to keep coming on new from
7 different vendors.

8 I guess that will have to play into it as well, is to -- is it
9 affecting, by depending on the type of vendor, what type of system it is?

10 COMMISSIONER OSTENDORFF: Okay.
11 Mark -- Al, do you need to say something?

12 MR. CSONTOS: Yeah. Can I just mention one
13 thing?

14 COMMISSIONER OSTENDORFF: Yeah.

15 MR. CSONTOS: We are working with Region IV and
16 Region I at this point to develop inspection procedures. As of right
17 now, we're looking at the temporary inspections, and then going down
18 that road. I did not include it in my slides because --

19 COMMISSIONER OSTENDORFF: Well, I wanted to
20 ask you a question on -- just that I ask both of you just quickly. I
21 recognize there's a short time remaining. How do you assess our
22 agency's consistency of inspection approach from one region to the
23 other in this area?

24 MR. CSONTOS: Assessing the inspection? I
25 mean --

26 COMMISSIONER OSTENDORFF: Towards the

1 consistency, the Region I versus the III.

2 MR. CSONTOS: We do have inspection procedures
3 that is pretty consistent between the regions, and again we have the
4 calls talking about inspection findings. What are we seeing, the things
5 we need to do differently. We're continuing to look at the inspection
6 program, in fact, to see does it need to be tweaked, depending on
7 experience.

8 COMMISSIONER OSTENDORFF: Okay.

9 MR. LOMBARD: We also hold periodic counterpart
10 meetings with the regions. Our folks who have the program on the
11 program, they have periodic, I think it's monthly or maybe even every
12 other week we have a counterpart call with the regions. But I want to
13 say too there's two legs to our going forward on this particular aspect.

14 It's not research-focused at all. It's really focused on
15 the two legs of the inspection and putting the AMPs, aging
16 management programs into place, and making sure that those systems
17 are inspectible. So encouraging industry, and they've done a pretty
18 good job of coming alongside and making sure that they are developing
19 those inspection methods and technology to keep moving and being
20 able to identify the issues.

21 COMMISSIONER OSTENDORFF: Okay.

22 MR. LOMBARD: And industry has done a fantastic
23 job on this. We asked them about this less than a year ago, and in
24 about ten months' time, they've gone from having no capability to
25 having robust, being able to go into canisters. We just came back
26 two weeks ago from Palo Verde, where they took a robot and they went

1 into inspect canisters.

2 COMMISSIONER OSTENDORFF: Good. Well
3 thanks for sharing that. Thank you all for your presentations.

4 CHAIRMAN BURNS: Thanks. Commissioner
5 Baran.

6 COMMISSIONER BARAN: I want to start by asking a
7 few questions regarding DOE's plan to proceed with a separate
8 geologic repository for defense high level waste. I think there's -- I
9 think there's broad agreement that this approach is consistent with
10 existing law, and that NRC would license such a facility if we got an
11 application.

12 As we all know, obviously NRC doesn't set the overall
13 high level waste strategy, disposal strategy. We're the licensing
14 agency. So I want to understand whether we're ready to conduct a
15 licensing review if we receive an application of this sort.

16 Cathy, from your point of view, are NRC's current Part
17 60 regulations sufficient to conduct an effective review of an
18 defense-only waste repository application?

19 MS. HANEY: I don't believe they are. Back when we
20 revised Part 63 to address Yucca Mountain, and Part 63 being a Yucca
21 Mountain-specific regulation, we essentially put Part 60 on hold. So
22 that rule is very old. It was not brought current with regards to
23 performance assessments, risk-informed performance-based
24 rulemaking.

25 It has not been brought current, and we did that
26 cognizantly and had engagement with the Commission on that. The

1 last time that as a staff we looked at Part 60 was in the 2012 time frame,
2 to look at were we prepared if a venue other than Yucca Mountain came
3 to be, and we realized that it was not appropriate.

4 It would take us several years to work on Part 60.
5 Concurrent with our working, there's also the Environmental -- the role
6 that the Environmental Protection Agency with their Part 191 would
7 most likely need to be updated.

8 About a month and a half ago I had a conversation with
9 my counterparts at EPA with regards to just realizing that if the
10 administration does go forward, that we would have to work on Part 60
11 and Part 61, and at that time, neither of us are.

12 I would envision if we would go forward with a revision
13 to Part 60, we -- that we may want to consider an advanced notice of
14 proposed rulemaking. We don't do that for all rules, but this may be
15 one that we actually would want to step back and consider, and provide
16 an approach to the Commission on the pros and cons of doing that,
17 before we went directly to developing a proposed rule and then onto a
18 final rule.

19 COMMISSIONER BARAN: Okay. DOE's
20 contemplating using bore holes to dispose of some of that defense high
21 level waste. As I understand it, Part 60 doesn't address bore holes at
22 all.

23 MS. HANEY: Correct.

24 COMMISSIONER BARAN: What changes would we
25 need to make to facilitate a licensing review of bore holes?

26 MS. HANEY: To date, staff has been -- has monitored

1 what the Department of Energy has been -- their interest in bore holes
2 and the work that they're doing in the research area, operational
3 experience. We have not had the resources to go and look to say what
4 would -- what would need to be changed in overlay.

5 So that would be something that we would need to do
6 and have not looked at to date. But at the same time, we have been
7 staying in very close touch with DOE about what they're doing. So
8 should the Commission direct staff to go forward with that, we are
9 current with what's going on.

10 In fact, there's a meeting that is being sponsored, the
11 NWTRBS is sponsoring it in October, and I have staff in attendance but
12 not presenting.

13 COMMISSIONER BARAN: Okay, and you mentioned
14 some of the aspects of the Part 60 regulations that are out of date. In
15 broad terms, aside from potentially addressing bore holes, what
16 revisions would need to be made to Part 60, to bring it up to date?

17 MS. HANEY: I think we need to go back and look at
18 the aspect of how the performance assessment is brought into the
19 regulatory framework, and then look at really experiences, lessons
20 learned from preparing the safety evaluation report on Yucca Mountain,
21 because we -- we did a lessons learned.

22 Our technical staff realized that there were some not
23 big challenges with ISFSI, but areas where the rulemaking could be
24 tweaked. Those would be the sorts of things that we would want to go
25 back and look at, in bringing Part 60 forward.

26 COMMISSIONER BARAN: Okay. My

1 understanding is that DOE currently may not have funding to prepare
2 an application of this sort, and it's not in our budget. Who knows if they
3 receive funding in the near term or have available funds. If DOE had
4 funding to proceed with an application, how soon would you expect
5 NRC's pre-applications discussions would begin with DOE? Is that
6 something that -- weeks, months, years after they decided and had
7 funds to proceed?

8 MS. HANEY: I guess you could almost say -- I mean
9 we're in constant engagement with the Department of Energy now.
10 Whether it's specific to Mark's area on storage, very much routine -- and
11 Mark can speak to this if you'd like, the routine interaction on going
12 forward with centralized storage.

13 In the area of the geological disposal, again we are
14 very at all levels, at the branch level, office level, division level, a lot of
15 contacts with DOE. So we're staying very close. So it would be very
16 easy to initiative the pre-licensing discussion pre-application.

17 Again it's, you know, at what point do you enter
18 into -- do you call it a routine with our federal partners, you know, a
19 potential licensee, or do you put that label on oh, we're officially in
20 pre-application discussion. That's a little bit, you know, the gray zone
21 on when you exactly start.

22 Now it also raises the question of a staffing and a
23 resource issue. So I would just like to mention that. We're not staffed
24 or not resourced. I guess we do have the critical staff, the technical
25 needs to enter into those conversations. But from a resource, FTE
26 and budgetary standpoint, we don't have that.

1 I would also say that again, timing is everything.
2 We've recognized this as we've been dealing with Yucca Mountain over
3 the years. The longer that we move forward and that the country
4 moves forward in siting a geological disposal, some of the critical skill
5 sets and the corporate knowledge that we have is leaving the agency.

6 I have, I believe, one, maybe two individuals left on my
7 staff that worked on Part 63. They're very soon to leave the agency,
8 and as hard as we try to capture the knowledge through all the different
9 avenues we have for capturing, you never, you know, you never can
10 capture it all.

11 So the longer it takes for us to start work on something
12 like revising Part 60, it will take us longer to be able to gear up, to be
13 able to go full speed at revising a regulation, because we just need to
14 build that knowledge base again.

15 COMMISSIONER BARAN: Uh-huh, and if there
16 comes a point where there are concrete pre-application discussions
17 between NRC and DOE, would you want to have an updated Part 60 in
18 place to have those kinds of discussions? I would imagine --

19 MS. HANEY: Yes.

20 COMMISSIONER BARAN: --in other licensing
21 contexts, you'd want to know kind of what the rules of the game are
22 before you really get into any kind of detailed discussions about how to
23 proceed.

24 MS. HANEY: Yes.

25 COMMISSIONER BARAN: Okay, and then one other
26 question I wanted to ask about was regarding potential consolidated

1 interim storage facilities. I didn't realize but saw on the materials that
2 we received for this meeting that the 17 shutdown sites currently use 33
3 different cask designs. I didn't realize it was that many.

4 How would that affect how we would license these
5 facilities? Would an applicant need to specify which types of casks
6 they will be accepting at their facility in the application?

7 MR. CSONTOS: Absolutely. They would have to
8 specify exactly which canister or non-canistered system, because
9 some of those might be bolted systems as well.

10 They would have to specify that in the application.
11 The waste control specialist has already been in for at least one formal
12 pre-application meeting, and that detail was part of their pre-application
13 materials.

14 COMMISSIONER BARAN: How challenging would
15 that be for license application review purposes? Is that --

16 MR. CSONTOS: It's actually, in my mind, more
17 challenging for the operator to keep track of all those aging
18 management programs for each one of those different systems,
19 because each one of them has a different life. They were brought in at
20 a different time. So the aging management requirements for some of
21 them, if they were loaded less than 20 years ago, hasn't even started
22 yet.

23 So that's the challenge, to make sure -- an inspection
24 challenge as well, but to make sure that they're tracking that for each
25 one of those different systems, and making sure the AMPs -- because
26 their AMPs might be different. They might have a little bit different

1 materials, different thicknesses, different heat loads. It's going to be
2 complicated.

3 COMMISSIONER BARAN: Okay, thank you.
4 Thanks, Mr. Chairman.

5 CHAIRMAN BURNS: Well thanks again for your
6 presentations. A couple of questions I have in terms of the canisters
7 and ISFSIs primarily. Is there any particular learnings we've gotten out
8 of international experience with the casks or cask management, that
9 we've seen? I thought somebody mentioned something from Koeberg
10 in South Africa or maybe you did, Al.

11 MR. CSONTOS: Yes. We are using international
12 databases of operational experience from reactor sites to inform us on
13 what are those things that we need to be thinking about, those known
14 unknowns on our side.

15 CHAIRMAN BURNS: Yeah.

16 MR. CSONTOS: And then from that, then use the
17 inspections to then look find those unknown unknowns, if they happen.
18 It may not. These systems are performing pretty well so far.

19 CHAIRMAN BURNS: Okay, thanks. One of the
20 things, and I think again I'll stick with you, Al. In terms of one of your
21 comments showing some photos from I think inspections at Calvert,
22 yeah, at Calvert Cliffs. You talked about -- you said, you know, the
23 corrosion there and you made the comment that the observed corrosion
24 had no immediate safety impact for corrective action.

25 Can you translate that? Because you know, what I
26 see sometimes is we get where we report our inspection findings, and

1 we get sort of dramatic, you know, reporting about we found this in
2 terms of cracking, which then at the canisters, which then comes back
3 to us in terms of, you know is the ISFSI at X site safe? Is the canister
4 safe?

5 So I think it might help here. I'll give you a couple of
6 minutes maybe to give some context. When we identify these types
7 of, you know, types of issues and observations through our routine
8 inspection program, what's the sort of immediate? We see these type
9 of things. What does that mean to say there's no immediate impact
10 and in terms of how we proceed forward?

11 MR. CSONTOS: Well, if you take a look at the photos
12 on Slide 53, let's say take the bottom left photo, for example.

13 CHAIRMAN BURNS: Yes.

14 MR. CSONTOS: This is an iron contamination spot
15 during the fabrication. That isn't stainless steel. Stainless steel
16 should not be looking like that. And so -- so our staff and the licensee's
17 staff, the licensee provided their condition report, provided all the
18 information.

19 We concurred with their evaluation, that this is not
20 something that is related to the stainless steel, that is the base of the
21 canister system. It's the contamination on the surface. It's like -- it's
22 basically when they make the metal, they roll it and there's a
23 contamination from another metal that they were just rolling on that, and
24 that was what you see there.

25 That could lead, though, to other effects, and that's
26 what we were letting them know. You don't have an immediate safety

1 issue, but you need to watch this spot later on, because there could be
2 other things happening there.

3 The picture on the bottom right is staining. There's
4 water coming through and there's deposits. They're atmospheric
5 deposits. That's where the chlorides and that's where the sulfates and
6 all the other things that could form on the surface, concrete debris, little
7 dust particles. All that stuff can be there.

8 We saw at Hope Creek, we saw a lot of weed seeds
9 that were on the surface, okay. That's just staining. That's really
10 nothing other than just showing that there are deposits that we have to
11 be thinking about.

12 The upper right corner is just light, light corrosion. It's
13 not even really corrosion. It's just a -- it's more just a discoloration from
14 the welding effects. The middle upper right picture is canister support
15 system that is not a stainless steel system.

16 It is corroding, and we're going to tell them it doesn't
17 look like there's anything right now that is going to preclude that from
18 being able to pull out a canister at this point.

19 We told them they have to watch it. It's part of the
20 operations management piece, aging management piece, where they
21 are going to have to track that, trend it, see if it's corroding more, and at
22 some point in time, they may have to fix it.

23 We are working with the American Society of
24 Mechanical Engineers to create those exact acceptance criteria,
25 go/no-go kinds of acceptance criteria. That is something that the
26 industry would like to have. We would like to have. There is a large

1 effort going on that, and that's helpful for us because it's a consensus
2 process.

3 Rather than us dictating to the industry, we allow
4 everyone to -- experts throughout the world to come in and provide that
5 information.

6 CHAIRMAN BURNS: Okay thanks, because I think
7 the message, what I hear you saying is we're identifying these
8 anomalies. This is not a matter of suddenly the cask is going to fall
9 apart, collapse and in terms of having some sort of immediate safety
10 problem, in terms of having to deal with, you know, hot fuel or
11 something else on the site. So I appreciate the explanation there.

12 Now I'll turn to Mark. In terms of, you know, thinking
13 about this potential construct for the consolidated storage sites, and
14 recognizing, I think as someone just said, maybe Al said we have -- or
15 maybe you said that we have existing sites throughout the country
16 which are sort of smaller because they're, you know, they're the Maine
17 Yankee sites or the Adam Neck or whatever, where you may be down
18 to nearly an ISFSI.

19 Is there anything that, as we start to think about a
20 larger, a larger site that no so much surprises us but it sort of is different
21 in terms of what we may have to think about. You may have touched
22 on one in the response, and I think Commissioner Ostendorff's question
23 is you have multiple canisters or casks that you have to deal with.

24 Are there other things we're thinking about that may
25 make it a bit different than our experience so far?

26 MR. LOMBARD: We've talked through that with

1 several discussions, and when you think about it, is there -- is the
2 regulation, the regulatory framework scalable and the regulatory
3 framework itself is scalable. There are some other considerations you
4 think about. If you put all these systems too close together, do you
5 have any thermal issues that you want to take care of, and we've
6 already thought through that.

7 Some of that was identified early on in PFS and it was
8 resolved, and we'll want to make sure that we still have that same line of
9 thinking from a thermal standpoint. So we are thinking through those
10 issues and we're taking them on one by one as they come up.

11 Some other issues might involve security as well, and
12 we're engaging in sort of very actively have engaged them, had several
13 conversations about the security aspect. Does that make any
14 difference if you have a thousand versus 32 of them sitting on the same
15 site, and we're working through those issues.

16 We're actually having a pre-application meeting with
17 risk control specialists, two of them next week, one on Wednesday, one
18 on Thursday, and the Thursday meeting is a closed meeting, to talk
19 about security measures.

20 MS. HANEY: Chairman, one other thing that I would
21 add that we haven't explicitly said is the concept of repackaging the
22 waste. This gets into the paradigm that Mark spoke about. But it also
23 comes into play with these number of different types of systems that
24 come into play.

25 So you don't typically see the repackaging issue as
26 strongly at the end of their drill (phonetic) sites. But I think it's

1 something and whether it's a near-term thing that we'll need to consider
2 or it's something that may be longer term. But I think again, we have
3 the regulatory framework for it, but it's something I think we need to still
4 keep in the front of our mind.

5 The other thing that we haven't touched on so far in
6 today's discussion is there is the big issue of transporting the fuel from
7 the site of origin to the consolidated area. Again, regulatory
8 framework-wise we have the regulations. But there's still a lot of
9 external engagement that will need to come into play, and whether
10 that's the licensee, the Part 50 licensee doing that engagement, the
11 DOE doing that engagement, NRC being engaged in that, that is --

12 Again, whenever we get into a lot of external
13 engagement, it's very resource-intensive. But it's very well worth it,
14 and I think the more that we can be involved up front in those
15 discussions, the better off at a national level we'll be.

16 CHAIRMAN BURNS: Okay. Thanks.
17 Commissioner Svinicki.

18 COMMISSIONER SVINICKI: Well thank you all for
19 your presentations, and I want to commend the hardy few that have
20 stayed. This business line is exciting, interesting stuff, so I don't know
21 why. Maybe Joaquin is bearing down on us and we all don't know it,
22 and everybody's evacuated for that reason. Maybe I don't know what's
23 going on.

24 MR. LOMBARD: I think it's an exciting business line,
25 Commissioner.

26 COMMISSIONER SVINICKI: So again, you know,

1 this is an interesting area. I want to pick up on my colleagues, who
2 have covered a lot of very fruitful ground. I just had a couple of things.
3 I appreciate that you have tried to quantify the renewal surge, and really
4 prepare for that.

5 It is not efficient for organizations to resource towards a
6 surge. So you've looked at the smart measures that you can take. I
7 commend that kind of forward thinking, and it sounds like you've had a
8 lot of engagement, to kind of ventilate to your planning and your
9 approaches to that. I think that that's also good, so there won't be any
10 surprises for any of the folks coming in as a part of that surge.

11 In some of these meetings in the past years or
12 meetings on this topic, there's been this discussion about perhaps
13 frustration. I don't really have a frustration over it, but there is this
14 dynamic that the regulator's willingness to renew certifications for older
15 packaging, just packaging in general, then there is a lack of incentive in
16 the vendor community to develop and go through the expense of
17 certifying new, perhaps more modern packaging.

18 Like my colleagues, I'm sure in addition to going to
19 power reactors, we also sometimes go into research or medical
20 settings, where you'll see in a lab and they'll say "Oh, and that's our
21 package over there for transporting it," and sometimes it's seen some
22 mileage on the road on some of that packaging.

23 So you know, what's your sense? I think that it is
24 really a chicken and an egg thing. If we don't -- if there isn't certified
25 packaging, then there isn't a movement of these materials around the
26 places where they need to be for commerce or research or other

1 beneficial uses.

2 But on the other hand, it is a fairly substantial
3 undertaking to develop brand new packaging and bring that in for
4 certification. Do you think that in general we're hitting the right sweet
5 spot there in terms of what we're requiring in the renewal process, and
6 yet not kind of creating a circumstance where we're not getting interest
7 in new packaging? Mark, did you want to talk about that?

8 MR. LOMBARD: Absolutely. It's interesting. One
9 thing we didn't talk about is the best part of our engagement with
10 industry and the vendors, especially is we're continuing to encourage
11 them to come up with the new designs that are more inspectible. Not
12 only that, but to maybe eliminate the issues that we're dealing with now,
13 like stress corrosion cracking. Maybe there's heat treatment or shop
14 painting or burnishing of welds or maybe even different materials.

15 We've seen already we have one application in now
16 from one of the vendors, that takes advantage of some of those things,
17 the new different materials that are less susceptible. I'm not going to
18 say SCC proof, but less susceptible to stainless steel stress corrosion
19 cracking.

20 But they've also included inspection ports so the
21 system itself, it's a horizontal system, is more easily inspected. So you
22 don't have to use these very high technology robots to get inside of
23 them.

24 COMMISSIONER SVINICKI: Okay, thank you, and a
25 number of my colleagues have talked about the materials phenomena.
26 I agree entirely with Commissioner Ostendorff, and I guess as a

1 consequence with you AI, since you agreed with Commissioner
2 Ostendorff, that there's a tremendous amount of research and
3 operating experience on the basic phenomenology.

4 What I took though, from your presentation AI and from
5 your responses to Commissioner Ostendorff, is that we are talking
6 potentially about some very protracted time frames. In the business
7 lines we're talking about today, that would even far exceed a 40, 60 or
8 maybe 80 year power plant operating life.

9 So to have that element of looking over the horizon,
10 where we say not only do we anticipate this materials phenomenon to
11 emerge, but on what time frame? How quickly might it progress, and
12 then what -- and you've touched on this already; I'm just kind of
13 recapping.

14 What's the significance of it, because it may look bad,
15 but it may not be terribly significant in terms of the credit we're taking for
16 that material in terms of shielding and other confinement, containment
17 and isolation of these materials from the environment?

18 So I think it's good that we're trying to be ahead of the
19 phenomenology, not to redo the research on it, but to understand its
20 consequence and relevance in this particular area of regulation, and to
21 the safety determinations that we and our successors over the
22 generations might have to make about the continued safety of these
23 technologies. Did you -- do you want to say anything in response to
24 that?

25 MR. LOMBARD: We completely agree with you. I
26 think that --

1 COMMISSIONER SVINICKI: Is that why you were
2 assigned a lot of areas to cover, because you're in really good
3 alignment with everybody?

4 MR. LOMBARD: Well, we want to operationalize this.
5 That's the whole point. I mean the plants, as well as the licensees that
6 are out there, the site-specific ones that are decommissioned sites or
7 whatever, they are already doing a lot of this.

8 It's just that we need to provide a little more guidance
9 to them, to look for the cracks, for example, instead of just looking for
10 other things, the larger, you know, gross corrosion and such. There
11 are these things that has been a little bit of ambiguity over the course of
12 the last four or five years.

13 And so we're giving that to them, and we're
14 providing -- and we're being very open with all stakeholders, with the
15 public and such, and that's why you've probably heard from a lot of
16 stakeholders. You think that there are things happening.

17 We're trying to get ahead of this issue by decades, and
18 by getting ahead of it by decades, we can proactively stop these things
19 from happening.

20 COMMISSIONER SVINICKI: And that's the other
21 thing. You know, as a fan of science fiction and kind of apocalyptic
22 genres, you know, it's interesting to project your mind down to very long
23 time frames and say, you know, can you make the assertion, which we
24 can certainly say that we would have technology to do wholesale
25 nationwide repackaging at ISFSIs.

26 It would be another thing to have the, you know, the

1 confidence to conclude and move forward with a recommendation that
2 that were necessary. It would be a very significant undertaking.

3 So I think to want to kind of be ahead of, you know, with
4 leading indicators and the ability to say, if we ever got to that point, we
5 would have a lot of confidence along the way in our determination that
6 that was or wasn't needed.

7 So you know, that's kind of what I hear. I don't know if
8 you're also a fan of those genres, but it's interesting to project --

9 MR. LOMBARD: Somewhat, yes.

10 COMMISSIONER SVINICKI: -- to project the mind
11 down those avenues.

12 MR. CSONTOS: But we're also leveraging the
13 reactor side repair technology as well. I mean we've had to deal with
14 stress corrosion cracking on the reactor side. I have lived with that for
15 the last ten years of my -- or last two years here, the previous ten on
16 that side of the house.

17 It's lots of repair technologies, lots of technologies that
18 can be brought to bear on our side. It's just a matter of porting it over to
19 our side. Welding of stainless steel is not rocket science. It is
20 something that can be done.

21 There's technologies to repair steam generator cracks,
22 for example, with laser, fiber optic lasers. I mean these are things that
23 can be brought to bear on my side.

24 COMMISSIONER SVINICKI: I think any of us who
25 are homeowners, we learn that don't we, is that if you had gotten ahead
26 of that water leak, you know, in a wall or something and you saw it and

1 you just didn't jump on it, there are -- that can also influence the
2 direction that the overall degradation mechanism takes, is early
3 arresting of some of these degradation mechanisms.

4 So I appreciate that. Well I think something else that
5 Commissioner Ostendorff covered that I -- I think is trickier, maybe,
6 than you all gave an answer to, is looking at consistency and
7 implementation of inspection regimes across the United States. Now
8 we put a lot of eyes on this and a lot of analysis to this on the ROP side.

9 We looked, and as a matter of fact the General,
10 Government Accountability Office recently did a look and found
11 that -- found the reactor side for findings of low significance. There
12 were some very -- there's variability across the NRC regions, and we
13 committed to take a look at that.

14 Now I think the favorable outcome there was that for
15 findings of graduated and higher significance, they found that there was
16 coherency and consistency across the nationwide program. But it's
17 always worth looking at, and I'm not as confident that I would wave my
18 hands over the fact that, you know, across the regions, our inspections
19 of some of these matters, our approach.

20 I know we have inspection manuals and guidance.
21 But there is the individual inspector out in the field, and I think it is a
22 different analysis to come in and look at that, and really compare it
23 across the NRC regions. So I think it may bear -- again, we have a lot
24 on our plate. I'm not saying it's the highest priority. But I think for us
25 and for regional administrators and headquarters program offices to
26 come together, it's good that they meet; it's good that we have

1 counterpart engagement.

2 But a systematic look at that sometimes yields
3 surprises, and I don't know that that exists here, but it could.

4 MR. LOMBARD: It actually does. We did that about
5 three and a half years ago as part of our LPI. We started off with the
6 LPI. We did an inspection enhancement initiative, worked very tightly
7 with the regions across the board. We identified some differences
8 between the four regions and worked to bring those back into more of a
9 consistent approach.

10 But also you mentioned ROP. We're working on
11 pulling into the ISFSI inspection, into the ROP, the Reactor Oversight
12 Program, so that that will build more consistency into our approach to
13 inspection and oversight.

14 COMMISSIONER SVINICKI: Okay, I appreciate that.
15 Again, thank you all for your presentations.

16 CHAIRMAN BURNS: And again, thank you. I'll
17 extend my thanks as well for the presentations this morning. It's been
18 a good discussion on the two business lines, both decommissioning low
19 level waste as well as spent fuel storage and transportation. Unless
20 my colleagues have anything else, we are adjourned.

21 (Whereupon, the above-entitled matter went off the
22 record at 11:27 a.m.)

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