UNITED STATES

NUCLEAR REGULATORY COMMISSION

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STRATEGIC PROGRAMMATIC OVERVIEW OF THE DECOMMISSIONING AND LOW-LEVEL WASTE AND NUCLEAR MATERIALS USERS BUSINESS LINES

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TUESDAY,

JANUARY 14, 2025

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The Commission met in the Commissioners' Hearing Room, at 9:00 a.m. EST, Christopher T. Hanson, Chair, presiding.

COMMISSION MEMBERS:

CHRISTOPHER T. HANSON, Chair

DAVID A. WRIGHT, Commissioner

ANNIE CAPUTO, Commissioner

BRADLEY R. CROWELL, Commissioner

MATTHEW J. MARZANO, Commissioner

ALSO PRESENT:

CARRIE SAFFORD, Secretary of the Commission

BROOKE CLARK, General Counsel

NRC STAFF:

MIRELA GAVRILAS, Executive Director for Operations

JOHN LUBINSKI, Director, Office of Nuclear Material Safety and Safeguards

JEN WHITMAN, Deputy Director, Division of Decommissioning, Uranium Recovery, and Waste Programs

DOUGLAS MANDEVILLE, Senior Project Manager, Uranium Recovery and Materials Decommissioning Branch, DUWP, NMSS

GREG CHAPMAN, Senior Health Physicist, Reactor Decommissioning Branch, DUWP, NMSS

ELISE EVE, Team Lead, Division of Radiological Safety and Security, Region I

DAFNA SILBERFELD, Deputy Director, Division of Materials Safety, Security, State, and Tribal Programs (MSST), NMSS

ALLYCE BOLGER, Intergovernmental Liaison, MSST, NMSS

MATTHEW BARRETT, Project Manager, MSST, NMSS

JACKIE COOK, Regional State Agreement States Officer, DRSS, Region IV

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

(9:00 a.m.)

CHAIR HANSON: Good morning, everyone, and welcome. I convene this meeting of the United States Nuclear Regulatory Commission to hear about strategic considerations associated with the decommissioning and low-level waste business line and the nuclear materials users business line. It's very important to keep the public informed of the agency's activities, so I thank you all for supporting this meeting today and I'm looking forward to a great dialogue.

We'll hear from two staff panels this morning. We'll take a short break in between. With each panel, we'll hold questions until the end. And then we'll hear questions from the Commissioners to the panel.

Before we get started, I'd like to extend a special welcome to Commissioner Marzano. This is his inaugural Commission meeting this morning. And I look forward to you joining in the discussion. So with that, I'll ask my fellow Commissioners if they have any remarks they'd like to make.

(No audible response.)

CHAIR HANSON: Okay. Thank you very much. With that, we'll hand it over to our Executive Director for Operations, Mirela Gavrilas.

MS. GAVRILAS: Good morning, Chair. Good morning, Commissioners. You are going to hear from two business lines this morning. They're both under our office of Nuclear Materials Safety and Safeguards.

The first panel will cover decommissioning and low-level waste activities. We have 90 FTEs in those activities with the majority, about 60 percent of them being in NMSS. But the rest is distributed amongst other

headquarter offices as well as the regions. And John Lubinski, the director of that office, will start the staff discussion. John?

MR. LUBINSKI: Thanks, Mirela. Good morning, Chair and Commissioners. I'd like to start by commending the staff in both of our business lines for their hard work and their commitment in achieving the Agency's critical safety mission in what has been a highly dynamic environment.

Our first panel today, we'll present the decommissioning and low-level waste business line. I will be providing an overview of the business line and its activities. Next slide, please. Decommissioning, uranium recovery, and low-level waste is a small business line compared to others within the NRC.

As Mirela noted, there's approximately 90 full-time equivalent staff across the agency for 2025. Our team ensures safety and security through licensing and oversight work at 23 decommissioning power reactors, 3 decommissioning research reactors, 8 complex material sites, 28 uranium mill tailing sites, and 5 uranium recovery sites. We work in close coordination with other federal agencies, states, and Tribal governments.

Examples of our work with other federal agencies include our technical support to the Department of Energy, or DOE, for determining what waste is incidental to reprocessing former weapons complex sites and for decommissioning of naval reactors. Despite its relatively small size, the business line garners a lot of public interest. We view proactive and meaningful interaction throughout decommissioning as essential for safe and effective decommissioning.

These interactions increase confidence and improve our

regulatory decisions. The NRC provides opportunities for public engagement through public meetings in the vicinity of a facility when we receive the preliminary site decommissioning activity report, or PSDAR, and when we receive the license termination plan. The NRC continues to participate in meetings as requested by local community advisory boards, keeping lines of communication open.

Recently, there's been a significant public interest in use and management of decommissioning trust funds. You will hear more about this from Elise Eve who's sitting at the other end of the table. And she's a decommissioning team leader in Region I.

Last year, we received our first request for alternative decommissioning schedules. That is to keep the facility in a SAFSTOR condition beyond 60 years. Greg Chapman who is sitting next to Elise is the senior health physicist in NMSS, and he will cover our process for how we're reviewing those applications. Next slide, please.

The business line is also charged with the licensing and oversight of uranium recovery sites and handling low-level waste activities. Agreement states have responsibility for oversight of material licensee decommissioning activities, uranium recovery activities, and handling the disposal of low-level waste in their states. All four low-level waste sites in the United States are licensed by agreement states and are in the states of South Carolina, Texas, Utah, and Washington.

This year saw the culmination of a decade of work as we sent the proposed rule to the Commission on the integrated low-level waste rulemaking which is before the Commission right now for consideration. This rulemaking provides a regulatory framework for quantities and concentrations

of low-level waste streams that are not considered in the current regulatory framework. And it can be used for new technologies that might generate low-level waste that has yet to be considered.

With respect to uranium recovery, there has been an increase in licensing work, with two license renewals currently in house and the third one expected later this year. I want to be sure to thank our partners in the Office of General Counsel for all their support as we navigate the hearing processes for these license renewals. The staff recognizes the significant Tribal and public interest in these activities and has made it a priority to provide meaningful and transparent communication regarding NRC policies, activities, and decisions, both in person and virtually.

Another activity with significant Tribal and public interest is the legacy of past uranium mining activities. This continues to be a challenging issue in the western United States. The presence of uranium and other elements in uranium mine waste above background levels has potential to impact public health.

While the NRC does not regulate mining activities, the NRC continues to support federal government efforts to address this legacy issue. The Federal Mining Dialogue Abandoned Uranium Mine Waste Subcommittee is composed of representatives of 12 federal agencies and was formed to work with each agency's jurisdictional authority to address risk to the public and the environment, identify potential mitigation strategies and emerging technologies, prioritize the direction of resources for physical safeguarding and reclamation, and when warranted, cleanup actions under the Comprehensive Environmental Response, Compensation, and Liability Act which many know as CERCLA. Doug Mandeville, Senior Project Manager

within NMSS seated next to Mirela will talk more about our engagement with the Environmental Protection Agency, EPA, DOE, and other federal agencies on the “all-of-government” approach to this issue. Next slide, please.

The business line is always looking for ways to improve. For Fort Calhoun decommissioning, the staff took a new approach by developing a key findings and risk assumptions memorandum to support inspection activities. Historically, we've seen challenges in aligning license termination goals with inspection efforts which have resulted an additional review effort during a license termination.

Specifically, the key findings memorandum summarizes the risk significant site characteristics and assumptions from the license termination plan on which the NRC based its findings. The goal of this memorandum is to assist in knowledge management and ensure safety by making it easier for the inspection staff to focus on the more risk significant aspects of the license termination plan. Ultimately, the goal was to help align the ongoing inspection efforts with final license termination which may eliminate any need for future evaluations during a license termination.

NRC's existing decommissioning guidance covers a broad range of nuclear facilities. The Nuclear Energy Institute, or NEI, has developed a technical guidance document on license termination focused on commercial reactor decommissioning. NRC believes the consolidation of reactor focused guidance could help licensees provide higher quality applications.

Staff held public meetings and provided extensive comments and feedback on this document which we will hear about more from Greg. Finally, the staff published the final interim staff guidance, or ISG, on

the radiological survey and dose modeling of subsurface to support license termination. Specifically, the ISG extends the Multi-Agency Radiation Survey and Site Investigation Manual, known as MARSSIM, which is a well-established, understood, and frequently used program to subsurface, including open evacuation, reactor and other basement substructures, and materials plan for reuse.

The guide also addresses support for risk significant parameters and consideration of dose from existing groundwater contamination among other topics. This enhancement addressed industry feedback on the need for additional guidance, including use of alternative methods given the complexity and difficulty in surveying hard to access locations in the subsurface. Lessons learned from recent license termination activities assisted in development of this guidance.

This concludes my remarks, and I will now turn the presentation to Jen Whitman who is seated to my left. She's the Deputy Director of the Division of Decommissioning, Uranium Recovery, and Waste Programs. Jen will discuss our licensing and oversight processes. Thanks, Jen.

MS. WHITMAN: Thank you, John. Good morning, Chair Hanson, Commissioners. As John said, I'm Jen Whitman, the Deputy Director for the Division of Decommissioning, Uranium Recovery, and Waste Programs. Next slide, please.

As a learning organization, we are always looking for ways to improve. And the ADVANCE Act passed last year has provided some additional direction. Over the past year to improve our communications and our licensing program, the business line has incorporated and expanded the

use of regulatory audits.

Audits have been very successful for other materials, business lines, operating reactor topical reports, and advanced reactor applications. We're currently exploring new approaches to accept full or partial license termination plans. Staff expects these efforts to provide licensees with flexibilities to address site-specific situations and result in timelier termination plan acceptance with fewer information requests.

Additional improvements to the licensing program may come out of the cross-agency team focused on reducing administrative burdens, improving communications, and leveraging processes to ensure timely risk informed decision-making. With respect to our oversight programs, DLW staff completed updates to IMC 2801, the Uranium Recovery and Byproduct Material Facility Inspection Program. These updates added the use of risk modules, the very low safety significance resolution program, the Be RiskSMART program, and the concept of program adjustments for inspections.

To continue oversight program improvements, we sent surveys and collected feedback from NRC staff at town hall meetings. We've also reviewed prior programmatic assessments and recommendations for program changes. In December, the staff hosted a public meeting to gather feedback from several stakeholders and reviewing the comments provided.

Considering the feedback received and reviewed, the staff is exploring several possibilities. The ideas include revising performance-based procedures to add the review of the use of inspection program resources based on licensee performance, alternative organizational structures, and technology to improve inspection reports. Staff is supporting

the cross-agency working group on Section 507 of the ADVANCE Act and in sharing alignment across our oversight programs as we look to make improvements. Next slide, please.

The DLLW business line completed a number of legacy projects over the past year, including the partial termination of the Zion Part 50 license which was reduced in license, area, and scope to only the independent spent fuel storage installation and its exclusion zone. I especially wanted to highlight our extensive engagement with the EPA resulting in the Fansteel site being added to the National Priorities List and the EPA assuming day-to-day responsibility for site operations. The Fansteel site pictured here was contaminated with uranium, thorium, heavy metals, acids, and organic solvents.

The site had both an NRC license and an Oklahoma Pollutant Discharge Elimination System permit issued by the Oklahoma Department of Environmental Quality. Due to financial and economic issues, in 2002 and 2016, Fansteel now owned by FMRI filed for bankruptcy and only secured enough funding to manage the site until 2024. A groundwater and surface water collection and treatment system must continue to operate in order to manage contaminated water at the facility.

In anticipation of the possibility of the facility being abandoned when funds were exhausted, the NRC worked with DOE's Office of Legacy Management, the U.S. Army Corps of Engineers, EPA, and the Oklahoma Department of Environmental Quality to find a path forward to ensure safety of public health and the environment. The staff reviewed the site's historical information and explored several potential options, including facilitating discussions between DOE's Office of Legacy Management and

Fansteel's counsel. The staff identified the National Priorities List as the most appropriate path forward and provided EPA and the State of Oklahoma a summary of the historical information regarding the site and NRC's efforts to find alternatives to the National Priorities List.

In response to this information, the Oklahoma governor designated the Fansteel site as the state's highest priority facility to be added to National Priorities List under CERCLA. The staff's proactive approach to researching potential solutions and working with federal and state partners led to EPA officially listing the site on the National Priorities List in September of 2023. Then in 2024, EPA secured the site, continued wastewater treatment operations, and began remediation.

On October 1st, EPA assumed operation of the site. And NRC continues to work with EPA and Oklahoma Department of Environmental Quality as long-term radiation activities are planned and executed. The staff also completed a lengthy review of a revised background air monitoring for the Homestake uranium mill tailing site in Grants, New Mexico.

As a result of the hearing, an agreement was reached between Homestake and the NRC that allows for a change in background air monitoring locations that maintains reasonable assurance of adequate protection of public health and safety. Lastly, another example of the staff's proactive engagement was the completion of the long-term surveillance plan for Western Nuclear's Split Rock site. Historically, NRC waited for the licensee or DOE to submit a long-term surveillance plan or long-term care fee.

In this case, the staff proactively engaged with DOE and the licensee to ensure alignment of priorities and resources to the issues of concern for these plans. The staff was able to approve both, and the site has

been transferred to DOE as the long-term custodian. Next slide, please. Internationally, NRC chairs both the Nuclear Energy Agency Committee on Decommissioning of Nuclear Installations and Legacy Management and the Working Party on the Technical, Environmental, and Safety Aspects of Decommissioning and Legacy Management.

NRC also serves on the Bureau of the Working Party on the Management and Organizational Aspects of decommissioning and legacy management. The NRC gains knowledge from the international community to aid in addressing decommissioning project management and complex technical issues. Recent examples include use of artificial intelligence and geostatistical methods to analyze data and construct models to enhance subsurface designs and provide remedial and compliance decision support.

Using these methods helps to identify any data gaps, allowing resources to be focused on collecting information necessary to support compliance. NRC is also actively working with the international community to identify best practices on the use of modern data logging systems, continuously collecting large amounts of radiological survey and location information. This includes radiological survey data collected from unmanned ground and aerial vehicles such as drones.

Development of guidance is necessary to ensure regulatory readiness to review advance methods and use by industry. NRC recognizes the potential for advance methods like these to allow for greater safety and a more streamlined approach to decommissioning. Next slide, please. The energy outlook has changed since we were here last year.

The need for more power has improved the economic situation for the existing fleet to remain online or restart plants that have shut

down with the intent to decommission. NMSS staff continues to engage with the Office of Nuclear Reactor Regulation on the potential restart of reactor operation at Palisades Nuclear Plant and the restart of Crane Clean Energy Center, formerly Three Mile Island Unit 1. Similarly, the licensee for the Duane Arnold Energy Center is in the early stages of exploring potential restart.

These are first of a kind requests since the reactors have submitted certifications of permanent shutdown and removal of fuel from the reactor vessel. While the plants remain in decommissioning status, the staff continues to provide oversight of decommissioning trust funds to ensure appropriate use by the licensee and that appropriate funds remain to accomplish decommissioning which Elise will speak to in more detail later. To be able to continue to address existing and new challenges as they arise, it's imperative that we maintain the necessary skill sets within our staff.

Unfortunately, DLLW has seen decades of experience walk out the door over the last year. We've renewed our focus on knowledge management activities and revised our qualification program to help get new staff up to speed more quickly. We are focused on ensuring that we have the staff with the expertise needed to complete our work and have been officially partnering with other program offices and OCHCO to bring people into the agency.

In the last year, DUWP onboarded three new staff, had two staff perform rotations outside the division, and qualified four staff. As we continue to onboard new staff, including two this month, we are applying our new qualification program and taking advantage of agencywide initiatives like the Ambassador and NRC Connect programs. This concludes my

presentation, and I'll now turn it over to Douglas Mandeville.

MR. MANDEVILLE: Thank you, Jen. Good morning, Chair Hanson and Commissioners. My name is Doug Mandeville, and I'm a Senior Project Manager at NMSS. I appreciate the opportunity to speak with you today.

I will be discussing various aspects of abandoned uranium mine waste remediation. More specifically, my remarks will touch on three aspects of abandoned uranium mine waste remediation: the staff's steps to implement the Commission's direction on SECY-23-0055, a potential mine waste remediation technology application, and the staff's work within the broader effort across the federal government on this topic. We're continuing to see focus and interest in this area at the federal and state levels and from TribalTribal Nations. Next slide, please.

As John mentioned earlier, the legacy impacts of past uranium mining activities remain a challenge in the western United States. Abandoned uranium mine waste is material left behind at the end of the mining process such as waste rock, equipment, and structures. To provide a sense of scale of past uranium mining activities, the graphic on the left of this slide shows a location of abandoned and likely abandoned uranium mines across the west.

There are around 15,000 abandoned uranium mines, including 500 in and around the Navajo Nation. While the NRC does not regulate uranium mining activities, there are two aspects of uranium mine waste remediation efforts that warrant NRC attention. The potential for uranium mine waste remediation actions to result in a licensable concentration and quantity source material and the potential use of lands on or near existing

NRC regulated mill tailing sites for disposal of uranium mine waste.

I'll address the staff's efforts on both of these topics. The staff is implementing the Commission's direction on SECY-23-0055 which was provided this past September. The effort is focused on how the staff should license abandoned uranium mine waste remediation technologies that result in a licensed concentration of quantity source material.

Staff has formed a working group that includes multiple agreement statement representatives and has had initial discussions with the working group on aspects of the Commission's direction. Staff has also started to consider definitions for the term ore to differentiate remediation activities from uranium milling activities. We're relatively early in that process, but we anticipate public and Tribal engagement on this effort in early spring.

We plan to incorporate this definition into our guidance document. Staff is exploring ways to streamline guidance development as we develop a focus document looking at remediation of abandoned uranium mine waste. To the extent possible, we're focusing on utilizing existing guidance.

NUREG-1556 consolidated guidance about materials licensees. Volume 12, program-specific guidance about possession licenses for manufacturing and distribution, Volume 16, program-specific guidance about licenses authorizing distribution to general licensees, and Volume 18, program-specific guidance about service provider licenses are three documents staff will likely rely on. Staff is also reviewing existing decontamination and decommissioning service provider licenses to identify approaches that can be incorporated into abandoned uranium mine waste

remediation.

At this point, it is unlikely staff will be able to completely rely on existing guidance. This area does present some specific issues that we'll need to address. Examples of these issues include dose calculations, application of dose-based cleanup criteria for different land use scenarios, and determination of adequate financial assurance.

Staff may identify more topics as our efforts proceed. At this time, we are targeting early public interaction on the guidance this spring and publishing a draft version of the guidance in the fall of 2025. Note that staff may be developing guidance and reviewing the license application simultaneously.

This will provide a challenge from a resource standpoint but also an opportunity for the staff to better adapt the guidance based on what we're seeing in an application. Depending on how the application review proceeds, the schedule for guidance development may need to be adjusted since the application will be higher priority. Next slide, please. Staff has had initial discussions with one company about an application focused on remediation of abandoned uranium mine waste.

Use of the technology will likely result in generation of a licensable concentration and quantity of source material. The picture on the bottom right of this slide is of testing done with this particular technology as part of an EPA led treatability study. Last month, staff held a pre-submission publish meeting to discuss and better understand the company's approach.

During that meeting, staff was able to gain insights on the technology and how it could be licensed under the service provider framework. We have planned further engagement with the company consisting of a pre-

submission audit later this month. We will keep the Commission informed of our schedule and progress on this effort.

We also plan to stay engaged with the EPA as we consider licensing abandoned uranium mine waste remediation technology. Next slide, please. In December 2023, the Commission held a meeting focused on short-term and long-term uranium fuel strategy in the United States. There are two primary takeaways for the uranium recovery area.

One was to maintain awareness of the market to be prepared for potential increases in licensing activities. John and Jen talked about that earlier. The second was to continue to make progress on legacy issues related to abandoned uranium mine waste.

This portion of our remarks focuses on the potential use of lands on or adjacent to NRC licensed mill tailing sites for disposal of uranium mine waste. As John mentioned, the staff continues to support efforts across the federal government to address these issues. The picture on the left of this slide shows abandoned uranium mine waste located in Arizona.

I included this photo just to give a sense of what these sites might look like. One effort the staff has supported is the federal mining dialogue of Abandoned Uranium Mine Waste Subcommittee which included -- which evaluated the use of federal lands for disposal of uranium mine waste. The group included representatives from the EPA, Department of Energy, Department of Interior, Department of Agriculture, Department of Defense, and other agencies and explored a variety of options for disposal locations.

In December 2024, the staff attended the group's workshop held in Flagstaff, Arizona. The federal agencies I listed above, representatives from the Four Corners states, and three TribalTribal Nations

attended the meeting. The December workshop provided an update of the group's effort.

At a high level, the group effort explored a variety of options for disposal locations. It was a valuable experience and was particularly helpful with respect to identifying and understanding the limitations each agency is currently working under. The graphic in the center of the slide illustrates the four challenges the group identified: technical or where to put the waste; programmatic, or existing policies and regulations; authorization of future liabilities; and financial, or how to pay.

Overcoming these challenges will likely require future legislative changes or executive actions. One idea that came out of the group effort and is continuing to be pursued is use of the lands in the Ambrosia Lake area of the Grants Mining District for disposal of uranium mine waste. The map on the right of this slide shows the Ambrosia Lake area which is in New Mexico.

The Rio Algom facility currently in reclamation is on the left side of the photo. The rectangle in black on the right is the Ambrosia Lake Title I site which DOE currently provides long term care for under general NRC license. The red and yellow squares on this page are past uranium mining locations.

The NRC staff worked with EPA and DOE to develop a memorandum of understanding or MOU to continue evaluation of this area as a repository for some uranium mine waste. The MOU is in the final stages of review. I should note that the MOU outlines a path forward that requires additional consideration and effort between the three agencies.

We'll keep the Commission informed on future

developments in this area. In addition to the Abandoned Uranium Mine Waste Working Group, the staff has also supported the Council on Environmental Quality efforts on abandoned uranium mine waste. This included staff participation and a meeting with the governors of New Mexico and Arizona and a meeting with several Tribal representatives.

The staff understands the need for one consistent federal voice and a focus on near term actions. This concludes my remarks. And now I'd like to turn the presentation over to Greg Chapman. Next slide, please.

MR. CHAPMAN: Thanks, Doug. Good morning, Chair Hanson and Commissioners. My name is Greg Chapman. I am a health physicist, NMSS. And I'll be discussing NMSS's efforts to development a risk-informed process to address alternative decommissioning schedules beyond 60 years, exploring the options to facilitate our decommissioning license reviews, and developing guidance on discrete radioactive particles. Next slide, please.

Regulations require nuclear power plants to complete decommissioning within 60 years of permanent cessation of operations. The staff recently received requests to be exempted from this specific regulation for two of the units shown in the slide -- the picture on the right shows Peach Bottom Atomic Power Station with unit one, just south of units two and three, and the picture on the left shows the Dresden Generating Station with unit one located adjacent to units two and three.

Because this would be the first application of this exemption criteria with adjacent operating reactors, the staff provided the Commission with information SECY-24-0073, describing staff's planned considerations

when applying the specific regulatory criteria for alternative decommissioning schedule requests. Considerations include availability of waste disposal capacity, impacts to other nuclear facilities, SAFSTOR conditions, physical security, and partial approvals.

The staff notes that the regulation states that schedules beyond 60 years will be approved only when necessary to protect public health and safety.

Per the statements of consideration for the rulemaking, 60 years was considered a reasonable time frame for decommissioning of power reactors to prevent deteriorating safety and institutional controls throughout the unit's life. The staff would review the safety and institutional controls to ensure their durability through any extended decommissioning period as part of our evaluation of an alternative decommissioning schedule. Next slide, please.

Decommissioning license applications primarily involve submission of license termination or decommissioning plans, staff review and approve these plans if they are compliant with applicable license termination regulations. Staff are reviewing the internal and external factors that influence the timeliness of our reviews to adjust clarity of our guidance and communication with licensees, to enhance the quality of submissions.

To facilitate licensee understanding of NRC guidance and license termination plan informational needs, the staff continues to encourage pre-submittal meetings with licensees and use of regulatory audits as appropriate, during -- especially during licensing reviews. The staff also continue to host a decommissioning lessons learned workshop in which we summarize lessons learned at the end of reviews.

Finally, NEI requests that staff review an endorsement on industry guidance NEI 22-01, which has more power plant-specific information and examples on what would constitute a proper license termination plan, and it will be made available to industry once completed. That document is designed to help standardize the LTP submissions made by nuclear power plants, and reduce staff's review time accordingly. The document was previously submitted to the staff for review and comment in late 2023, and the second draft was just recently submitted to staff for review and endorsement. Next slide, please.

Staff continue to work diligently to generate guidance that addresses the impact of discrete radioactive particles, or DRPs, on license termination decisions. DRPs are relatively high activity discrete particles or objects that are generally insoluble in water and have characteristics that are not addressed in current decommissioning guidance.

DRPs can be generated during decommissioning from breaking open systems containing legacy hot particles generated during operations, and they can also be chips of activated metal or concrete created by segmentation efforts during decommissioning.

The staff developed a draft interim staff guidance, DUWP-ISG-03, which was issued for public comment, to share a method for demonstrating compliance with the regulations when residual contamination with DRPs is discovered. However, the key to minimizing DRP releases into the environment is controlling them at the source through implementation of a robust contamination control program.

Guidance provides specific survey considerations for identifying DRPs in the environment, and dose assessments to risk-inform

decisions about license termination. One comment on the draft guidance of particular note is that national and international scientific bodies should be involved to develop a realistic and less conservative biological model for assessing real and potential DRP exposures by consensus.

Staff is considering whether potential research need would be beneficial, as DRPs would be a rare occurrence. However, if a national scientific body consensus model for DRPs is developed in the future, then NRC staff would evaluate the need to update the DUWP-ISG.

This concludes my presentation, now I'd like to turn the presentation over to Elise Eve. Next slide, please.

MS. EVE: Thanks, Greg. Good morning Chair Hanson and Commissioners, my name is Elise Eve. I am a team leader in Region I, and today I will be discussing the effective oversight of decommissioning trust funds at licensed sites and the decommissioning activities at Three Mile Island, including the Crane Clean Energy restart efforts. Next slide, please.

The current process in place for the oversight and decommissioning trust funds, which includes annual evaluations and inspections, is sufficient for determining whether licensees have the necessary funding to complete decommissioning activities. This approach has also proven effective in verifying that expenditures from the trust fund are used for legitimate decommissioning purposes.

In accordance with Inspection Procedure 71801, NRC inspectors routinely communicate with licensees and collaborate with project managers and financial experts and headquarters to assess decommissioning progress and, when needed, review detailed expenditure data related to the decommissioning trust fund.

Using the questions and screening criteria in the inspection procedure, the inspectors have the experience and training to identify whether further review is needed. The screening questions and the inspection procedure ensure that significant changes to the decommissioning trust fund are identified and evaluated, to determine whether there will be any impacts to the safe decommissioning of the site.

Similarly, the screening questions trigger additional review if there has been a significant change to the licensee's decommissioning strategy or approach which could lead to an increase in spending from the decommissioning trust fund.

In the first quarter of 2024, violations were issued to four different sites for expenditures from the decommissioning trust fund that were not for legitimate decommissioning activities, such as community outreach events. The violations were of low safety significance and the expenditures were a small fraction, less than point-one percent, of the total decommissioning trust fund amount. The identification of these low-safety significant violations provides us confidence that the oversight program is effective in detecting and addressing issues related to decommissioning trust fund spending.

Based on the annual review of the financial assurance report submitted by the licensees, all sites have sufficient trust funds to complete decommissioning.

Last, I would like to highlight that the review and oversight of decommissioning trust funds represent a small part of the overall decommissioning inspection program. We will continue to prioritize our inspections based on the activities that have the most radiological safety

impact to the public, such as demolishing of structures that could lead to an airborne event if controls are not appropriately applied.

The picture on the slide are members of the decommissioning team in Region I preparing to perform a walk-down at one of our plants in active decommissioning, to ensure the licensee is implementing appropriate radiological controls. Next slide, please.

I would first like to note that we're expecting Constellation to submit a request to rename Unit One at Three Mile Island to the Crane Clean Energy Center. However, since I will be referring to both units in my presentation, I will be using the term, unit one, for clarity.

Regarding Three Mile Island, NRC continues to provide oversight of decommissioning activities for units one and two. Staff is leveraging successful strategies from the Palisades restart effort to enable a collaborative approach, to address the restart of the unit one facility while continuing to implement the decommissioning inspection program. Specifically, staff from Region I, Region III, NMSS and NRR are working closely to ensure lessons learned from the Palisades restart effort are appropriately considered and applied.

Following the model of Region III, Region I is working to establish a Three Mile Island Unit One Restart Team, which will begin implementation of the newly issued Inspection Manual Chapter 2562. To ensure continued safety of unit one, my team of decommissioning inspectors will continue to perform the core inspection procedures as required by our decommissioning inspection program.

As applicable we will identify opportunities to credit both, the decommissioning inspections and restart inspections. For example,

Inspection Manual Chapter 2562 developed for the facilities returning to an operating phase recommends a radiological environmental monitoring program inspection. Similarly, Inspection Manual Chapter 2561 for decommissioning sites has a core inspection procedure for radioactive waste treatment and environmental monitoring, which is conducted on an annual basis.

This is an example where one activity, such as observation of the licensee collecting environmental samples, could be inspected under both, the decommissioning and restart inspection programs.

Although unit one and unit two are two different licenses with two separate decommissioning inspection programs, we will monitor the activities associated with the restart of unit one for any impacts to the safety commissioning of unit two. This is similar to an approach we took at Indian Point when unit three was still operating following the permanent shutdown of unit two.

In our inspection planning, we considered shared systems and programs between the units, such as the electrical infrastructure, and assessed whether operations at unit three affected the decommissioning of unit two.

Since I discussed decommissioning trust funds in my previous slide, I will highlight that we will continue to perform decommissioning inspections, including the financial assurance review, in accordance with Inspection Manual Chapter 2561 at Three Mile Island unit one, until full transition to the reactor oversight process.

As a learning organization we will continue to consider lessons learned from the Palisades restart efforts, and we'll capture key

learnings during the restart activities of Three Mile Island unit one. These learnings will help us succeed as we prepare for the potential restart of Duane Arnold. Additionally, we will actively seek opportunities, such as routine calls with the State of Pennsylvania and participation in the local community advisory panel, to keep the public informed of our inspection activities.

This concludes my presentation, I will now turn it over to Mirela to close out this part of the briefing. Next slide, please.

MS. GAVRILAS: Thank you very much. We are ready for your questions.

CHAIR HANSON: Thank you, we'll begin questions this morning with Commissioner Wright.

COMMISSIONER WRIGHT: Thank you, Chair, good morning -- good morning and happy new year. And welcome, Commissioner Marzano.

You know, thank you for your presentations. I know, from just regular meetings with John, just how busy y'all are, and there's a lot going on. And I do appreciate everything that you and your team that supports you do to get you ready for these meetings, especially as we, you know, work toward meeting our mission.

You know, as we start 2025, I really am excited for the future of the Agency. I appreciate everything that you and your staff do -- I know that you're in touch with my team at Team Wright, and we stand ready to help you any way we can, as you know, so don't hesitate to reach out. We're all the agents for change for the NRC, but we're not going to be able to reach our full potential at all unless we have strong relationships, from the Commission down to the staff, at every level, and we have strong teams as well.

So, my best to you and your staffs as you go into 2025, and my best wishes for a prosperous new year.

John, I'm going to start with you this morning. You know, we've seen with the directions from Congress, with the passage of the ADVANCE Act, that they want us to be more efficient. And you mentioned interactions with external stakeholders are essential for effective decommissioning, and I want to probe a little bit and see -- I hope I can ask you this the right way to where you really understand what I'm trying to get to. So, tell me a little bit more about what type of interactions with external stakeholders are the most efficient or effective?

MR. LUBINSKI: Yeah, thanks Commissioner, appreciate that question. And as you would probably expect, the answer is it depends on the issue and it depends on the situation.

When I talk about decommissioning though, I think the biggest issue is the early engagement with the external stakeholders. Many of them are very informed about what goes on at a nuclear reactor when it's operating, understands our processes -- they don't understand what happens when it transitions from operating to decommissioning.

Having early engagement with them and letting them know what the process is, what they can expect, what they can expect as far as public meetings, what type of applications are coming in, and, most importantly, where they can formally and informally engage with us -- formally through a hearing process, informally through our meetings that we have with them.

One of the key aspects of that is our Post-Shutdown Decommissioning Activities Report, the PSDAR, which is really a roadmap

showing how the plant is going to go through decommissioning. Having engagement with the communities before the submission of that report is important, so they know what they're going to see in that report, how they can engage.

It's important that our -- even -- so important that our regulations require us to hold meetings in the vicinity of the plant in person, when we have those meetings. I think that's most effective with respect to that report, because you get a lot of synergy among the folks in the meeting and understanding what common interest they have, and then may hear from others in the meeting what other issues are and what we need to address.

Also, there's a lot of benefit though for, once you establish those relationships in person, to having virtual meetings. Some of the benefits of virtual meetings provide an efficiency to the community. Taking time off of work or having to rush in the evening to get to a meeting somewhere, having to travel, is difficult for folks. So, if we offer virtual aspects, it allows more people to participate in the area. It also allows more of our technical experts here, whether it's at headquarters or in the regions, to be able to listen in, hear the concerns directly from the public, as well as the subject matter experts to provide answers to questions on how they can engage.

Getting information from them also helps us in being able to determine what we look at when we're going through the license termination plan. It's identified to us what's important to the community, we can make sure not only are we doing our effective reviews but that, when we write our safety evaluation reports and have future communication, we can clearly communicate to the communities how we address their concerns, how we

address the issues, and how we ensure safety as part of decommissioning.

COMMISSIONER WRIGHT: So, to probe a little deeper here, you know, we've been -- we have this whole beyond 60 conversation that's going on right now, as you know, and regardless of if we have to follow a formal process or whether we have the ability and authority to do it on our own already, how do you envision interactions with external stakeholders where beyond 60 is concerned?

MR. LUBINSKI: So, yeah, when you talk about more the formal process versus, you know, your words, on our own -- I would say the process right now for, your words, on our own, I would say is a case-by-case basis as we do our reviews.

In doing those reviews, we have provided to the Commission a SECY paper last September of the criteria we would use. We made that a publicly available document, we thought it was important to inform the Commission but also to inform the public of the type of criteria that we were using in performing our evaluations. This would allow the public to come in if they had concerns or issues in a way we were performing our reviews, they could engage with us.

As part of the reviews themselves, it follows the typical licensing process. Any RAIs, requests for additional information, that go out, any meetings we hold with the applicant are public meetings -- public can attend, they can participate, they can ask questions of the NRC on how we're doing our review process.

From an efficiency standpoint, going back to the ADVANCE Act, as you said, we want to be efficient. If we expect a low number of applications with respect to plants going beyond 60, this process of case-by-

case is probably the most efficient, least amount of resources for us and the industry, as we continue to move forward. As you do the first one and make decisions, the next one will become more efficient because of the learnings from us and the staff -- or -- us and the licensees.

A more formal process would be if we were to change our rulemaking, or go through rulemaking to change our regulations. If we did that, there's a number of options for that, one could be providing clarity under the current regulations of what's needed.

From a public engagement standpoint, rulemaking is a great way to get public comments and feedback on what is the most efficient and effective way of doing this, and the rulemaking process would allow that. It could provide clarity if it's -- if you were changing the rules, if it was prescription where you took the 60 and now you made it a higher or a lower number, that provides additional clarity and it provides for stakeholder input.

As part of the decommissioning rule that's currently before the Commission, we did not propose changing the 60-year requirement, but we did get comments, both for keeping it and for changing it -- changing it in both directions, making it less, making it higher. So, that is one area where we were able to have stakeholder engagement, to determine whether or not it needed to be changed. So, we did -- so, even though we did not propose a change, even though we did not ask questions, we did get comments. We evaluated those comments and in the end we determined that we thought that the current rule was sound.

But again, if we go through a formal process of changing that, that could provide additional clarity and give additional stakeholder input.

COMMISSIONER WRIGHT: Okay, thank you. Doug,

good morning.

MR. MANDEVILLE: Good morning.

COMMISSIONER WRIGHT: So, this -- in your presentation you spoke about a number of things, you -- about the use of Ambrosia Lake for mine waste disposal and the MOU between NRC and DOE and EPA, and you mentioned the pre-submission audit for the Mine Waste Remediation Company later this month. What do you expect the outcome of that audit to be?

MR. MANDEVILLE: Well first, thanks for the question. The pre-submission audits really help us gauge how ready an applicant is to submit, they also help us become more familiar with the detail, content and format of the application. So, if we identify things that aren't clear, we can -- we'll be able to share those with the applicant, and at the conclusion of the audit we should have a good sense of if they're ready to submit or not. So, it's really just us developing some confidence and helping the licensee with that confidence, if they're ready to submit.

At the same time we're also keeping an eye on the application and what the SRM envisioned and, if we do see differences, we'll look at the implications of those differences and then communicate that to the -- to you guys. So, basically just, you know, keeping it -- outcome is hopefully having an application that's ready to submit soon after the completion of the audit, would be the ideal outcome.

COMMISSIONER WRIGHT: Okay, so where Ambrosia Lake is concerned, what are the next steps to address the mine waste issue there?

MR. MANDEVILLE: Yeah, thank you. So, the first thing

we're -- once the MOU is finalized, we do have a -- I am sitting in today on a call, in John's place, with the other agencies, leaning forward a bit to start talking about what the next steps are. But internally, we have a jurisdictional determination to finish, that kind of sorts out the mine waste from the 11e(2) waste that's present in and around the Rio Algom site. Then Rio Algom will have to work with the licensee to, Rio Algom, to look at different disposal options and locations.

And then there likely will be some type of amendment request in the future, similar to what we had with the UNC Church Rock site, and we'll be able to follow our existing guidance in NUREG-1620 where we look at these other disposal of mine waste, either on or near or adjacent to the mill tailing site.

But it's basically a site-by-site approach. We're still pretty early in the process, but that's at least a high level, what's coming down the line, there.

COMMISSIONER WRIGHT: Okay, thank you so much. And I know, Chair, I'm out of time -- I just wanted to tell Greg and Elise that we will -- that my team may reach out to you with a couple of questions that I didn't have time to ask today. So, thank you so much.

CHAIR HANSON: Great, thank you, Commissioner Wright. Commissioner Caputo?

COMMISSIONER CAPUTO: Good morning, thank you all for being here, and thank you all for your preparations for this meeting. I'm going to continue on following Commissioner Wright's line of questioning in a couple places today.

I'm going to start with decommissioning beyond 60 years.

Mr. Chapman spoke about the work the staff is doing, both of you mentioned 2473, the SECY paper that's before us, and -- which states, there is little precedent or guidance regarding how to apply considerations for an alternative schedule to decommission power reactors that have permanently ceased operations.

So, as it stands, licensees would have to prove, and the NRC would have to find, that decommissioning beyond 60 years is, quote, necessary to protect public health and safety.

I'm kind of struggling with the nature of that language. I want to start by putting that in context -- this language was written in 1988, a full ten years prior to the filing of the first license extension application. So, the context at that point I would expect to have a lot more to do with making sure that facilities weren't left to sit indefinitely without being decommissioned.

As it stands now, we only have four sites that are potentially, or four reactors, that are pushing that 60-year time frame. Even facilities that sat for years in SAFSTOR prior to being, decommissioning, have in some cases been completely decommissioned by now -- I point to Zion as an example of that.

So, the context in which this language was written was very different, and in the context of SAFSTOR, inspectors conduct walk-downs, observe aging management, and assess the fields and material condition of the structures, systems and components that remain. So, there is an eye toward how these buildings, how these facilities -- the condition that they are in.

So, it brings me back to our principles. So, the clarity principle states, regulations should be coherent, logical and practical. While

this might have been logical and practical at the time, I kind of question whether that language is practical now, given what we face. It is very difficult in a risk-informed sense to argue that a facility is safe in year 59 and somehow unsafe in year 61, it's also difficult to imagine how a licensee would go about proving the nature of that requirement.

So, that puts us in a bit of a bind. This really, from what I understand, only affects four sites -- the two that have been mentioned, and perhaps also Fermi and Millstone, depending on the timing. So, given the small number of sites, it is really difficult for me to conclude that rulemaking is an efficient way to proceed.

So, I just want to be clear, the staff has options to address this without going through rulemaking -- options that would be more timely and more efficient, considering the fact that this only potentially addresses four licenses, correct?

MR. LUBINSKI: Thank you. So, as you said, we do have the options and we would evaluate this on a case-by-case basis. In doing so, as you said the words, we need to look at what's necessary to protect public health and safety. We provided in that paper what the staff believes is the regulatory history behind what those words mean.

So, if you look at, in these cases the sites you mentioned, most of them are dual unit sites, the safety implication would be, most likely, what is the impact of decommissioning activities from a safety standpoint or a security standpoint on the operating unit? If they could prove that there were certain impacts of those activities, we could approve the application, allowing them to leave part of the site not in decommissioning, but reducing the footprint for that activity, because it meets the regulation. So, we do have the

tools to do that.

From the standpoint of just generically saying you can go beyond 60 because there's only four sites or you're a dual unit site, that is beyond what the current regulation would allow. And I would say, that is a policy issue that would need to be determined by the Commission.

So, that is the process we are following with interpreting those words. If the Commission believes that we need to expand that further, with respect to the current words, we do believe that's something we would either need a policy issue from the Commission on or a change to our regulation. Because, these words, as we, as I noted already, were in the current rule, we looked at the regulatory history behind that in providing the SECY paper to the Commission.

We did just do the decommissioning rule for all plants, we did not propose a change to it and we did get comments both directions. Some not allowing people to go to 60, saying it was too long. Others saying you should do this, especially for dual unit sites, and did not recommend a change. So, that would be a process where we could make the changes in the current decommissioning rule that's in front of the Commission today.

But as I noted to Commissioner Wright, as we develop these type of changes, it's important to get the public engaged in that. So, if we were to change the criteria we're using, I believe it's important to get public interaction on that. And again, it would be a policy decision if we changed that.

I will also note that the decommissioning rule that we put into place, we've always said as we were developing this, is this is going to apply to every reactor out there at some point in time -- all the operating

reactors as well as our future reactors. So, any changes we make today with respect to the statements of, necessary to protect public health and safety, would not just apply to the four units that we have today, it would apply to all the reactors in the future when they eventually go through decommissioning.

So, if we were looking at this as rulemaking, we'd have to look at this more broadly and not just with respect to the current units today that are making the request. We could do this efficiently through our current processes, the plants themselves may not get the desired outcome, necessarily, that they want.

COMMISSIONER CAPUTO: So, why do you believe, it sounds from what you said, that you don't see an option for using an exemption here? Why is that?

MR. LUBINSKI: Because the rule itself --

COMMISSIONER CAPUTO: Our exemption authority is pretty broad.

MR. LUBINSKI: The rule itself specifically addresses what to do when you're looking at a plant that is requesting going beyond 60 years for decommissioning, and staying in SAFSTOR, and provides the criteria already. Issuing an exemption could be done --

COMMISSIONER CAPUTO: Isn't it a bit unusual, the nature of this language? Because we're basically forcing a licensee to prove that something is unsafe?

MR. LUBINSKI: That is, indeed, correct. And it is unusual, and it's in the regulations. We right now -- I believe that within the current authority we have within our office to approve this, we would need to do this in accordance with the current regulation the way it's written. If the

Commission --

COMMISSIONER CAPUTO: Which would force these licensees, potentially, to become -- to begin decommissioning these facilities in spite of the fact that they have onsite operating reactors.

MR. LUBINSKI: Would require -- that could, I'm going to say could -- again, we have not seen a -- we have not completed a review of an application yet that would tell us exactly whether we would agree with that or not. I would say, the most likely scenario would be --

COMMISSIONER CAPUTO: We're forcing them to argue that they could not decommission safely while continuing to operate facilities, and where potentially that would conflict with the nature of what's likely to unfold on the Three Mile Island site. So, it would be tough for someone to argue with the Three Mile Island site playing out, that they couldn't.

MR. LUBINSKI: Again that's, indeed, correct. Right? The Three Mile Island site could come in -- their current plans are that they would do a complete decommissioning of unit one, maybe a restart of unit two as they're doing at the same time.

So yes, you're right, it would be difficult to make a safety case that said, for an operating unit, could you do this? Where I was going is, in what I believe right now is within the current authority of the staff, is we would only be able to approve it in accordance with the current regulation and meeting this standard. If the Commission were to tell us to reinterpret that standard, or tell us from a policy standpoint we should use exemptions to do this, we could do that.

I will also note that we did engage the Commission a few years ago, and it was a bit of a different situation with GE Vallecitos and going

beyond 60 years. There were multiple types of areas we looked at from the standpoint of issuing exemptions and this requirement, as well. The Commission at that time did look at the safety implications of the plant, and made a determination at that time we would not go beyond 60 years --

COMMISSIONER CAPUTO: But that's a collection of research reactors, correct?

MR. LUBINSKI: It is, but it also had to do with the fact that there were multiple units and sites, so there were similarities. The delay in their schedule had to do with delays in actually known decommissionings, so we already had an outcome of when decommissioning would be --

COMMISSIONER CAPUTO: But these were not sites where they were operating power plants supplying power to the grid?

(Simultaneous speaking.)

MR. LUBINSKI: They were not -- that is correct. So --

COMMISSIONER CAPUTO: Which, given today's situation with electricity needs, impairing that or jeopardizing that should be a pretty high bar?

MR. LUBINSKI: And I would say, at this point the -- I don't see that our decisions would impair that. We're talking about the use of established decommissioning trust funds that have already been established, that are enough to do the decommissioning at the site. So, it's not a financial hardship for the operating plant at this point to decommission the plant. So, we're not seeing any safety impacts on the plant. And, in fact, the criteria would say that if it is a safety impact on the plant, they would not do it. So, the --

COMMISSIONER CAPUTO: But ultimately, this is a policy

matter for the Commission, and the Commission could decide to grant an exemption without requiring a lengthy rulemaking process?

MR. LUBINSKI: Absolutely, the Commission, as I said, from a policy standpoint, can do that.

CHAIR HANSON: Thank you.

Commissioner Crowell.

COMMISSIONER CROWELL: Thank you, Mr. Chair. Happy New Year, everyone. Thank you for your presentations today. They''ve been informative.

And again, welcome to Commissioner Marzano. I'm very pleased to have you here for a variety of reasons, including the fact that it's been two-and-a-half years that I suffered through being the new guy. And this is my first Commission meeting where I'm not the new guy. So, welcome, Commissioner Marzano.

With that, I'm going to jump right in and pick up on the beyond 60 conversation. And, John, I think I want to come, this will come to you to start.

I think that the spirit of setting a 60-year threshold was more than just whether, you know, a facility can be put in safe store and be adequate for public health and safety protection.

You know, 60 years was also based on complexity of these clean-ups' financial considerations and a commitment to communities that they don't have to have a defunct facility in their community for an extended period of time. And 60 years is already a generation, so you're talking about, you know, a second generation of people living with a decommissioned reactor in their community when you start to look beyond 60.

And so, with that in mind, you know, how much does or could you envision the views of the local community leaders, elected officials who may have a desire for a facility to be cleaned up sooner rather than later, or certainly not take longer than 60 years, for the benefit of their community? While it may not be, you know -- whether the licensee may have a different view, I do think the community's view is pretty important.

So, how does that -- how do those two things -- or, how do those things weigh within your considerations?

MR. LUBINSKI: Thanks for the question.

Before I answer, I want to start with a point you made earlier that I wanted to reiterate is when we're doing our evaluation, if we were to approve a plan to go beyond 60 years, one of the criteria is that it will be safe, it will be secure, and it will not have a negative impact on the environment.

So, as you said, Commissioner Caputo, whether or not you're at 59 years or 61 years, does that make a difference from the safety standpoint? We would not allow a go beyond 60 unless we assured it's safe, so safety would be paramount.

Our current process right now does -- going through that process right now only allows for stakeholder input from the standpoint of participation in the public meetings that we have with the licensee with respect to any interactions we have with them, as well as availability of information, such as our request for information.

We would not be seeking any public input on whether or not the public believes this is a good idea. That is not part of our process for issuing an exemption. We would not be seeking public input from the local community on what their concerns may be.

We would consider, as we continued to move forward, any safety concerns, any security concerns, any environmental concerns that were raised by the public in making our final decision in whether or not it would be safe or not.

From the standpoint of time frames, as you said, 60 years, the question right now is we'd have to look at it on a case-by-case basis, how far do you go beyond 60 years? So that's another question.

Some units that are dual units may want to go 60 years beyond when the operating unit shuts down. So, again, we don't know exactly when that's going to be either. So, you could be at 60 years today, take the time the operating unit continues, and then add another 60 years beyond that. So --

COMMISSIONER CROWELL: I understand. I appreciate it. I would encourage you to think a little bit more about this perspective. I think we owe it to local community residents and leaders to, you know, weigh their views on having a defunct nuclear reactor in their community and what that means for, you know, land, you know, land use planning and re-use, economic development. People may be averse to moving into that area because it has a defunct reactor sitting there.

So, you know, when you go beyond 60, I think the consideration is broadened beyond just the technical because of the impacts. And we can discuss this more as we go forward.

I want to stick with the topic but move to Elise and talk about TMI/Crane Clean Energy Center. And in that context are there things that should happen, you know, at Unit 2 before Unit 1 restarts, like certain demolition or, you know, disturbing activities that could, you know, impact the

effort to restart Unit 1?

Like, what are you thinking about in that context?

MS. EVE: Thanks. Appreciate the question. And, you know, I don't know the specifics what exactly needs to be done at Unit 2, but we, we know that there are some shared systems and programs, for example, for security. We will need to take a look at that before the -- in preparation for the restart of Unit 1 and the Crane Clean Energy Center.

We are working closely with our organization within the region, our security organization, and emergency preparedness, and radiological protection just to ensure that we are fully evaluating the potential impacts to Unit 1 with the ongoing decommissioning of Unit 2.

COMMISSIONER CROWELL: Okay. And is it, you know, given that Unit 1 and Unit 2 have different, you know, licensees, how does that play into these decisions about decommissioning reactor next to an operating reactor? You know, when there are two different owners how do you manage those expectations? Do they have to work it out amongst themselves?

MS. EVE: Yes, you're right. It is a unique situation having a co-located site with two different licensees. We do encourage TMI-2 and TMI-1 to work together, licensees to work together going forward because they do, like I said, they do have some shared systems and shared programs.

But it can be a challenge. We work together with both of them and encourage them to work together.

COMMISSIONER CROWELL: And to tie this back to the conversation with John, I -- you know, I don't think it's defensible to stop or slow down significantly the process of cleaning up and decommissioning Unit 2, given its history. And that gets right back to some of these considerations

that are beyond, you know, just the pure technical and how we decide how long a facility should have for completing decommissioning.

Let me move to Jen for a moment, probably with my remaining time left.

So, on Slide 9, I puzzled over this slide for a while because it's a little misleading. I know that wasn't intentional, but what's on that slide is not really completion or the completed legacy projects. I don't know if that was the point.

You know, Zion license may be terminated, but it still has issues, you know. And Greg talked about those.

Fansteel hasn't been cleaned up at all. It's just that it went into someone else's jurisdiction from us to EPA. So, not completed at all, so it's a little misleading on Fansteel.

Is that fair to say?

MS. WHITMAN: I would -- for the site overall, that's fair. I think for a lot of NRC's responsibility we've passed that on to DOE.

COMMISSIONER CROWELL: I mean, so what's really happening here is this is jurisdictional changes, not necessarily completion of legacy projects.

What led to Fansteel having inadequate financial assurance? Because that was under our watch at the time, right?

MR. LUBINSKI: Thanks. If I could add here, Jen.

MS. WHITMAN: Go ahead.

MR. LUBINSKI: Long history to that. I'm not going to be able to give you a complete answer, which we can provide later

But as they continued with the ownership along the way, we

were, we were already looking towards decommissioning. They started off with not having adequate funding for the decommissioning as they move forward.

Also, identified as part of decommissioning some additional challenges they had that required some additional remediation.

When you slow down in the decommissioning, they ended up having to put some monitoring in place and some remedial actions just to keep the site safe, which ended up using decommissioning -- or money that could have been used for decommissioning. And the site is definitely a different site than you would look at as a nuclear power reactor.

So, those additional challenges are what led to not having sufficient funding. It's not unusual for many of the uranium recovery sites from the past -- again, that's why it's called a legacy issue -- to have that.

I will say from a completion standpoint, and I agree with what you're saying, but I would say from the Fansteel, from a completion standpoint, it has been years trying to get resolution to the funding issue. We knew that we were continuing to look -- or, they were continuing to run low on funds.

We needed to make sure that it continued to be safe, and we had funding to maintain the safety of the site. And the completion was being able to identify a process for continuing to have funds and working with EPA and have this listed as a national -- on the National Priority List was what we were considered is, the completion is getting those funds back in place.

COMMISSIONER CROWELL: Okay. And for another time I'd like to discuss the comment that was made that financial assurance is now you're confident in adequate financial assurance amongst current

licensees and why you feel that we're -- why you have that confidence and if there's any reason to worry that a shortfall may happen with any given licensee in the future. Thank you.

CHAIR HANSON: Thank you, Commissioner Crowell.

Commissioner Marzano.

COMMISSIONER MARZANO: Thank you, Chair Hanson.

And, Commissioner Crowell, I am happy improving your seniority on the Commission.

COMMISSIONER MARZANO: Well, I just want to start by thanking you all for your presentations. As I said, I am pleased to be making my second appearance in this room in under a week. And I'm glad that we were not snowed out this time.

With this being my first meeting as a commissioner, I would be remiss to not acknowledge all the great work the staff has accomplished and continues to do, especially in these business lines. And it's particularly challenging. There are a range of very important issues that are facing NMSS in these areas.

Along those same lines, one of the things I'll note is that all these ongoing innovations in nuclear technology and the use of radioactive materials means that there's no shortage of opportunities across the Agency for staff to participate in groundbreaking efforts. So, I think there's a lot to look forward to, here.

I'm grateful to be a part of this as well and to begin working alongside of you and my fellow commissioners to address these issues.

To that, to that point, I believe the NRC is only seen as the gold standard because of the work that staff does, their diligence, and

dedication to the mission. And it's a testament to the staff, the leadership, and the collective commitment to effectively and efficiently achieve our safety and security mission.

So with that said, I'd like to turn my questions over. Before I do, I do want to comment on Commissioner Caputo's line of questioning. And I think it's very important to kind of acknowledge some of these legacy issues that may be remaining out there, especially given the direction from Congress from the ADVANCE Act.

Yes, back in 1988 maybe it wasn't envisioned that decommissioning would go beyond 60 years, 60 years may have been enough. But operating re -- when reactors were first receiving construction permits, it wasn't envisioned that they go beyond 40 years. And now we're looking at 80.

So, I think one of the most, one of the important things here is to look for those opportunities throughout the work that we do to really kind of bring to the fore what the ADVANCE Act and congressional direction was getting us to try and do, and can go a long way with improving efficiency over the long term. So, just wanted to say that first.

Jen, thank you again for your remarks today. You mentioned in Slide 8 talking about the potential for partial license termination plans. I'm interested in this approach, and I'd like to know a little bit more about kind of what the timeline is for this and, you know, for reviewing, improving, and implementing these approaches.

MS. WHITMAN: Yes. So, we actually put together a team over the last year that was looking specifically at prior license termination plans, both those that had been approved as well as those that had been

withdrawn, to kind of figure out what some of the best practices there and what are options for the staff to make improvements in our review process.

And one of the ideas the team came up with is this partial LTP acceptance review. And so, they're looking at, you know, is the information that's incomplete is it clearly defined, well scoped? And is there, you know, a defined schedule for when the submission of the information would come in? Because that would allow for planning for our staff as well as the licensee to have assurance that that information would be there before the final decision needed to be made. So that's one of the ideas that the team has come up with.

And, Greg, as the team lead for that, were there any other ideas that you wanted to talk about?

MR. CHAPMAN: I think it's worth mentioning that tomorrow, actually, we have a lessons learned meeting with industries, a public meeting here. And one of the topics we'll be going over is the difficulty we've had over their submissions and trying to conduct reviews. And we're in our process to develop the effort to try to communicate how they could use our guidance to a little bit more effectively submit an LTP. That's one way of looking at it.

COMMISSIONER MARZANO: Is there -- you know, public engagement in decommissioning is an extremely, you know, sensitive and important topic. But would this partial license termination plan, so it's an acceptance review, it's not necessarily a separate licensing action?

MS. WHITMAN: Correct.

COMMISSIONER MARZANO: Are there any additional opportunities for public engagement with this, with this approach, or does

public engagement basically follow the same trajectory that it's on now?

MS. WHITMAN: So the public engagement would be -- so our process, unlike NRRs, it's an internal procedure, so we don't have opportunity for public engagement specifically on the process. But on implementing the ideas and as part of the acceptance review, as John mentioned, we do have public meetings that are part of the normal process.

COMMISSIONER MARZANO: Okay. And this may be somewhat self-revealing, but can you talk a little bit about the advantages of this approach versus the current approach?

MS. WHITMAN: So, the current approach, right, where we're looking at the acceptance review, you've got to have the full and complete application for the staff to begin the detailed acceptance review. And in this case we've seen that there are some times where either, you know, contracting work or scheduling for the licensee it would be beneficial for them to be able to submit a chunk of information at a later point in time.

And so, this would give licensees the flexibility to do that.

COMMISSIONER MARZANO: Okay. My understanding of the decommissioning process is the PSDAR is submitted, a license termination plan follows. Will this improve or maybe narrow that gap between when the PSDAR is released and when you have the license termination plan in hand?

MS. WHITMAN: So, it could. I think a big part of that timing is licensee-dependent, and their resource and schedule needs and desires.

You know, the staff, when the review comes in, we do our best to get the review out the door as expeditiously as possible.

COMMISSIONER MARZANO: Okay, thank you. I'd like to turn to Doug. I appreciate the work on abandoned uranium mine remediation, reclamation. I think it's important. You kind of highlight in your slides, you know, the just number of sites that exist in the western United States that are, you know, potentially having public health impacts.

Can you talk a little bit more about how NRC is engaging with EPA in the management and cleanup of these sites, particularly some of the effort that you've done now, and maybe highlight one or two areas that, you know, both NRC and EPA have derived some benefits from this collaboration?

MR. MANDEVILLE: Yeah. Thank you for the question.

So, there's -- you know, I mentioned the MOU effort in the federal mining waste dialog. So, those are more broad efforts that are looking kind of across the Federal Government.

There have been some site-specific situations. We worked with them in the Ambrosia Lake area, is one. We also worked with them a couple years ago in the UNC Church Rock site. That was, again, to relocate mine based on an existing mine tailings site.

So those -- yeah, I think we have good relations with both the DOE staff and EPA staff where they're working on those. So it's a good, collaborative effort.

But, you know, what I think I hope comes out of this is, you know, these are all case-by-case situations. I think what really would be helpful or could be offered, this is my own viewpoint, is some broader views or some broader actions from a legislation standpoint may help be able to move this from a case-by-case basis into a broader kind of framework. So, I

hope that's helpful.

John, do you have anything you wanted to add or?

MR. LUBINSKI: Thanks, Doug.

You know, I would add what's been really great about working recently with EPA and DOE is the effective communication and understanding roles and responsibilities. So, we've done a great job, and I credit Doug and his folks for doing this, is really laying out what the criteria we're going to use for reviewing the proposals EPA has so that they can make the best-informed decision.

For most of these sites, they're the ones either owning it and paying for it, or, even if they don't own it, they have some kind of financial interest. So, they want to understand from us what are the regulatory options they have? What are they going to need to do?

And I'll put our third partner, the Department of Energy, because they may be the long-term care recipients of these sites in the end, and making sure they'realigned as well.

And I really appreciate what Doug's doing to make sure to lay out that process and provide options.

COMMISSIONER MARZANO: Well, again I just want to highlight and say I really appreciate the staff's work in this area in particular. The problem is vast and it will take cooperation just across -- not only across the Federal Government but with, with the states and the tribes themselves.

And so, with that, I'd like to explore a little bit more about your, about your thoughts on that and the legislation, but with that, I'll conclude my questions.

Thank you.

CHAIR HANSON: Thank you, Commissioner Manzano.

Jen, let me start with you this morning. So, how many, you know, what LTP reviews do we have ongoing? And how many do we have, you know, how many do we expect in the near term, say in the next 5 years or so?

MS. WHITMAN: So, right now we have several in house. We have the NS Savannah, which is nearing completion. Fort Calhoun submitted a revised LTP, so that's currently under review. And then Oyster Creek is also in house, and we are awaiting a supplement in March.

And next year -- sorry, in the next month we expect Crystal River and then later this year Vermont Yankee and Pilgrim. And we also are engaging with GE and North Star who are planning to decommission the entire Vallecitos site.

So, that's the five licenses for the different reactors there.

CHAIR HANSON: Okay. Well, you mentioned Fort Calhoun I think, you know, in your remarks. And can you just briefly discuss the approach taken there and how that's informing maybe some of the other reviews?

MS. WHITMAN: Yes. So, you know, the staff put together the memorandum about the risks of the LTP to help with as the inspection staff does their work as the site moves towards final license termination.

So, the staff applied the risk-informed decision-making principles to focus their review and then clearly highlight those areas that they focused on that led to their determination of reasonable assurance of the LTP so that the inspectors in the future would be able to, you know, clearly reach the same conclusion.

CHAIR HANSON: So, Greg, you mentioned the revision of the guidance. This is kind of for the two of you, right. So, and the guidance was going to come out kind of later this year.

And I guess I'm, kind of wondering about the timing of the issuance of the guidance and how that can then be leveraged by either ongoing, you know, licensees that are currently undergoing review, or things that are going to be coming kind of down the pike.

The question for you is going to be a little bit kind of how, given the timing of where we are and the number of things that we have under review, how -- I guess I'll put it bluntly -- how useful is that going to be, given where we are?

MR. CHAPMAN: Well, it's useful for staff in just the fact that we can reference that in RAIs and direct licensees to what we're looking at specifically. So, having it out there even as a draft is helpful in that respect.

CHAIR HANSON: Okay. Okay.

MR. CHAPMAN: All right?

CHAIR HANSON: Well, fair enough. Yeah.

Jen?

MS. WHITMAN: Yeah. And I would say, you know, we have the, as Greg mentioned, the decommissioning public workshop tomorrow. And so, we have been engaging with industry on, like Greg said, the draft versions of documents.

And so, I think, you know, the information has been out there for a little while. And the licensees can use it today to inform the applications for the near future.

CHAIR HANSON: Okay. So, Jen, in your presentation

you mentioned, you know, a lot of the knowledge that's walked out the door. And you talked about an emphasis on knowledge management.

So, you know, from your perspective what's working best in the knowledge management space for you and your team? And how do you, how do you know that?

MS. WHITMAN: So, I think the revision to the application program has been pretty successful with the four staff that we qualified this year. We got some pretty good feedback from a couple of the staff that went through the process about, you know, how they felt ready and prepared to do their qualification board, and that the qualification program prepared them to do that.

So, I think that's been successful.

I also think that, that one of the things we're doing more of is videos, kind of the short form videos. We've see that people, you know, we have a lot of paperwork or digital content. It's a lot of reading when you first come onboard. And that can get monotonous. And so, we've seen the video format be much more successful.

So, we're looking at expanding that in our KM activities going forward and having more of that available because that seems to be what people are more interested in learning from.

CHAIR HANSON: So, from the videos it's more successful because you've seen lots of, lots of clicks? You're counting number of viewings or because it's showing up in qualification tests and people are doing better, or doing the same, or?

MS. WHITMAN: So, we don't have the clicks data yet. We've only had a couple of videos. And it's been more word of mouth of this

is what people have said, Hey, that was really useful. I really enjoyed being able to go back to doing that, and being able to go back and watch that again if I missed something.

CHAIR HANSON: And so, Greg, this is going, it's going to be kind of a similar question for you. You talked about streamlining those reviews. You know, are you collecting data? How are you going to know what's the measure of a streamlined review? Is it less staff hours, fewer licensee hours?

How is that, how is that being measured and when are we going to see some results of that?

MR. CHAPMAN: Sure. Well, currently our PMs are tracking pretty much ever significant milestone in the RPS software application.

CHAIR HANSON: Okay.

MR. CHAPMAN: So, they're logging when the submittals come in, when they're accepted, number of hours that staff charged to it, and when final actions are taken. So, we could easily use that data to assess exactly what you're talking about.

And I think looking at both the number of hours that staff are charging to the actions, or similar actions, as well as the whether or not they are having to withdraw submittals due to insufficient information, those are a few things that we'd be looking at to ensure that we're streamlining the process.

CHAIR HANSON: Okay. All right, thank you.

And, finally, you know, I guess, you know, I want to touch on the beyond 60 years thing. I really appreciate all my colleagues'

comments on this issue.

I think one of the unfortunate things here is that, you know, we got an info paper. That's what 2473 is, it tees up a bunch of issues but it doesn't actually ask the Commission for a decision when.

This might be an area that's actually pretty ripe for a Commission decision.

And I absolutely agree with Commissioner Caputo in her remarks that, you know, the current criteria of going beyond 60 years being necessary for public health and safety puts licensees in the untenable position of having to prove a negative, essentially.

And it's, I think, that situation, while maybe it made sense back in Eighties, you know, doesn't make sense anymore.

And that then the question before us and the need, I think, for a vehicle to address those questions is, well, what is a reasonable set of criteria in this space for going beyond 60 years?

And I think as you get into that, then Commissioner Crowell's remarks are worth remembering as well, because if it's solely the existence of an operating reactor, well, we could have sites, we've given new deployments where we've got reactors going on for a long time where, where we thought maybe 60 years back in the Eighties was fine, but we could suddenly find ourselves in the 80 or 100 year time frame.

And to Commissioner Crowell's point, I don't know a lot of communities that have actually signed up for something like that.

And, and I think it's well -- a point well taken, John, that you made which is the facts on the ground actually matter; right? That there aren't releases to the environment, that those facilities are being maintained,

that the aging management programs are being maintained, et cetera.

So, there are a lot of considerations here, and it could entirely be that a, to Commissioner Caputo's point, that a rulemaking, given the universe of reactors that we're talking about where the juice isn't worth the squeeze.

And, yet, I think you see in that info paper and in some of the discussion that the staff have had over the last year or so, and that we had this morning, that we're stuck on this regulatory language that exists that says being necessary for public health and safety.

And even if, whether you're under 50.82, which is the decommissioning rule, or 50.12, which is the more generic exemption process under Part 50, it seems to be kind of reference back to that language.

And so, I think there's a need for some further consideration on the part of the Commission in this space, and engagement with the staff about what a reasonable, and useful, and efficient, and clear, and a process that adheres to our principles of good regulation in this space.

So, I don't know that there's a question there. But if, John, if you wanted to respond, you could, I guess.

MR. LUBINSKI: Yeah. Thanks. Thanks, Chair.

And let me say I appreciate as you summed up all the commissioners' comments, and I believe all the points that were raised were really great points and valid points that need to be considered. And thank you.

I would just, you know, a couple data points along the way that got us where we were, as you -- as Commissioner Caputo said. We're looking at a rule from the Eighties.

We did have more recent interactions with GE Vallecitos more recently. That was only about 6 or 7 years ago.

We also did going through the decommissioning rule when this was initiated, made a conscious decision at that time not to, not to address this issue, so we didn't see it as an issue.

So, there were multiple steps along the way that led us to say we didn't, we didn't see an indication of a need for change, which is why we sent an info paper, was to keep the Commission fully informed that we believed we were following current policy.

So, I just wanted to give the background on why, and what led us to an information paper at that point in time.

I would also put another factor that I would say, and you maybe hit a little bit in your questioning to Jen, was what has also changed is when we were looking at this we were, we were, you know, the decommissioning rule, the GE Vallecitos time frame, we were looking at an environment where we were seeing an increase in decommissioning, not just the number of LTPs coming in, but current operating plants.

And when we looked at the horizon and said we see more of them not going to subsequent license or we see them going to accelerated decommissioning, so we were actually seeing an area where we were going to see more decommissioning, which would lead to more decommissioning of not only entering decommissioning but going to accelerated decommissioning.

As Jen mentioned, that environment has changed within just the last two years.

So, I would agree with you from that standpoint, that is

another indicator that we probably should look at in making a determination or whether or not this is right for something of either a Commission decision from a policy standpoint or in a rulemaking space.

Thanks.

CHAIR HANSON: Okay. Thank you.

Thanks for the I appreciate my colleagues giving me the extra time.

We are at it is halftime, as we say around here. So, let's plan to reconvene at 10:40.

Thank you all very much for your presentations this morning.

(Whereupon, the above-entitled matter went off the record at 10:33 a.m. and resumed at 10:41 a.m.)

CHAIR HANSON: Okay. Welcome back, everyone. The next panel will discuss the Nuclear Materials Users Business Line. And it will be kicked off once again by our Executive Director of Operations Mirela Gavrilas.

MS. GAVRILAS: Good morning again, Chair and Commissioners. Our second panel on Nuclear Materials Users has -- we'll talk about this business line which has about 200 FTE also distributed between headquarters and the regions, with the bulk of the work happening in NMSS.

And as on the previous panel, John will start us off.

MR. LUBINSKI: Good morning again, Chair and Commissioners. There is great breadth, diversity, and a volume of work in this business line. Most Americans are impacted by and are benefitting from the activities covered by this business line.

We all have smoke detectors in our house that likely contain radioactive materials. Food or drink may have undergone production using devices containing radioactive materials. And many of us or our family members have benefitted from the use of radioactive materials for medical diagnosis or treatment.

The nuclear materials users, or NMU, business line partners with the 39 agreement state programs to implement the National Materials Program. Three additional states have expressed interest in becoming agreement states.

The National Materials Program, or NMP, oversees more than 17,000 materials licensees nationwide, including over 7,300 medical licensees. Agreement states regulate about 80 percent of the licensees.

While new activities and technologies continue to be introduced, the number of licensees in the business line has remained relatively stable, and we expect it to remain that way in the future.

Oversight ensures safety, security, and protection of the environment. You will hear more about the effective regulatory oversight of radioactive materials security from Matt Barrett. He's sitting at the table to my left. And he is our agency lead for source protection security.

One significant change in the business line is the addition of the oversight of fusion machines. The business line recently provided a proposed rule covering fusion to the Commission. Dafna Silberfeld, to my left, is the Deputy Director from MSST. And Allyce Bolger, who is sitting next to on the other side of Mirela, is a technical lead for the development of the fusion regulatory framework. Each will talk about fusion during their presentations.

While NRC has yet to receive an application for a fusion machine, two agreement states, Massachusetts and Washington, have approved licenses for manufacturing of fusion machines.

Next slide, please. The NMP continues to benefit from the Integrated Materials Performance Evaluation Program, or IMPEP, review process. IMPEP monitors and ensures NRC and agreement state programs continue to be adequate to protect public health and safety, and ensures consistency in the way we regulate the licensees.

IMPEP continues to get increased support from agreement state members. And you will hear today about the important role that regional state agreement officers play from Jackie Cook, who is sitting at the other end of the table. And she is a Region IV regional state agreement officer.

As part of our ongoing partnership with agreement states, we continue to provide training through classroom, virtual, and online courses. Dafna will provide more details about the training offered to agreement states.

But I wanted to highlight that we will support two additional course offerings required for qualification in fiscal year 2025. This effort addresses concerns raised at the Organization of Agreement States, or OAS, commission meeting in October of this year regarding staff turnover in the states, resulting in an increased need for training for newly-hired employees that was not originally planned.

We are seeing the use of different byproduct materials in medicine, particularly in radiopharmaceuticals and medical devices coming onto the market. We expect this trend to continue, as there are many more clinical trials.

Our regulations for medical uses of byproduct material are

effective and performance-based to account for new technologies. We continue to develop guidance to streamline the licensing process. This includes guidance for addressing related impacts from the use of these new materials, such as handling longer-lived waste from impurities, and consolidated training and experience guidance for authorized users.

The Advisory Committee of Medical Use of Isotopes continues to provide valuable advice to the NRC staff. In addition, the NRC engages with external medical -- with the external medical community through routine communications with five major medical societies, including the Society of Nuclear Medicine and Molecular Imaging, the American Society for Radiation Oncology, the Society of Intervascular[*sic]* Radiology, the American Brachytherapy Society, and the American Association of Physicists in Medicine.

The staff gained important insights from these organizations on reporting requirements for extravasations, and training experience implementation guidance. The expertise of these groups helps us fulfill our mission to regulate the uses of byproduct material in medicine as necessary to ensure radiation safety without intruding into the practice of medicine, which is consistent with the NRC's medicals policy statement.

Next slide, please. The staff continues to team with our agreement state sponsors. In response to New York State's request to return the sealed source and device program, the state and NRC completed the transfer of 15 registration certificates from New York to the NRC ahead of schedule, ensuring continuity of licensing and oversight

The staff continues to offer technical assistance to related materials licensing and oversight to the agreement states, particularly in

reviewing reportable events and addressing new types of requests related to the medical use of byproduct material.

The staff provided guidance on licensing considerations for growing interest in mobile therapeutic radiopharmaceutical use, and use of remote authorized users, as well as the review of standard license conditions for new emerging medical technologies.

The business line supports Agency implementation of the NRC's Tribal policy. We have streamlined the process for informing tribes about specific shipments of irradiated reactor fuel and nuclear waste.

We added state and' TTribal Community letters to the Agency's public LISTSERV, a subscription-based service that ensures broader and timely distribution of updates to the interested Tribal member.

We support Tribal consultation on NRC review of reactor applications.

The staff continues collaboration with our international counterparts on regulatory development to support deployment of fusion energy technology. Over the past year, staff participated in multiple international working groups and bilateral and trilateral meetings with other countries to lay the foundation for and develop regulatory framework for fusion energy.

The staff also supports the International Atomic Energy Agency, or IAEA, Code of Conduct on the Safety and Security of Radioactive Sources -- we refer to that as the Code -- and its supplemental implementation guidance.

Staff actively participates in IAEA consultation meetings and with IAEA member states, and cooperates bilaterally and multilaterally with

partner countries to ensure radioactive sources are used in an appropriate framework of radiation safety and security.

This concludes my remarks. And I will now turn the presentation to Dafna.

MS. SILBERFELD: Thank you, John.

Good morning, Chair Hanson and Commissioners. My name is Dafna Silberfeld, and I am the Deputy Director for the Division of Materials Safety, Security, State, and Tribal Programs.

Today I will outline the actions we are taking under the ADVANCE Act, highlighting how they directly support fusion initiatives and other material users business line activities. I will begin by outlining how the NRC is working to establish regulatory stability for fusion. Then I'll highlight our collaboration with agreement states, federal partners, and Tribal Nations, emphasizing the intentionality behind our engagements.

Next slide, please. We provided the regulatory framework for fusion machines proposed rule and draft guidance to the Commission, SECY-24-0085, that supports licensing of fusion machines under the NRC's established byproduct material framework.

The limited scope proposed rule includes changes to definition, content of application requirements, recordkeeping and inspection requirements, intruder assessment requirements for waste disposal sites, and environmental report submission requirements to support licensing of fusion machines.

This proposed rule benefitted from extensive public outreach that included sharing draft versions of the proposed rule language and guidance with the public during its development. Over a 50-month period

this outreach included seven public meetings, five government-to-government meetings with agreement states, targeted outreach to Tribal governments, issuance of three state and Tribal communication letters, and consideration of nine stakeholder letters.

Additionally, the staff integrated personnel from Massachusetts and Washington agreement states into the rulemaking and guidance developing working groups to leverage their experience in licensing Commonwealth Fusion Systems and Helion Energy, and to ensure coordination with licensing activities occurring in agreement states.

The staff monitored development of the ADVANCE Act and was able to incorporate conforming changes into the proposed rule.

While the proposed rulemaking and guidance support commercial and mass manufacturing, staff is taking action to expand on a regulatory process to support streamlined licensing of mass manufactured fusion machines.

Some specific examples include collaborating with the Federal Aviation Administration on airworthiness certifications, engaging with the Food and Drug Administration regarding radiation therapy medical devices, conducting discussions and site visit with seven fusion technology developers to assess industry readiness, and hosting public meetings maintaining the NRC's ADVANCE Act feedback website, and planning a technical session on fusion deployment at the upcoming Regulatory Information Conference.

This work will support providing a report to Congress, as required by the ADVANCE Act, by July 9th, 2025, summarizing our progress and outlining our path forward.

Next slide, please. The National Materials Users Business Line works closely with agreement states on implementation of the National Materials Program. The National Materials Program Champions, made up of the representatives from the NRC and from the agreement states, serve as points of contacts for National Material Program activities.

The NRC staff and National Materials Program Champions have held several government-to-government meetings, and champion chats focused on fusion.

Collaboration also extends to conferences, such as this year Organization of Agreement States' Annual Meeting where nearly a full day was devoted to discussions on fusion. Attendees heard insights from the NRC, states already working with fusion technologies, and representatives from fusion companies.

The NRC and agreement states continue to recognize the benefits of the Integrated Materials Performance Evaluation Program in assessing radiation control programs. As was mentioned in the Organization of Agreement States Commission Meeting, a working group was formed to explore additional approaches to evaluating Radiation Control Program performance. And we're currently implementing several of those recommendations.

For example, one recommendation aims to enhance the consistency and efficiency of these reviews as the number of agreement states grows. To address this, we improved team leader training with scenarios, report writing techniques, introduced regular forums for dialog and alignment, and streamlined reporting by removing redundant steps such as a proposed final report when no changes are necessary

A second recommendation highlighted at the recent Organization of Agreement States Commission Meeting focuses on early identification of performance issue in radiation control programs, and timely correction actions with National Materials Program support.

As part of the steps to address this, we're partnering with the Organization of Agreement States Board to develop integrated materials performance evaluation program awareness training for new radiation control program directors by July 2025, including a welcome package, evaluation criteria overview, reference materials, and annual training at the Organization of Agreement States meeting to ensure new leaders are well prepared to address program challenges.

Next slide, please. Our training program for the National Materials Program ensures NRC and agreement state staff meet necessary qualifications, offering approximately 25 specialized courses to support their development. This collaborative effort includes NRC-sponsored training delivered at the Technical Training Center and online by NRC and contract instructors.

It also involves state-hosted training where agreement states provide the venue while NRC instructors deliver the training, and state-delivered training where agreement states use their own instructors, with NRC-approved materials supported by the NRC in areas such as training aids, course administration and evaluations.

In fiscal year 2024, we provided approximately 900 spaces in NRC training classes for agreement state staff and allocated approximately $835,000 to support agreement states' training by covering associated travel costs.

Recognizing the importance of addressing staffing challenges, we prioritized training opportunities for agreement states with new hires, ensuring their personnel have access to the necessary courses to qualify and perform their duties effectively.

Additionally, as John noted, in response to the training needs highlighted by the Organization of Agreement States at the recent commission meeting, we've added two additional state-delivered training sessions for FY25 where the NRC will pay for all associated travel costs for participants, which will significantly help address these needs.

Next slide, please. Our approach to Tribal outreach includes promoting meaningful government-to-government meetings and early consultation for Agency activities, such as rulemaking, licensing, decommissioning, and agreement state applications.

The Tribal Relations Team helps provide cultural competency training to staff, enhancing understanding of Tribal customs and governance. In addition, they advise management on policies and projects that may affect Tribal interests, ensuring compliance with federal mandates and Agency policies.

This year, our top priority is developing Tribal consultation guidance to promote consistent government-to-government communication with TribalTribal Nations and enhance engagement efforts.

The Nuclear Energy Tribal Working Group has offered to contribute to this initiative.

Additionally, we're revising the Tribal Protocol Manual to update outdated information and foster cultural sensitivity by incorporating Tribal feedback. The Tribal protocol manual guides staff's communication

and interactions with TribalTribal Nations by outlining responsibilities and cultural practices.

We're also incorporating Tribal feedback on the history section to ensure a more thorough and inclusive revision.

Through the update and development of these documents the Tribal Liaison Program will achieve our strategic goal of engaging tribes in NRC activities in a transparent manner.

This concludes my remarks. And I will now turn it over to Allyce Bolger.

Next slide, please.

MS. BOLGER: Thank you, Dafna.

Good morning, Chair Hanson and Commissioners. I will be providing a discussion on Executing Regulatory Certainty for Implementation of Fusion and Assuring an Adequate Strategy for Future Expansion.

Specifically, I have two key messages describing the NRC's approach to this topic.

Next slide, please. The first message is to sustain consistency across the NMP. The NRC has a well-established partnership with our 39 agreement state co-regulators. And as we look to the future of fusion regulation we will be focusing on maintaining cohesive and knowledge-sharing national program.

Additionally, it will be important to quickly identify and address any challenges to ensure the continued success of the program.

We will continue to engage our NMP counterparts through established processes such as training courses, routine monthly meetings, topic-specific discussions, and participation at the OAS annual meetings.

This engagement will help ensure that our regulatory community is appropriately equipped with the technical expertise to license and provide oversight of advancing fusion machine designs.

The NRC will partner with the DOE, industry, and academia to develop training on the various fusion design methods, fusion reactions, operation types, and other design-specific safety considerations.

With the active development of novel material suitable for fusion, the NRC's Office on Nuclear Regulatory Research will be evaluating the status of research on materials, effects of fusion machine components, and radioactive waste and recycling.

While our current rulemaking addresses these two areas, leveraging the results of this research can enhance the NRC's fusion machine regulatory requirements to ensure adequate protection of public health and safety throughout the lifecycle of fusion machines.

Growth of the fusion industry will also necessitate having adequate staffing levels. The NRC Division of Material Safety, Security, State, and Tribal Programs has hired a senior health physicist in the Materials Safety and Licensing Branch to support fusion activities and will continue to evaluate the need for appropriately staffing both the headquarters and the regional offices.

Agreement states will have the responsibility for ensuring that staffing levels meeting their needs are in place as the technology advances and the fusion industry expands into commercialization.

The NRC has the lead in offering licensing and inspection training, as is currently done for a variety of byproduct materials technologies which will alleviate resource constraints on agreement states and promote

consistency. Agreement states will also have the options to host or deliver training courses to supplement the NRC's training schedule, especially when a particular state has a higher demand to scale up qualified staffing numbers.

To allow for timely qualification of fusion licensing and inspection activities needing additional training demands will be essential to providing regulatory certainty.

As the fusion industry becomes more mature and the regulators have more run time, licensing guidance will be enhanced to address the specific fusion technologies operating and any challenges identified.

Additionally, inspection guidance will be developed in the next few years for the NRC and agreement states' staff. The NRC is establishing a Fusion User Group and implementation toolkit which will simplify the exchange of operating experience and providing technical support.

While striving for consistency across the NMP, agreement states have flexibility in their program implementation and administration to accommodate individual state preferences, state legislature direction, and local needs and conditions. States may establish more stringent or similar requirements, provided that the requirements for adequate protection of public health and safety are met and compatibility is maintained.

The NRC will assess the compatibility of its fusion requirements as part of the rulemaking process.

Additionally, the IMPEP enables the NRC and agreement states to evaluate each other's technical readiness and implementation of fusion, as well as to offer best practices and insights for improvement.

Next slide, please. My second key message focuses on

our interactions with international stakeholders.

The NRC has been working with other federal agencies, such as the DOE and the U.S. Department of State, to advance the International Partnership on Fusion Energy. The NRC has participated in international fusion regulatory workshops and conferences.

For instance, the International Atomic Energy Agency, or IAEA, has hosted meetings for the development of fusion technical reports and safety reports.

The IAEA has also established the World Energy -- World Fusion Energy Group which introduced the publication *Fusion Key Elements*. This document identifies six key elements to form the foundation for global movement on fusion and provides an internationally shared vision for fusion energy development.

Actions taken by NRC staff as part of the development of the fusion machine regulatory framework are reflected in these key elements. This includes building a work force of regulatory staff and development of a risk-informed regulatory framework to support effective oversight of commercial fusion machines, the sharing of regulatory practices through international cooperation, engagement with a diversity of stakeholders, and public outreach and education efforts to increase awareness and understanding of fusion energy.

The NRC has also participated in several trilateral meetings with the United Kingdom and Canada. These meetings focused on sharing information on each country's development of a fusion regulatory framework, licensing inspection of existing commercial tritium and fusion research and development facilities, and training of regulatory staff.

This group is working together to develop a series of workshops, the first of which is planned for March of this year and will focus on challenges in international regulatory development alignment, fusion hazards and risks, wider document sharing, and technical supply chain management.

These engagements are helping to enhance the NRC's fusion machine regulatory requirements by benchmarking Canada's licensing of commercial tritium operations, benchmarking with the U.K., and sharing best practices for training regulatory staff to ensure adequate protection of public health and safety.

This concludes my remarks. I will now turn it over to Matthew Barrett. Next slide, please.

MR. BARRETT: Thank you, Allyce.

Good morning, Chairman Hanson and Commissioners. My name is Matthew Barrett and I'm a Project Manager in the Division of Materials Safety, Security, State, and Tribal Programs. I'll be proving a discussion on the Agency's Source Management and Security Program. Next slide, please.

Radioactive materials provide critical capabilities in the oil and gas, electrical power, construction, and food industries, are used to treat millions of patients each year in diagnostic and therapeutic medical procedures, and are used in technology research and development.

NRC staff provides programmatic and technical leadership and support for the safety, security, and control of radioactive materials. Additionally, we both maintain and seek to improve the digital platforms used to perform these actions.

This is accomplished through interacting with both regional and Agreement State license reviewers and inspectors and on enforcement actions related to these materials; reviewing the data, feedback, and issues that arise during these operations; and utilizing these lessons learned to improve our regulatory guidance and policy revisions.

These feedback mechanisms, in addition to conducting a program review of the security regulations for Category 1 and 2 radioactive materials, identified enhancements to improve the associated guidance documents.

NRC staff is developing the regulatory basis for the evaluation of financial assurance for Category 1 and 2 sources with consideration of Category 3 sealed sources, which will be submitted to the Commission in early 2025.

This effort is meant to facilitate licensee disposal of unwanted sources once they are no longer needed, once financial assurance funds are set aside. The staff is developing methods to calculate financial assurance and perform cost-benefit analysis for alternative disposal options. Staff is considering factors such as the overall risk and total cost of dispersal to implement financial assurance requirements in the development of the regulatory basis.

Next slide, please.

NRC regulation of Category 1 and 2 radioactive materials is enhanced through strong collaboration with federal and state partnerships. The most prominent of these partnerships is the Task Force on Radiation Source Protection Security, or Task Force, which the NRC has led since 2005. The Task Force provides recommendations to the President and Congress on

security of radiation sources to protect against potential terrorist threats, including acts of sabotage, theft, or use of a radiation source in a radiological disposal device and a radiation exposure device.

The Task Force represents partnership with both federal and state stakeholders. It serves to advance safety and security of radioactive materials, including discussions of various non-isotopic technologies.

The Task Force is comprised of independent experts from 14 federal agencies and one state organization, representing agencies with broad authority over all aspects of radioactive source control, including regulatory, security, intelligence, and international activities.

Over the life of the Task Force, these strong collaborative interactions have resulted in completion of 36 of 42 total recommendations, with the remaining six under evaluation for closure in the 2026 report. While four of these open recommendations have limited NRC involvement, NRC staff is actively addressing the remaining two.

More specifically, the NRC's consolidated rulemaking for licensing the disposal of Greater-than-Class-C waste in Part 61 supports both open recommendations: developing Greater-than-Class-C low-level radioactive waste disposal capability and developing disposal options for unwanted cesium chloride sources.

The Task Force began meeting in January of 2025 to develop the next report that is due to the President and Congress in August of 2026.

Next slide, please. As a key component of the integrated source management portfolio, the web-based licensing, or WBL, system

supports the advancing of the National Materials Program Framework to enhance the operational efficiency. The WBL system is a secure internet-accessible platform that supports the regulatory community in maintaining the safety, security, and oversight of radioactive materials.

Specifically, the WBL equips programs with essential IT tools to manage the complete life cycle of licensing, certifications, inspections, and reciprocity activities -- all in one integrated system.

Platforms like WBL retain their ability to meet the needs of users through consistent maintenance and modernization. Several such efforts for WBL are actively in progress.

A key example of these ongoing improvements is the planned introduction of the new functionalities that will allow the external users to directly submit license applications through WBL. This upgrade is expected to improve the application process by simplifying how applications are submitted and providing tools, like guided forms and automated checks, to reduce errors. It also enhances accessibility by allowing applicants to securely access the system anytime and anywhere, eliminating the need for mailing paper forms or emailing sensitive information.

This improvement additionally benefits license reviewers, significantly reducing workload relative to the manual processing of license applications.

Another example of ongoing improvements is the integration of the licensing data in WBL with the National Source Tracking System, or NSTS, to enhance security. The NRC Agreement Statements and federal and state agencies use NSTS to track and regulate certain nuclear material used in medical, industrial, and academic applications from the time

they are manufactured or imported through the time of their disposal or exportation.

This integration is designed to enhance data consistency and eliminate redundancy by automatically synchronizing information entered in WBL and in NSTS. This project started preproduction in October 2024 and the full integration is expected to be completed this year.

By creating a seamless flow of data between the two systems, the NRC will enhance security while significantly reducing the administrative burden of maintaining separate datasets, improving operational efficiency and ensuring more accurate, up-to-date records. This streamlined approach further supports our commitment to modernizing systems and enhancing the overall effectiveness of our regulatory process.

Next slide, please. In 2024, we successfully onboarded three Agreement States to WBL -- Nevada, South Carolina, and Arkansas, bringing the total to 13 states actively using WBL.

This is a complex process and no two data systems are alike and they must fill dozens of data fields per licensee. But, as with prior states making this move, the feedback after completing the transition to WBL has been overwhelmingly positive.

Looking ahead, we are excited to share that four additional Agreement States are currently in the process of onboarding to WBL -- Maine, New York, Ohio, and Virginia. Additionally, we are working with Connecticut and Indiana to implement WBL when they are expected to become Agreement States in 2025 and 2026, respectively.

The adoption of WBL by these states underscores it growing recognition as a valuable tool in addressing the unique needs of state

regulatory programs. We remain dedicated to supporting these states through their implementation journey to ensure successful integration into the platform.

By 2027, we anticipate that half of the Agreement States will adopt WBL as their primary licensing and inspection platform. This milestone highlights WBL's versatility in addressing the diverse IT needs of state programs.

Next slide, please. As part of our continuing efforts to innovate and improve the efficiency of our regulatory processes, last October, radioactive materials inspectors began leveraging this web-based visualization tool to identify and schedule eligible inspections within a specified area. By integrating key data, such as inspection priorities, geographic locations, and due dates, the tool reduces scheduling planning time from an hour to roughly five minutes -- a time savings of, roughly, 90 percent.

In addition to streamlining routine scheduling, the tool enhances adaptability by identifying alternative licensee sites to ensure inspection resources can be utilized effectively even in the fact of unexpected cancellations or delays.

Its dynamic capabilities can also support emergency response efforts, enabling inspectors to quickly pinpoint licensee sites potentially impacted by natural disasters or other regional disruptions.

This concludes my remarks. I now turn it over to Jackie Cook.

Next slide, please.

MS. COOK: Thank you, Matthew.

Good morning, Chair Hanson, Commissioners. My name is

Jackie Cook. I am a Regional State Agreements Officer in the Division of Radiological Safety and Security, Region IV.

I will be discussing how the RSAOs work collaboratively with the Agreement States to further NMP and how we have implemented strategic measures such as Integrated Materials Performance Evaluation Program, or IMPEP, periodic meetings, and communications across Agreement States, identifying cross-state issues for engaging Agreement States to understand and implement appropriate actions to maintain or reestablish a healthy radiation protection program. I will also discuss a success story: the State of Mississippi.

Next slide, please. Regional State Agreements Officers are the primary point of contact with the Agreement State technical experts and decisionmakers, addressing program activities and monitoring the health of the Agreement States. A key aspect of this is conducting periodic meetings to ensure the states remain protective of the public health and safety and are addressing open recommendations from the IMPEP.

The IMPEP is a policy for reviewing Agreement State and NRC radioactive control programs on a four-to-five-year schedule, using integrated assessments based on common and non-common performance indicators.

Recommendations from prior reviews that remain unresolved are carried forward. However, ongoing RSAO interactions through daily communications can assist states in addressing these recommendations, enabling the Management Review Board to evaluate progress after periodic meetings, our IMPEP reviews, and potentially, close them if improved performance is demonstrated.

Our relationships with Agreement State programs provide for early notification of events and issues. One specific example was an Agreement State licensee in one Agreement State who was storing radioactive material in another state without the proper licensing, inspections, notifications, or security measures in place. Once the event was reported in the one state, the RSAO in the Agreement State, in the spirit of the NMP, identified the cross-states issue and notified two other Agreement States. We, then, worked with affected Agreement States to facilitate communications between the Agreement States to ensure the safety and security of the radioactive material in the affected Agreement States.

Next slide, please. As an RSAO, I am extremely engaged with not just the Agreement States under my purview, but also other Agreement States, as either a team member, a team leader, or an IMPEP team member.

Specifically, last year in 2024, I led the Kentucky IMPEP review and the New York follow-up IMPEP reviews. In addition, I participated as a team member on my Agreement States' IMPEP reviews in Wyoming and North Dakota.

For Agreement States on enhanced oversight, we conduct monthly or bimonthly meetings to discuss the Program Improvement Plan, which is like a progress report, so to speak, to address recommendations and other IMPEP-review-team-directed tasks, with a goal of improving performance. We align with the Organization of Agreement States to assist Agreement State programs, with the purpose of moving the NMP forward and strengthening the NRC and Agreement States function as regulatory partners.

For other noteworthy issues, we hold government-to-

government meetings and Champion Chats. These sessions provide a platform for Agreement States and NRC staff to ask questions and share insights. The feedback gathered during these discussions informs rulemaking, the development of licensing and inspection guidance, and updates the state agreement procedures, licensing processes, inspection protocols, and generic communications.

The NRC provides three types of technical assistance to Agreement States: routine, special, and programmatic.

The NRC provides routine technical assistance as part of its daily interactions with the Agreement States. Specialized technical assistance extends beyond routine interactions, and often involves the assignment of NRC staff or medical consultants for specific tasks or periods.

Programmatic technical assistance may be necessary if the need is identified through the IMPEP process. IMPEP reviews may identify programmatic issues in an Agreement State program that impact resources, such as staffing, funding, and equipment, and as a result, impact the Agreement State's ability to maintain a program that is adequate and compatible with NRC's Materials Program.

Next slide, please. In 2022, we conducted the Mississippi IMPEP, which resulted in placing Mississippi on probation due to four unsatisfactory performance indicators and 11 recommendations. This prompted additional oversight, regular interactions, the development of a Program Improvement Plan, and a follow-up IMPEP review scheduled for 12 months later.

Mississippi submitted their PIP detailing the tasks to address the recommendations and improve overall performance. As part of

the process, the staff, led by me, held monthly heightened oversight calls with Mississippi to discuss the status of the actions in their PIP, with the goal of turning the program around.

We focused on the key areas of staffing, inspection, and processes. As a result of our combined efforts, in addition to Mississippi reaching out to other Agreement States who were placed on enhanced oversight, the 2023 follow-up IMPEP review of the State of Mississippi's program identified significant improvements by the program.

The IMPEP team concluded that three of the four indicators found unsatisfactory were now satisfactory, and the other indicator which was unsatisfactory was now satisfactory, but needs improvement. The Commission agreed with the IMPEP team's assessment and Mississippi was removed from probation and placed on heightened oversight.

While Mississippi is still on heightened oversight, the actions taken serve as a model of collaboration, communication, and coordination. The level of alignment achieved, with the Regional State Agreements Officer as the catalyst, is a testament to how the program works. Mississippi's next IMPEP review is scheduled for the end of March 2025.

This concludes my remarks. I'll now turn the meeting back over to Mirela.

Next slide, please.

MS. GAVRILAS: Thank you, Jackie.

We're ready for your questions.

CHAIR HANSON: Thank you for your presentations. We'll begin again with Commissioner Wright.

COMMISSIONER WRIGHT: Thank you, Chair.

Thank you for your presentations again. As I mentioned on the last panel, I really appreciate all the work that staff does to help you get ready and the time that you're taking to prepare to get ready for us.

Yes, this is really an information-packed, three-hour meeting and it's actually going to be a little bit more than that today, I think, now that we have a full Commission. But the time just flies by.

Allyce, I'm going to start with you. It sounds like -- and I know that after you talked about it, too, it sounds like there's a lot of work going on in fusion, right? And the NRC has been engaging with a number of stakeholders. The Commission as well has meetings with them all the time. We've toured facilities and everything.

And in my office, I know for sure -- and I have no doubt the other Commission offices as well are hearing that the proposed rule that's out there currently in front of the Commission is not really aligned, in their opinion, with the ADVANCE Act or consistent with Commission direction. And I'm sure you all are hearing the same concerns out there.

So, I thought I would give you an opportunity here to tell your side of that story -- you or anybody else who wants to pitch in.

MS. GAVRILAS: Yes, so we've heard some things. We believe that it's consistent with the ADVANCE Act. I, frankly, haven't heard that it's not consistent with Commission direction.

But, as a general comment, we believe that it is quite responsive to Commission direction in terms of having an expedited role in the public that is now subject to conversation. And John can talk a bit more about the options that we discussed.

MR. LUBINSKI: Yes, thanks, Mirela.

And, Commissioner, thanks for the opportunity, so we can state our belief that we did align with the ADVANCE Act, as well as Commission direction.

Regarding the ADVANCE Act, the rule itself has verbatim definitions in it that are in the ADVANCE Act for byproduct material in fusion machines -- verbatim, crystal-clear.

There is not a definition in the Atomic Energy Act, nor in the ADVANCE Act, for particle accelerators. The only definition of that is in our regulations in Part 30. That is the only area that I heard concerns from external stakeholders, is about our definition of particle accelerators.

The definition we provided in the proposed rule regarding particle accelerators closely parallels the wording of the ADVANCE Act in that it does reference particle accelerators in the definition of byproduct material. And it's used to distinguish particle accelerators that are not fusion machines. So, we believe that the proposed rule in that sense very much aligns and meets the ADVANCE Act.

With respect to the definition of particle accelerators, we did look at other options for that wording. We did in what was provided to the Commission. It's not an options paper. Of course, it's a proposed rule and we had our definition of particle accelerator, but we did provide other options that we considered for the definition of particle accelerators. We provided the pros and cons of those.

For some of those other definitions, especially the ones that I would say some of the external stakeholders have touted as their preference, our concern there was they may have some unintended negative implications on the Agreement States with respect to their regulation of particle

accelerators. It also may require some additional work in now changing the guidance that we have in place for particle accelerators, which sticking to a streamlined rule and keeping the limited scope, we wanted to keep it focused on fusion devices and making sure that in the fusion machines we provided clear guidance.

So, if we were to take one of those other definitions, we may have to go back and have additional exchanges with Agreement States, as well as with external stakeholders, if we had one of those other definitions.

With respect to meeting Commission direction, as I've said, I believe we already met the ADVANCE Act. While it was not clearly in the Commission direction, we believe that's implied. We believe we met it by providing alternatives to the language, so that the Commission is fully informed of the decision we made with respect to the definition of particle accelerators, as well as providing options and pros and cons and other definitions. We provided the implications of using those other definitions.

We also, in meeting the Commission's direction, had a limited-scope rulemaking. So, we very much focused our rule on definitions and content of an application.

We also made sure that, for other areas, we very much limit what we put in regulations, and relied heavily on the guidance documents for communicating that.

The guidance documents, as Allyce said, these were similar to the type of guidance document used for the licensing of fusion machines by Massachusetts and the State of Washington. So, it very much aligned with meeting the needs of what was needed for those applications.

We believe, if we were to use one of the other definitions,

we would have to open up the scope of the rule with respect to the definitions of particle accelerators, as well as additional interactions with the states, and would have more time -- it would take more time to actually implement the rule. So, we believe, in that respect, we did meet both the Commission direction as well as the ADVANCE Act.

MS. GAVRILAS: Can add one thing? We're looking forward to interactions with external stakeholders to better understand what exactly is needed and why it's needed so we can make adjustments without guessing why we're making an adjustment. That's our problem right now.

So, this is a draft rule. Looking forward to that engagement and that will enable us to make the necessary adjustments without impacting things that don't need to be impacted.

COMMISSIONER WRIGHT: Well, this is exactly where I was going to go. I wanted to find out, what were your interactions with the people who are going to be using the rule? And are you hearing what they're saying and what their concerns are? And then, looking at what that delta is between that and what you say, and trying to have that conversation to solve that problem. That's what I was getting to.

MS. GAVRILAS: So, I think in this case it's important for us to understand why they are asking for what they're asking, so that we can implement something --

COMMISSIONER WRIGHT: Sure.

MS. GAVRILAS: -- that minimally impacts things that don't need to be affected.

MR. LUBINSKI: If I could add to that, Commissioner, the rulemaking was initiated based on the Commission SRM in April of 2023. It

wasn't until July when the ADVANCE Act provided the additional definitions. So, many of the extensive public meetings we had were prior to the implementation of the ADVANCE Act.

I want to commend the staff for the work they did in July, when the ADVANCE Act was issued, to make some significant modifications to the package to make these changes.

We, then, did have a public meeting with the industry to talk about what our proposal was. We did hear feedback from the industry with respect to that, and we actually did make a change to the definition of particle accelerator that we felt better aligned with what we were hearing some of the concerns.

Now, in answering your question, we may not have fully understood their concerns, if they still have concerns about the issue right now, but we did hold that public meeting. We did get the input. We did make changes based on the input we heard.

COMMISSIONER WRIGHT: Well, thank you. I'm sure there will be a lot more discussion after me today on this panel.

So, Dafna, in the time I have left here -- we've got about a minute and a half or so -- and I know this is your first time before the Commission, right? It might be others' as well. No? In a meeting like this?

MS. SILBERFELD: Yes, definitely in this.

COMMISSIONER WRIGHT: Right. So, you have a kindred spirit --

MS. SILBERFELD: Right.

(Laughter.)

COMMISSIONER WRIGHT: -- in Commissioner Marzano.

So, you spoke about training -- and I wanted to kind of talk about that for a second -- with the Agreement States, which has been an issue that's been brought forward in the last year, especially again late last year in a meeting we had here at the Commission.

And thank you, by the way, for increasing the class opportunities. That's really where the problems come to, right, for the Agreement States?

So, I'd like to know just a little bit more about the collaboration going on between the NRC and the Agreement States. And you're new to your role, relatively speaking, right? So, in your opinion, how are we working with the Agreement States to better understand their needs and how can we strengthen the relationships we have with them, right? And kind of in your opinion from what you see.

MS. SILBERFELD: Sure. So, in the past couple of months, we touched based with the Organization of Agreement States Board every two weeks, and training has been really a focus point of those conversations. And so, apart from just understanding the needs with turnover in the states, and understanding where they need the training, we've also been talking about their feedback on the types of training that we offer.

And so, for example, I think they had brought up that some of the courses are now self-study. You know, they have been moved to an online format, and they've been starting to receive a lot of feedback about that. You know, we needed a little bit of runtime because, since COVID, we've had to see how that's working.

And so, just as an example, one of the courses they talk about is medical use of radiation and how that used to be in person and it's

not anymore. And one of those reasons that it's not in person is because a lot of the medical facilities aren't necessarily allowing groups of people to come in and kind of observe anymore.

But the online also comes with some other challenges. Where you're not exactly seeing everything in person, you might just feel like what you're seeing is in a video, doesn't really give you the training you need.

So, we've sent those videos, just as an example, to the Board. We've asked them to take a look at them; give us feedback. We're meeting in two weeks again just on that particular one to kind of see, is there something we need to do? Do we add a workshop? What else can we do?

So, we're kind of taking that approach, really looking at all of the concerns that they brought forward, and see how we can work together to move forward on that.

COMMISSIONER WRIGHT: All right. Yes, I really appreciate it, because you are answering the call on that. Because I know it's a concern.

Thank you.

CHAIR HANSON: Thank you.

Commissioner Caputo?

COMMISSIONER CAPUTO: Good morning.

Thank you. Thank you for your presentations this morning. I really appreciate the discussion.

I'm going to continue on from Commissioner Wright's line of questioning on fusion.

So, a year ago when we had this meeting, I asked the staff to state on the record if NRC was ready to license fusion machines under Part

30. And the staff asserted that we could license fusion machines under the current Part 30 framework.

Now, we have companies that have entered into agreements to provide power generated by fusion machines by the end of the decade. So, there's clearly a need for regulatory certainty here.

And in SECY-24-0085, the staff states that including fusion machines in the existing regulatory definition of particle accelerator would increase the level of effort for Agreement States and create unintended consequences, which John just described.

The states have already licensed existing fusion machines as particle accelerators using existing guidance. So, the compatibility categories of these definitions ensure consistency across the National Materials Program for fusion machines, while providing Agreement States flexibility to adopt the essential objectives of the definition of particle accelerator.

So, can you provide more specific examples of what would require a greater level of effort because of fusion machines in the existing particle accelerator definition?

MR. LUBINSKI: Thank you for the question.

Before I go to the example that you asked for, yes, as you said, we said a year ago that we were ready to license. And I believe the fact that we worked closely with the two states that licensed the two fusion devices demonstrates that it can be done not only effectively, but efficiently under Part 30, as demonstrated by their licensing.

COMMISSIONER CAPUTO: Because it has been done.

MR. LUBINSKI: Because it has been done. It has been

done under --

COMMISSIONER CAPUTO: So, shouldn't we be extremely careful right now not to undermine what's already been done, if these approvals have been made by these states for existing operations --

MR. LUBINSKI: Exactly.

COMMISSIONER CAPUTO: -- under the current framework as it exists? Aren't we injection regulatory uncertainty in line with Commissioner Wright's questions?

MR. LUBINSKI: So, exactly, and that's what we are striving to do and we believe we are doing.

No. 1 is --

COMMISSIONER CAPUTO: Sorry, striving to create regulatory uncertainty?

MR. LUBINSKI: No, to make sure that we continue to have certainty. Thank you.

COMMISSIONER CAPUTO: Thank you.

MR. LUBINSKI: We are striving and believe we are continuing for certainty. What happened between the time that those regulations under Part 30 and what we're proposing to the Commission today is the implementation of the ADVANCE Act. As I said, that provided a different basis under which we are regulating fusion devices under Part 30 than we are -- than we will versus how we do it today under Part 30.

The definitions that are in the ADVANCE Act, clearly, the byproduct material definition in a fusion machine provided a very crystal-clear nexus between our regulations under Part 30 and the Atomic Energy Act through the modification in the ADVANCE Act. That is why we want to

continue to maintain that certainty.

As we move forward, that's why the definition of particle accelerator is so important, because the states have been regulating particle accelerators differently than they would under the new definition that could be proposed by many folks. That's where they would end up having regulatory uncertainty for the regulation of their particle accelerators in their state and drawing a distinction between those particle accelerators in fusion machines --

COMMISSIONER CAPUTO: This is where I get confused because you're saying that you want to create regulatory uncertainty but by altering --

MR. LUBINSKI: No, certainty.

COMMISSIONER CAPUTO: -- -- regulatory certainty. But altering the definition, you're risking injecting uncertainty where there's already existing precedent following existing language.

MR. LUBINSKI: Because of the way that the ADVANCE Act was implemented, we have to distinguish what the definition of a fusion machine is and what the definition of a particle accelerator is. We did not have to do that under the previous prior to the ADVANCE Act. So, the ADVANCE Act required us to draw that nexus to how a fusion machine is regulated under Part 30 and how a particle accelerator is under Part 30. We don't see a way that we could just leave the current definition of particle accelerator the way it is.

COMMISSIONER CAPUTO: To define or to differentiate the two?

MR. LUBINSKI: To differentiate the two. We believe what

we've done has done an adequate job of differentiating the two. We believe from a certainty standpoint, because the current Agreement States have licensed those, they used, essentially, the same guidance document that we've updated as our 1556. So, that shows, again, a regulatory certainty that they will not have to make the changes. The only change they would have to make is to the definitions, which is why we went limited scope.

And our attempt is to ensure that, as we define the differences between particle accelerators and fusion machines, we do it in a manner that provides the most clarity and allows the Agreement States to continue to implement their current programs for particle accelerators and for those that have already licensed fusion machines to implement the same program.

COMMISSIONER CAPUTO: I'm still struggling here. Because if these facilities have been licensed as particle accelerators, and we are now differentiating particle accelerators from fusion machines, doesn't that undermine and call into question the decisions that they've already made?

MR. LUBINSKI: I do not believe it does from the standpoint of the way we've crafted the definition of particle accelerator in the new rule. It would allow them, once they implement that definition, that that class of particle accelerators -- so, it would be a class of particle accelerators that is a fusion machine -- could still continue to be regulated that way, and that the existing regulations or the existing requirements they put in place for the current devices would fall under that. That is our goal and we believe we're achieving that.

COMMISSIONER CAPUTO: Well, I think there's clearly going to be more deliberation on this going forward. I certainly share

Commissioner Wright's concerns.

Ms. Bolger, a different question on fusion. How do we balance the need to meet our NEPA statutory responsibilities with the low-risk profile fusion machines and the likelihood that initial fusion machines will likely be licensed by Agreement States, which would not trigger a federal action for the purposes of NEPA?

MS. BOLGER: Correct. Thank you for that question.

So, NEPA, currently, under Part 51, where we have codified NEPA regulation or regulations, there is a categorical exclusion for research and development and academic uses of byproduct material, which current fusion activities that we are seeing today would fall under that, if they were licensed under an NRC license. However, most of these activities are currently being licensed in Agreement States for the near term. We don't currently have anything in an NRC state that we are pursuing at the moment.

And NEPA is only applicable to federal -- to the NRC states or federal entities. Therefore, when we were developing the rule and looking at that and preparing our NUREG-1556 guidance for the fusion machines, which was specific just to NRC, but there's the requirements for Agreement States, when they implement that, to adjust those aspects to their current state requirements. So, they would have to implement any state requirements regarding environmental reviews, per their own legislation.

COMMISSIONER CAPUTO: So, if states are implementing their own procedures for environmental reviews, and let's say the first tranche of fusion machines are licensed by Agreement States, does that begin to provide us a basis for informing a potential categorical exclusion for fusion in the future?

MS. BOLGER: It could, absolutely. We will definitely, if any come to the NRC for review, we would definitely look into what the states have currently or previously reviewed to detail what our outcome would be for our review, and whether we would develop the categorical exclusion.

COMMISSIONER CAPUTO: One last question for John.

Senior leadership is responsible for leading change. This is a broad question. How is leadership ensuring the staff is considering new ways of doing business to move beyond past practices versus simply taking credit for efforts that started before the ADVANCE Act?

MR. LUBINSKI: Thank you. So, I'll highlight a couple of them that are in the ADVANCE Act right now.

One of them that is the subject of our briefing today is fusion. Most of the discussion we've had today at our proposed rulemaking, it would be -- it could be used for licensing today and would be effective in going forward on mass production of fusion machines.

However, we do believe there's a lot of efficiencies that need to be gained there, if we were looking at mass production of fusion machines. The fact that our staff is leading the effort, already looking ahead at a vision statement to say, what would that look like and what are some of the best practices that we can learn from other agencies? We've gone outside the agency and looked at other practices from FAA, from FDA, from Transportation, to say, what are some of the models that can address not only the environmental issues, but the safety issues, allow for a more streamlined production? I think that is a model that we'll continue to use in other areas.

From a culture standpoint, I think that's where it's more important to implement the change. And two of the areas under the

ADVANCE Act are in 507 and 505 -- 507 being for the inspection; 505 being for the licensing. NMSS is clearly called out in the 507 for the oversight and we're working very close with NRR, and we're looking at, how do we reevaluate program changes?

As you know, we have actually modified every inspection program in NMSS over the last five years, taking into account risk insights, reducing inspection effort in many areas, and increasing the intervals between inspections, which has saved resources. But we are not going to rest on our laurels there. We're relooking at those programs in light of what is being done in NRR and what changes are made.

In addition, while 505 only looks towards the reactor side and what we're doing in licensing, we're going further and we're looking at our licensing in NMSS using the same models as well and making a determination of what is the minimum amount of criteria that's needed to approve a license.

We're implementing a philosophy of really thinking along the line of what our backfit philosophy is. Even though backfit does not apply to nuclear materials users, we're following the principles and asking ourselves to ask the question: is this needed for reasonable assurance for adequate protection? If it's not, is it providing a substantial increase in safety that's commensurate with the cost associated with it? And we're trying to instill in all of our licensing reviews.

And as we've talked about already in the previous discussion and in some of our discussions here, we're doing some licensing actions through exemptions and taking alternatives to our current licensing guidance in making those decisions. And I think that shows a culture of change to say we're not just doing things because the SRP says, but we're

looking at it from the standpoint of what's needed for reasonable assurance of adequate protection and can we do it in the most efficient way.

COMMISSIONER CAPUTO: Thank you.

CHAIR HANSON: Thank you.

Commissioner Crowell?

COMMISSIONER CROWELL: Thank you, Mr. Chair.

Thank you to all the presenters today. A very good second panel here with lots of questions.

I'm not going to talk about or ask about the definition of particle accelerators and I'm also going to try to wrap up a few minutes early, so we can get our timing back on track here.

Picking up on Commissioner Caputo's second question, I believe, about environmental reviews, what about, for fusion machines, what about under the context of mass-manufactured fusion machines? How does the environmental review process, how is it implemented in that context?

MR. LUBINSKI: Would you like me to start or you start?

MS. BOLGER: Yes, thank you for that question.

So, that would not fall under the research and development categorical exclusion that we have for the NRC. That would currently require some sort of environmental review, per our process. But again, that wouldn't apply to the Agreement State since they all have implemented different environmental programs, based on whatever statutory requirements that they have in place.

So, this is definitely something that we are considering, as we look at the mass manufacturing under the ADVANCE Act, 205 section, the mass manufacturing of fusion machines.

COMMISSIONER CROWELL: So, could it vary from state to state in terms of the depth or range of environmental review?

MS. BOLGER: Correct.

COMMISSIONER CROWELL: Okay. Allyce, I'm going to stick with you, but change topics slightly here a little bit.

On your slide 36, do you currently have a clear sense of where Atomic Energy Act authorities end and the broader health and safety authorities provided to Agreement States continue? And for example, I mean like the NRC would not regulate machine-produced x-rays from a fusion machine, but a state would. Is that distinction clear in the draft regulations and guidance?

MS. BOLGER: I would say so. I mean, there are going to be -- fusion technologies are various. For instance, some may use lasers, which is not something that would be covered by the NRC and that would fall under whatever state requirements for those types of devices.

But as far as the radioactive material production, you know, with the revised definition of byproduct material from the ADVANCE Act, and now in the AEA, which clarifies what byproduct material is produced from the fusion machine specifically, I think that provides a clear definition of where the NRC activities fall into that, and then, Agreement States, obviously, have additional authorities that they may have purview over beyond what would be NRC activities.

COMMISSIONER CROWELL: And will help those Agreement States understand the distinction or the jurisdictional responsibilities?

MS. BOLGER: Yes, we have been discussing this during

our government-to-government meetings, sort of where the NRC's activities, what they cover and what they don't cover. That has been discussions during our various interactions with our Agreement State co-regulators.

COMMISSIONER CROWELL: Matthew, I'm going to move to you for a moment.

Slide 39 of your presentation, I was reviewing, and on that slide you mentioned the rulemaking on financial assurance for Category 1 and 2 sources with consideration of Category 3 sealed sources. As we all know, last year in 2024, the Commission did not reach a decision on additional security for Category 3 sources, but there is still a Commission, the 2016 Commission direction to consider Category 3 sources in financial assurance. Is that how the staff is proceeding on this topic?

MR. BARRETT: Thank you for the question.

It's an interesting topic, and part of this, we absolutely want to make sure that our actions are aligned with what the Commission direction is. But being where we are in this current rulemaking, way out in front of this, just establishing the reg basis, I think this is the best time to ask this question, right, and decide whether or not this is going to be a part of this rulemaking moving forward.

COMMISSIONER CROWELL: Will it be resolved at the staff level or will it come, then, to the Commission for their input?

MR. LUBINSKI: So, yes, if I can? Thanks, Matt, if you don't mind me picking up.

So, where we are is developing the regulatory basis right now. The regulatory basis will clearly lay out multiple options. Some of those will be just financial assurance for Cat 1 and 2. Others will be including

Cat 3. So, we'll clearly address the Commission direction in developing that as part of the regulatory basis, getting feedback.

The next step after the regulatory basis will be to determine whether we go through a rulemaking. That would come back to the Commission as a proposed rule at that time and we would use the regulatory basis in providing a proposal to the Commission of whether or not this Commission should consider including the Cat 3 in there or not. So, before any decisions are made in the proposed rulemaking, it will come back to the Commission of whether Cat 3 gets included.

COMMISSIONER CROWELL: Okay. Thank you. I appreciate that.

I'm going to come back to you, Matt -- not because you punted to John. This is easier.

What are the key barriers to states adopting the web-based licensing format? Is it a budget constraint or something else? And is it something we can help with?

MR. BARRETT: This is a great question. Thank you.

And there's a lot of factors involved. The budget constraints can be challenging and a lot of states are dealing with attrition problems of their own and maintaining knowledge management. I believe that, especially with moving to WBL, there's a lot of advantages that we've seen over and over in states that have picked this up.

Mississippi actually picked up WBL in between their IMPEP in 2023. And I think it was a key part of why they were able to do so much to improve.

But there is, there's a lot of things that we can do and we

are working to try to improve the efficiency at which someone could adopt the WBL. However, all data systems are very different, and a lot of states run systems that are not easily transferred in. And so, it does become a bit of a burden on the front end especially, whether it's a staff burden or a cost burden. And a lot of states are trying to juggle a lot of other issues. So, sometimes adopting a new software can fall a little bit down that list.

But we are working on creating some different ways that we can help, and sometimes that means us directly helping with some of that workload.

COMMISSIONER CROWELL: Technical assistance or financial assistance in directly helping?

MR. BARRETT: As far as actually moving data.

COMMISSIONER CROWELL: Okay. Workload, to help with the workload?

MR. BARRETT: Yes.

COMMISSIONER CROWELL: But not necessarily giving money for them to --

MR. BARRETT: No.

COMMISSIONER CROWELL: -- to do their workload? Got you. Okay.

MR. BARRETT: And we have also started to look at a way of potentially allowing states to adopt a WBL element tiered approach. So, maybe they would start with a less fully fleshed-out system that provides a minimum viable product, and then, over time, adopt more of the modules and functionalities of WBL.

COMMISSIONER CROWELL: Okay. One more question

and I'm going to kind of address it to Matthew and Jackie. And if you don't want to answer it, you can give it to John and Mirela.

What are the primary reasons or barriers for a state not becoming an Agreement State? I mean, there's some notable omissions from our Agreement States -- you know, the Michigans and Idahos and Missouris that have a footprint here. What's the reason why those states aren't Agreement States? Is there any common denominator or any insights you can provide?

MS. COOK: I'm going to give it a shot.

(Laughter.)

MS. COOK: I think it's because the governor has to approve it. So, I think that's what happened with one of our states. They were interested in becoming an Agreement State, but they weren't for sure how their next administration that's coming in was going to feel about it.

COMMISSIONER CROWELL: But in that instance, did the incoming administration indicate why they didn't want to pursue becoming an Agreement State?

MS. COOK: I don't know any reason why.

COMMISSIONER CROWELL: Is there any feedback of why states haven't pursued becoming Agreement States?

MR. LUBINSKI: The only other item I would add to it -- and again, I'm going to say it this way -- it becomes both a political and a business decision of the state. It costs money to become an Agreement State, right? You're setting up an organization.

We did a survey a number of years ago. I'm not sure -- maybe others know -- if we've done it more recently.

We're full cost recovery, right, within the NRC. Not all states are full cost recovery. So, if they're taking on an Agreement State, then they're getting additional taxes from their people within the state to pay for the development of that program and the implementation of the program every day. So, there is that additional cost burden that they may have, and I use "may" because they could put fees in at 100 percent cost recovery.

But, then, they have to look at the side of, what's the advantages of becoming an Agreement State for them? If the federal government is already doing the job for them, it's being done effectively, there's not an impact in their state, especially if they have a small number of licensees -- you mentioned states that are bigger -- but, you know, with a small number of licensees, why set up a whole program and have to go through -- because, again, it could be as little as three or four people. Why do that if it's already being done?

COMMISSIONER CROWELL: This is why, as a former state regulator, I was surprised that my home State of Nevada is an Agreement State because we don't have a lot of capacity of staff or a well-funded state government. We don't have state income tax, you know, things like that.

But other states that are different, you know, the Michigans of the world are. And I guess the essence of my question is, or my statement -- and then, I'll wrap up here -- is just, whatever we can do to help encourage more participation. Because I think full participation is really what maximizes the value of the Agreement State program. And I'd prefer seeing it go that way than having authorities slowly given back to the NRC.

MR. LUBINSKI: Just if I can on that one, I would say I don't

believe from the standpoint -- and I could be corrected on this -- that we have a goal or a mission for all the 50 states to become Agreement States. It is something that's in the Atomic Energy Act that allows for that to occur. So again, it's, from our standpoint and our programs, we're not promoting and seeking other states to become Agreement States at this point. So, if that's something we need to look at differently, I think that's a broader policy issue.

COMMISSIONER CROWELL: Yes, and if the Commission can help with it, let us know.

MR. LUBINSKI: Thanks.

CHAIR HANSON: Thank you.

Commissioner Marzano?

COMMISSIONER MARZANO: Thank you, Chair Hanson.

I want to thank this panel again for their presentations. For me, coming from the reactor world, this business line on the materials side of the house is where I have a lot of learning to do and this is a really helpful review. So, thank you for that.

So much during the first panel, the NRC as a regulator, and the regulator it is because of the work that you all do and the work that it takes to -- the work that will be required in the future to make sure that we are successful in meeting these future workloads as well. And I think the future rulemaking here is a good example of the NRC moving to where the technology is going and being ahead of it. And so, again, that effort is very much appreciated.

To that point, I am encouraged by the responsiveness of NRC to the ADVANCE Act and getting the rulemaking done quickly, and being responsive to Congress in that regard is very important.

One thing -- and again, I think I'm going to try and give back some time as well -- maybe we can save it for a future conversation about some of the details on your interactions with the states and everything. Obviously, there are states that are further ahead -- Massachusetts, Washington -- than others, and I can see where there may be conflicts that need to be worked on. I'd love to learn more about that, but not here.

So, I'd like to move on to -- well, let me just make a point about understanding that moving quickly is important, but getting it right the first time, coming from the industry, you know there is a first-time quality mentality, and I think that the NRC must set the example for that as well. And so, I do look forward to working with you all and reviewing that SECY paper, so we can move forward and get it right the first time.

Switching gears just a little bit, I want to talk about the Tribal outreach. And I'm wondering if -- there was a mention of NRC's Tribal relations team, how they interact with tribes, and then, the knowledge that they impart on staff.

Can you talk a little bit more about how the Tribal relations team goes about engaging in the communities? One of the things that is front of mind for me is that many tribes may not be currently impacted by licensees' or NRC's activities, but that may change in the future, both in nuclear energy development and transportation of waste, et cetera.

So, can you talk about how they go about engaging in communities to bring that cultural competency into the Agency and help train staff on that?

MS. SILBERFELD: Okay. So, the Tribal relations team tries to do a lot of different outreach and just, also, by integrating in different

parts of the Agency, you know, helping support our Environmental Center of Excellence when they're doing their Section 106 consultations. Or working through other federal agencies in their working groups that reach out to tribes. We try to be a part of that as well.

Just as an example, we have a pilot going on with FEMA where we're working with them on kind of a transportation working group to really hear Tribal concerns, et cetera.

We try to do as much as we can with sending out public notices every two weeks through different kind of state Tribal communication letters.

We work through other Tribal working groups, like NETWG, and they also kind of really help us to hear and get the feedback. But we're always strategizing and trying to see how we can do more outreach.

COMMISSIONER MARZANO: Thank you.

Yes, I think be proactive in this space is going to be helpful for, again, new nuclear energy development as it comes forward.

I do want to turn back to fusion really quickly. I'm interested. Mass manufacturing has been front and center both in the fusion space, but also in the fission space. So, atom splitting and putting them back together.

I'm interested in what interactions you've had to date with other regulators -- FDA, FAA, especially with FAA -- on the mass manufacturing model. Are there any insights that you've been able to glean to this point that would be applicable here and for Agreement States, but then also, is there any carryover to the NRR side of the house for mass manufacturing of, say, small modular reactors or microreactors?

MS. BOLGER: Yes, so we recently did connect with the FAA specific to the request in the ADVANCE Act, Section 205, regarding fusion mass manufacturing. I was not personally involved in those discussions, but I know we did have very good interactions with them and a lot of information was provided from them on the various -- how they go about their whole entire licensing process from the development of the plane to air travel, the whole gamut that they cover.

And I think that has provided us, the team working on developing that report to Congress, with some options for us to utilize in our current regulatory framework, so that we can put together and ensure in time, when there is a need for the mass manufacturing framework to be available, that we can implement some of those aspects into our program to make it efficient.

And, John?

MR. LUBINSKI: Yes, thanks, Allyce.

If I could add to that, beyond FAA, we did reach out to FDA, Department of Transportation, looked at some of the models they use as well. What we found is many of them are very similar to the kind of issues that we're dealing with. It has to do with when you do what, right? When do you do the certification? When do you do the oversight and the verification of what goes out the door; that it meets the quality standard, as you continue to go forward?

So, I think what we've aligned on -- you know, we're seeing; I won't say "aligned on" -- where we align is we're seeing a lot of similarities to that right now.

We also have looked on the reactor side, in answering your

question, where you have the design certification process for reactor designs. So, we're looking at that as well. We're looking at whether or not codifying designs in regulation is a better way to go or if continuing to not have them codified in regulations. There's pros and cons to that, as we continue to go forward.

And we're also looking at a recent paper that NRR put together on nth-of-a-kind reactors to look at what are the policy issues associated with mass manufacturing that may be critical path, as we continue to go forward. At this point, we haven't identified anything through this review that we see similar to what you're seeing in the nth-of-a-kind reactor, but we're seeing some similarities.

I would say we're not far enough along to say we can share with NRR some of the insights we've gotten and whether or not that would change the design certification process.

COMMISSIONER MARZANO: Okay. Well, thank you very much. Thank you for making my first Commission meeting a success here. I'll count it as that. And I look forward to many, many more in the future. So, thank you.

CHAIR HANSON: Thank you. I'll echo that. It was, it's been a success.

Well, thank you all for being here, and particularly, thanks to my colleagues for all of your thoughtful questions on fusion. I confess to a certain amount of confusion on this topic myself. Sorry, that was a --

(Laughter.)

CHAIR HANSON: But I think I really appreciate kind of identifying some of the key issues. So, with regard to fusion, I'm going to just

kind of exist around the edges here a little bit.

And what I'm really interested in is kind of human capital development, right? And particularly, given the relationship that we have with Agreement States and the demand that we've seen from Agreement States for our training across the board, you know, what's the status of our efforts to develop training programs, technical training for fusion that both NRC as well as Agreement State staff can leverage?

I don't know if that's Dafna or Allyce, however you guys want to do it.

MS. BOLGER: Yes, I'll kick it off. Thanks for that question. Yes, that's a great question.

So, we're still in the initial sort of phases of developing that training. I think now that we've gotten the proposed rule in, we're going to start focusing some of our efforts going forward into interacting with the DOE, industry, and academia, and start developing the internal training, so that we can have those courses available for our NRC staff, as well as the Agreement State staff, as fusion starts to progress more.

CHAIR HANSON: Yes, well, given the importance, I think it was -- I don't know whose presentation it was mentioned about the importance of Washington and Massachusetts, and, of course, Wisconsin has been active in this area as well. How are we bringing them in to either have some of those be state-led training or in the development of the coursework itself?

MS. SILBERFELD: So, I would say, you know, definitely, they would be a part of just lessons-learned and learning how to put together the training. In terms of state-hosted, for example, which might be what

you're referring to or --

CHAIR HANSON: Yes. Yes.

MS. SILBERFELD: -- if we deliver it --

CHAIR HANSON: Yes.

MS. SILBERFELD: So, for state-hosted, the state would offer the venue, for example, but we would offer the instructor.

CHAIR HANSON: I see.

MS. SILBERFELD: And then, for state-delivered --

CHAIR HANSON: Got it.

MS. SILBERFELD: -- then the state might have an instructor that is trained by the NRC. So, both could potentially be an option --

CHAIR HANSON: Okay.

MS. SILBERFELD: -- I would see in the future.

CHAIR HANSON: Okay. All right. Yes, good. I think that's right. I mean, I think the success of the materials program across the board has been things like the IMPEP, right, the peer reviews of other programs, and the involvement, and the states peer-reviewing us and other kinds of things. And so, having that cooperation, then, apply to the fusion area, again, once we've settled a lot of the key policy questions, I think will be really important.

So, Allyce, you mentioned some of the international stuff. And I know the IAEA has been in this, but I'm particularly interested in our cooperation with the UK and Canada. You know, we're all in slightly different places. Obviously, the UK is regulating this, I believe, out of the Ministry of Health. I'm not sure about the Canadians.

But talk to me about kind of the objectives and maybe the expected outcomes of that cooperation; how that's been going, and where do you see that going in the future?

MS. BOLGER: Okay. Yes, thanks. That's a great question.

So, absolutely. So far, I think we've had very good collaboration with both our UK and Canadian partners. We're all kind of -- our three programs, regulatory frameworks are looking to put fusion into the materials, byproduct material framework, rather than like a reactor utilization facility framework. So, we all have that commonality.

CHAIR HANSON: I see.

MS. BOLGER: And I think one of our big goals is, to use the buzzword, harmonization across, you know, global harmonization of regulatory framework for fusion, since fusion is kicking off on a globle scale.

So, in addition to it, the works that the IAEA have been going through are individual and trilateral meetings with the UK and Canada. They have led to great discussions. We're putting together a series of workshops starting this year, really, to discuss like training aspects and best practices and get some benchmarking.

Canada has some unique experience with the tritium, the commercial tritium facilities that they have out in the Chalk River area. And then, back in November or early December, we had some of our staff go and actually tour those facilities during one of our trilateral meetings. That was a day tour there that we were able to kind of see, since they had that unique tritium-handling system, which is going to be very important for a lot of these fusion machines that will be requiring to breed and use the tritium that they're

developing in their system. So, that's given us a lot of insights into that and how we can, hopefully, incorporate that into our framework and guidance.

CHAIR HANSON: Yes, that's really helpful. Thank you. Right?

Because if you're aligning on kind of what are the key things of concern, right, tritium management, neutron activation --

MS. BOLGER: Yes.

CHAIR HANSON: -- you know, it's a really limited set of things, right? This is part of the thing with fusion. And then, ostensibly, technology developers then can be able to see how they -- it's easier for them to see how they're going to get from point A to point B; that is, to get a license in each of the three jurisdictions.

MS. BOLGER: Right. Right.

CHAIR HANSON: Okay. No, that's really helpful. Thank you.

Matthew, I just want to turn to you a little bit. Commissioner Crowell had a great question about what the barriers to the use of WBL are. And I know we're approaching 20, which is a great milestone, right? It's like half the Agreement States -- whoo.

(Laughter.)

CHAIR HANSON: But maybe an equally important measure there is kind of, where are we in terms of the -- there's 17,000 licensees, right? -- so, where are we in kind of the number of licensees that are actually captured in WBL? I mean, it could be half of the Agreement States, but it could be 75 percent of the licensees. I mean, New York is huge, right? But Maine may be smaller. I actually have no idea. But do you have

kind of a sense of that?

MR. BARRETT: I honestly don't have that data point for you. I think that's a very interesting question. I would love to know.

But you're absolutely right, the big programs -- New York, California, Florida -- these are still a little bit outside of our reach at this point, although we have spoken with members of these Agreement States and I think there will come a critical mass which will help us with some of those larger programs.

And I think that the challenges of being in a larger state will be very different than some of the smaller states -- just my expectation. But I do look forward to bringing some of those bigger states in, and we do have some larger programs that are using, but not at the scale quite to the Texas or California size.

CHAIR HANSON: Okay.

MR. BARRETT: I don't think we have that data point, but I will find out for you. That's a good question.

CHAIR HANSON: Okay. Great. Thank you.

On the application, the license application function in WBL, kind of what's the timing for the -- I don't know what you want to call it -- the rollout, the debut of that?

MR. BARRETT: Yes, yes. So, the ability for them to actually directly submit license applications through WBL, we're actually looking to start a pilot program for that here in a couple of months.

CHAIR HANSON: Okay.

MR. BARRETT: We're in the process of going into pre-deployment, and then, a pilot program, and expect that to be live to use

probably Q2 of 2025.

CHAIR HANSON: Okay. I know the Agency has taken some steps to improve the security of the licenses themselves, kind of coming out of the GAO report. Is there a security benefit maybe of having an online application process, so it's not in a PDF or other kind of format that maybe we've seen in the past?

MR. BARRETT: I believe that there is. And so, to just speak from what I've seen and my familiarity with the technology, I think submitting something through WBL is substantially safer than submitting it through email or sending something through a letter in the mail. But that is a little bit subjective. I guess some people might disagree.

I think that we have incredibly tight security requirements for WBL in other systems that we use here at the NRC. And so, I would love to see us transition as much as possible into these programs, because I think security has picked up as a side benefit to those things.

CHAIR HANSON: Okay. Good.

MR. LUBINSKI: Excuse me, Chair. If I could add to that, as we look to that, it's not just them automatically putting into the system, but we are looking at putting tokens on the licenses, as we continue to move forward. It's something we're exploring.

What we're seeing from that is you end up getting a security benefit, but you also end up in the long run getting a resource savings from the standpoint of a handling benefit as well -- the number of phone calls that may come in. So, we've looked at that as well and believe that, even if we did not have the security benefit, we just could do a cost-benefit analysis and show that we're getting a savings. So, when we can do that, it heightens the

priority of achieving that, and we're crunching the numbers now on that and seeing how we can make that happen.

CHAIR HANSON: Great. Yes, thank you.

All right. Well, that's really all I have.

I wanted to just say, just getting back to the training thing, for everybody, I really appreciate -- and Commissioner Wright brought this up, too -- how responsive the staff was to the staff-led training issue and providing some travel funds for states to be able to participate in that, coming out of the Organization of Agreement States CRCPD meeting last fall. So, thank you all for that.

With that, I'll wrap it up with my questions. I really appreciate -- oh, yes?

COMMISSIONER CAPUTO: Go ahead.

CHAIR HANSON: Oh, no, I was going to just thank everybody, and I'm happy to bang the gavel --

COMMISSIONER CAPUTO: May I get a moment?

CHAIR HANSON: -- but please.

COMMISSIONER CAPUTO: So today, Commissioner Marzano joins us for his first very successful meeting and brings the Commission back to our full strength of five. So, welcome aboard. It's good to have you here.

So, I just want to observe that, 50 years ago, Congress wisely decided that the importance and complexity of nuclear safety was best met with an independent, five-person Commission, bringing to bear their range of experience and perspectives in a collegial manner.

In the spirit of collegiality, the Commission has had an

unwritten custom that Commissioners refrain from criticizing or offering commentary on another Commissioner's questions. What might appear to one Commissioner as questions from left field might be viewed by another Commissioner as crucial to understanding whether the Agency is appropriately staffed to meet its mission, and thereby, crucial to her decision-making responsibilities as a Commissioner.

So, in the spirit of collegiality and modeling inclusiveness, I want to simply offer that to my colleagues for consideration going forward.

CHAIR HANSON: Thank you.

Any other comments this morning?

(No response.)

CHAIR HANSON: Okay. With that, we're adjourned. Thank you.

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