UNITED STATES

NUCLEAR REGULATORY COMMISSION

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MEETING ON STRATEGIC PROGRAMMATIC OVERVIEW

OF THE FUEL FACILITIES AND THE NUCLEAR MATERIALS

USERS BUSINESS LINES

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THURSDAY,

MARCH 2, 2017

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ROCKVILLE, MARYLAND

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The Commission met in the Commissioners' Hearing Room at the Nuclear Regulatory Commission, One White Flint North, 11555 Rockville Pike, at 9:00 a.m., Kristine L. Svinicki, Chairman, presiding.

COMMISSION MEMBERS:

KRISTINE L. SVINICKI, Chairman

JEFF BARAN, Commissioner

STEPHEN G. BURNS, Commissioner

ALSO PRESENT:

ANNETTE VIETTI-COOK, Secretary of the Commission

MARGARET DOANE, General Counsel

NRC STAFF:

VICTOR McCREE, Executive Director for Operations

DANIEL COLLINS, Director, Division of Material Safety, State, Tribal, and Rulemaking Programs, Office of Nuclear Material Safety and Safeguards

MARC DAPAS, Director, Office of Nuclear Material Safety and Safeguards

CRAIG ERLANGER, Director, Division of Fuel Cycle Safety, Safeguards, and Environmental Review, Office of Nuclear Material Safety and Safeguards

LINDA HOWELL, Deputy Director, Division of Nuclear Materials Safety, Region IV

MARK LESSER, Director, Division of Fuel Facility Inspection, Region II

PAUL MICHALAK, Chief Agreement State Programs Branch

P-R-O-C-E-E-D-I-N-G-S

(9:03 a.m.)

CHAIRMAN SVINICKI: Good morning. We meet this morning to hear from the NRC staff in two separate panels with a discussion of strategic considerations associated with the fuel facilities and the nuclear materials users business lines. So we will have, again, two panels compromised of NRC staff, with a short break in between.

And we will begin this morning with our Executive Director, Mr. McCree.

MR. McCREE: Good morning, Chairman, Commissioner Baran, Commissioner Burns. It's good to see you this morning. We appreciate the opportunity to provide you with an update on the strategic considerations associated with the fuel facilities and nuclear materials users business lines, including the current activities, priorities, and emerging focus areas and future of these programs. Both business lines are led by the Office of Nuclear Material Safety and Safeguards, or NMSS.

As you know, these business lines are dealing with challenging issues that involve significant stakeholder engagement. As we have discussed in recent Commission briefings, a significant activity that crosscuts all of the business lines under NMSS's purview is a collaborative initiative with the Office of the Chief Financial Officer to identify and implement actions that will enhance the accuracy of fee billing.

With this initiative, we are addressing various challenges to the fee billing process that have been identified in the past

few years. The speakers with me here today will elaborate on this topic.

Today's briefing will be provided in two parts, beginning with the fuel facilities business line. Within this business line, we proactively plan and prioritize our activities to complete the current workload while looking for opportunities to become more effective, efficient, and agile, and that we are ready to meet future challenges.

The business line has embraced the concept of a matrixed organization, one that leverages the talents of people in both headquarters and the regions to support the execution of our regulatory activities. With knowledge of and versatility to support one another's programs, the fuel facility's business line is able to demonstrate agility by adjusting to changes in workload and responding to emerging issues.

Additionally, the fuel facilities business line continues to improve its effectiveness and efficiency. For example, the business line recently assessed their request for additional information, or RAI, process by benchmarking it against the RAI processes used by other NRC organizations, and identified a few areas that could be enhanced.

We are in the process of implementing those enhancements by updating our internal licensing guidance documents, and Craig Erlanger will elaborate more on this topic during his presentation.

This business line also supports continues improvement by gathering, analyzing, and applying operating experience. For example, in response to the Westinghouse scrubber

condition that was identified in July of last year, we initiated a lessons learned review.

Our goal was to identify whether improvements to our regulatory processes was warranted to increase the likelihood for either the licensee or NRC identifying such facility operating issues and preventing such conditions from occurring in the future. Both of these topics will be discussed in more detail by the subsequent presenters.

Slide 3, please.

Our first speaker will be Marc Dapas, the Director of the Office of Nuclear Material Safety and Safeguards, who will provide an overview of the fuel facilities business line.

Following Marc's presentation, we will hear from Craig Erlanger, Director of the Division of Fuel Cycle Safety, Safeguards, and Environmental Review. Craig will discuss the current fuel cycle program environment.

After Craig, Mark Lesser, to my left, the Director of the Division of Fuel Facility Inspection in Region II will discuss fuel cycle facility oversight activities.

We will end the first panel with Brian Smith, the Deputy Director of the Division of Fuel Cycle Safety, Safeguards, and Environmental Review. Brian will discuss the Westinghouse scrubber lessons learned report and the topic of domestic and international operating experience.

With that very brief introduction, I will now turn the presentation over to Marc Dapas.

Next slide, please. Slide 4.

MR. DAPAS: Thank you, Vic. Good morning, Chairman, and Commissioners. As Vic noted during his remarks, I will begin with an overview of the fuel facilities business line.

Next slide, please.

The fuel facilities business line is responsible for ensuring the safety and security of fuel cycle in greater-than-critical mass facilities. The business line leads the licensing and oversight activities for these facilities as well as implementation of the domestic material control and accounting and international safeguards programs. Additionally, the business line supports rulemaking activities.

Given the broad scope of activities in this business line, we do collaborate extensively with our internal business line partners to ensure that collectively we remain appropriately focused on our priorities. These priorities influence the work we perform on a day-to-day basis as well as our long-term planning.

Our current priorities are, first, ensuring safety and security through effective oversight of operating facilities and facilities under construction and through the effective management of licensing actions and environmental reviews.

Second, supporting U.S. non-proliferation activities through implementation of the international safeguards and domestic material control and accounting programs.

Our third priority is maintaining effective communications with stakeholders on staff approaches to emerging issues, rulemaking, guidance development, and other regulatory activities specific to the fuel facilities business line.

With respect to emerging issues, we leverage our organizational capacity to adjust our resources as necessary to provide for the appropriate response in terms of the issue of safety and security significance.

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The scope of activities in this business line include the regulation of 13 licensed fuel cycle facilities, seven of which are operating, one that is currently under construction, four that are licensed with construction pending, and one facility that is in the process of preparing for decommissioning.

The business line also provides licensing and oversight support for a number of Part 70 licensees that possess greater-than-critical mass quantities of special nuclear material, such as universities, research, and test facilities. From a budget perspective, the fuel facility business line has a rebaseline budget of 113 full-time equivalent, or FTE, and approximately $6 million in contract support, excluding corporate support resources. This is appropriately four percent of the agency's budget for fiscal year 2017.

The majority of the resources in the businessline reside in the oversight and licensing product lines, with additional resources for rulemaking, event response, and international activities.

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I would like to highlight a significant accomplishment pertaining to the fuel facilities business line. Specifically, implementation of all Project Aim-related rebaselining activities was completed by October last year. This resulted in a resource reduction

of 11 FTE and $217,000 in contract support and travel funding.

Some of the specific activities that we completed include revision of internal guidance documents to reflect the changes to the licensing and inspection programs deriving from rebaselining decisions.

We also reduced the frequency of the Fuel Cycle Information Exchange conference, known as FCIX, from annual to biannual, and reduced our support for selected international outreach and cooperation activities. These changes were communicated to internal and external stakeholders in several different forms.

Next slide, please.

As Vic mentioned, we are working diligently to address challenges in the area of fee billing. Recently, through various audits and self-assessments, we identified errors in reporting Part 170 flat and full-cost fees, as well as Part 171 annual fees for some classes of materials licensees.

These errors highlighted the need to increase our focus on resolving fee billing issues and improving the overall billing process. As such, Maureen Wylie and I issued a joint tasking memorandum this past November directing NMSS and staff in the Office of the Chief Financial Officer, or OCFO, to engage in a collaborative effort to improve the accuracy of fee billing for all of the business lines under NMSS's purview.

We are currently implementing a number of actions to achieve several overarching objectives. The first objective is to ensure that the proper internal controls for fee billing and cost recovery are in

place and understood.

The second objective is to improve knowledge and communication with both NMSS and CFO employees on their roles and responsibilities that support accurate billings.

The third objective is to improve communications between staff and OCFO and the other partner offices responsible for establishing fee billing policy, setting requirements, and conducting invoicing. We will complete these three objectives and, in doing so, we will reduce billing errors and improve timely detection of potential billing problems.

In addition, we are actively working on defining clear roles and responsibilities for NMSS and OCFO staff, documenting internal office processes and procedures for NMSS staff that have key roles in supporting the fee billing process, establishing the appropriate level of training for employees, and, finally, we are enhancing information technology systems in the areas of detection and controls and integrating improvements as part of the licensing process. Our goal is to have many of these improvements in place by the beginning of fiscal year 2018.

One activity that I would like to highlight is the provision of fee awareness training. NMSS and OCFO recently developed, and subsequently provided, in-depth training for all NMSS staff with fee-related responsibilities, including project managers, technical reviewers, and contracting officers' representatives.

The training included a conceptual overview of the agency's fee billing program, shared expectations for accurate reporting

and timely resolution of issues related to fee billing, general steps required to support the fee collection and reporting process, and resources available to assist employees with fee billing questions. To date, OCFO and NMSS have offered this training six times.

And, lastly, we are currently reviewing the existing fuel facilities annual fee matrix that is used in determining the annual fee in an effort to improve the accuracy of fee billing and to ensure that the services provided are accurately captured in the matrix.

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I would like to take a couple minutes and highlight some areas where business line staff have implemented the Commission's direction regarding safety culture. With respect to continuing outreach, we plan on discussing safety culture at the Fuel Cycle Information Exchange, which is scheduled for June this year.

As Vic noted earlier, we recently conducted a lessons learned effort for the Westinghouse scrubber condition, and we are in the process of developing an action plan to review our inspection procedures and potentially add more information on safety culture.

Programmatically, we addressed safety culture issues through the alternative dispute resolution program. And, finally, in our outreach and education activities, we take advantage of the safety culture educational resource workbook, which is a comprehensive education tool that includes all nine safety culture trade talks, a safety case study, and journeys document, as well as the Federal Register Notice outlining our safety culture policy statement.

Thank you, and I will now turn the presentation over to

Craig Erlanger.

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MR. ERLANGER: Thank you, Marc. Good morning, Chairman, Commissioners. My presentation will focus on the current fuel cycle environment.

As previously noted, the business line supports a number of activities involving a broad range of stakeholders and licensees. I will highlight several ongoing activities, accomplishments, and challenges within the fuel facilities business line.

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Our last Commission briefing for this business line was held in February of last year. Since that time, we have made significant progress on several initiatives in the areas of rulemaking, licensing, oversight, and policy development. A notable example is the progress made on the fuel cycle cyber security rulemaking initiative.

Consistent with Commission direction, this rulemaking was designated as a high priority activity. The objective of the rulemaking is to establish a graded, performance-based, regulatory framework for the protection of digital assets associated with safety, security, and safeguards functions. This rule will require licensees to protect their facilities from cyber-attacks that have the potential to cause specific safety or security consequences of concern.

Over the past year, we completed significant milestones, including finalizing the regulatory basis for the proposed rulemaking. The regulatory basis was developed and issued within one year of receiving Commission direction and took into consideration

numerous comments from a wide variety of stakeholders.

The regulatory basis forms the foundation for the proposed rule that will ensure that fuel cycle facilities have an adequate cyber security program to protect digital assets as the cyber security threat continues to evolve.

We also briefed the Advisory Committee on Reactor Safeguards, Digital Instrumentation and Control Subcommittee, in both November 2016 and February 2017, on the proposed rule package and draft regulatory guide. We expect the ACRS to provide a letter to the Commission regarding their views on this topic later this spring.

In the area of stakeholder interactions, we have held a total of 10 public meetings on this challenging topic. These meetings with licensees and members of the public, as well as our interactions with other federal agencies, have provided information, views, and opinions that have guided the development of the proposed rule and draft regulatory guide. We plan to deliver the proposed rule package and draft regulatory guide to the Commission later this spring.

Transitioning to the second bullet on this slide, as part of our efforts to implement the agency's post-Fukushima activities, we made significant progress resolving complex technical issues related to the closure activities associated with Generic Letter 2015-01, “Treatment of Natural Phenomena Hazards in Fuel Cycle Facilities.”

This generic letter was issued in June 2015, requesting that licensees submit information to demonstrate their compliance with regulatory requirements regarding the treatment of natural phenomena events, and to determine if additional NRC regulatory action was

necessary to ensure that licensees were in compliance with their licensing basis and existing NRC regulations.

To date, we have issued closure letters for the Westinghouse Columbia, AREVA Richland, and mixed oxide fuel fabrication facilities, as well as for the Honeywell Metropolis Works facility. We continue to make progress on closing out the generic letter activities for the remaining facilities through appropriate engagement of internal and external stakeholders. We anticipate that the closure activities for the remaining facilities will be completed by the summer.

Lastly, in January 2017, we submitted SECY-17-0006, "Interim Staff Guidance on Evaluating Chemical Exposures at Ffuel Cycle Facilities." This subject of chemical exposures at fuel cycle facilities has been a longstanding and complex issue.

Next slide, please.

We continue to effectively implement the business lines licensing and oversight programs by performing timely licensing reviews and oversight activities consistent with the current environment. In the area of licensing, I would like to highlight a few significant licensing-related activities that have been accomplished since we last briefed you.

As Marc mentioned, we recently assessed some of our existing guidance documents. We revised our Licensing Review Handbook to ensure that the changes to our licensing program resulting from the Project Aim rebaselining initiative were properly documented and communicated to the staff. The Licensing Review Handbook is an internal guidance document that provides procedures for licensing-

related actions.

As Vic mentioned in his opening remarks, we also assessed our existing RAI procedures by benchmarking the existing process against those used by other NRC organizations. From that review, we identified a few areas for improvement, such as enhancing our guidance related to the timing of the issuance of RAIs during complex reviews, as well as the development of a job aid that would explain the overall RAI process. We plan to update our RAI guidance during this fiscal year to reflect the results of this assessment.

In addition, we also conducted several licensing seminars on a number of important licensing topics, including technical assistance requests, RAIs, and fee awareness training. These seminars are intended to improve staff awareness of key licensing principles, reinforce agency expectations on important licensing topics, and discuss potential process improvements.

Overall, these seminars promote continuous improvement within the licensing program and enhance knowledge management and knowledge transfer within the business line.

In the area of oversight, we have made some enhancements to the current inspection program to better align it with the principles of good regulation. For example, we developed and implemented a new inspection manual chapter related to the reactive inspection decision-making process for fuel facilities.

This manual chapter provides the criteria and decision-making process the staff uses to determine whether a reactive inspection is needed. Mark Lesser will provide additional details on

this activity.

We also revised an inspection manual chapter related to the fuel cycle safety and safeguards inspection reports to provide consistency, add efficiencies, and improve clarity in preparing fuel facility inspection reports. We have also assessed and revised two inspection manual chapters and 11 inspection procedures, to include updates resulting from inspection feedback.

The fuel facilities business line also has an important role in the area of material control and accounting. We continue to provide support for multiple business lines, including operating new reactors as well as for fuel facilities. In fiscal year 2016, we reviewed the material control and accounting programs for multiple license renewals and new facility applications.

We developed and updated material control and accounting guidance and qualification documents, and we supported and led material control and accounting inspections. For example, we recently completed review of the material control and accounting plans for the mixed oxide fuel fabrication facility and for the combined license applications for the new units at North Anna and Turkey Point.

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This graph provides both a historical overview of the number of licensing actions completed by the fuel facilities business line as well as the projected number of licensing actions.

The overall decrease in the number of licensing actions, which is most notable between fiscal years 2013 and 2015, can be attributed to the fact that most major fuel facilities completed long-

term license renewals, the Paducah Gaseous Diffusion Plant was decertified and returned to Department of Energy oversight, and LES completed its major expansion construction activities.

In fiscal year 2016, we completed a total of 57 licensing actions. Moving forward, based on the known and anticipated workload, we expect that the number of licensing actions will remain consistent with this recent trend. We also do not expect any major license applications for new facilities until at least fiscal year 2019.

We are presently reviewing six license renewal applications, as well as other license amendments. We also continue to support both the Northwest Medical Isotopes construction permit review and the preparation for the construction and inspection of the SHINE facility.

Lastly, we will continue to support the agency's efforts to engage with the Department of Energy and industry in anticipation of future reviews of new fuel types for existing and advanced reactors.

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In addition to focusing on our licensing and oversight programs, we continue to support regulatory activities through stakeholder outreach. We continue to manage the impacts of the cumulative effects of regulation through the use of an integrated schedule and regularly scheduled meetings with licensees and other stakeholders. We have received positive feedback from stakeholders that these interactions continue to be an effective way to keep stakeholders aware of ongoing initiatives and to help prioritize the activities and resources.

Our next meeting is scheduled for later this month in Atlanta, Georgia, at the Region II office.

The next FCIX will be held on June 13th and 14th, 2017, at NRC headquarters. FCIX provides a forum for NRC staff, industry representatives, licensees, and other stakeholders to discuss regulatory issues and mutual interests related to the fuel cycle.

As Marc previously mentioned, we recognize the importance of establishing and maintaining a positive safety culture. Our partners in the Office of Enforcement will discuss this topic during FCIX. The FCIX agenda also includes an executive panel discussion, keynote speakers, and sessions on a variety of licensing and oversight topics.

Another example of stakeholder outreach is the fuel cycle processes course. Within the last year, the business line provided two offerings of this course. This course provides participants with an overview of the fuel cycle, insights into the science and technology used at fuel cycle facilities, and awareness of relevant NRC regulations and an understanding of the costs and economic factors associated with the fuel cycle.

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Consistent with one of our business line priorities, we continue to support the United States Government commitments related to non-proliferation by implementing international safeguards treaties and agreements; specifically, the U.S.-IAEA safeguards agreement, including the additional protocol and the U.S.-IAEA Caribbean territories safeguards agreement.

In support of these agreements, the NRC jointly manages the nuclear materials management and safeguards system, known as NMMSS, with the Department of Energy National Nuclear Security Administration.

NMMSS provides the inventory information on obligated source and special nuclear material for weekly, monthly, and annual reporting requirements to our international partners with which we maintain nuclear cooperation agreements, and to the International Atomic Energy Agency in accordance with U.S.-IAEA safeguards agreements.

In accordance with the additional protocol, each quarter the NRC collects data from companies and manufacturers related to the export of nuclear materials and equipment for nuclear fuel cycle activities. These declarations are compiled into one comprehensive U.S. Government report handled by the Department of Commerce.

These declarations that are reporting to the IAEA fulfill U.S. requirements under the additional protocol, which supports non-proliferation and enhances the ability of IAEA to detect potential undeclared nuclear activities worldwide.

In addition, we continue to participate in interagency groups involved in safeguards and non-proliferation activities, including chairing the subgroup on IAEA safeguards known as SISUS. SISUS meets quarterly to discuss safeguards implementation issues in the United States. The Department of Defense, the Department of Commerce, Department of State, and the National Nuclear Security

Administration also participate in SISUS.

Lastly, we continue to provide technical support to the Office of International Programs on import and export licensing and the review of 123 agreements.

I would like to briefly highlight some specific activities in the area of international safeguards that were conducted in the past year. These activities include conducting rulemaking and outreach activities to implement the modified small quantities protocol as part of the U.S.-IAEA Caribbean territories safeguards agreement, organizing and leading the annual NMMSS training for licensees and other NMMSS users, and hosting the 12th annual meeting of the IAEA working group on the application of safeguards to geological repositories.

Next slide, please.

We are focused on ensuring the safety of security at fuel facilities through effective licensing and oversight, and by supporting U.S. non-proliferation activities. Moving forward, this entails completing Generic Letter 2015-01 activities by the summer of 2017, completing the proposed rule package for the cyber security rulemaking initiative, and completing the final rule package and associated regulatory guidance document by the summer of 2018, and implementing strategies to improve the accuracy of fee billing for the business line.

This concludes my part of the presentation. I will now turn it over to Mark Lesser, who will discuss the fuel cycle oversight program.

MR. LESSER: Next slide, please.

Thank you, Craig. Good morning, Chairman, Commissioners. The NRC's fuel cycle oversight program plays a key role in ensuring the safe and secure operation of fuel cycle facilities through effective implementation of comprehensive safety and security inspections.

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NRC inspection and enforcement activities have contributed to safe and secure licensee performance. Fuel facility oversight accomplishments include completing approximately 100 core inspections of the eight operating facilities to ensure they operated within the established safety basis.

We chartered one reactive, augmented inspection team, or AIT, in response to the Westinghouse scrubber condition where the critical mass limit of uranium in a conversion process scrubber was exceeded.

We completed approximately 13 additional inspections, including follow up to confirmatory action letter commitments made by Westinghouse for restart following the scrubber condition, a program adjustment inspection at BWXT to verify corrective actions from previous escalated enforcement action, completion of the temporary instruction for natural phenomena hazards at two facilities, and several information security-related operational readiness inspections at Centrus and Fort St. Vrain.

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We achieved several organizational accomplishments

in the fuel facility inspection program. With respect to the integrated prioritization and rebaselining of agency activities, we implemented three recommendations to gain efficiencies in inspection oversight.

We reduced the resources applied to the plant modifications inspection, deriving from more focus on selecting risk-informed facility changes. A provision exists in the inspection program to add resources if a licensee has demonstrated performance problems or has implemented a relatively high number of safety-significant or complex facility changes.

We modified the licensee performance review process to provide an option to conduct the Category I public meeting that occurs at the end of the review by webinar. Considerations include anticipated level of local public interest, licensee performance areas needing improvement, and other non-routine discussions that may occur. We tested this option at AREVA last year, with positive feedback from stakeholders and will, therefore, expand it as appropriate.

We issued inspection manual chapter 2601, reactive inspection decision-making process for fuel facilities, which describes the process and considerations for determining the level of reactive inspection following an event. The manual chapter is aligned with Management Directive 8.3, NRC Incident Investigation Program, and provides specific guidance unique to fuel cycle facilities that had previously existed in an internal Region II procedure.

The decision-making process involves information-gathering by the region following an event notification to assess the

significance, and then providing a recommendation to NRC management as to the level of response, i.e. routine follow up, special inspection, augmented inspection team, or incident investigation team.

Clearly, the potential risk significance of the event is strongly considered, but occasionally the lack of information may drive a decision for onsite inspection. Licensees' awareness of the manual chapter can help to fill this information gap and potentially alleviate the need for reactive inspection, thus saving resources.

In addition to promoting openness and accountability, the manual chapter provides insight to licensees as to the type and level of information the agency needs to make a decision on the appropriate NRC response to an event in terms of inspection activities.

For example, a significant factor deciding the level of inspection is our assessment of licensee management's degree of conservative decision-making, immediate corrective actions, and initiation of an appropriately scaled event investigation.

If the inspectors assess these factors as favorable, the level of reactive inspection may be reduced. It is, therefore, believed that if licensees can effectively communicate detailed information following an event, unnecessary expenditure of resources can be averted, and efficiencies gained.

We also revised the information security enforcement policy from a traditional deterministic approach to being risk-informed. Regional inspectors worked closely with the Office of Nuclear Security and Incident Response to develop the revision. The changes include risk-informed considerations for determining the severity level of a

violation for failure to control classified information, which involved the significance of the information, who the information was potentially disclosed to, the availability of other access controls, and the duration of the vulnerability.

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I would like to spend a few minutes on inspection oversight of the mixed oxide fuel fabrication facility in Aiken, South Carolina. In 2016, we expended over 1,500 hours inspecting the principal systems, structures, and components, or PSSCs, as well as the quality assurance corrective action and change process programs.

We have continued to inspect construction activities on many PSSCs. To date, MOX Services has certified that two of the 53 PSSCs are complete, which were verified by the NRC. As a result of a Severity Level III problem associated with undersized welds that adversely affected the structural capacity of ledger assemblies, we assessed MOX Services' performance to be within the regulatory response column, or Column 2, of the construction action matrix, in accordance with Manual Chapter 2630, Mixed Oxide Fuel Fabrication Facility Construction Inspection Program.

This NRC inspector-identified finding was significant, in that welds were undersized for approximately 100 ledger assemblies, which make up portions of load-bearing floor and ceiling supports in the Aqueous Polisher Building. Without correction, any failures during future operations could have affected worker safety and caused failures during -- and caused failure of safety-related equipment, as well as caused other potential consequences.

Since MOX Services could not ensure that all credited safety functions could be performed for all event scenarios, including seismic motion, MOX Services developed corrective actions to restore compliance with the design basis. We plan to confirm their corrective actions with follow-up inspections when the applicant has completed its corrective actions sometime after March.

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On July 14, 2016, Westinghouse reported that it had exceeded its criticality safety mass limit for uranium in the conversion process scrubber. The scrubber collects and filters off gas from several different pieces of equipment in the uranium conversion process prior to release to the environment. Following notification of the event, we initiated follow-up activities to gather additional information and ultimately initiated an AIT.

The inspection team reviewed the facts surrounding the failure to maintain mass controls in the S-1030 Scrubber, the potential for similar failures in other production areas, assess the licensee's response, and evaluate the licensee's corrective actions to prevent recurrence.

Region II issued a confirmatory action letter on August 11th documenting the licensee's corrective action commitments. The AIT was completed in September 2016.

The licensee identified, and the AIT confirmed, deficiencies in aspects of safety culture that contributed to the condition, such as questioning attitude, safety communication, work processes, and problem identification and resolution.

The facility remained shut down to implement corrective actions, which were verified by regional inspectors. The regional administrator approved, in writing, the licensee's request to restart on October 20, 2016. Region II conducted a program adjustment review and determined that increased oversight was warranted.

In addition to the core inspection program, Region II continues to inspect longer term corrective actions, equipment monitoring, scrubber cleanouts, plant operations, criticality safety, and modifications.

The NRC provided an international nuclear and radiological event scale, or INES notification, to the IAEA based on a rating of two, on a scale of one to seven. Mr. Smith will discuss the agency lessons learned initiative that resulted from this condition.

The slide that was -- is up depicts two pictures taken during the removal of the material. In the top figure, you're looking at the inlet transition section of the ventilation duct towards the scrubber packing area. And the bottom figure shows a solid chunk of the uranium fluoride material that was removed from the inlet transition section of the ventilation duct.

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We continue to focus on knowledge management. Effective implementation of the fuel facility inspection program requires expert operational knowledge of several different types of technologies and facilities, including conversion, gas centrifuge enrichment, laser enrichment, low-enriched fuel fabrication, and high-enriched fuel

fabrication.

Each facility has its unique processes, chemical hazards, and different integrated safety analyses, requiring facility-specific operational knowledge by our inspectors. The inspection program also has seven different inspector qualifications, including operations, criticality safety, material control and accounting, information security, physical security, health physics, and emergency planning.

We have made significant progress in encouraging our staff to cross-qualify in multiple specialty areas to develop versatility. This is consistent with the agency's human capital management objective of having agile staff to accommodate shifts in workloads and also support strategic workforce planning.

We continue to leverage our communities of practice, such as material control and accounting, nuclear criticality safety, information security, and radiological safety, to maintain the engineering and scientific knowledge base to ensure technical credibility within a group.

We maintain a strong connection with both NMSS and NSIR program offices through periodic counterpart meetings, regular phone calls, and a joint approach to issue resolution. Inspectors are also provided opportunities to engage with peers and develop proficiency through inspection in industry-wide technical forums.

The region will continue to focus on opportunities to collaborate with our NMSS program office to support the fuel facility inspection program and implementation of recommendations from the

Westinghouse lessons learned report. We will also continue to support completion of facility reviews related to the natural phenomena hazards and seek opportunities to engage communications with stakeholders through public meetings.

This concludes my portion of the presentation. I will now turn it over to Brian Smith, who will discuss operating experience.

Next slide, please.

MR. SMITH: Thank you, Mark. Good morning, Chairman, Commissioners. My presentation will describe how the business line supports continuous improvement through gathering, analyzing, and applying operating experience to maintain fuel facility safety, nationally and internationally.

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Because of the high safety significance of the Westinghouse scrubber condition, the staff conducted a lessons learned review to look for areas of continuous improvement in licensing, inspection, operating experience, roles and responsibilities between the region and NMSS, and knowledge management.

The resulting report was issued in January 2017, and the staff is developing an action plan to address the recommendations that were provided in the report.

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I would like to highlight several of the recommendations from the lessons learned report. First, ensure that systems associated with potential intermediate or high consequences are inspected within a specified time period. Using the current

inspection planning process, we can track the inspections of each system and compare it to a predetermined inspection periodicity, which can then be used to inform future inspection plans.

In addition, we can challenge the underlying assumptions that support how a particular system is modeled in the integrated safety analysis. If we determine that those assumptions are invalid, or reflect less margin than originally anticipated, the periodicity between inspections can be shortened to ensure that systems are inspected at an appropriate frequency.

A second recommendation is to develop guidance for inspectors and project managers on how to conduct integrated safety analysis reviews in accordance with 10 CFR 70.72, which is a regulatory requirement to develop and maintain a configuration management program.

This guidance will help us prioritize the sampling process and ensure that iterative modifications to a system over several years are reviewed holistically.

A third recommendation is to improve the operating experience program framework to ensure that information is being provided to the staff involved in implementing the licensing and inspection programs, so that changes in those programs can be made if warranted. The fuel cycle inspection program has effectively leveraged past experiences to improve inspection procedures. However, we are evaluating some new approaches to data analysis to support identifying trends.

One trend we are interested in involves the contributing

factors associated with an event. Trending these contributing factors can then be used to risk inform the inspection planning process and the license application review process.

Another important topic that was associated with the Westinghouse scrubber condition is safety culture. As Mark Lesser mentioned earlier, the licensee identified safety culture as one of the root causes of the condition. As part of the confirmatory action letter, safety culture is an issue where the licensee implemented short-term corrective actions prior to restart and continues to address via corrective actions. Long-term safety culture actions will be followed up on via future supplemental inspections.

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As I just mentioned, we are leveraging operating experience to improve our licensing and inspection programs. Currently, the business line supports maintenance of a fuel cycle operating experience database. This database was used to support various analyses of events over the past five years. During this time, there has not been a significant trend in the number of events per year.

Approximately 10 percent of events evaluated were considered safety significant based on our screening criteria. Of those, six were related to criticality safety, four pertained to operational safety, and one involved emergency preparedness.

The knowledge gained from these evaluations is fed back into the fuel cycle programs to improve guidance. For example, we revised the nuclear criticality safety inspection procedure to reflect licensee's installation of updated equipment, such as criticality alarms.

The information is also shared with our counterparts in the Department of Energy through quarterly operating experience briefings.

Next slide, please.

Internationally, lessons from significant events are not necessarily limited to one country. Thus, international exchange of operating experience is very important. For this reason, the business line participates as a national coordinator in the IAEA's fuel incident notification and analysis system, or FINAS, by entering events into this database and sharing lessons learned with a number of countries.

As a group, the national coordinators are working to establish an advisory committee to enhance the functionality of the FINAS system. The business line is at the forefront of this effort.

Thank you. And with that, I'll turn it back to Vic.

MR. McCREE: Thanks, Brian. Chairman, Commissioners, thank you for your attention. That concludes our presentation. We overachieved in that we have three minutes left, but we are now ready for your questions.

CHAIRMAN SVINICKI: Well, thank you. I know it takes a substantial amount of work to prepare for these meetings, so I thank the presenters and all those who compiled the information the information that you presented today.

Before we begin the Q&A, I recognize that I neglected to provide an opportunity for my colleagues to provide any opening remarks that -- so I would turn to them to see if they just want to dive in.

Okay. So we're going to dive in, and we begin the

Q&A portion with me. I want to begin by really complimenting the staff. There are some areas that are complex. It's a multi-year endeavor, but we continue to make progress. One is the discipline around the RAI process. I appreciate that the activities described by this panel are a complement to the reviews of the RAI process in the new reactors and NRR program. So I think that that was an important undertaking, and I want to credit the staff for that work.

Also, in the fee billing and improving the overall billing process -- Mark, you talked about that -- again, that what you presented is your piece of, really, an agency-wide improvement initiative, and these are things that, as much as we might want to see very rapid results, it takes a lot of careful work, and it's going to take us some time to get where we would like to ultimately be on that.

Also, there was discussion about implementation of Project Aim-related activities. An important follow on to that, though, is memorializing what I refer to, maybe others do, as kind of the Project Aim paradigm or framework that says we are -- you know, we made some -- a set of really interesting and difficult choices in the rebaselining process, maybe some tough calls, some judgment calls about activities we decided weren't returning the value for the investment. But it is important, as an agency, that we memorialize and instill that kind of discipline to the initiation of new activities.

So it might be helpful to have anyone talk about that, not the implementation, but more of the going forward. I don't know, Marc, would you like to take a stab at that?

MR. DAPAS: Well, I would agree with you, Chairman,

and this is something that Vic has communicated to the senior leadership team, and we have reinforced that in our discussions in various forums, where we engage the staff, first-line supervisors, about how we need to continue to look at Project Aim as an ongoing philosophy, discipline, paradigm shift, where any activity that may represent emergent work, you are working at, how can you conduct that in the most efficient and effective manner.

I think some of the things we're doing to ensure that staff are cross-trained, so that they are more agile and can move from one area where work may no longer continue to exist to another area in terms of staff fungibility. So I think it's very important that we continue to think of all activities that we undertake with that, you know, what I'll call agile Project Aim, how we can be more efficient and effective framework.

And I think the staff is understanding that. They are asking very good questions in that regard. So, clearly, it is a message that we are trying to communicate in various forums, and identify examples specifically where the -- I'll call it Project Aim framework should be appropriately considered and applied.

CHAIRMAN SVINICKI: Well, thank you for that. And, again, with all of the hard work that the NRC staff has already done on Project Aim, it would be -- it would not honor that hard work if we were to not approach future activities with a similar kind of mind-set, so I appreciate that.

Craig, on the fuel cycle cyber rulemaking, one of the things that I had explored with the staff earlier was being sure that we

captured the procedural learnings that might exist from the operating reactor side, that we did have some I think learnings initially about the scope and scale maybe of the approach to a cyber rulemaking. Could you describe how it is that the staff has gone about making sure that we have captured those integrated learnings?

MR. ERLANGER: Thank you for the question, Chairman. We -- the approach we have taken involves an effort that involves the Office of Nuclear Security and Incident Response who had the lead for the reactor effort related to cyber security and lead for the agency. They are part of the team. We constantly reflect on how the reactor rule is being implemented, and we try to ensure that we learn from that experience.

What we have found with this rulemaking, and I think it is a lessons learned from the reactor rulemaking, is stakeholder engagement and understanding of what we are trying to accomplish is essential to this effort.

By the time the proposed rule package gets to the Commission, we will be at two ACRS meetings and 11 public meetings. What we're trying to do in those forums is when we receive feedback from licensees and stakeholders, show them how we have improved our documents, and that their responses have been heard, since in some instances they -- the feedback we receive is incorporated, in others where the staff has chosen not to, but to have the dialogue to explain why the staff arrived at that conclusion.

In the end, we believe through this engagement, and learning from the reactor programs, if we have that front -- upfront

alignment on what we're trying to accomplish, the implementation will be that much easier, if the proposed rule package does move forward.

CHAIRMAN SVINICKI: Great. Marc, you --

MR. ERLANGER: Marc, would you like to add to that?

MR. DAPAS: Yes. Just one perspective I'd like to share. I was the Deputy Office Director in the Office of Nuclear Security and Incident Response when we were engaged in conducting inspections regarding implementation of the first seven milestones.

And I recall that there was guidance that had been provided by the Nuclear Energy Institute, NEI, to licensees, and licensees had established their programs based on that guidance.

The NRC had not formally endorsed that guidance. We had provide comments, but we didn't follow up to ensure those comments were addressed, and NEI didn't engage us in ensuring that we endorsed that guidance. The point being is when we went out to conduct inspections, we identified gaps. What I think is different and a learning for us with respect to how we are approaching cyber security for fuel cycle facilities is that ensuring that we are engaging in a number of forums, public meetings, et cetera, so that the industry and NEI understands how we would plan to implement the particular rules in the regulatory guidance.

So I think that is a valuable learning, to ensure that we at least have a shared understanding of the facts. There may be differing views regarding the best approach going forward, but it's very important that at least both sides understand where we are in terms of the guidance we are developing. So I think that was, from my

perspective, a significant difference in how we are approaching it with respect to the -- in earlier stages with operating the reactors.

CHAIRMAN SVINICKI: Okay. Thank you. Those specifics are very helpful.

The other topic that I would raise with this panel is really overarching for both panels. But since this is the first panel, we will go ahead and at least describe it here. It is kind of our movement to further risk inform the regulatory framework as a whole.

A simple fact that we confront between the reactor side and the materials side is that, as a body, the materials licensees and the fuel cycle facilities do not pose the same potential for risk or risk profile of the power reactor community. And, therefore, I think we have turned quite rightly and naturally in this really multi-decadal journey of risk-informing the nuclear safety framework.

We turned, first, to the reactor side, and I think that that was appropriate to do. Some of the manifestations of that journey are things like the reactor oversight process. And if we take as a given that there is value in at least taking that journey on the materials side -- maybe there isn't the same risk profile -- I know that in the haste of day-to-day business it is very difficult to sustain these long improvements and kind of the evolution of the sophistication of our risk approach to licensees.

And, you know, Brian described learning from operating experience. There has been discussion of knowledge management today. But how would the staff characterize for the materials licensees and for fuel cycle facilities for the non-power reactor

body of licensees that we put a bit of a pause on the risk-informed journey for these facilities?

And, specifically, I reflect on early in my time here squarely before the Commission was the notion of moving away from integrated safety assessments and towards PRAs. At the time of the Commission's consideration of that, I was not supportive because I think a movement to sophisticated PRAs requires a foundation of knowledge that you base that on and risk insights, and it just seemed like the analogy was not there, it was imperfect, and so we have stuck with the integrated safety assessments.

But how would you characterize where we are in the journey to have a greater risk sophistication with these licensees? And is there more we could be doing? And what would that consist of?

MR. McCREE: So, Chairman, I'll start. That's a wonderful question, and I would ask both Brian and perhaps Mark and Marc to weigh in. But I would start by making it clear that we fully and clearly understood the Commission's direction on the revised fuel cycle oversight process.

So we are not proceeding with risk-informing our approach to the oversight of fuel cycle facilities that would require us to build that infrastructure. We are not doing that.

That said, it is, we feel, prudent to inform our oversight process, our review of licensing actions, based on the safety important, if you would, of whatever the matter involves. And to that extent, as Brian spoke about operating experience, I know we use the term "risk inform," that may be a misnomer, but it is informing our plans going

forward based on the safety significance of the matter.

Of course, fuel cycle facility licensees under Part 70 still have to have -- Subpart 8, still have to have an integrated safety assessment. So we do use that both in a licensing and an oversight activity.

So I guess with that start, Brian?

MR. SMITH: Okay. I'll address a couple aspects. In the area of ISA, we are working with the American Nuclear Society on the development of a standard for developing ISA methodologies, and so that work is underway. We have one person that is involved, or two people that are involved in that group, in the development of that.

Also, from the lessons learned report, it talked about developing additional guidance for the review of ISAs, as well as the implementation of the ISAs in the field. And that brings us into the inspection area, and I'll turn that over to Mark to address that section.

MR. LESSER: Thank you, Brian. The only thing I would add is that we do challenge our inspectors to plan for inspections and to sample -- identify samples to look at that do involve higher safety significance, higher perceived hazards.

It's largely based upon the knowledge of the facility, the knowledge of the processes, and their training. And so that is -- it's part of our process to do that.

CHAIRMAN SVINICKI: Okay. Thank you. Thank you, all. Commissioner Baran? Oh, I'm sorry. Marc?

MR. DAPAS: Thanks. Just a real quick perspective. I think with respect to fuel cycle facilities, what we are trying to achieve

with the cyber security rule, as an example, where you look at Category 3 facilities, and they may not have any vital digital assets, so what is the appropriate regulatory requirement, if you will, for that class of facilities?

You commented more broadly regarding materials and fuel cycle facilities. I just would offer quickly, with respect to materials facilities, you look at Manual Chapter 2800; it prescribes inspection frequencies. That's based on risk significance of the associated sources, and I think that our NUREG-1556 guidance for license reviewers also is, you know, risk-based and risk -- risk-informed, I should say, regarding the guidance that those reviewers would use in reaching a licensing decision.

So those are just two quick examples in the materials users' business line.

CHAIRMAN SVINICKI: Okay. Great. Thanks. Commissioner Baran.

COMMISSIONER BARAN: Thanks. Thanks for your presentations. I appreciate the Chairman's questions about -- and the discussion on the cyber security rulemaking for fuel cycle facilities. I'm very supportive of that effort, and it sounds like the staff is making good progress on developing a rule that is going to provide the necessary cyber security protections in a thoughtful, graded way, at a high level.

It sounds like we're heading in the right direction on that. Is that your assessment?

MR. DAPAS: From the regulatory perspective, yes. I know there are still some differing views among some of the industry,

as communicated to us by NEI. But I think we are doing the best we can to try and come up with an overall rule that addressed the broad spectrum of comments and views that we have received. But I think we've made a fair amount of progress there.

I think the important thing is making sure there is a shared understanding of the facts, like what is the level of documentation required for screening here? What does it mean when you have to have a cyber assessment team? And what does the scope of that need to be? Do you get credit for -- by certifying agencies for non-classified systems? Which has a direct impact on the number of critical digital assets.

So I think we are making progress with some of those key areas where there are strongly held differing views on what the approach should be.

COMMISSIONER BARAN: Well, you know, I think Craig is right when he says that, you know, the regulated and the licensees may not agree on every issue, and that's fine; that happens in a rulemaking process. But as long as we're really being thoughtful about what we're doing and we're learning lessons from prior efforts, I think that's really important.

I wanted to ask a few follow-up questions on the Westinghouse Columbia Scrubber Event. And I guess I'll ask you, Mark, but you can -- anyone can jump in, because several of you covered it in presentations. As you explained, the controls relied on to prevent criticality around the scrubber were compromised, and Westinghouse and NRC both found safety culture deficiencies that

contributed to the significant degradation in safety margins.

The facility was shut down to implement corrective actions, and NRC later approved restart. But I think, as we all know, safety culture issues don't get resolved in a month or two. They required sustained effort and oversight.

Can you talk about the status of those safety culture improvement efforts? Where do things stand now? Where do you see them, you know, in the near future?

MR. LESSER: Certainly. Thank you. So as we talked about before, both the licensee and the AIT identified safety culture issues. Safety culture was included as part of the -- a commitment by Westinghouse to look into this, and confirmed in a confirmatory action letter they have a commitment to conduct a third party independent review later this latter.

In the interim, they are implementing corrective actions to heighten their awareness, train their staff, in areas such as questioning attitude, problem identification, becoming much better in there. We currently are monitoring/following their progress. And as you said, and I believe it's not going to be overnight, it's going to -- it's going to be a process to get them to where their current management wants them to be. We understand that.

So what our plans are for -- is to follow up on their third party review, make sure we're aware of what that highlights, and any additional corrective actions that are recommended on that, and just continue through inspection follow-up to monitor their progress.

COMMISSIONER BARAN: Okay. Westinghouse

reported this event last July, and NRC reported the event to IAEA as a Level 2 event a couple months later in September. What accounted for this lag in our reporting to IAEA?

MR. ERLANGER: I can start the answer. And if any of my colleagues have anything to add, please -- please do. We recognized internally there were some challenges with reporting and understanding what the timelines were and what the expectations were for staff.

We identified that. We put in place a process to ensure that that doesn't happen again. Specifically, under the leadership of the Office of Nuclear Security and Incident Response, as the national officer that handles the aspect of reporting, they are looking right now at the management directive and updating it.

These type of conditions happen infrequently, so knowledge and understanding of what we need to do -- we were fortunate. We have many staff members who have been in the business line for many years who are aware we had the reporting requirement. The update to policy and procedure on the office level needs to occur, and we are updating the parent management directive. So, moving forward, we understand the expectations.

MR. DAPAS: I would offer -- Craig described some of the actions we are putting in place, but fundamentally one of the challenges we faced was understanding what the expectation is and how the guidance should be applied, had a couple different offices involved. The Office of Nuclear Security and Incident Response, some of the staff in our office, you know, didn't have this as clear an

understanding of the expectation.

And you may recall, Commissioner Burns, we had a discussion with you, and one of the things we wanted to focus on was making sure we get it right. We didn't want to report prematurely and then there's additional information that causes you to revisit that initial reporting.

And while there is a timeframe, I think it says, if I recall correctly, what, 72 hours you are supposed to make an initial report. You know, we wanted to make sure that we had a clear understanding and didn't make the wrong call, given the implications of response to that particular report among the international community.

So that was part of the contributing factor. So now the guidance more clearly explains the types of things that need to be considered in arriving at an overall conclusion that it's reportable or not.

COMMISSIONER BARAN: Was part of the issue here that, you know, for an event like this one, where the ops center isn't stood up, and you're not in an alert, or anything like that, that there wasn't -- you know, wasn't really a trigger for this kind of question to come into play about a report, or is it just more that these events are so infrequent that people just didn't have the experience with it?

MR. ERLANGER: From my perspective, Commissioner, it is the infrequency, it is -- does not -- it is not a procedure that we use on a regular basis. Mark raised a very good point, in that it took a bit of time to understand the condition and what was occurring, and we before -- accurate reporting was on our minds at that time as well.

COMMISSIONER BARAN: Okay. Mark, you described a new manual chapter on the reactive inspection decision-making process for fuel cycle facilities. And it sounds like it essentially goes through the factors NRC will consider when deciding on an appropriate level of inspection after an event. How much did this manual chapter build on the staff's prior work on developing a fuel cycle facility revised oversight process? Is this providing some of the rigor that a more systematic oversight process would have provided?

MR. LESSER: Thank you for that question. It is a rigorous process. In fact, it has existed for a few years within internal Region II procedures. We have used it. The manual chapter was really developed to be more transparent in our decision-making process.

So it is really a three-phase process. It has an initial screening process to identify significant operational events or degraded conditions, and then we pair that with the likelihood -- where the likelihood of high consequence events might fall out as -- in terms of -- in terms of uncertainty, i.e. could a high consequence event been different -- been not -- normally highly unlikely, would it have fallen into likely or a more likely category?

And then we apply -- we gather that information, which dictates the type of inspection we have. But then we also apply these management effectiveness oversight factors that can give us a little more comfort as to how management is handling the event, the licensee's management.

So to directly answer your question, I really was not

derived from the RFCOP work. It had been developed separately a number of years ago.

MR. McCREE: Commissioner, if I might add, what this evidences, this artifact evidences the success of a more strategic initiative begun a long time ago, actually, when Mike Weber was the Director in NMSS and I was actually in Region II at the time, Deputy for Operations.

And that was a recognition that we had an opportunity to realign roles and responsibilities more clearly and optimize where we were conducting work. And what I mean by that is 10 years ago material control and accounting criticality inspection and INFOSEC inspection were in headquarters, the first two in NMSS and the latter, INFOSEC, was in NSIR.

And we recognized an opportunity to centralize those mainly inspection and oversight functions in Region II, providing an opportunity for NMSS to realign resources to fulfill the traditional program management oversight function of inspection and regulatory activities within NMSS. That was accomplished several -- about three years ago when we centralized all inspection functions in Region II, including those three areas, and NMSS reinforced its support for the program management.

So it enabled us to focus on a number of the infrastructure, the processes, and the procedures that govern how we do oversight. And this artifact, which we had -- in Region II had created our own version of it to help make risk-informed, safety and security-informed decision, we needed to institutionalize that in a management

chapter, in an IMC, and we were able to do that once we demonstrated agility and organized in a better way.

And there are other attributes of that as well. You mentioned information security. Several years ago, five years ago, we were conducting multiple reactive inspections per year, AITs, two or three a year, because we were using Management Directive 8.3, which caused us to make decisions at a much higher level.

We have been able to right size the thresholds for responding and not have to expend resources in areas where we shouldn't. So I think that's an overall success for our program.

COMMISSIONER BARAN: Thanks for that context. Thank you.

CHAIRMAN SVINICKI: Thank you. Commissioner Burns.

COMMISSIONER BURNS: I might just pick up because I actually have strong views on the INS -- INES scale and its application. But one thing -- and I remember talking with Marc, and I appreciate the discussion, part of what this was coming up is I think -- the point I was going of the general conference and there's a question of we were coming to the point of whether -- there was not a question of reportability under our general obligations of the event.

What the -- the dynamic that's played out is that I think the INES, as it is most effective, is really a retrospect -- and I'll use the word "retrospective" reporting from the standpoint of assessment of the significance of the event. So you get it into an international database that then others -- if you're on the basically same line.

The worst thing that can be done is, in effect, what the Japanese did during Fukushima-Daiichi, is they started declaring the accident at certain levels on the INES scale using it in a way, really, in my view, it was not intended.

So I think what we've done, I think with Marc and the other offices, is sort of with intentionality build this into our structure, that we have a timely assessment. But ultimately it is an assessment of what the event really is in terms of the significance, because it is really a way of building or drawing on operating experience that then can be used in the international community.

So I think we can do better. What I -- as said, what I hope and, you know, and I believe, you know, our posture in this should be a timely -- you know, a timely reporting, but not pushing ourselves to sort of like live-time event reporting, because that -- that is really -- I don't think what is intended, again, in the Daiichi circumstance. It was wholly, in effect -- you know, my view, wholly ineffective and wholly unnecessary, what they're doing.

We knew there was a significant event. There are other conventions and reporting -- reportings that come into play in that circumstance, particularly if you have the potential, although we -- you know, it didn't really happen or carry out that way, but the potential for -- for transboundary contamination or impacts.

I appreciate the presentations. Obviously, covered a lot of area, you had to do it sort of at a high level. So what I'd like to do is maybe, in my remaining time, is talk to a few -- or get -- maybe talk or get from you maybe some more specifics or just some

clarifications on some of the things.

Marc, I think it's on Slide 8 you talked about information technologies. This is I think related again to the fee -- improving the fee billing areas. I am just trying to understand, there is reference we are enhancing information technology systems in the areas of detections and controls, and I'm trying to understand what -- what that is, what are in this area. What do you --

MR. DAPAS: My comments regarding fee billing, as the Chairman indicated, it's an agency-wide initiative. It includes materials, fuel cycle facilities, spent fuel storage and transportation, and decommission of low-level waste, uranium recovery.

My focus on the technology aspect, for example, in materials is, how does web-based licensing integrate with FAMIS? As an example. And it's the recognition that there are interfaces with the different IT systems.

You know, WBL was not constructed to provide fee billing information originally, but that -- we are using it for such, and so we are looking at, what about the interfaces there that can be improved. So it's some of those systems -- the Camp project, the MDM, and I'm trying to remember what that stands for. But that's really what I was intending to capture is some of the information technology systems that we use. There are software enhancements that can be developed that would facilitate a more effective fee billing process.

COMMISSIONER BURNS: So it's a way that some of those things -- so we've gone to web-based licensing, which helps us in other areas such as real licensees and things like that. But you see

it is potentially also helping us in terms of the verity of the fee -- the fees being assessed or things like that.

MR. DAPAS: You know, there is program codes that are entered in the web-based licensing, and then there is information extracted from that. But there is also the opportunity to enhance the interface that occurs between WBL and FAMIS in terms of an automatic interface and not the manual interface of data input.

I don't know if there is any other comments Brian wants to make with respect to fuel facilities.

MR. SMITH: Yes. Just one -- one additional aspect to that. In WBL, the important thing is the accuracy of the data that goes into the database itself from a fees perspective. And so what we want to try to do through this project is to work on some of the internal controls within the database itself to ensure that the data is accurate as it goes into it.

COMMISSIONER BURNS: Okay.

MR. SMITH: And then transfer it.

MR. DAPAS: Brian is leading the task force associated with that fee billing initiative, and --

COMMISSIONER BURNS: And maybe you could talk to -- I mean, you know, I think, as the Chairman noted, you've got a number of things here, and really I think, you know, comprehensive and trying to get at different ways. And this -- your answer to my question is that, you know, it sort of expanded upon that.

Here is the other thing is how -- talk about how we -- how are the measures of success? I mean, obviously, the ultimate

measure is accurate fee billing. But what are you looking at to sort of assess how you're getting there? I think that would be interesting to hear.

MR. SMITH: Okay. How we're getting there. Okay. So Marc said I'm the lead for it. I'm the co-lead for it, along with Gordon Peterson of the CFO's office. So we're working very closely with the CFO's office in implementing the taskers that were addressed to Gordon and myself.

There were 12 items within that. Based on some audits that we reviewed, and discussions we've had with staff within both the CFO's office, NMSS, and the regions, we have identified additional areas that need to be addressed. So we have developed a detailed project plan that we are working towards implementing now.

We have weekly group meetings where we go over the status of the tasks. We have monthly status meetings with Marc and Maureen on that, with a goal of completion by the end of this fiscal year.

Some of the lower priority tasks will probably spill over into 2018, but we want to ensure, though, that the higher priority tasks are completed this fiscal year.

COMMISSIONER BURNS: Okay. Okay. Do you want to add?

MR. LESSER: I -- Marc, I don't know if you -- I understand your question. I don't know if we knocked it out of the park. I'd like to be able to follow up, unless Marc --

MR. DAPAS: Well, I would offer, as you indicated, the real proof in the pudding will be, are we accurate with our fee billing

invoices? And what feedback do we get from the licensing community here? But we do need to look at, what are the interim metrics or measures that we can put in place to assess success.

And I would offer, as Brian said, we identified some of these areas via self-assessments, well, that same type of self-assessment, periodic evaluation that we would need to conduct to determine to what degree have we been successful with the measures that we put in place? But I do think we need to give some additional thought to what would be the appropriate outcome measures.

COMMISSIONER BURNS: Okay. Let me -- I think, Craig, this may be for you. You talked about in terms of the licensing -- licensing action volume that you had. You know, obviously, in recent years, in the reactor business line, the issue has been a question of backlog. I didn't hear so much about that. I'm not sure I've heard that. But what is -- what are the metrics for processing in there, and how processing licensing actions that come in, how are you all falling out along those lines?

MR. ERLANGER: Metric-wise, we have not had an issue with meeting our metrics. We have been -- a couple of quarters where we have been challenged, and a lot has to do with the volume coming in. Historically, we have had a much larger denominator. So if we missed a licensing action, it was a bit easier to recover from.

With the decrease in the overall number of facilities, the maturity of licensee programs, their actions, we have seen a lot less in the number area. What we are seeing in the program is a change in the nature of the work, where a while -- while there -- to state the

obvious, the overall number of facilities is decreasing from where we have been historically.

We are seeing increases in the areas of medical isotope reviews, which are reviews performed by our licensing staff. We are also seeing it in our engagement on accident tolerant fuel, and in other areas. So where there have been decreases in a program, there have been commensurate increases. But we have not to date been challenged. We have been meeting our metrics.

COMMISSIONER BURNS: And the metrics basically --

MR. ERLANGER: We have timeliness -- we have timeliness metrics. And, Brian, maybe you can help me out with the specifics. There's two metrics. We try to get to -- 150 days for licensing actions, we try to get them in and out.

COMMISSIONER BURNS: Okay.

MR. SMITH: Eighty-five percent complete within 150 day, and 100 percent complete within 540 days.

COMMISSIONER BURNS: Okay. And the volume of those actions, is it more than just the -- what you call the fuel cycle facilities, because it reaches some of those Part 70 licensees?

MR. ERLANGER: Yes. We do receive applications from greater-than-critical mass facilities and others. One area that we find a bit challenging is the predictability of future licensing work. Our averages are -- the projections we have are based on historical averages. Unless it is a major amendment, major plan, sometimes we hear about it real time that within the next 30 to 60 days we plan on

submitting X.

So that's an area we are looking at where we can enhance those communications to get a higher level awareness before an action comes in.

COMMISSIONER BURNS: Okay. And if I could ask just one last question directed to Mark. You talked about -- I appreciate what you were talking about in terms of, you know, equipping people to look at and conduct inspections, do oversight in areas that might not be their direct especially, but, you know, getting them trained, getting them the experience to do that.

Just sort of generally, are there -- and others can answer to -- can answer this as well -- are there particular skill gaps that we're seeing or concerned about in the next couple of years or so?

MR. LESSER: The skill gaps that we have been looking at primarily involve material control and accounting. That was a gap that we had about a year to two years ago. We lost a few people who were experts in that area, so we have -- that was a strategy we put in place to get people trained up.

COMMISSIONER BURNS: Trained up.

MR. LESSER: And the other area that we do find challenging is to get senior resident inspectors at the two Cat 1 facilities. And we have reached out to the operating reactor facilities to look for their skills, which we believe are very transferrable due to their resident inspector skills, and we have been successful in the past. So those are two areas we continue to monitor.

COMMISSIONER BURNS: Okay. Thanks.

MR. McCREE: I'd give a plug, segueing from your question, on an initiative started in Region II a while ago called resource management strategic initiative. And it undergirds what Mark alluded to, the -- encouraging people to cross-qualify in multiple areas, so that we -- they are more versatile and the region can be more agile in meeting not only those -- the current challenges, but any that may arise in the future.

I would offer that the new fuel designs for advanced reactors does present an opportunity for us to identify skills or that we may not have in the depth and breadth that we need, whether it's in metallurgy and/or reactor physics. So that's an area that we have spoken about recently at a quarterly performance review. And we'll have, as a senior leadership team, more discussions through the strategic workforce planning effort that -- that is being led by Mike Weber, as well as in our strategic leadership meeting coming up in May.

So there are some areas that we are focusing on a bit more closely.

COMMISSIONER BURNS: Good. Thanks. Thank you.

CHAIRMAN SVINICKI: All right. Well, thank you all, again.

And having closed on that response, Victor, I -- I would note that if other members of the Commission are having the same experiences as me, where we're hearing more and more about new fuel types, accident tolerant fuels. I know it has been discussed quite a bit

in advanced reactors, so it may be good fodder for future Commission meetings.

And so the staff can be thinking about that as well perhaps, but I think those topics are ripe for some focus just on them exclusively. But thank you, again.

We'll have a brief break now. My Smartwatch says it's 10:23, so we'll go to 10:28. Thank you.

(Whereupon, the above-entitled matter went off the record at 10:23 a.m. and resumed at 10:31 a.m.)

CHAIRMAN SVINICKI: Okay. If we can reconvene now, we will hear the staff's presentation and the Nuclear Materials Users Business Line.

Victor?

MR. McCREE: Thank you, Chairman, Commissioners.

We will now transition to the Nuclear Material Users or NMU Business Line. Slide 31, please.

With me at the table, again, is Marc Dapas, who will be provide a strategic overview of the NMU Business Line. He will be followed by Dan Collins, to his right, Director of the Division of Material Safety, State, Tribal, and Rulemaking Programs, or MSTR, NMSS, who will discuss the current Nuclear Materials Program environment.

Next, Linda Howell, to my left, Deputy Director of Region IV's Division of Nuclear Material Safety, will discuss the Materials Licensing and Inspection Program. She will also discuss implementation of the Web-Based Licensing Program, or WBL.

And lastly, Paul Michalak, Chief of the Agreement State Programs Branch with NMSS, will discuss implementation of the Agreement State Program.

So, with that brief introduction, I'll turn it over to Marc.

Next slide, please.

MR. DAPAS: Thank you, Vic. And again, good morning, Chairman and Commissioners.

I'll just mention I saw a little bit of laughter when you were referencing MSTR. One of the things I remember when I came into NMSS, MSTR, FCSE, DURWP, DSFM. It's been quite interesting, not quite as bad as FSME, but certainly a challenge in acronym space.

The Nuclear Materials Users Business Line has a significant breadth and scope. It includes materials licensing, inspections, security, rulemaking, Agreement State Program oversight in the context of the National Materials Program, and, then, federal, state, and tribal programs.

Given the broad range of activities and interests in this business line, we continue to communicate and coordinate with stakeholders and our partners to identify external factors early and to adopt strategies to mitigate potential uncertainties and disruptions to the business line's activities.

We continue to focus on effectively managing the current workload as well as preparing for future workload changes and potential challenges. The fiscal year 2017 rebaseline budget for this business line is 238 FTE and approximately $23.2 million, again, excluding corporate support. This is about 7 percent of the agency's

budget for fiscal year 2017.

Going forward, we are planning for adjustments related to the Commission-approved rebaselining and the Materials Program consolidation evaluation. Of particular note, the Nuclear Material Users Business Line is responsible for the rulemaking function for the four business lines under NMSS's purview. And currently, MSTR is extensively involved in the effort to establish the Center for Expertise with respect to rulemaking, with the goal of standing-up that Center on October 1st of this year.

Next slide, please.

Currently, we are actively working on a number of high-priority items. More specifically, we are working on Commission-directed tasks involving a reevaluation of Category 3 source-securing and accountability, in light of the Government Accountability Office's materials licensing audit, the experience the NRC has gained with source security and in light of the recently-completed Part 37 program review. This will help us to ensure our regulations and processes governing source security and accountability continue to adequately protect public health and safety.

We are also working closely with the State of Wyoming on its efforts to become an agreement state. Wyoming proposes in its draft application, which we received back in October 26th of last year, that the NRC retain authority over six Uranium Mill Tailings Radiation Control Act Title 2 licenses, which are the six uranium recovery licensees that are undergoing decommissioning.

We are preparing a Commission paper since this

proposal differs from the scope of the program already approved by the Commission. I would like to point out that, since this application is for uranium recovery, we do not expect significant impacts to the Nuclear Materials Users Business Line once Wyoming becomes an agreement state. However, as we did discuss with the Commission during the briefing on the Uranium Recovery Program last November, this will have a significant resource impact on the NRC's Uranium Recovery Program.

The third high-priority item that we are working on involves revision of the Tribal Protocol Manual to reflect the recent Commission-approved Tribal Policy Statement. To the extent possible, we will be conducting outreach with tribal organizations to increase their awareness of the Tribal Policy Statement and the associated Tribal Protocol Manual.

Let me now turn the presentation over to Dan Collins.

Next slide, please.

MR. COLLINS: Thank you, Marc.

Good morning, Chairman Svinicki and Commissioners.

I will be providing a brief overview of the National Materials Program and discuss some of the business line's accomplishments and ongoing activities.

First, let me provide some general background on the National Materials Program and the licensee base for the NMU business line.

Next slide, please.

The National Materials Program is a broad collective

framework within which both the NRC and the Agreement States function in ensuring the safe and secure use of radioactive materials. Between the Agreement States and the NRC, we regulate more than 20,000 specific licensees in the United States that range from small companies that utilize well logging sources to larger medical users.

About one-third of all materials licensees are engaged in diagnostic or therapeutic medical practices. A small number are academic or research users, and the majority of the remaining licensees use radioactive materials for commercial or industrial purposes such as radiography, soil density testing using portable gauges, and sterilization of materials using irradiators.

On this slide are some pictures to showcase different applications of nuclear materials. Note that approximately 86 percent of materials licensees are now under Agreement State oversight. The number of materials licensees remains relatively stable. In providing for an effective National Materials Program, it is essential that the NRC and Agreement State programs are compatible for the wide variety of licensees that are collectively regulated.

Next slide, please.

The National Materials Program activities effectively support NRC's strategic goals and objectives. I will briefly describe several areas of our accomplishments.

Based on information reported by Agreement States for their most recent Integrated Materials Performance Evaluation Program, or IMPEP, reviews, as well as information from NRC Regions, we estimate that the National Materials Program completed around

20,000 licensing actions and well over 5,000 inspections in fiscal year 2016. In addition, there were also nine IMPEP reviews of Agreement State programs conducted in fiscal year 2016. As a result, we provided reasonable assurance for the safe and secure use of radioactive materials in medical, industrial, and academic applications for beneficial civilian use.

We are engaging in several activities to help improve the National Materials Program and to ensure the program functions efficiently and effectively. We are making significant progress on those activities. For example, we are completing revisions of all 21 volumes of the NUREG-1556 series, which is consolidated guidance about materials licenses. To date, seven volumes are completed. In addition, each volume contains references to the Safety Culture Policy Statement along with examples of safety culture traits. For the balance of the volumes that have not yet been completed, all except for one are in the process of collecting or addressing public comments.

Other examples include revising Inspection Manual Chapter 2800 which contains the Materials Inspection Program guidance to allow for the addition of more flexibility and common-sense extensions to the periodicity of inspections for materials licensees; changing the licensing renewal terms from 10 to 15; centralizing bankruptcy reviews at headquarters; continuing to improve the WBL system, and, finally, coordinating with the Office of the Chief Financial Officer and Regional Offices to address fee billing issues in accordance with the November 8, 2016 tasking memorandum from Marc Dapas and Maureen Wylie.

In the fee billing effort, we are working to clearly define roles and responsibilities between NMSS, the Regions, and OCFO. We are working, also, to ensure data integrity in web-based licensing and to address incorrect or non-billing of licensees that resulted from communications problems between WBL and the Financial and Accounting Integrated Management Information System, which is also known as FAIMIS.

In the area of source security, we conducted a comprehensive review of the effectiveness of the requirements in 10 CFR Part 37, which is physical protection of Category 1 and Category 2 quantities of radioactive material. That review considered nine areas regarding this rule and its implementation.

We concluded that the requirements in 10 CFR Part 37 are effective in protecting Category 1 and Category 2 quantities of radioactive material. In addition, we also identified specific areas in which revision of the rule, development or revision of implementing guidance, and enhanced communication with licensees would provide for greater understanding and improved consistency in licensees' implementation of the rule.

Additionally, as Marc mentioned, we are conducting a reevaluation of Category 3 security and source accountability. To accomplish this, we are soliciting stakeholder feedback via a Federal Register notice, webinars, public meetings, industry meetings, and workshops, developing a vulnerability assessment that considers changes in the threat environment over the past several years, and evaluating processes for license verification and source tracking for

Category 3 sources.

Recently, we submitted an information paper to the Commission with our plan to complete this task, including the associated outreach efforts as well as our plan to propose an integrated rulemaking that incorporates a number of planned activities relevant to source security and accountability. We will provide this rulemaking plan to the Commission for deliberation after receiving Commission direction on the notation vote paper that we will submit in August of 2017 to seek Commission approval on recommendations deriving from the Category 3 reevaluation effort.

Another item I would like to highlight is the work we are doing on patient release, principally in connection with radioactive iodine treatment. We are soliciting public input on patient release regulations and guidance, and we plan to use this information along with research data to update NRC guidance and inform any potential regulatory changes. We intend to submit a Commission paper in December of 2017 to provide the results of our evaluation and any recommendations to update guidance and regulations.

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The National Materials Program continues to provide substantive support to a variety of bilateral and multilateral international activities, including those at the International Atomic Energy Agency. We participate in a number of activities to satisfy international treaty and convention obligations as well as statutory mandates.

Examples include serving as the United States Government lead for implementing the Code of Conduct on the Safety

and Security of Radioactive Sources Initiative and supporting a wide range of cooperative programs to exchange information with established regulatory counterparts to mutually enhance the agency's respective programs.

We also actively support the IAEA assistance programs and activities to help foreign regulatory counterparts develop or enhance their national regulatory infrastructures and programs, as well as strengthen controls over radioactive sources consistent with the Code of Conduct.

In addition, we support a wide variety of international technical meetings to ensure NRC views are adequately considered and help to shape the development of international guidance and recommendations. This includes regular meetings with the Radiation Safety Standards Committee, through which we provide valuable expertise on the development and revision of IAEA guidance documents and standards.

Next slide, please.

We are actively engaging in frequent and clear communications with stakeholders since it is one of the most important keys to the success of the National Materials Program. I would like to mention two primary partners that helped the NRC to achieve its mission and the goals of the National Materials Program; namely, the Organization of Agreement States, which we refer to as OAS, and the Conference of Radiation Control Program Directors, which we refer to as CRCPD.

We coordinate closely with both OAS and CRCPD

through monthly teleconferences, attendance at their board meetings, and participation in their annual conferences. OAS and CRCPD will share their perspectives with you an upcoming Commission meeting in April of this year.

Additional, we use Radiation Control Program Directors' letters to communicate sensitive, unclassified, and non-safeguards information with the Agreement States. This communication vehicle helps to ensure that we have a quick and reliable method to convey sensitive information that is relevant to the continued protection of public health and safety and the common defense and security.

In addition, we collaborate with various stakeholders on a number of initiatives and use a variety of mechanisms to communicate issues of mutual interest. For example, we coordinate and facilitate internal meetings such as the Commission meeting involving OAS and CRCPD that I just mentioned and the Advisory Committee on the Medical Use of Isotopes, also known as ACMUI. We meet with ACMUI formally twice per year and we engage them on a case-by-case basis during the year to help guide and inform our regulatory actions in areas that impact the practice of medicine. ACMUI will also share their perspectives with you during an upcoming Commission meeting in April of this year.

Another example of our active engagement with stakeholders is our outreach effort on safety culture. In addition to the safety culture educational tools that were discussed in the Fuel Cycle Business Line briefing earlier, we keep our Agreement State partners

involved in the Safety Culture Initiative by having a standing member from the State of North Carolina on the Safety Culture Advisory Committee. Additionally, in September of 2016, we provided a presentation at the Meeting of Mid-Atlantic States Radiation Control Programs that was held in New Jersey.

Next slide, please.

We are focusing on continuous improvement, and here are some examples: in addition to making progress on improving the National Materials Program that I have already discussed, we are prioritizing resources so that NMSS, our partner offices, and Agreement States can appropriately address findings and recommendations from Government Accountability Office and the Office of Inspector General audits.

In fiscal year 2018, we are planning for reductions in the NMU Business Line resources to incorporate changes associated with Commission-approved rebaselining and the Materials Program Consolidation Evaluation, which impact both headquarters and the regional budgeted activities.

We are implementing position management strategies and continue to work with our staff and stakeholders to ensure we maintain flexibility in our program, to adapt to changes and resource reductions while still meeting our mission in an effective and efficient manner.

Finally, I would like to highlight a particular challenge that the NMU Business Line faces, which is keeping up with technological advancements in various license modalities. One

example that we are working through involves radiographers using a single state-of-the-art multifunction device to meet the requirements for having a direct reading dosimeter and operating an alarm rate meter and a personal dosimeter on their body while conducting radiographic activities. NRC's position has been that a single device cannot be used to meet all three requirements. However, some Agreement States have allowed the use of commercially-available, state-of-the-art multifunction devices to satisfy some of those multiple requirements.

Rulemaking would be required to fully address the issue, which we are evaluating in conjunction with our review of a related petition for rulemaking. In the meantime, we are working with the Office of Research to assess the reliability of this technology, and we are also working with the Office of General Counsel, the Office of Enforcement, and the Regions to consider use of enforcement discretion to permit the use of this technology.

I will now turn the presentation over to Linda Howell.

Next slide, please.

MS. HOWELL: Thank you, Dan.

Good morning, Chairman and Commissioners. I'm pleased to be here this morning to provide you with a brief overview of the Regional Office accomplishments and challenges in the areas of materials licensing and inspection. My presentation provides information on combined regional activities and implementing the Materials Program in fiscal year 2016.

Next slide, please.

The NRC's Regional Materials Licensing and

Inspection Programs focus on safety and security with respect to beneficial uses of source and byproduct materials and they effectively support the National Materials Program in meeting its objectives. The Regional Offices implement robust and effective oversight programs for materials licensees. Both internal audits and evaluations performed under the NRC's IMPEP process continue to demonstrate that the Regions' licensing and inspections follow risk-informed and performance-based methodology to ensure safety and security.

There have been several noteworthy and significant accomplishments during the past fiscal year. In fiscal year 2016, combined, the Regional Offices reviewed and completed approximately 1,650 licensing actions and conducted approximately 1,000 inspections of the nearly 2,400 NRC materials licensees. The regional staff also processed 1,900 reciprocity requests, which are requests from Agreement State licensees for authorization to use licensed material in areas under NRC jurisdiction pursuant to the general license of 10 CFR Part 150.

The number of inspections and licensing actions completed in fiscal year 2016 is roughly the same as were completed in the previous two to three years. Whenever possible, the Regions perform unannounced inspections of work being conducted in the field in order to provide a representative assessment of licensee performance.

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For material licensees, the geographical areas of use include the 50 states as well as U.S. territories as far east as Puerto

Rico and to the west as far as Guam and American Samoa, as well as far north as the Northern Slope of Alaska on the banks of the Arctic Ocean. Given this vast geographic territory, it is very challenging to conduct unannounced inspections of temporary jobsites in these remote locations.

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The photographs on this slide and the next depict various industrial activities such as radiography and well logging that inspectors may review in the field at remote locations. Here we see radiographic operations being conducted in connection with a pipeline.

Next slide, please.

Our inspectors also travel offshore in the Gulf of Mexico to inspect well logging or radiography work performed on platforms or lay barges. Here you see photographs of well logging activities.

Next slide, please.

Regional inspectors are also dedicated to observing and inspecting risk-significant activities in the field. For example, on Super Bowl weekend last year an inspector flew to Anchorage, Alaska to monitor the transfer of a self-shielded blood irradiator containing Category 2 quantities of Cesium-137. The irradiator was loaded into a Type B transportation container and was transported to a new location in the middle of the night. Anchorage police used the event as a training exercise, and security for the evolution involved SWAT and other police officers.

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The Regions also evaluate and respond to events as

needed. In this regard, the regional staff conducted 22 reactive inspections in response to medical events, transportation events, and an overexposure of a licensee employees in the past fiscal year. The Regions closed 44 allegations and processed 16 cases involving potentially willful actions identified by the Office of Investigations.

The inspections conducted by all three Regional Offices resulted in 40 escalated enforcement actions, of which two involved alternative dispute resolution with the licensee. One priority for the alternative dispute resolution process is to ensure that safety culture traits applicable to each enforcement case are addressed in the associated confirmatory order. The number of reactive inspections, allegation reviews, and escalated enforcement cases were approximately the same as the average over the past two to three fiscal years.

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The Regions also provide oversight of master materials licensee programs. Region I has oversight responsibility for the U.S. Navy. Region III oversees the Veterans Administration, and the U.S. Air Force is overseen by Region IV.

Oversight of these master materials licensees includes licensing action reviews such as amendments and renewal of the master materials licenses, communicating frequently with the licensees, and accompanying the licensees' internal inspections staff to review their inspections of sites and permittees to ensure consistency with the NRC's Inspection Program.

The Regions also perform independent inspections of

the master material licensees' facilities, and we coordinate those inspections closely with the licensee's inspection to avoid duplication as well as with the other Regional Offices to ensure effective use of our NRC inspection resources.

Another of the Regions' responsibilities is coordination with the Agreement States, which is primarily done through the Regional State Agreement Officers. The regional materials licensing and inspection staff also support the Agreement State Program through participation in Agreement State Program reviews under the IMPEP process and by providing consultation and training as requested.

In addition, regional materials licensing and inspection staff support the Program Office through participating in working groups such as those involved with reviewing the licensing and inspection programs, as directed under the rebaselining initiatives, through rulemaking, and by developing guidance such as the NUREG-1556 series. And when needed, we also assist in drafting generic communications such as regulatory information summary.

Regional staff continues to support international initiatives in the nuclear materials arena. In fiscal year 2016, an NRC manager from Region IV provided training under an NRC assistance program to foreign regulatory management and staff on the fundamentals of radioactive source inspections. Regional licensing and inspections staff also continues to support the Technical Training Center by providing instructors on various courses.

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I'll now provide just a very brief overview of the NRC's

implementation of WBL. The NRC has continued to make progress in implementing WBL. Last year the NRC Materials Licensing staff began full use of the WBL system to generate licenses. Prior to 2016, the software was being tested and our staff were still be trained on its use.

WBL supports the management of the licensing and inspection information as well as license generation that enables NRC staff to manage the licensing cycle from initial application through issuance of the license, amendments, renewals, and, finally, termination in the license.

WBL requires the staff to enter data and populate fields for generating a license. Once that initial license is issued for a given licensee, making any changes to or renewing the license will take less time; thus, improving the efficiency of the licensing process. In addition, the use of WBL allows us to generate licenses that have resulted in greater consistency in the license document itself as well as the content of the license.

Not only is WBL used for generating licensees, it does have features similar to a database that allows it to produce reports that help the staff manage the licensing and inspection casework, provide input to our performance matrix, and identify licensees with Category 1 and 2 quantities of material for incident-response purposes.

WBL also provides capability to document a licensee's inspection history. Thus, it provides us a single source for tracking and reviewing both escalated and non-escalated enforcement actions.

In addition, WBL interfaces with the FAIMIS system for

fee billing and cost recovery. As both Marc and Dan mentioned earlier, there is a significant initiative underway to address fee billing issues, and the regional staff have been working closely with NMSS and OCFO on that project.

We have identified several WBL enhancements that are being prioritized and worked as time and resources allow. In summary, the progress initiated last year in implementing enhancements to WBL, our completion of staff training on the system, and placing the system into full use in generating licenses has enhanced efficiency and effectiveness of the materials licensing process and has also addressed several of the observations documented in the Office of the Inspector General's audit of the WBL system. Specifically, the use of the system for licensing actions consistently throughout the Regions and its continued use or enhanced use for inspection information more uniformly has specifically addressed some of the OIG recommendations.

I'll now turn the presentation over to Paul Michalak.

MR. MICHALAK: Thank you, Linda.

Good morning, Chairman Svinicki and Commissioners.

The Agreement State Program has been critical to the success of the NRC's execution of its mission for the past 54 years. Starting with the first agreement signed by the NRC and the Commonwealth of Kentucky in 1962, the NRC's program has matured and evolved in the last five decades. Currently, 37 states have signed formal agreements with the NRC and have the regulatory authority to license and regulate byproduct materials, source materials, and certain

quantities of special nuclear materials.

It is important to note that our oversight and liaison activities in the Agreement State Program support the National Materials Program. Under the National Materials Program, the NRC and Agreement States function as regulatory partners.

Today I am going to speak about several areas of the National Materials Program, including the IMPEP process and training provided to the Agreement States. I will also highlight current topics of interest to the Agreement States.

Next slide, please.

The IMPEP process has been, and continues to be, an effective means of evaluating both Agreement State and NRC regional material program performance. As Dan mentioned earlier, we conducted nine IMPEP reviews and associated Management Review Boards in fiscal year 2016. The Management Review Boards, which consist of NRC senior management and an OAS liaison, determine the overall assessment result for each NRC Region and Agreement State Radioactive Materials Program. The Management Review Boards determined that all but one of the nine programs were adequate to protect public health and safety and compatible with the NRC's program. The remaining program was adequate, but not compatible, and the State is taking actions to address that finding.

In addition, we held 14 IMPEP periodic meetings to help the NRC staff and the Agreement States remain knowledgeable of the others' respective programs and to plan for future IMPEP reviews. These meetings are not formal evaluations. Rather, they are open,

informal, and interactive discussions of programs' status and performance and include the identification of issues and actions for their timely resolution.

The IMPEP process provides a graded approach for addressing program weaknesses. The NRC may implement monitoring, heightened oversight, or probation of an Agreement State program, depending on the significance of the issues identified.

Monitoring is the lowest-level action. It is an informal process in which we maintain an increased level of communication with an Agreement State Program.

Heightened oversight is the next-level action and is a formalized process that allows us to maintain an increased level of communication with an Agreement State experiencing program difficulties.

Probation is a high-level action when the Management Review Board identifies program weaknesses regarding the adequacy and/or compatibility of the Agreement State's program, but does not consider the weaknesses so serious as to find the program inadequate to protect public health and safety. Of the 37 Agreement States, four are on monitoring and none are on heightened oversight or probation.

We are currently preparing the Proposed Final Policy Statement for the Agreement State Program for Commission approval. The Policy Statement is a consolidation and update of the existing Policy Statement. It addresses the federal/state interaction to establish and maintain agreements with the states under the provisions of the Atomic Energy Act.

Our implementation of this Policy Statement would ensure post-agreement interactions between the NRC and Agreement State Radiation Control Programs are coordinated and also ensure that Agreement States provide adequate protection of public health and safety and maintain programs that are compatible with the NRC's regulatory program. We are on schedule to deliver the Policy Statement to the Commission in April of this year.

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As part of our IMPEP reviews, team members accompany a sample of state inspectors doing different types of license activities to directly evaluate the performance of the inspectors. These pictures are from an inspection accompaniment conducted during the 2016 Tennessee IMPEP and involved high-dose rate remote afterloader brachytherapy at a hospital in Tennessee.

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Self-assessments are an integral part of how high-performing organizations establish and maintain that level of performance. With support from OAS, we are currently undertaking a focused self-assessment of the IMPEP process. As part of the self-assessment, we are evaluating the process to determine if changes or enhancements are warranted, including whether certain IMPEP performance indicators are complete and sufficiently focused.

We are also examining whether changes are needed in IMPEP indicator criteria and metrics to enhance clarity and consistency based on fact-of-life changes to the overall Materials Program. It will entail an assessment and efficiency and effectiveness

of two common performance indicators: technical staffing and training and the status of the Materials Inspection Program. We selected these two areas because, historically, Agreement States have found them the most challenging.

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As active partners in the National Materials Program, we anticipate that Agreement State management and technical staff will continue to actively contribute to the National Materials Program. This includes participation in IMPEP reviews and various NRC-led working groups.

For fiscal year 2017, 11 Agreement State technical staff will participate in IMPEP reviews. Nine Agreement State technical staff participated in the recently-completed February 2017 IMPEP team member training. There are 27 Joint NRC Agreement State Working Groups covering topics such as Standing Committee on Capability and implementation of Part 37, as well as working groups related to various volumes of NUREG-1556. The working groups have one or more Agreement State members.

In fiscal year 2017, both Wyoming and Vermont are expected to submit formal Agreement State applications. For Wyoming, we are reviewing the draft application for a limited agreement that addresses regulatory authority over the subcategory of source material involved in the extraction and concentration of uranium and thorium milling, as well as the management and disposal of byproduct material. For Vermont, the application will be for the NRC to relinquish portions of its regulatory authority to license and regulate byproduct

materials, source materials, and certain quantities of special nuclear materials.

For the foreseeable future, we expect the continuing challenge with Agreement States, particularly smaller programs, in maintaining sufficient technical staffing. The problem is primarily related to the lack of radiation protection professionals, particularly health physicists, and the related issue of staff turnover.

The lack of radiation protection professionals is not a new issue. In June 2005, the Health Physics Society issued the Position Statement, "Human Capital Crisis in Radiation Safety". More recently, in December 2015, the National Council on Radiation Protection and Measurements issued Statement No. 12, "Where Are the Radiation Professionals?" In this paper, the Council concluded that the nation is on the verge of a severe shortfall of radiation professionals.

To help address this issue, as part of the Energy Policy Act of 2005, the NRC, under the National Nuclear Education Program, funds scholarships, fellowships, and faculty development in nuclear-related fields, including health physics and radiochemistry.

As I will discuss next, we are taking additional steps to help mitigate this issue by providing technical training to Agreement State personnel. Despite the fact that we are keeping up with Agreement State training demands, the lack of radiation protection professionals and staff turnover are ongoing issues in some Agreement State programs.

Next slide, please.

We continue to meet Agreement State training needs. In fiscal year 2016, we provided 38 training courses to Agreement States with 548 training slots filled by Agreement State personnel. We achieved these numbers by reducing travel costs through the use of non-refundable airline tickets and the Technical Training Center's successful implementation of online and blended training, blending being a combination of online and in-class training.

In the current fiscal year, the Agreement State travel and training budget is reduced by 10 percent. Nevertheless, through the Technical Training Center's innovative efforts to expand the online and blended training, as well as our continued conversion of select in-class training to either online or blended training, we still plan to offer 38 classes and expect well over 500 training slots to be filled by Agreement State personnel in fiscal year 2017.

In addition to training classes, we provide the Agreement States with training assistance, including webinars on issues of common interest and routine interactions with our staff on specific issues. We provide informal training in the form of advice and guidance on various issues related to the regulation of source and byproduct materials and small quantities of special nuclear materials.

Almost without exception, Agreement States have provided positive feedback to the Management Review Boards and staff regarding the benefits of participating in IMPEP reviews and the technical training provided by the NRC.

Next slide.

Current topics of interest to OAS and its member states

cover a wide range of issues pertinent to the regulation of source and byproduct materials. Over the last year, in discussions and interactions with Agreement State managers, several topics appear to be of particular interest. As is the case for us, all of these topics have potential resource implications for the Agreement States and/or their licensees.

One of the topics of particular interest is the 2016 GAO audit and investigation on source security. Two Joint NRC Agreement State Working Groups developed recommendations with respect to pre-licensing and license verification processes in response to the GAO audit findings. These recommendations include revisions to guidance, procedures, and training that will be implemented by the NRC and Agreement States.

Another topic is the reevaluation of Category 3 security and source accountability. This effort includes evaluating the addition of Category 3 sources in a National Source Tracking System and examining the effectiveness in requiring licensing verification through the License Verification System or through the regulatory authority, that is, the NRC or Agreement States.

Agreement States are interested in non-military radium. As part of our effort to identify historical non-military sites with the potential for radium contamination, we developed lists in Agreement States that historically used radium and provided them to the individual states. Agreement States need to determine whether radium contamination is currently present at these sites and, if so, the amount and the extent of contamination.

Another topic of interest for Agreement States and licensees is the Part 35 rulemaking. Among other things, if approved, the rule would amend the medical event definition for reporting and notification requirements for permanent implant brachytherapy. The final rule includes several other requirements, including specified training and experience, criteria for measuring molybdenum contamination, and adds a new requirement for the reporting of failed technetium and rubidium generators. We expect Agreement States to adopt the rule within three years of its publication.

Agreement States and licensees are also interested in the proposed financial planning rulemaking. On October 7, 2016, staff requested Commission approval for a rulemaking plan on financial assistance for disposition of Category 1 and 2 byproduct material radioactive sealed sources. This proposed rulemaking, if approved, would ensure that licensees possessing these risk-significant sources are financially prepared for the cost of final dispositioning.

This concludes my remarks. I'll now turn the briefing back to Mr. McCree for closing remarks.

MR. McCREE: Thanks, Paul.

And thank you again, Chairman and Commissioners, for your attention this morning during our briefings on both business lines.

I had hoped that you heard this morning evidence that we do embrace the ethos of being a learning organization. I believe that's evidenced in the multiple self-assessments that NMSS has conducted and, then, the self-initiated lessons learned review. We

value being our own worst critic and learning from our failures, if you would, and even learning from where we have succeeded, and understanding what caused us to succeed so we can continue to replicate that success.

I also hope that you recognize the openness that has been indicated as this office has engaged multiple stakeholders, both internal and external, to make sure that there is shared understanding and that the decisions and recommendations are fully informed. I believe that evidence is both our principle of good regulation which speaks to openness as well as our value of openness.

And finally, the offices via the business lines focus on becoming more effective, efficient, and agile, which is the heart of Project Aim. I believe that is being ingrained within the culture, as evidenced here, and I think that is the ultimate success, if you would, of Project Aim when there is evidence of that.

Now, with that, that completes our presentation this morning. We are ready for your questions.

CHAIRMAN SVINICKI: Well, thank you again to all the presenters and to your colleagues who helped you prepare the presentations that you have given this morning.

As Commissioner Burns mentioned, there is such a diversity of topics in each of these panels, it is hard to know where to begin.

Let me begin, though, by commenting that I agree very strongly with what Victor said. I am struck by all of the self-directed reviews and initiatives underway to continue to keep both business lines

and all the activities within those business lines on a journey of continuous improvement.

Along those lines, I will start with Paul. You spoke about the IMPEP reviews and, again, continuing to look at the efficiency and effectiveness of that process. Our relationship with the Agreement States is, of course, a matter of law, but also a very important partnership for us.

As you mentioned the human capital challenges there in the health physics area, on a kind of parallel but separate topic, in terms of the working groups and other dialogs that we have going on, maybe the more issue-specific dialogs with our Agreement State partners, do you find that Agreement States have the resources in order to designate participants on the various working groups? Are you hearing anything about them being able or having challenges in resourcing the participation in those groups?

MR. MICHALAK: For the working groups, just the opposite. I mean, they insist upon participation and they are very strong participants.

An example is the self-assessment for IMPEP. We have two Agreement State members, and one of them is actually quite vocal about IMPEP consistency. And we're glad he is on there. We feel that he is going to make a good contribution, and our work product will contribute to the improvement of the IMPEP process. So, actually, what we have found is a big demand; they want to get on the working groups.

CHAIRMAN SVINICKI: Okay, and I don't in any way

mean to gloss over the other challenges that often the Agreement State programs have in terms of human capital; also, access to training, cost-effectiveness of training. I feel you covered that well. So, I didn't have any questions in those areas.

On the Tribal Policy Statement and the associated manual, I think you described a process of beginning to have outreach. Is that more for awareness at this point? And as both of those documents are in use for longer periods of time, will we have some systematic way to get feedback or to collect feedback we are receiving that we might, if we in the future wanted to revise or update either? Can anyone talk about the way that we will collect those experiences as the documents are operative for longer periods of time?

MR. COLLINS: Okay. So, two parts to the response, Chairman. Thank you for the question, though.

In terms of the current outreach, it is really more for awareness. I just finished signing 567 letters that went to the tribes and shared with them the Tribal Policy Statement for their awareness. So, we completed that last week.

In terms of the future, the Tribal Protocol Manual will have a periodic refresh requirement. And so, I would envision -- and we will need to follow up to make sure that we actually capture this; this was a ticket -- but I would envision that we would do some form of a reach out to capture perspectives, not just from the tribes, but from any member of the public as well.

CHAIRMAN SVINICKI: Okay, great. And, Dan, while I'm talking to you, I thought that your example about multifunction

devices for dosimetry and alarms was an interesting reminder to all of us about, yes, we want to have continuous improvement of our processes internally, but the world is also marching on. Technology is being developed. So, I thought it was interesting to hear an example in the materials realm that, perhaps when the rule was written, we didn't contemplate the development of this kind of technology.

Is this a bit of a one-off or was that just one example of something that we see quite a bit in the materials area?

MR. COLLINS: I wouldn't say it is a one-off, but I also wouldn't say that we are seeing it a whole lot. There are a couple of discrete examples that we are trying to work through that particularly impact the licensees in the Agreement States.

CHAIRMAN SVINICKI: Okay, and you did mention working with the Office of Research and others to look at the potential development or use of enforcement discretion. There again, if the safety case can be made and we can agree with the sufficiency of using a multifunction device, I appreciated you raising that here today.

Marc has his hand on the button. Did you want to say something?

(Laughter.)

MR. DAPAS: Just one quick comment. Engaging research and evaluating how we want to approach it longer-term here, whether the technology satisfies our requirements, we are dealing right now with a nearer-term issue. We have some enforcement action in Region III and Region IV right now. Is it escalated enforcement? We have a non-concurrence that we are working through.

So, this is an issue that we need to reach closure on in terms of how we are going to disposition the current violations. And then, we need to look forward in terms of, is there a change to the regulations that is necessary that would recognize this advancement in technology?

CHAIRMAN SVINICKI: Okay, and to have perhaps some more durable approach going forward. But thank you for letting me know about some actions in the near-term that have a connection to this. That is helpful.

My last area that I wanted to raise is one of these broader things that isn't just for this business line, but I think manifests so squarely here. So, I'll begin by telling a story, which is in the process of testifying as a member of this Commission before our congressional oversight committees, the issue has been raised at least one time about, on the operating reactor side, because we are 90-percent fee recovery, a fee billing agency under law, that if you were to see a gradual diminishment in the number of operating reactors, the way the question was posed to me was, is it fair that the remaining people have to pay, basically, the administrative burden of the entire NRC program?

My response, I hope respectfully conveyed, was, you know, I don't really frame it as a fairness issue. It is kind it is math. And so, if the law requires that you recover these fees, then if there's fewer people to recover them from, then there is some level at which it is a lot of administrative overhead for very few licensees.

But it occurs to me that really a singular manifestation of this is every time you get an Agreement State, you have fewer NRC

licensees. So, although the question wasn't raised in that context, I think it certainly manifests itself in this area.

Is there a better answer I could be giving to that question than just say, well, as I said, well, it's a mathematical outgrowth? And I do acknowledge that there is some point at which it is such a small number of licensees that it becomes something you would want to think about doing something about. But is there anything beyond that answer that would be more satisfying?

MR. DAPAS: Let me just offer one quick thought. We have explored this in the past under Mike Weber's leadership when he was the Director of NMSS and I was involved in the Division of Nuclear Material Safety in Region III.

And that is, under the context or guise of the National Materials Program, can some of the Agreement States take on broader responsibilities in some of these programmatic cross-cutting aspects there versus the NRC staff taking the lead for that and --

CHAIRMAN SVINICKI: I can see that that might be a little perilous because we are still responsible for national coherency of the approach across the country under law. So, yes, that is a very complex question. I am sorry I interrupted you.

MR. DAPAS: No, I guess I would offer I agree, we have to retain our responsibility, but also some of the specifics in work effort. You know, the Agreement States could propose something for NRC consideration versus we taking the lead in developing the product and, then, asking the Agreement States, "What do you think about this?" It really gets down to, in my view, who would have overall

responsibility for the lead? And then, we would have to endorse that product consistent with our regulatory responsibilities. That would be an initial thought about that.

CHAIRMAN SVINICKI: Okay, and I think we see that kind of labor-saving approach where we endorse guidance that is developed by the regulated community, again, upon our review and our agreement that it is adequate and sufficient. So, I see a parallel with that idea.

Did anyone else want to address that?

MR. COLLINS: And so, if I could add a perspective, and this kind of gets back to your first question for Paul, the Agreement States are able to support many of the working groups that we have. One of the areas where they do have challenges, though, in supporting working groups, and perhaps something more broad, like Marc just described, is that for some of the smaller programs, they would have difficulty, I think, in being able to staff additional work.

CHAIRMAN SVINICKI: Okay. Thank you. Thank you. That's helpful.

Commissioner Baran?

COMMISSIONER BARAN: You caught me drinking water.

(Laughter.)

Well, thanks for your presentations.

The staff recently sent the Commission an update on radioactive source security and accountability activities. This is important work and I appreciate all of your efforts in those areas.

This paper explained that the staff is contemplating one combined rulemaking plan for several source security and accountability issues. And I think the idea is to do one rulemaking to address any Part 37 physical security changes, any source accountability changes, and, also, potentially financial assurance for the disposal of Category 1 and 2 sources, if the Commission approves that.

And as I was thinking about it, I think there are definitely times when it makes sense to do a comprehensive rulemaking like the power reactor decommissioning rulemaking where there are several closely-related issues that stakeholders want to see addressed simultaneously. Source security, accountability, financial assurance struck me as fairly distinct or more distinct issues.

In my time on the Commission, I have seen a couple of instances where rulemakings tried to address multiple topics that were only loosely-related, and sometimes those rulemakings drag on for like a decade or longer. And it seems like the slowest element ends up slowing down pieces or elements that could have moved much faster.

Dan or Marc, can you walk us through the thinking behind combining all of the separate radioactive sources using the one rulemaking? What do you see as the pros and cons of doing that? Is there a case here where there are elements that could potentially slow down the entire package?

MR. COLLINS: So, thank you for that, Commissioner. We are recommending that an integrated rulemaking be undertaken in order to address multiple recommendations, both from the Part 37 program review as well as some of the working groups that we stood

up for the GAO sting and, for now, the working group that is looking at the Category 3 source accountability and security.

And one of the considerations, as we were working at this, is that the recommendations that come of those various working groups all touch on some of the same portions of the regulations. And so, if we were to do them in a discrete fashion where you, say, for example, take care of Part 37 just associated with the PRM and with the Part 37 program review, but we don't take care of what is coming out of the Category 3 source accountability, then that Category 3 source accountability work, those recommendations would have to wait until that first rulemaking is finished.

Similarly, for some of the recommendations for the Pre-licensing Working Group, those would touch Part 30, Part 40, and Part 70. And the recommendations from the License Verification and Transfer of Sources Working Group as well as potentially the Category 3 review would also potentially affect Part 30, Part 40, and Part 70.

And so, the thinking was, if we are going to have the rule open for revision for any one of these working groups, we should holistically do it all at once in a coordinated fashion, rather than having to delay some portions of these recommendations until the first rulemaking is finished.

MR. DAPAS: Just a couple of additional things that I would offer is the rulemaking activities we are talking about would impact the same population, if you will, or stakeholders here. When we talk to our Agreement State partners, one of the items of feedback is, you know, we need sufficient time to review here, and it is a resource

impact for the Agreement State staff. So, being able to comment on one integrated rulemaking that would address, say, Part 30 or Part 40, Part 30 in particular, Part 37, would be of value in terms of resource efficiency. So, that was part of the thought process, that it is the same group of stakeholders that are associated with the different rulemaking activities.

And Dan mentioned the PRM. There is a petition for rulemaking that was submitted by NEI dealing with Part 37 and Part 73. And so, that would be another one of the items that we would want to address in this integrated rulemaking approach.

And then, we were looking at the financial assurance that Paul mentioned, bringing that into play when we look at the regulatory basis aspect. The Commission has weighed-in on that rulemaking plan, but that is how we would integrate that activity into the others that we are talking about in terms of an integrated rulemaking.

So, the long and short of it is we think it is the most efficient approach in providing for that effectiveness outcome that we are trying to achieve.

COMMISSIONER BARAN: Okay. So, it sounds like you think there is a pretty tight nexus between the source security and the source accountability issues, in part because the working groups are addressing those issues in an overlapping way.

MR. DAPAS: Yes. So, you know, one of the rulemaking recommendations coming out of the Pre-licensing Verification was that equipment needs to be in place, right, before a licensing action is issued. So, that would affect part of the regulation

that might be the same associated with some of the other recommendations that might come out of source security and accountability, or looking at inclusion of Cat 3 and STS affects part of the regulation that also -- or the same regulation that is germane to other recommendations. So, it is that integrated assessment of just looking at the particular rule, and we get comments specifically to that, and it is just felt to be more efficient.

COMMISSIONER BARAN: Okay. And I take your point in terms of the potential efficiency for stakeholders and commenting on things. Do you think there's also that nexus on the financial assurance issues? Are those -- they are? Okay.

MR. COLLINS: And they would largely be the same Agreement State partners that would be supporting us.

COMMISSIONER BARAN: Okay. The staff recently published a Federal Register notice seeking stakeholder feedback on questions related to the ongoing reevaluation of Category 3 source accountability. I think the comment period closes next week, and the staff has already done a public meeting, a webinar. I think you might have another webinar today.

Agreement States are some of the key stakeholders, as you mentioned, on these source accountability issues. Dan or Paul, can you give us a sense of what you are hearing so far from states on the accountability issues?

MR. COLLINS: Sure, I can start and, then, Paul if you can add?

COMMISSIONER BARAN: Okay.

MR. COLLINS: So, we have heard a couple of things from the Agreement States. And the two prominent ones that come to mind for me are that we should consider a graded approach to any new requirements that we might create. So, for example, the question that we have heard is, does it make sense for the reporting requirement for reporting a transaction into NSTS to be required to be done in 24 hours for Category 3 source materials, which are a small percentage of the quantity of Category 1 materials? So, they are not saying it should be a year, but something not necessarily as tight as 24 hours. So, that is one example.

The other area of concern or interest that we hear from them is impact on their resources. So, in one of the recent public meetings we had a relatively small program that currently has eight FTE on its staff, and they shared with us that their initial guesstimate, if you will, of the resource impact of expanding to include Category 3 and, then, STS and WBL would be that they would need an additional 1.5 FTE. And they shared their concern that they might not be able to get that from their state.

So, those are the two areas that, for me, come to mind as being the principal concerns. We are not hearing from the states that we shouldn't do it. They are just saying let's take a graded approach and, also, they have the concerns about impact on their resources.

MR. MICHALAK: I can't add much to Dan's comment other than the lens of resource impacts goes across a lot of activities and feedback from the Agreement States. So, it is not unheard of that

they will come back and they will like what we are doing, but they want to have input because they are worried about the resource impact that it is going to have on them.

COMMISSIONER BARAN: Thanks.

I've got a little bit of time left. Let me turn to this discussion you were having, Dan, with the Chairman and in your remarks about one of the challenges for the business line being keeping up with technological advances, you know, particularly in the medical field.

And in your discussion with the Chairman, the focus was more on kind of keeping our rules up-to-date. Can I ask kind of on the skill/expertise side of things, what are we doing to make sure that the staff has or has ready access to the right skills and knowledge to address the technical issues associated with the medical uses of radioactive sources?

MR. COLLINS: Sure. Thanks, Commissioner.

So, currently, our headquarters medical team staff size is one team lead and five staff members. Of those five staff members, three have medical/physics background, and that is a particular area where we have a hard time finding expertise.

But, in terms of what we do on a routine basis, the headquarters medical team staff takes specialized training that is offered by the Technical Training Center. So, that is all of our HP staff on that team.

And they also attend the basic health physics training and they attend many of the clinical medical organizations' meeting and

information exchanges. So, they might go to the society meetings for the American Association of Radiation Oncology, which you may know as AASTRO, to the American Association for Physicists in Medicine, the American Brachytherapy Society, and Society for Nuclear Medicine and Molecular Imaging. In many cases, they also participate as government liaisons to subcommittees on those societies. So, that helps them stay abreast of some technology.

We also are fortunate to have access to medical practitioners through ACMUI or through our three consultants who are medical doctors. They also participate in period medical training webinars and monthly Part 35 working group meetings as well as just a lot of frequent discussion amongst the team to share information.

Collectively, these actions enable the medical team to analyze and evaluate issues that come up for us. And then, also, we do get input from ACMUI in helping us with our guidance development.

With respect to the regional inspectors, the licensing staff that we have, the inspectors and the licensing staff, each of the Regions currently has staff who are well-versed in both licensing and inspection. And we are fortunate that we have several inspectors who have actual clinical experience from their employment prior to coming to the NRC.

So, that is kind of what we do currently. Looking into the future, we do foresee a need to reach out to the medical/physics, to the various medical societies, professional societies, to help us identify medical/physics students, to be able to inform them of any opportunities that may come up at the NRC. And that is an area in terms of medical

physicists that we would need to target for our future hiring.

And then, just finally, one area looking towards the future that we think we may need to expand on is our capabilities or the experience within our consultant base. You know, our current consultants have a breadth of experience and they are able to satisfy our needs, but looking into the future, as the technology does advance, we need to think about getting one or two more consultants who have a little bit different experience than what we currently have within the consultant population.

MR. DAPAS: Just one thing to add real quickly. As Dan described, it requires proactive focused attention to maintain that skill set here. And so, it is a focus of ours, and through these various initiatives and engagements, we are trying to maintain that skill set. But it takes continual attention.

COMMISSIONER BARAN: Yes, I appreciate that you are focused on it the way you are. I mean, ACMUI is a great resource for us. It can't be our only resource. You know, as the regulator, we have got to have an independent capability, even if we are not getting into the practice of medicine, but an independent capability to understand and resolve regulatory issues that are before us.

And when I take a step back -- this would be something we can talk about next month with ACMUI -- when I take a step back, I think, for society at large, this is an area that is really significant. It is a relatively small part of our staff, and it is not traditionally a major area of kind of FTEs and other things. But, for the world at large, it is really significant and there are a lot of technological advancements. So, it is

important, I think, that we have that capability, that the capability is up-to-date, and that if we are not where we want to be there, that we have some focus on that.

All right. Thank you.

CHAIRMAN SVINICKI: Commissioner Burns?

COMMISSIONER BURNS: Thanks.

I'm going to start off by focusing on the other end of the process which is the oversight and inspection. Part of it, I need to ask Linda a couple of questions in terms of what we are seeing in that area.

I always remember as a young attorney working in the enforcement area that materials licensees were far more interesting than reactor licensees, and not always for good reasons, which is probably something you will probably reaffirm for me today.

(Laughter.)

But, Linda, you may have touched on it, but you gave a good perspective in terms of the types of escalated actions, including some ADRs and things like that. Would you say there is any particular kind of trend or is that sort of what the kind of noise, what I will call noise level is that we would get from year to year, what you are reporting?

MS. HOWELL: We did take a look at that in preparing for the presentation today. We have some fluctuation from year to year. We basically looked at fiscal years 2012 through 2016.

COMMISSIONER BURNS: Yes.

MS. HOWELL: The fluctuations in the number of escalated cases that we might have varied. It was relatively stable and varied with the number of inspections that were actually performed,

which is what you would expect. There were not really any trends that the staff identified in terms of are we seeing performance issues with a particular category of licensee. It pretty much related to the categories of licensees that were inspected during that timeframe.

COMMISSIONER BURNS: Yes, one of the questions that I had, is there -- and I don't mean to put you on the spot on this -- but if you would categorize the types of violations? I mean, I might sit here and sort of guess the list, things like failure to do surveys, failure to lock the storage containers, you know, things like that.

MS. HOWELL: Right. Of course, with the full implementation of Part 37, we did see violations that were specifically associated with physical security programs for licensees that possessed Category 1 and 2 quantities of material. And that could be anywhere from failure to secure, failure to have the appropriate monitoring systems, some of what you might expect with the more complex regulatory requirements that came into effect a couple of years ago.

Setting those violations aside, I can't say that we have noticed any specific trend in terms of are we seeing more survey-related violations, more violations related to the medical program.

COMMISSIONER BURNS: Yes.

MS. HOWELL: It is relatively equivalent for the level of detail that we reviewed in preparing for today.

COMMISSIONER BURNS: Yes, and how about exposures or overexposures? Well, actually either one? I won't distinguish there, you know, what I call, I guess, unintended exposures

or overexposures as a result of materials uses. Because I know from time to time I can think of particularly times when there's some particularly ugly brochures we created on radiation burns and things like that, you know, way back when. But anything in that area particularly?

MS. HOWELL: We haven't had any significant overexposure events. There have been cases, one or two in each of the Regions over the last several years that have been investigated, nothing substantial, as you probably recall from years far back. But, just taking a look here on reactor inspections and enforcement histories, we haven't had any really significant overexposure events in the past two to three years.

COMMISSIONER BURNS: And a couple of instances that went to ADR, and usually those are coming out of a willful violation or a potentially willful violation, or where we allege a willful violation at least, and what did those cases generally involve, the ADR ones, if you are aware?

MS. HOWELL: I can't speak for all of the Regional Offices.

COMMISSIONER BURNS: Okay.

MS. HOWELL: You are correct, they typically -- you know, we are doing ADR because the outcome of the potential enforcement action would involve issuing a civil penalty or that it perhaps involved wrongdoing.

For Region IV, the last one that we did, it was a survey violation, and I don't off the top of my head recall what the second case was. Do you, Dan?

MR. COLLINS: No, for your case, no, I don't. But here in headquarters we had a couple that we are dealing with distribution of material, particularly distribution.

COMMISSIONER BURNS: Okay. Okay. That's good. I can follow up on it, but I appreciate the answers. It is interesting to see overall, because we are never going to have I think zero. But I appreciate just sort of maintaining awareness, looking at what are the types of things. As you indicated, some of it is attributable to implementation of new worker requirements in Part 37, but that is important because, you know, instilling that discipline on control is important, and things like that.

Let me turn to the IMPEP program. Paul, you talked about the potential self-assessment. I guess I have a couple of questions there.

First, if we look at the major, I'll call it challenges -- actually, I will be more direct -- if there are threats to the IMPEP program, to some extent some of those threats probably we can't deal with. That is, for example, state funding or the challenges that they have.

But what is it that we can try to be the best we can be at that sort of minimizes the challenges that the states have in terms of being compatible, being able to carry out programs? What are the best things that we can do?

MR. MICHALAK: I think it is the training that we are providing, particularly with the lack of health physicists. So, what we are seeing is you still get physical scientists --

COMMISSIONER BURNS: Yes.

MR. MICHALAK: -- entering the programs.

COMMISSIONER BURNS: Yes.

MR. MICHALAK: And so, the fundamental health physics, which actually feeds back to how we have been able to absorb the 10-percent drop because those are the classes that became online. And so, some of the bigger demanded classes are the classes that became blended and online. But I think it is the training because their problem is turnover.

COMMISSIONER BURNS: Yes.

MR. MICHALAK: You've got, like you were saying, the market, you have a steady demand and a shrinking supply.

COMMISSIONER BURNS: Yes.

MR. MICHALAK: And the states have to deal with that. And so, there's turnover; there is churn. And so, we figured out we had 548 trainee slots last year. We will have well over 500 this year. There is a demand for our training.

And these are training primarily people in the qualifications programs. What we have done is we have worked with the RSAOs in the Regions and we have lists for every Agreement State on who's in their qualification program, so we can prioritize them.

And then, in an IMPEP, if we find that they are having staff issues in the IMPEP, we particularly prioritize that state and that program to get their people up-to-speed. So, I would say training.

COMMISSIONER BURNS: Yes, I appreciate that because I think, you know, from my interactions over the last couple of

years with state people, that is the thing you hear from them, either from the conferences or their drop-ins or when they come in and all. So, I think a continuing good focus on that.

Marc, do you want to say something?

MR. DAPAS: Thanks, Commissioner. Just one quick perspective to offer.

I think when there are staffing issues it is important, as we invoke the IMPEP process, that we have a fair and accurate assessment of what is the impact of those staffing issues on the program. So, we don't conclude there is a more significant impact than the Agreement State would indicate; that we can defend that conclusion because, when we place an Agreement State, say, on monitoring their resources that the Agreement State expends, it is important that our assessment of the program is as accurate as it can be based on the tools that we have, which are the performance indicators, which, then, underscores the importance of this self-assessment in ensuring those indicators and the criteria we use are the best they can be.

COMMISSIONER BURNS: Okay, good. And I guess my other question in the area, you talked about, I say I guess, working up toward a self-assessment IMPEP. Are there particular aspects of the program, I mean, that maybe we think we already ought to take a look at in terms of -- as I say, overall, I think that IMPEP has been a successful program. This has been, I think, a good program under Section 274 and a good partnership between the states and the feds.

But there are particular areas where we think we might

take a look at or tweak? And I won't put you on the spot, but --

MR. MICHALAK: No, I'm smiling because our Agreement State partners think consistency --

COMMISSIONER BURNS: Ah, okay.

MR. MICHALAK: -- is an issue. And that is the theme from the two participants in the self-assessment, Agreement State participants in the self-assessment.

And we are looking across. So, we are looking at all 37 states across about a five-year period --

COMMISSIONER BURNS: Yes.

MR. MICHALAK: -- is what we are looking at, over the two common indicators, the staffing and training and the status of --

COMMISSIONER BURNS: And the consistency going to what, to make sure I understand how --

MR. MICHALAK: Well, how we apply our ratings.

COMMISSIONER BURNS: Okay.

MR. MICHALAK: Satisfactory; satisfactory, needs improvement. There is a little bristling that we are not being consistent. And so, that is one of the things we are going to evaluate, is our consistency.

COMMISSIONER BURNS: Okay.

MR. DAPAS: I think another challenge that we see, having chaired a number of Management Review Boards or been a participant on the MRB, is that when we look at the compatibility with regulations where the state rulemaking or legislative approval structure is such that it can be a real challenge to get a change in a regulation,

then we need to look at, and looking at the safety/security aspect, does the Agreement State impose license conditions? So, you are meeting the intent. And so, what is the appropriate assessment? If you are overdue on a certain number of rules or regulations, what is the impact that is having there? And I think that is a challenge. Some of the states basically say, you know, circle of influence here, we can't change the process that is in place there in terms of how long it takes to implement a compatible regulation. And that is a challenge that you see.

COMMISSIONER BURNS: Yes. Okay. Thanks.

Just a quick clarifying question. Vermont is basically coming in for a full, what I'll call a full scope. Yes, I realize it is a relatively small number of licensees. I think I heard at one point 35, 37, or something, but they are coming into what I will call sort of a general. It is not an --

MR. MICHALAK: Correct. No, it is not Wyoming.

COMMISSIONER BURNS: Yes.

MR. MICHALAK: It is not the subcategory.

COMMISSIONER BURNS: Okay. Thanks very much. Thank you.

MR. McCREE: If I could, a little bit opportunistic here, but I couldn't help but draw a bridge, at least in my mind, strategically between our desire to be innovative, more innovative, which is characterized in the leadership model as one of those characteristics that we want to strive towards. And the effort began several years ago through OCHCO and the senior leadership team to focus and invest

more in learning transformation. Again, that was several years ago, and that Learning Transformation Initiative used as a pilot this health physics course which is available to the Agreement State staff at a reduced cost using distance learning.

And that has put us in a position to deliver needed training to those resources, given that their travel funds and perhaps even staffing capability -- we can deliver that much-needed training much more cheaply and much easier.

So, there are a number of examples like that where we can do better with an innovative mindset, and it would put us in a position to do better and deliver better in areas that we may not even have imagined at the time that we started improving our effectiveness and efficiency improvements. So, I just want to highlight that as a success.

CHAIRMAN SVINICKI: Well, thank you for that, Victor. Again, I always find examples are so helpful and illustrative of the direction that we are trying to go.

Do either of my colleagues have any additional questions?

(No response.)

Well, I'll just conclude by thanking the staff again. I know that it is likely that business line meetings are not the NRC staff's favorite thing. And the Commission periodically reexamines to assure ourselves the value that we find because we know that they are a burden for staff's preparation. But, for my part, I think that for program areas that are important but kind of humming along, it is unlikely that

issue-based Commission meetings are going to catch all of the dimensions of the important work going on.

So, I do find a lot of value in these meetings, and I want to align myself with Commissioner Baran's comments that, for the nuclear materials users, in particular, it has got to be among the areas that we regulate that touches the most kind of American lives day to day of people who are not considered part of the nuclear industry that we regulate. So, it is very important work.

And I thank you all again.

With that, we're adjourned.

(Whereupon, at 11:47 a.m., the meeting was adjourned.)