UNITED STATES

NUCLEAR REGULATORY COMMISSION

+ + + + +

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

+ + + + +

THURSDAY,

MAY 7, 2026

+ + + + +

The Commission met in the Commissioners' Hearing Room, at 9:00 a.m. EDT, Ho K. Nieh, Chairman, presiding.

COMMISSION MEMBERS:

HO K. NIEH, Chairman

DAVID A. WRIGHT, Commissioner

BRADLEY R. CROWELL, Commissioner

MATTHEW J. MARZANO, Commissioner

DOUGLAS W. WEAVER, Commissioner

ALSO PRESENT:

CARRIE M. SAFFORD, Secretary of the Commission

MATT POCIASK, General Counsel

NRC STAFF:

MIKE KING, Executive Director of Operations

YOIRA DIAZ-SANABRIA, Chief, Storage and
Transportation Licensing Branch, Division of
Fuel Management, NMSS

SHANA HELTON, Director, Division of Fuel Management,
NMSS

ANDREA KOCK, Director, NMSS

SAMANTHA LAV, Chief, Fuel Facilities Licensing
Branch, Division of Fuel Management, NMSS

BILL LIN, Senior Health Physics Inspector, Division
of Radiological Safety & Security, Region III

CHAD OELSTROM, Fuel Facilities Inspector, Division
of Fuels, Radiological Safety, and Security,
Region II

CINTHYA ROMAN-CUEVAS, Deputy Director, Division of
Fuel Management, NMSS

PROCEEDINGS

9:00 a.m.

CHAIRMAN NIEH: Okay, good morning, we'll call this meeting to order. Today we're going to meet about the NRC's fuel cycle facilities, and spent fuel, and transportation business lines. And as safely enabling the entire nuclear life cycle is vitally important to America's energy security, and our national security.

On the front end the United States depends too heavily on foreign uranium and enrichment, and that has to change. And on the back end, safe and secure transportation of spent fuel is vitally important for public trust, and confidence in your technologies. And as the NRC continues to deliver results in this moment, we are focusing our efforts on strengthening America's entire nuclear life cycle, front end to back end.

And it's really evident in the results that have been achieved with the TRISO-X fuel fabrication facility license issued several months ahead of schedule. Also the recent announcement of the expedited review schedule for Radiant's microreactor assembly facility, as well as the improvements that we're looking at in our transportation regulations.

So, I really want to commend the NRC staff here at headquarters for all this incredible work, as well as the staff in the region that are overseeing the fuel cycle, and spent fuel, and transportation activities across the country. This work is really important, again, it's America's energy security and national security.

Before I get into the staff's presentation, I want to see if any commissioners have any comments they'd like to make. None? Okay, I'll turn it over to staff, and I do note we will take a five-minute break after the first panel. Is that right, Madam Secretary? Great, okay, Mike, you got it.

MR. KING: Good morning, Chairman Nieh, and commissioners. It is great

to be here with you today, and we really appreciate the chance to walk through where we are, and where we're headed in the two business lines that are central to meeting the nation's nuclear energy needs, fuel facilities, and spent fuel storage and transportation.

Across both of those we're modernizing, we're streamlining, and we're looking hard at how we can do our work smarter, all while keeping safety and security as our north star. That commitment has not, and will not change. This morning is really about showing how our staff is stepping up to meet the rapidly evolving energy landscape, and how we are positioning ourselves together for what's coming next.

Next slide please. The fuel facilities business line is really at the front edge of what energy transition means for us. The demand for new fuels is growing rapidly, and our team has been leaning in to make sure we're ready. We know the challenges out there, both at home and internationally, and we're tackling them head on.

We have been refining our licensing and oversight approaches, making them more efficient and more predictable. We're also staying tightly connected with our international partners so we can continue to shape high standards for fuel cycle safety and security globally. And at the center of all is our staff, their expertise and dedicated service have enabled us to keep pace and meet the moment.

Next slide please. As we adjust how we regulate, we're staying anchored in safety and security, but we're also recognizing that our mission includes enabling the safe deployment, and innovations in fuels. So, we have been busy improving how we communicate, how we plan, and how we make decisions. We are also getting ready for our June 15th reorganization.

We expect that will help us line up our structure with the needs of our growing workload. A lot of good work is already happening to make sure this transition happens

smoothly. This morning's panel is going to walk through how we're preparing our people for new demands, holding ourselves accountable to national priorities, delivering meaningful accomplishments, and making sure the improvements we're seeing today are sustainable for the long term.

Let me take a moment to introduce our speakers. Andrea Kock will kick us off this morning with an overview of the business line. Shana Helton will highlight some of the key accomplishments we've had, and what we're implementing with the ADVANCE Act, and Executive Order 14300. Samantha Lav will cover new fuels, and how we're coordinating closely with DOE. And Chad Oelstrom will bring in the regional oversight perspective. Andrea, over to you.

MS. KOCK: Good morning, Chairman Nieh, and commissioners. It is our honor to provide you an overview of the fuel facility's business line. I am really proud of the staff's hard work to meet the nation's energy needs by safely regulating fuel facilities. Next slide please. The fuel facilities business line budget for this year is 79 FTE and $4.7 million.

This budget supports an operating fleet of eight operating fuel facilities, one facility that's under construction, one facility that's licensed but hasn't been constructed, and ten greater than critical mass fuel facilities. We anticipate that the number of operating facilities will grow substantially, there are multiple reasons for this.

First of all, the operating fleet is prioritizing power up rates, and they are achieving those up rates through use of new fuels. And we have issued amendments for both uranium enrichment, and fuel fabrication amendments to support these up rates. Secondly, the ban on the use of Russian uranium, which the chairman mentioned, goes into full effect in 2028, and has resulted in an urgent need to increase the domestic capacity for enriched uranium.

In addition, the interest in artificial intelligence has spurred an interest in small modular reactors, and many of those reactors use high assay low enriched fuel or HALEU. And last year the president declared a national emergency to greatly increase the current electrical generation capacity. This has produced a great deal of activity.

For example the DOE recently issued $900 million to create a domestic HALEU capacity in the country, and we have seen a great deal of interest in new conversion, de-conversion, fuel facility, and fabrication technologies, including reprocessing technologies. Our projection of what that translates to in terms of the number of licensing applications from fiscal year '26 to '30 is depicted on this slide.

And since the last Commission briefing, the staff has completed 28 licensing actions with 14 current actions in house. We project an increase to about 102 licensing actions through 2030, and if all the applications that we expect to come in do come to fruition by 2032, we project a total of 28 operational fuel facilities.

Next slide please. We are boldly responding to the urgent call to fuel the nation's nuclear power reactors. And one indication of this bold action is our licensing of the TRISO-X fuel fabrication facility three months ahead of schedule, and with 14 percent less resources. Shana will provide more information on how we were able to accomplish this, and some of the regulatory flexibilities that we applied.

And since we last briefed the Commission, we set expectations for licensing more efficiently, and we implemented several improvements to reduce schedules and resources, while continuing to ensure safety. And as a result of our efforts under the materials, licensing efficiencies, and processes team, we've reduced schedules by 15 percent, and reduced our resources applied by 15 percent in comparison to historical execution.

Shana will talk through how we have accomplished this. In addition we are

shifting our behaviors, that is the how of how we do our work. We have embraced a new communications model, and we have increased accountability with regular project check ins, and quarterly meetings at the office director level for major applicants.

When applicable, we use establish precedents from previous licensing actions so that we can focus on just what's new or changed. We have also done a great deal to streamline our environmental review process, and we are leveraging our years and years of regulatory experience to take on new challenges.

For example in the EO 14300 rulemakings that we're working on, we're addressing multiple legacy challenges. Samantha Lav will present on how we're leveraging previous experience to prepare for reprocessing technologies. And if I could just take a minute to talk about Samantha and what she's done, not just on reprocessing technologies, but in addressing multiple complex challenges throughout her career at the NRC.

She will be leaving the NRC in a couple weeks, but I just wanted to mention all of her accomplishments. She has assisted, and presented in multiple Commission meetings like this through her career in every business line at the agency. I want to thank her for her service, and she will be greatly missed.

So, continuing on with my presentation, as we seize the opportunity to further improve our oversight process that Chad will talk through, we have done this by building on what we did with the smarter inspection program that began in 2021. And then building on that through the ADVANCE Act's Section 507 improvements, we took further steps to meet the moment.

Keeping our commitment to safety, while becoming even smarter, and more risk informed. Due to the smarter inspection program enhancements, and the ADVANCE Act enhancement that Chad will discuss, our baseline inspection program resources have

decreased by an annual average of ten percent.

We are working on additional enhancements through the ADVANCE Act actions that will be implemented, that will continue to improve our efficiency, and you'll hear more about this in Chad's presentation. Next slide please. We are focused on preparing our people today for tomorrow, and we have adopted a few strategies to help in this way.

We are applying strategic work force planning to align what our current and future needs are to our workload demands, and this proactive approach to talent management will ensure that we have the staff that we need who are qualified to license and inspect fuel facilities. We are also working to establish a strong culture foundation by identifying and communicating our priorities and our focus areas so the staff can see how their work fits in with our mission.

We are using communication tools such as Teams to make sure we have consistent communications across the business line. And we are fully utilizing our culture team, who provides constant feedback to our leadership and executive teams through just feedback informally, and through surveys. We are also trying to smartly manage our workload.

We are utilizing the shed defer process where we need to, and we are suing dedicated project focus time to complete our work so that we maintain balance. We have also been diligently working toward reorganizing like Mike said, this will better support completing our licensing and inspection workload more efficiently.

We will be realizing the benefits of nationwide inspection planning, and a business line centered approach to decisions. Next slide please. We are holding ourselves accountable to our stakeholders by monitoring the execution of our budget. This business line is budgeted for 79 FTE this year.

And so far we are currently projected to spend 78 FTE, or utilize 99 percent of our budget. And while we are close to our budgeted FTE in utilization, in an effort to continuously ask ourselves where we can do better, we evaluate quarterly our execution, and any deviations from the way that we anticipated to execute our budget.

We are over expending on our licensing product line by a significant amount due to increased number of unanticipated licensing actions and pre-application activities that our staff is supporting. And to support this unanticipated work, we have shifted resources internally, and we are working to hire in areas where we have less steps for the necessary skills that we need.

We do anticipate that annual fees for the fuel facilities class will continue to decrease in fiscal year 2026 in comparison to last year due to a reduction in the budget, and an increase in direct fee billable work. Shana will be providing more details on how we are assessing fees, and ensuring fee stability within the business line.

This concludes my remarks, and I will now turn it over to Shana.

MS. HELTON: Thank you, and good morning, Chairman Nieh, and commissioners. As you heard from Andrea, we have a small but mighty business line, and I have a lot of accomplishments to share with you. I will start there on the next slide. As the chairman noted just last week, we accepted an application from Radiant for a special nuclear materials license for its microreactor fabrication facility in Oak Ridge, Tennessee.

We plan to complete our safety review over 50 percent times faster than our new NEIMA metric. In March we issued an approval to Framatome, allowing fabrication of fuel enriched up to six and a half weight percent. We used only 85 percent of our projected resources to complete this review. This fuel will support operating reactors seeking to deploy accident tolerant fuel for power up rates, and to improve their operational performance.

And over the past year we have issued several approvals to the Centrus Enrichment Facility, and subpart of the DOE's HALEU demonstration project. The uranium produced by Centrus will support the fuel qualification and testing of advanced reactor designs. And as the chairman noted in February, we issued the TRISO-X license for their new fuel fabrication facility.

This achievement represents the dedication and hard work of both the NRC review team, and the applicant. I think all who are involved with this review would agree that over the course of the licensing process, this was a tale of two NRCs. We certainly became savvier with our use of tools and data, such as leading indicators and project dashboards.

We use those to effectively manage our projects today, these good practices have become part of our standard day to day. But one of the biggest changes within our staff was cultural. As we became a more enabling regulator, we shifted to an approach of mutual problem solving. We used risk informed thinking to develop safe ways to get to yes without being constrained by our traditional regulatory approaches.

For example, we found a solution to the building those IROFS issue that we're also considering for an upcoming rulemaking. Similarly, we are finding new ways to meet our mission in oversight. Our Region II inspectors proposed reducing inspection hours for the Solstice Conversion Facility.

We were able to do that using updated risk information, and by drawing from our many years of inspection experience. This reduced our inspection resources for the facility in 2026 by 25 percent. And during this trial period, we are closely monitoring the performance of the plant, and if needed, we can adjust our oversight approach to ensure safety.

Next slide please. So, annual fees cover work that is not tied to direct

licensing or oversight, and remain a focus for the business line given the small number of fee paying facilities. Back in 2016 you can see on the slide, fees had risen so much that a cat one fuel facility annual fee was on par with that of an operating power reactor.

We took measures to reduce the fee impact, resulting in the downward trend that you see starting in 2017. Additionally at that time the workload was very stable, sites were decommissioning, budget overall was decreasing, and there really weren't any significant plans to pursue new fuels. But then you see a 19 percent increase in 2023, and a 24 percent increase in 2024.

This sharp rise in annual fees was largely driven by a dynamic external environment. Unfortunately there was some late breaking unforeseen delays of planned licensing submittals which results in shifting that cost from the Part 170 budget into the annual fee that's levied on our eight licensed facilities that actually pay the annual fee.

So, to get a sense of how impactful these workload shifts can be, if just one new application review is budgeted and does not materialize, that can result in an increase of about five to ten percent in the annual fee. When this occurs, the staff can take mitigating actions, we can inform the Commission during the review of the budget, we can work with the Office of Management and Budget during their review of our proposals.

And during execution year we can look at moving resources between business lines as we did this year to support the fuel facilities increased work. Unfortunately in 2023 and 2024 the timing of the shift in workload just wasn't conducive to a total fix for the fees. But in 2025 you see that the fees start to trend down, this is not by accident.

We conducted extensive outreach to federal partners, and to industry to better assess when work would be realized. We revised our confidence rankings that we use for projected licensing, and we budgeted fairly austerely for mission indirect work. In addition,

the NMSS licensing expectations that Andrea mentioned direct our staff to focus their time as much as practical on work that is directly billed to licensees and applicants.

I'm pleased to show these efforts are working, and fees are coming back down, and this is an area that we continue to monitor, and manage closely. Next slide please. As we're preparing for the coming workload, we're focusing closely on our people. The efforts within my division, which does include staff funded by multiple business lines, makes for a pretty good case study that is representative of the fuel facility's business line overall.

We are closely monitoring attrition and budget projections to identify critical skill sets, and prioritize our recruitment and retention efforts. To fill immediate needs we are leveraging rotational assignments, and work sharing across business lines and across organizations. We are cross qualifying staff so they can fill multiple roles.

And we have recently revamped our qual process so we can speed the time it takes to qualify, and we have modernized the program to include today's expectations for how we work, including our licensing and oversight efficiencies we have developed for the ADVANCE Act and use of Be riskSMART principles. Over the past three years we have qualified about 22 staff, and we have 7 more in progress.

And I would just like to recognize the many staff who support the mentoring, qualification activities, and knowledge management that really need to occur to prepare our staff for success. I am really thankful for their efforts, and that in doing so they have built a team environment. Next slide please.

So, shifting gears, I'll discuss some strategic initiatives aligned with our national priorities. We are using the EDO procedure as a guide for constructive dialogue with applicants during our enhanced pre-application process. This facilitates the preparation of a high quality submittal to the NRC.

We have recently launched a new applicant landing page, the QR code is shown on the slide to get to that page. And this is to make our regulatory process more accessible to newcomers. Our environmental staff have made major improvements to their process to meet the Fiscal Responsibility Act, and the ADVANCE Act.

These initiatives helped us accept GLE's Paducah laser enrichment application within 30 days of receiving it for acceptance. And we have published the environmental impact statement without needing to request any supplemental information. The schedule we established for GLE falls within our new NEIMA milestones, and we are closely monitoring progress to ensure we catch and resolve issues timely.

We launched a construction oversight program, and published a major revision of the associated inspection manual chapter. This is in use today to inspect the activities at new facilities, and also to inspect the expansions taking place at existing facilities. This guidance has also been helpful in encouraging good communication between the industry and NRC as construction plans progress.

For operating facilities we have implemented new inspection metrics to ensure we close out open issues within 45 days. And we are in the process of re-baselining our existing inspection program. This effort will explore whether we may safely expand the risk informed approach that I described for the Solstice facility.

Next slide please. And lastly I will touch on NRC's role in fulfilling the president's executive order on deploying advanced nuclear reactor technologies for national security. This directed the establishment of at least 20 new nuclear cooperation agreements. These are a front line, non-proliferation tool that advance both U.S. strategic and commercial interests in support of international partners who are seeking safe, secure, and reliable nuclear energy solutions.

The U.S. State Department is responsible for international negotiations, with the technical assistance and concurrence of NNSA, and in consultation with NRC. NMSS staff in the fuel facility business line supports the Office of International Programs policy work by performing a technical review. Ensuring that the tracking and safeguards obligations can be implemented in our system that tracks nuclear material that flows in and out of the country.

And it also monitors obligated material around the world. Our staff's work does not end with the signed agreement. They provide on hands implementation support of the agreements themselves. Over the past year our progress has significantly accelerated, and the U.S. has signed new agreements with El Salvador, Armenia, and South Africa.

Looking ahead, our agreements with Argentina and Saudi Arabia are nearing completion. And as shown on the slide, planning continues for several more. That concludes my remarks, and I will now turn it over to Samantha. Thank you.

MS. LAV: Thank you, Shana. Good morning, chairman, and commissioners. It is my pleasure to update you on our efforts to enable deployment of new fuels for advanced reactors, and on reprocessing. Next slide please. The Department of Energy's fuel line pilot program is establishing a secure domestic supply chain for the DOE reactor pilot.

These fuel fabrication facilities will begin operation under DOE authorization, and may transition to NRC licensing for commercial operations after the pilot. In March DOE brought in this effort by launching the Nuclear Energy Launch Pad, which expands the program to include enrichment and reprocessing pilot lines.

The Launch Pad may result in additional facilities transitioning to NRC in the future. Today the fuel line pilot program includes five companies that will produce TRISO, metallic, and salt based fuels, and several of them are already planning to transition to NRC

licensing under Part 70. Our goal is ensuring that this transition is safe, efficient, and predictable.

And that it ultimately supports U.S. energy security. We will leverage the DOE authorization where appropriate to inform our independent, safety, security, and environmental findings. To support this, the NRC staff is working closely with DOE on a transition roadmap designed to provide regulatory clarity and predictability.

The roadmap will help future applicants leverage their DOE authorization, and understand what gaps they need to address in their NRC license application. We hold weekly meetings with DOE and their contractor on the roadmap. These meetings allow us to identify gaps early, and align expectations.

Because the road map will not be completed until after the authorization review starts for some of the pilot lines, we are prioritizing topics that could lead to rework or redesign if not addressed early. DOE, with our feedback, is mapping DOE requirement's to the NRC's and categorizing the differences as administrative, operational, or facility level.

Our early focus areas include natural phenomena hazards, building codes, safety classifications of structures, systems, and components, security, emergency preparedness, environmental reviews, material control and accounting, and construction oversight. These subject matter meetings are also helping NRC staff gain a better understanding of what is in the authorization, and how it can be leveraged in future license application reviews.

We have also been recording these meetings for knowledge management. Overall this roadmap will be an important tool to help applicants meet applicable NRC requirements, will support the NRC's independent findings, and will enable a predictable and efficient transition into the NRC regulatory framework.

Alongside the roadmap development, the NRC is also observing DOE authorization process itself. Next slide please. Throughout the DOE authorization process, NRC is actively observing and engaging so that we understand facility designs, safety basis, and operational strategies well before NRC licensing begins.

We hold biweekly calls with DOE, and observe their authorization activities at the request of prospective applicants. These observations give us insight into DOE processes, highlight potential gaps, and support early alignment as prospective applicants prepare for eventual NRC submissions. To provide consistent direction, the NRC issued an expectations memo that clarifies staff involvement during DOE authorization observations.

It also outlines what prospective applicants should expect if they plan to reference their DOE authorization in their NRC application, and it encourages them to invite us to observe key activities as part of pre-application engagement for their future NRC license application.

We provided this guidance to the pilot fuel line participants, and those who plan to transition to NRC licensing have invited us to observe the authorization process. In addition, staff from the office of nuclear reactor regulation, and from the office of nuclear regulatory research are detailed to DOE to support the review of authorization applications.

Their insights, along with regular communication, help us understand the evolving designs, and identify any gaps relative to NRC requirements. All these activities strengthen our readiness, and promote consistency and regulatory expectations as these facilities move towards NRC oversight.

Shifting now to our second topic, I will discuss NRC's readiness to license reprocessing facilities under 10 CFR Part 70. Next slide please. Industry interest in reprocessing continues to grow. Multiple vendors are exploring aqueous and pyro processing

technologies, and the NRC is already engaged in formal pre-application interactions with two applicants.

We have had informal interactions with several more. The various reprocessing technologies may process oxide or metallic spent fuel, and produce a range of outputs such as radium hexafluoride to be re-enriched, mixed oxide products, or metal ingots of uranium, or uranium transuranic mixtures. In addition to the uranium and plutonium used in fuels, some prospective applicants are also planning to separate other elements to be used in industrial and medical applications.

Early engagement is helping us identify any technical or regulatory challenges up front. DOE activities are also contributing to technology maturation, and providing early operational pathways through DOE authorization process before potential NRC licensing. As I mentioned, DOE's Nuclear Energy Launch Pad includes reprocessing activities that may begin under DOE and then transition to NRC.

DOE's surplus plutonium disposition and utilization programs provide material that may be reprocessed or down blended, and used to produce plutonium based or mixed uranium transuranic fuel. Companies receiving this material may operate under DOE authorization, and later transition to NRC, or they may apply directly to the NRC for a license.

NRC maintains regular coordination with DOE's Office of Nuclear Energy. The Advanced Research Project Agency Energy, or ARPA-E, National Laboratories, and the National Nuclear Security Administration to stay aligned on technology development and safeguards considerations.

ARPA-E's Converting Used Nuclear Fuel Radioisotopes to Energy, or CURIE program, and DOE NE research and development funding can make NRC licensing more efficient by developing reprocessing methods, and the process monitoring, material

accountancy, and safeguards technologies that future applicants can use to demonstrate safety and security.

With this increasing interest, the NRC is preparing for future licensing needs. Next slide please. NRC's earlier work on a dedicated regulatory framework for reprocessing provides a strong technical foundation for future licensing. Beginning in the mid 2000s, NRC conducted substantial preparatory work, including the 2009 Regulatory Gap Analysis, which identified 23 gaps needing resolution.

The 2011 Draft Regulatory Basis outlining potential regulatory approaches, and the 2013 recommendation to develop a new Part 70-X based on risk informed insights. Although that rulemaking was terminated in 2021 based on limited near term applications expected at the time, we continue to use this foundational work in our pre-application interactions.

Per Commission direction, the NRC staff has maintained awareness of developments and reprocessing, and invested in strengthening technical expertise. Since 2022 the Office of Nuclear Regulatory Research has developed four reports that expand our understanding of engineering scale pyro processing, off gas and ventilation systems, chemical process safety, and emerging technologies such as voloxidation, oxide reduction, and fluoride volatility.

These products are informing updates to our regulatory guides and standard review plans to ensure we fully address hazards and accident mechanisms across different reprocessing technologies. Under NRR's leadership we have also reviewed existing regulatory guides, and began developing a draft annotated outline of a standard review plan for reprocessing under Part 50.

Staff across the Agency participated, helping build reviewer capacity that will

be valuable whether licensing occurs under Part 50 or 70. Building on this foundation, the NRC is now focused on using flexible risk informed methods to close regulatory gaps, and support licensing under existing regulations.

Next slide please. The NRC can license reprocessing facilities today under the existing Part 50 or 70 regulations using exemptions and license conditions. We are leveraging past rulemaking efforts, technical research, and recent readiness activities to ensure future licensing decisions are grounded in a modern and robust technical understanding.

These efforts also help inform pre-application engagement, and help us develop flexible approaches to closing regulatory gaps. Licensing reprocessing facilities under Part 70 offers several advantages. It supports a streamlined one step licensing process, it provides a risk informed, performance based, technology neutral framework.

And reduces burden by eliminating duplicative exemptions or prescriptive requirements. NRC is also helping applicants navigate Atomic Energy Act requirements for reprocessing facilities that are also production facilities. Based on the risk profile of each facility, we are assessing whether a facility would be a production facility, and exploring flexible methods tailored to the facility risk.

For example, the act requires the NRC to license operators who manipulate the controls of a production facility. An applicant could propose a definition of these controls based on a consequence threshold. If a facility does not have accident sequences that would meet that threshold, licensed operators would not be required.

However, this would not eliminate the requirement to have a robust training program as part of their management measures program. Similarly, we are working with applicants to align on the appropriate subset of safety limits, limiting conditions of operation,

and surveillance requirements that should be included in technical specifications based on the specific risks of the facility.

In closing, the NRC is proactively preparing for the emergence of new fuel types and reprocessing technologies. Through strong coordination with DOE, early engagement with industry, and development of flexible, risk informed approaches, we are ensuring that applicants have a predictable pathway into the NRC regulatory framework.

Our goal remains the same, to enable innovation, while maintaining the highest standards of safety and security. That concludes my remarks, and I'll turn it over to Chad Oelstrom, thank you.

MR. OELSTROM: Good morning, Chairman Nieh, and commissioners. Thank you for the opportunity to brief you today. I will provide a regional perspective on our ongoing enhancements to fuel cycle oversight and inspection, including how the smarter inspection program has provided a base for gaining efficiencies, the enhancements informed by the ADVANCE Act, and our construction and operational readiness inspection program for fuel facility expansion and new fuel technologies.

Next slide please. To provide Region II's perspectives on oversight enhancements, I need to begin with a brief overview of the Smarter Fuel Cycle Inspection Program, or SIP, to illustrate how SIP is the foundation for our approach to gaining efficiencies while maintaining safety. Region II has been executing the SIP for over four years.

While the SIP considered all phases of the program, the major initiative focused on the baseline inspection program, and represented a sustained risk informed transformation of our inspection program. SIP focused on three major areas, inspection frequency and resource allocation, reducing overlaps and enhancing guidance, and programmatic and process improvements.

In 2024 we completed a comprehensive self-assessment of the SIP's effectiveness. The assessment concluded that SIP successfully met program goals, and improved regulatory focus, and consistency while maintaining safety.

For example the SIP identified nuclear criticality safety as an essential inspection area, and determined that shifting critically related inspection samples from other inspection areas to inspectors with specific criticality safety expertise would enable for more focused and effective inspections that support reasonable assurance of adequate protection.

This more targeted, risk informed approach resulted in an average of 16 percent annual resource savings in this area without degrading oversight effectiveness. The SIP assessment also identified areas where additional clarification and flexibility is needed to address emerging trends, enhancements in training, and knowledge management, refinements to inspection guidance, and continued improvements in staffing and scheduling.

Overall the SIP has demonstrated that inspection effectiveness, efficiency, and safety assurance can be strengthened simultaneously while also adapting to the evolving facility risk profiles and staffing realities. Next slide please. Over the last year we have continued to improve the program with the ADVANCE Act's Section 507 recommendations.

These improvements to the program built off the SIP's success, used the SIP assessment, and applied a risk informed approach. This past year we have implemented the enhancements. These include implementing the revised Solstice conversion facility principle inspection plan based on the facility's evaluated risk profile, and implementing the first wave of ADVANCE Act 507 recommendations.

Resulting in an additional three percent resource hours savings to the overall oversight program. Some examples include shifting the licensee performance reviews from biennial to triennial, and basing the need for public meetings on licensee performance and

public interest, incorporating very low safety significance issue resolution into inspection guidance.

And limiting the need for inspection entrance and exit meetings to reduce the burden on inspectors and licensees. In addition, working with the Division of Fuel Management, we have made additional recommendations for enhancements under the ADVANCE Act's Section 507 recommendations. One example is we recommended combining the plant modification annual and triennial inspections into one biennial inspection.

These staff recommendations will build off the previous enhancements, and are expected to result in additional resource savings without reducing safety focus. Staff recommendations are currently in the review and approval process with implementation in calendar year 2027. Next slide please.

The efficiencies gained through SIP implementation and subsequent enhancements have strengthened Region II's inspection program, and enabled more effective use of resources in areas of greatest need. With the gained efficiency we are pursuing the previously discussed opportunities provided in the SIP assessment, including increasing inspector depth in specialty areas, knowledge sharing, and continued improvements in staffing.

Currently one inspector is pursuing fuel facility qualifications, while others are expanding specialty qualifications to strengthen baseline program execution. For example since the SIP assessment, two inspectors have completed qualifications in material control and accountability inspections, increasing capability and depth in a critical program area.

Region II inspectors are actively supporting the program office through rotational assignments that contribute to program oversight and procedural enhancements. They are also engaged in key licensing efforts such as M-LEAP, and played an integral role in

the TRISO-X licensing process by providing oversight perspectives on the practicability and enforceability of license conditions, resulting in tangible benefits to both licensing and inspection.

The cross organizational collaboration, particularly with the Division of Fuel Management, has strengthened knowledge sharing, improved licensing insight, and enhanced overall program quality. The SIP implementation, together with the subsequent enhancements, has ensured Region II's ability to administer the baseline inspection program, while enabling the strategic allocation of resources to construction oversight, facility modifications, and emerging technologies.

Next slide please. We are applying the same risk informed scalable principles used in SIP to our construction oversight program. Recent experience includes implementation of the construction inspection program for TRISO-X, including construction inspections that resulted in productive discussions on nuclear safety and oversight expectations.

And at Framatome, we are conducting operational readiness reviews, ORR inspections on site wide modifications that support increased enrichment activities. By performing inspections as each phase is completed we will reduce the overlap in volume of inspections required at the end to help support a timelier authorization.

We have modernized the construction inspection framework by leveraging lessons learned from prior fuel cycle construction efforts in Part 52 reactor construction, as well as insights gained through the development and implementation of the Advanced Reactor Construction Program, ARCOP.

This effort reflects a coordinated approach across Region II fuel staff, experienced construction inspectors, the Program Office, and the Advanced Reactor Program

staff. These insights have guided the development of inspection manual chapters that establish a scalable risk informed construction inspection approach applicable across all fuel cycle facilities construction, replacing the prior site specific model.

Inspection prioritization and scheduling tools that maintain construction oversight resources at a fraction of historical levels while ensuring safety and a sustained team of qualified construction inspectors leveraging expertise across business lines rather than increasing staffing. In addition we have periodically updated industry on our approach, and conducted construction workshops on the construction inspection program.

Next slide please. As part of our modernization efforts, we now rely on a suite of data driven tools that strengthen our readiness, improving planning, and enhance the predictability of our construction oversight. These tools also reflect the re-organizational benefits of closer alignment between regional fuel facility staff, and headquarters, program policy, and licensing organizations, enabling more integrated and informed oversight across the Agency.

To support consistent, efficient, and effective construction inspection planning, we developed a risk informed inspection prioritization tool for items relied on for safety, IROFS.

This tool created by the Office of Nuclear Regulatory Research in collaboration with Region II inspectors and the Division of Fuel Management helps inspectors prioritize the most safety significant features by using a risk informed approach that evaluates IROFS and accident sequences, applying construction inspection attributes to prioritize inspection activities, supporting preparation for operational readiness review inspections, and informing construction inspection and operational readiness review planning.

This tool enables consistent and defensible inspection decision making by

aligning inspection focus with risk significance and construction attributes. It has already been applied to inform the development of the TRISO-X principle inspection plan with strong results. To further strengthen our risk informed planning, we are developing the fuel cycle facility tracker.

An interactive Power BI based platform that integrates real time insights from Region II and headquarters licensing and program staff to project construction milestones and confidence levels across emerging fuel cycle facilities. By unifying these inputs in a single dashboard, the tracker enhances coordination between regional and headquarter staff, improves visibility into upcoming work, and enables proactive alignment of inspection resources where they are needed most.

Next slide please. The nuclear industry landscape is evolving at a brisk pace. Many new companies and contractors are entering the nuclear landscape with limited or no NRC or nuclear experience. In the past the NRC has provided updates to the industry about our construction inspection program, and our interpretation of regulations.

With the influx in new applicants and new contractors in fostering our mission, we have developed a dedicated presentation and engagement effort to help the new players understand nuclear safety and construction, and de-mystify NRC construction oversight.

The outreach is focused on how we execute our mission for public safety through our inspection and oversight process, and the benefits of open communication between all parties, a strong nuclear safety culture, and establishing programs early that ensure timely identification and resolution of construction issues.

This presentation will be presented at an upcoming fuel industry stakeholders meeting. Region II's experience demonstrates that scalable, risk informed

oversight can maintain safety, support emerging fuel technologies, and help the Agency adapt to growing workload without proportional increases in resources consistent with the Commission's expectations and the public's trust.

Importantly the implementation of these program enhancements reflects a mature evolution of our oversight capabilities, enabling us to meet our public safety mission, while enabling the safe deployment of new fuel facilities. This completes my portion of the presentation, I will now turn it over to Mike.

MR. KING: Great, and thank you all to the panelists. Commissioners, happy to take your questions.

CHAIRMAN NIEH: Thank you very much for the comprehensive presentation. Commissioner Marzano, you get to go first today.

COMMISSIONER MARZANO: Thank you, chairman, and thank you all to our panel for your presentations today, and for your role in enabling the safe and secure operation of our nation's fuel facilities. As I stated during last year's Commission meeting, and as the chairman pointed out, the work that you all do to support the licensing and oversight of the nation's fuel facilities has a direct connection to strategic national priorities.

I commend you for what you have accomplished over the past year, demonstrating how the NRC isn't simply keeping up with innovation, but driving innovation in fuel cycle technology towards commercial deployment. Your efforts are supporting a once in a generation modernization of our nuclear fuel supplies, delivering new fuels that are enabling power up rates at existing reactors, and making advanced reactors viable.

Last year we discussed the expectation of significant growth in the fuel cycle business line over the next few years, and we have heard during the staff's presentation, these expectations are quickly becoming a reality. It is clear that the workload in this business line

will be higher than ever, and we must manage our resources strategically over the next fiscal years, directing them where they are needed the most.

We must also anticipate the staff's needs, and ensure that they have the tools to support and accommodate this coming workload, and the Agency maintains the technical expertise required in this area. I encourage staff to seek support from the Commission as needed, and I thank you again for your commitment and your expertise.

So, with that I'd like to begin talking a little bit about reorganization, especially in NMSS, and how the regions are going to be kind of shifting and transitioning here. So, as it's pretty well known, regional staff are going to be reporting directly to NMSS rather than to the regional administrator.

And so my question centers around with this new structure, how the changed management plan that is implementing this will address the kind of organizational culture aspects of the transition, and specifically how leadership at NMSS will ensure that effective and efficient communication and cooperation between the leadership and regional staff will be maintained.

Including an inclusive culture where people feel part of the organization, given that the leadership is not going to be necessarily physically present.

MS. KOCK: First, thank you for your really thoughtful comments. But in terms of your specific question on the reorganization, first I'll just start with what the reorganization will accomplish in terms of our efficiency and our decision making. And I think bringing the licensing part of our mission together with our inspection part will help us work through issues more quickly, and get to a risk informed approach.

I think the other thing that bringing the regions under NMSS will accomplish is looking at consistency in our approaches across the regions. But to get to your specific

question, which I think is really, really important in terms of integration of the organizations, and the regions under NMSS, and communications, and making sure that those organizations are integrated, that is one of our highest priorities.

And it is something that we need to pay particular attention to. And so we're still continuing to think through this, but a couple things that we're already working on are more direct communications, so things like video communications instead of email communications. Being physically present in the regions, both ways.

So, Cathy and I are going out to all the regions in the next few weeks to make sure we get to know the people there. We do need to make sure we have opportunities to have people from the regions come to headquarters, so we have setup several opportunities in the next few weeks to make sure that we do that.

And then I think we need to think creatively about integration when we can't be together. So, making sure that we remain connected, so little things we're thinking about, making sure that we have a photo org chart, instead of just an org chart with names so that you know people's faces.

It seems like a small thing, but that's a big thing to me, to make sure that we know the people in our organization, and they feel valued. And also thinking about how we can connect even virtually. So, yesterday we had a connect day event, where we had people joining for lunch, and we had teams from the regions, teams connecting to the regions where they had their own connection event.

It's not ideal, we're not all in one space, but making sure we think about how we do those things creatively so that people feel inclusive are just some of the things that we're thinking through. But it is a critical issue, and it's really top of my priority list.

COMMISSIONER MARZANO: Yeah, and I think there is pluses and

minuses, I think there is a lot of benefit in raising kind of some of the experience that inspectors and folks on the ground have on a daily basis to kind of hey, this is a good idea, this is working, or I have this idea. And being able to have that kind of more consistently applied across NMSS and the business lines here, I think that is very valuable.

But at the same time feeling that connection to the organization being in a separate physical location I think can be a cultural challenge as well. So, I appreciate the proactive steps that you're trying to take here. So, I'm going to shift a little bit away from the reorganization topic. And I want to, Samantha, one, thank you for your years of public service, and I appreciate all that you have accomplished here.

I'd like to kind of talk a little bit more specifics on the transition of DOE pilot facilities to NRC. Has there been, in the fuel facilities specifically, any historic examples of how a DOE facility has been reviewed, and approved by the Commission into under our authority?

MS. LAV: Yeah, in the 1990s we transitioned the gaseous diffusion plants from DOE authorization to NRC certification under Part 76. So, there were actually a lot of lessons learned from that. There is an NRC lessons learned report, there's an NRC IG lessons learned report, and we reviewed that, and are using a lot of those insights in our interaction with DOE, and the development of the roadmap, and thinking about how those facilities can transition.

So, some of those things are directly what we're doing now. Like one of the recommendations was having a crosswalk of DOE to NRC requirements, so that's the roadmap. Another one was making sure that NRC staff are trained on the DOE requirements. So, in all of our interactions and our subject matter expertise discussions, as well as having NRC staff that are detailed, we're really gaining those insights.

And there were discussions about readiness for transition, and those are things that we're going to consider as we develop expectations for construction oversight, as well as what that transition looks like.

COMMISSIONER MARZANO: Excellent, yeah. I knew there was an example out there, just couldn't maybe put my finger on it. But again, you've mentioned kind of the observations, and being involved with the DOE reviewers specifically. Are there any areas in particular that you're seeing that are going to present kind of more of a significant challenge?

I'll say that's one example, but we have lots of different players, new players, have a lot of familiarization to do with both DOE's authorization, and ours. And so as you've kind of gone through these observation activities, is there anything that I think you may anticipate would be greater challenge than others?

MS. LAV: Yeah, many of the pilot line applicants are new to the nuclear industry, or have a more limited experience, right? So, they're first trying to understand the DOE requirements, as well as the NRC requirements. And with the roadmap coming later, it's really important for us to be able to ourselves understand what those differences are, and be able to communicate that early enough.

So that if there's something that would require a retrofit in the future, they can consider that early enough before they start construction to say okay, well I might need to design for a slightly different design basis, let me make sure that I'm conservative, and I'm addressing both.

COMMISSIONER MARZANO: Yeah, along those lines, so there is definitely a potential scenario where a licensee may, in transitioning from DOE to NRC, may have to either augment or revise their integrated safety analysis, or make other site modifications. Is that something that is potential here, and how are we kind of working early

on with the pilot facilities to hopefully try and minimize or avoid those impacts?

MS. LAV: Yeah, that's exactly why we picked the topics that we did for early engagement. Those are areas that could potentially lead to retrofits, redesign, and so fortunately with the pilot lines, they are several months behind where the reactor pilots are. So, they're not quite as far along in the construction, or even in the design reviews.

We have a little bit more time to provide that. With the applicants who are going to transition, we are looking at their preliminary documented safety analysis if they have that, if they want to share that with us, and trying to find some of those insights, and we will be sharing those with them.

COMMISSIONER MARZANO: Excellent. All right, Chad, thank you for being here. I'd like to talk just a little bit about again, kind of transition. We have a lot of focus on construction oversight, rightfully so with a lot of new facilities coming online. But as we kind of move from construction to operational phases, how are you seeing kind of this -- how our oversight program may have to shift for new facilities compared to those that exist today.

So, from an operational oversight perspective, can you talk a little bit more about what you may anticipate?

MR. OELSTROM: So, for our program, the way it is structured is we should be able to -- I know. So, for the way our program is structured is that we should be able to incorporate these new facilities within to our existing baseline program. And right now as part of the ADVANCE Act we are also looking at what improvements can we make for the program.

So for example, we're able to, when we're looking at the different categories of fuels, we've already started to incorporate category 2 fuel facilities into our baseline program. So that way we're going to be able to continue our oversight over these programs, and over our facilities.

COMMISSIONER MARZANO: Thank you. Well my time is up, I'll just note real quick that I was very pleased to hear about how just aligning knowledge and background of inspectors can provide tremendous efficiency. So, I just want to plug to kind of continue to look for other opportunities in that, because I think that's very powerful, and it's showing in the results. So, thank you, Mr. Chairman.

CHAIRMAN NIEH: Thank you, Commissioner. Commissioner Weaver?

COMMISSIONER WEAVER: Thank you, chairman. Thanks to all the briefers, I appreciate the time and effort it takes to prepare. Samantha, just a comment first, you may not recall, we worked together almost 20 years ago putting together NUREG 0800 in anticipation of the first renaissance, and it's been a pleasure to see you grow within the NRC, and I'm sorry to see you leave.

So, looking at, I think it was Shana, you showed the budget numbers in terms of the fees over the years. Back in that 2016 time frame I recall submitting several pointed letters to the NRC about fuel cycle fees. You can look those up, they are kind of entertaining to read. But my points, I think, so I'm really pleased to see the progress you've made, and the work you're doing to try to manage that.

Because I felt at that time, I didn't sense that that was happening. But the things, when I look back what really mattered there was you're budgeting, you're licensing for what you think is going to come, and what happens is somewhat out of your control. But you can make better guesses based on experience, and I think you're doing that.

But the other piece that I think I really focused on, and this is where my question is going to go, is for the non-direct billable work, the bulk of your work really, to make sure that it's really adding value, that it's directly related to the mission, because I felt in the past sometimes we were going down roads that ultimately didn't come to fruition.

Used a lot of internal resources, used a lot of resources on the side of the licensees and applicants, and then nothing came of it. So, as you look ahead, I guess we'll have the '28 budget before us soon, but what are the biggest non-billable infrastructure type projects that you have in fuel cycle, maybe from an importance, and from a size resource perspective?

MS. KOCK: I can start, and Shana can add.

MS. HELTON: Sure.

MS. KOCK: So, we are trying to make sure that most of our work, or most of our time is spent on direct fee billable work. And I think if you look at the portion of our budget that is directly billable, it is increasing over time. So, I think we're moving in the right direction, but there's still more to do. So, we're a continuously learning organization.

But in terms of answering your specific question, there is also important work that happens in what we call indirect activities that do contribute to the annual fee, and the biggest one is training our staff. And so we do need to continue to do that, so that's a big portion of what that goes into that annual fee.

Another big portion, rulemaking, and this year we're over expending in rulemaking for obvious reasons, so rulemaking is a big part of it. And guidance development, and we do need to look at the value of those various activities, and make sure that the value is worth the time that we're expending. We have deferred a lot of guidance development.

We are thinking through what things we need to not do anymore, either maybe we need to do them less frequently, like some kind of annual reporting requirements that don't add a lot of value, we might be expending them, or just not doing them anymore. So, we are looking at return on investment of those things, but those are kind of the big hitters.

And I also have to give a shout out to my predecessor, John Lubinski, I think

shortly before he left he introduced a return on investment template, so that it kind of forces us to ask for those indirect activities, walking through, what is the return on investment, so is this worth spending our time? So, I think more to come on there, I think we need more work there, but we're moving in the right direction.

COMMISSIONER WEAVER: Thank you.

MS. HELTON: And I'll just add, as we note, in fuel facilities fees have been a focus area I think from 2016 to where we are today, 10 years later. It's a very different, it feels like 10 days, sometimes it feels like 10000. But back in 2016 I don't think we had nearly the level of rigor that we have today.

And since I joined the business line in 2021, we have had a lot of public engagements with industry to give transparency about what exactly is in the non-fee billable aspects of the work that we do. And a lot of it is people as Andrea noted, and the administrative functions that are critical to achieving our mission.

We cannot get work done if we don't have administrative assistants for example, we see that when we have a shortage of staff in that area, that there becomes a backlog of licensing, and we don't want to be there. So, there are definitely mission critical aspects, even though it's non-fee billable work that we absolutely need, and that's where we've been placing our focus.

One other thing about fees that I'll mention is that it's a partnership when we're looking at managing fees, because the workload, we're reactive to it. And one of the areas that we have, in addition to giving transparency about what comprises the non-fee billable, in credit to Samantha, because she made quite the track record for knowledge management, not just from this meeting, but in our fuel facility stakeholders meetings, we have one next week.

And she has presented in that forum to sort of educate the industry about the timing of our budget process, and when staff has the ability to influence decision making, when the Commission has the ability to influence decision making, because once we get on a path, there are certain things that are prohibited by law, or by process that we just simply can't influence from the staff level.

So, knowing when to give us the information I think has been helpful, because we have seen increased communication from applicants and licensees, they're sensitive to our timing. Sorry for the long answer.

COMMISSIONER WEAVER: Thank you. I'm going to try to get in two more questions. So, on the reprocessing work, I think I heard there's a draft standard review plan under development perhaps, or I'm not quite sure. What is the status of that, and when would you expect to have sort of some public engagement on that?

MS. LAV: Yeah, so the working group with NRR and NMSS started out looking at reprocessing under Part 50, and looking at the existing reg guides, that was looked at in the draft reg basis as well, and what should continue, what needs to be updated or modified, and working with the center, started an annotated outline for an SRP under Part 50.

Right now much of the interest is licensing under Part 70, so we're going to take some of what we learned in starting the development of that, and consider what future updates for reprocessing guidance may be needed. So, we'll leverage that as we evaluate additional guidance needs.

COMMISSIONER WEAVER: Okay. Chad, on inspection, so obviously for reactors we just rolled out, or are in the process of changing the ROP. If you look back to a time before the smarter inspection program was implemented, and to where you're going to end up, can you give me some sense of how the level of effort might change in terms of the

number of inspection hours at a typical licensee?

I realize there is different kinds of facilities, and may vary by facility, but I'm trying to -- for example in the ROP we went from something like 2000 hours in the baseline to something like 1300. I'm just trying to get a sense of the magnitude of the changes that are occurring on the fuel cycle side.

MR. OELSTROM: So, in terms of hours, I can't provide that. Percentage wise, I can provide that. So, when you look at what we've done for resource savings, you need to look across the past five years with the SIP implementation, what we've introduced with the ADVANCE Act so far, and then what we propose to introduce.

And with those reduction, what we're looking at total is roughly a 30 percent decrease. So, it's --

COMMISSIONER WEAVER: Okay, so it's comparable.

MR. OELSTROM: So, it's very comparable to the ROP.

COMMISSIONER WEAVER: Right. And as you look forward, obviously fuel cycles, other than enrichment facilities can start construction pretty quickly after they submit an application. How well are we prepared to deal with having a larger number of fuel cycle facilities under construction in the construction oversight program?

MR. OELSTROM: That's where these efficiencies that we've gained are extremely helpful, Because it has now allowed us to take resources, and focus in on construction, and manage these construction projects. Now, there will be a point in the future, as they're looking at budgeting that, where those resources, the amount of workload will catch up to those gains.

So, that's continuing to be evaluated as far as for future budgeting in that. But for right now we are able to focus in on the demand for construction.

COMMISSIONER WEAVER: Okay, well thank you. That's all for me. Yeah, Mike, I'm sorry, yeah.

MR. KING: I was just going to say the work that's going on with the Reactor Oversight Program and Advanced Reactor Construction Oversight Program, they collaborated across business lines. And so all of the good learnings from that have been applied here, and the construct that I think will yield the biggest results is they start with what is the risk of this facility to the public?

Let's scale the overall plan for oversight commensurate with that risk. So, if it's a higher risk facility, there'll be more construction oversight. If it's lower risk, there'll be less. And so that is what is baked into these programs.

COMMISSIONER WEAVER: Thank you. Chairman?

CHAIRMAN NIEH: Thank you, Commissioner Weaver. Thank you all for the presentation, your work is incredible, it's so important to the future of nuclear energy in America, not only for existing reactors, but as well as the new reactors. I really appreciate everything you and your teams are doing here in headquarters and the regions.

Samantha, congratulations on the next chapter in your career, I wish you all the best, I'm glad we had a chance to do that TRISO-X showcase, the accomplishment of the business line there. So, Chad, I really like the discussion about the fuel cycle oversight program improvements, it's great that you're making it more risk informed.

I love that you even had research helping you with the priorities, so that's great work here. I want to talk about further enabling how we can do our jobs better, having a strong safety focus with efficiency and speed. I think we have an opportunity, Project IKE, Orano, they submitted an application to the NRC.

An identical facility is operating in France, licensed by a mature, competent

regulator, the ASNR in France, there is decades of experience we have with these facilities. So, tell us, what do you think the opportunity is for us to leverage information from a trusted, competent regulator, to help us arrive at a safety decision sooner rather than later?

MS. KOCK: Yeah, I think this is a unique opportunity, and we must seize that opportunity because it's unique in that we have another country that has licensed a facility with the exact design that we are now reviewing. We have another country that has more experience in things like reprocessing that we haven't done in this country in years.

So, that's a very unusual situation for the NRC, and so we are taking full advantage of that situation. We did meet with France during the -- to start the discussion about how we can coordinate, we need to take this idea of leveraging to a new level with what we're doing with Project IKE.

And what I mean by that is we've done similar things on the reactor side, and based on the timing of applications, or differences in the designs that are being considered, or differences in the frameworks that are being used in countries, we haven't been able to actually take another application and reference, and leverage that information, and that's what we need to do here.

So, we're at the very beginning of the process, we've got a series of activities laid out for the summer to start interacting with France. But what we've done so far is try and identify what are the topics where we think there may be the most similarities between the two frameworks, and where we need the most assistance.

Identify those, and go after those areas to be able to fully leverage. We're also thinking about how we might be able to use AI to evaluate for example, the safety evaluation, I don't know the French term for safety evaluation, but to leverage the evaluation that was done by the French, and compare that to our requirements to see where there are

the most similarities so that we can leverage that.

So, that's another idea that we have, and we have staff going over to France actually this summer to tour the facility, to get some more of these insights. So, I couldn't agree more, it's a unique opportunity that we won't let pass us by.

MR. KING: If I could add one aspect of it, it's not only a unique opportunity for us to learn from, and leverage, but it's also an area for us to lead in the international arena, right? At the IAEA we were just there, right? Poland and others are trying to leverage our previous reviews, this will allow us to play a key role in enabling the deployment of U.S. technology abroad as well.

CHAIRMAN NIEH: In my view this is the model for the future of global nuclear safety regulation. We all know a lot, we've done a lot, and I think this is an area where we can demonstrate leadership using another country's information to leverage what we do. So, that is great, I love to hear, and I want to hear more about the efficiencies we can gain there.

Okay, DOE and NRC coordination on the fuel pilots, there has been a lot of questions asked about hey, what is happening? In my view this is deliberate, coordinated federal effort to deliver nuclear energy infrastructure to America. I have talked with some folks that we have detailed over to DOE on the reactor pilot program.

Amazing examples of how our knowledge and experience is informing the development of improving the safety case for these designs that may ultimately come to NRC for commercial applications. I heard you say it's kind of -- you're a little behind the reactor pilots, but tell me with the folks that we have observing, tell me some of the things that we've seen so far, and how that's going to help us in commercial transition.

MS. LAV: Yeah, our staff that are detailed for the reactor pilot, some of

them are the same people, there's a subset of them that are also working on the fuel facility pilot. So, they're learning that DOE process on both sides. We have staff who are looking at fire protection, at MC&A, and at physical security, as well as quality assurance.

So, we are having good discussions with them, they are asking questions, they are asking RAI's like they would if this was an NRC review. There haven't been any real major aha moments yet, but we are early in the review. I will say some of the things that have come out from talking to pre-applicants, is interest in how are we going to leverage DOE environmental reviews.

So, we have gone back and had discussions on that to look at can we IBR things, how do they document that, or are there things that we can leverage, and how will that help us in our review in the future as well. So, we're thinking about this more holistically.

CHAIRMAN NIEH: Okay, that's fantastic. Look, there is no rubber stamping, whether we're going to work with another regulator, or work with another federal agency, right? There is knowledge, and this knowledge helps improve our decision. So, we will, in all cases I believe, validate any information we have from any observation of a foreign regulator or another federal agency to inform and make our regulatory reviews efficient.

Because the way I see this, DOE is investing significant money and programmatic things to build the nuclear life cycle infrastructure. NRC, we're providing the licensing frameworks, we're in separate lanes of traffic, but we're all headed to the same destination, which is United States leadership in nuclear energy.

So, thank you for the work there. With all of this great stuff going on, this cannot be one and done. You all have made extremely amazing accomplishments in the timeliness of your decisions with a strong safety focus, with efficiency, and speed, and that's great. It can't be one and done, so EDO mentioned a couple days ago we're building a

management model to instill the discipline, and the consistent in how we do business going forward.

So, I'm going to ask a mid-level manager, Shana, tell me how you see an NRC management model helping us going forward into the future, and suctioning this performance. Because I've already seen the things you're talking about with budget execution discipline, the focus on fees, responding to Commissioner Weaver's letters.

Tell me how a management model is going to help our Agency be successful long after all of us in this room are gone.

MS. HELTON: Happy to share some insights, and I'll try to be less long winded than I was on fees.

CHAIRMAN NIEH: You've got 2 minutes and 50 seconds.

MS. HELTON: Yes, thank you. We talk about systems, we talk about data that we're using, the leading indicators, the project dashboards, but the data and the dashboards are only as good as the people who are going to go and use those systems, and apply them in their day to day behaviors. And I can tell you as kind of a lesson learned coming out of the TRISO-X review, it was really the shift in behaviors that started accelerating our progress.

And the tools helped us, but I think with the organizational model that we're developing, having the focus on behaviors, Andrea and I are actually leading the development of what that actually looks like, more specific behaviors. We're having a town hall with staff next week to start to roll out our preliminary thinking about those, and get feedback, because we all have to see ourselves in the management model.

And I think that for the lessons learned that we take using those in a forward focused manner, updating our programs, for example many of the lessons learned from

TRISO-X, we're now informing our efficiencies that we've been developing under the ADVANCE Act, we are documenting those in our division instructions which are publicly available, and they're going to help us.

And by being publicly available, it's going to help our stakeholders hold us accountable to them if they don't see us following them. So, I think there is a lot of ways that the management model is going to help us, in having the alignment, and the leadership to help us focus on the behaviors, the accountability, and the standards that we want to set. I see a lot of promise in that actually.

CHAIRMAN NIEH: That's really great to hear. You mentioned culture, both of you mentioned culture in your discussion, and Mike, thank you for your efforts, I love what you all are doing. I'm so proud of the leadership team, and how much you've accomplished in such a short period of time in just building the framework for a discipline management model that we can use going into the future.

I think organizationally speaking, this is probably one of the most important things that we can do for the sustainability of this Agency going forward. Again, our efforts here just cannot be one and done, it has to be repeated over and over into the future over a long period of time. So, thank you very much. I'm done, and I think next Commissioner Wright.

COMMISSIONER WRIGHT: Thank you, chair, and thank you for your comments by the way. And if you don't mind, I'd like to associate myself with those comments. Because what you have identified, and what the staff is trying to do is critically important, and it has to be durable, it has to be able to replicate itself over, and over, and over again, and I really appreciate what you said.

And your efforts as well, and thank you so much for your presentations today.

I know how difficult it is to prepare for these things, and for the people who help support you. But this is a really important meeting because you are coming to inform us, and allow us to try to ask some questions that make sense, I guess where we get some good maybe clarity on some things.

Andrea, I want to take a moment and just thank you for your comments about Samantha Lav. I had the opportunity to have Samantha in my office. I was one of her complex challenges. She was a very valuable member of Team Wright, I remember when I hired her she immediately took three weeks off to get married and go on a honeymoon.

And then she came back, and she worked very hard for us. But more important than that, Samantha, you do prioritize your family, and I really -- you know how I am about all that in the office, so I'm very proud of you in that regard, that you try to keep things balanced. She is fun to work with too, just so you know.

She tolerated constant puns, word play, and dad jokes. Her sneezes are memorable, I know you all have experienced that. And when we traveled, and we got to travel to different facilities around, I cannot tell you the number of gigantic inflatable animals that we saw on top of buildings in the weirdest places, right?

And we laughed constantly, we didn't even have to speak to each other, when you saw it, you knew it, and you just laughed about it. So, I appreciated that part about you. But seriously, you are exceptional in every way, Samantha, and the NRC is a better place because of your service here. And team Wright loves you as well, and wishes you the best. So, thank you.

MS. LAV: Thank you, Commissioner, I appreciate that.

COMMISSIONER WRIGHT: Well, maybe not all of it. With that I'm going to transfer over to some questions. So, Andrea, you mentioned early in your background, slide

seven or so, you mentioned that you'd shed certain activities, right, to focus resources better. Can you maybe add a little meat to that bone, maybe clarify, or specifically what kind of activities or program elements have been reduced, or eliminated particularly in the licensing framework development, or guidance updates?

MS. KOCK: That's an important question, because if you've been at the NRC a while, you know it's an area that we struggle with actually, shedding our work. And so what we're trying to do is to be very deliberate about that. So, we're actually tracking every activity that we shed, and updating that, and we continue to just send that message that when you add something, what are you taking away?

And then what's the return on investment in what we're doing? So at a high level that's what we're doing, but to specifically answer your question, in the fuel cycle area, most of what we've shed is guidance development, or deferred. So, most of you are familiar with NUREG 1520, it's the NUREG that we use for licensing fuel facilities.

And it does need to be updated, but we did defer updating as well as multiple reg guides, and other internal guidance. Like I mentioned, we're also deferring some routine periodic reports that we've maybe pushed out, instead of doing it annually, maybe doing it every couple years, or every five years as well.

And we're using that return on investment template to ask ourselves do we really need to do this, and just shedding the work that is not needed. Again, more work is there, it's a cultural shift. We hire the brightest and the best, and the brightest and the best like to do everything possible. And so we really do need to focus in that area, so more to come.

COMMISSIONER WRIGHT: Okay. Maybe I'm going to drill just a hair deeper on that too. So, with regulations becoming more risk informed, and how are you ensuring that you're keeping pace? I mean is there any kind of a sign, a metric, or that -- and

I guess what would be the plans, have you all developed plans on how you're going to address areas where guidance seems to be outdated?

MS. KOCK: Yeah, I would say the guidance, and the infrastructure, and Shana talked about the importance of the infrastructure, it does need to keep pace. So, I'll acknowledge there are probably areas of our guidance that aren't keeping pace right now just because of the speed at which we're moving. So, we do need to integrate those activities of updating the infrastructure back into our work.

It's just doing that at the right pace, and it might look different, so we typically issue NUREGs, it was very resource intensive to write a new NUREG, or update a new NUREG. So, we need to look at the process by which we're doing that to look to streamline the process so it's not so resource intensive.

Or providing that information in a different forum, like I like to use the example of Nucleopedia, it's information you can put out there quickly to people, and it's very accessible. So, thinking differently about how we actually get that information out there.

COMMISSIONER WRIGHT: Okay, anybody? Samantha?

MS. LAV: Just a quick example of that, so when we were doing the TRISO-X review, it became apparent to us that we needed more guidance on electrical, and I&C, and what was needed there. So, the staff in NRR who supports us, they developed two template SERs to kind of walk through what would we be looking at when we're writing our SER.

And that really helped TRISO-X, as well as we've provided it to other applicants to understand what needs to go into the application. So, we are looking at other ways that we can get that information out quicker, and that's one example.

COMMISSIONER WRIGHT: Right. And I'm not exactly sure where the question is at in this, but one of the big concerns we have, especially on the fuel side of things

is budget, and making sure that if something doesn't materialize, that people don't get penalized, or how we're trying to work through those things. And I know that you're -- Shana, you mentioned it as well, that you all are trying to do a little better job of looking in the crystal ball, right?

But in the event that that doesn't happen, that the crystal ball says one thing, but something else happens, can you give me a little idea of what you're really looking at, or how you're looking to get help in this area? Because it is important to the people, to the licensees, it's important to us from resource allocation, and things as well.

And I don't know, are we -- I guess on top, is there something that we as a Commission need to do to really get involved on the Hill, or anywhere else to help address this?

MS. KOCK: So, just quickly want to give a shout out to Shana and her folks, because I think a big part of making sure that that happens less is the confidence rankings that we've developed as part of the budget. And they have done a fantastic job of looking at what has caused us to receive an application sometimes that we didn't expect, or not receive one that we did expect.

And they have rolled that into the confidence levels that we use for budgeting. So, just shout out to them, that should help. But in terms of your question, when it does happen, what are our tools? We do have tools, and Shana mentioned some of them, the implementation plan when we get our budget, if something has changed we can make an adjustment.

We've got in mid-year we check in to see where are we, we can shift things between business lines, we've done that. Where can the Commission help? There are opportunities through the budgeting process for us to interface with Congress and OPM to give

them the heads up that hey, we don't see this coming in, we don't need that portion of our budget anymore.

We used to do that less formally, and we didn't always do it consistently, and I think we're becoming much more consistent about how we do that. So, I think that's where the Commission can help.

MS. HELTON: I'd just like to add to all of that, and I really appreciate the efforts that our partners in OCFO have undertaken to work with us, recognizing the sensitivity of the small fee class. So, it's really key that we leverage, we've got limited opportunities, the Commission has limited opportunities.

And making sure you have the information that we have at the right time so that you can seize that chance when you have it depending on where we are in the budget cycle is very key. So, I really appreciate what OCFO is doing to help us with those communications, and we'll certainly be keeping the Commission informed if there's an area where we have to pivot in the future.

MR. KING: Yeah, and I was just going to mention we are actively working, looking at this program of fees, and how the Commission could potentially help in this area.

COMMISSIONER WRIGHT: Well, I appreciate your willingness to just come visit us from time to time just to keep us informed on this, and don't wait until it's a problem. If you see it starting to happen, or something is on the horizon, you've got to come to us and let us know so we can get active on your behalf. Thank you, chair.

CHAIRMAN NIEH: Thank you, Commissioner Wright. Commissioner Crowell, please.

COMMISSIONER CROWELL: Thank you, Mr. Chairman. Thank you to all the presenters today. It's always a blessing and a curse to go last, but I think I'm going to try

to be additive here in terms of value, and I'll just quickly say, add my congrats to Samantha, I think in my comparatively short time at the Commission, I think you and Shana are probably the two most frequent flyers that I've encountered.

So, hopefully you're cashing in your miles hopefully. And I think what Commissioner Weaver forgot to say is that you're always welcome back as well. If it makes you feel any better, Commissioner Wright, we all share that him as a complex challenge as well. Andrea this is probably going to default most of this stuff to you, but we'll see how we go here.

So, the Radiant announcement recently about our accelerated review time line, I mean that's great news. There's always a little bit of nervousness in announcing something like that up front because you've got to stick to it. But staying within the non-proprietary information space here, could you give a little bit of flavor to us, and those listening, what makes a difference in terms of what we receive from an applicant that allows us to set a more accelerated time line schedule?

What are the lessons learned here for others to think about as they engage with you all?

MS. KOCK: I'm going to say what you probably already heard, but I can reiterate it. It's early and often communications up front, so that we have an understanding of what we're going to receive, and then really leveraging that communication model. We have talked about it sounds simple, but what it really means is understanding where the potential issues are early so that we can address those right up front.

And so pre-application, pre-application, pre-application is really critical.

COMMISSIONER CROWELL: And what about the quality of information received in response to those pre-application questions, is that an important element as well?

MS. KOCK: That is a very important element, and it goes back to that communication model. If we're able to, in an early phase of the project, identify that there is an issue where there's not enough information, or there's going to be a regulatory framework challenge, and then meeting directly with the applicant to talk through options of how that might be addressed, we've been able to do that in multiple cases.

And the new communication model facilitates that kind of mutual problem solving, solution based interactions, that helps us make sure that we get the information that we need right up front.

COMMISSIONER WRIGHT: And so given the working relationship we have with DOE these days in trying to do the development, and the deployment commercialization, and that symmetry, when we're doing pre-application work with entities, are we now also helping explain the difference between the NRC process and the DOE process.

Particularly if they may be already leveraging the DOE process, so they know what to expect going forward? Is that part of those early conversations as well?

MS. KOCK: That is part of the early conversations, and we have had cases, not with Radiant, but we actually had an issue with BWXT in the fall where they are in the DOE process, and we were able to intercede questions about how what they were doing impacted the NRC's regulatory requirements, and which ones applied versus DOE, and we were able to help them work through that.

COMMISSIONER CROWELL: Okay, and then in terms of workload going forward, and you'll have to correct me if my math is wrong here, but it looks like for fuel facility business line, you say you've completed 28 licensing actions since May of last year, so in about a year, 28. And that 14 under way, 102 more through 2030, and if you add all that together you get about that same average from May 2025 to 2026, mid 20s, up to 30 per year.

Is that accurate?

MS. KOCK: So, that is accurate in terms of the numbers. I mean, what we're seeing is those licensing actions, they're less routine, and they're more complex. So, where we may have had just a quick amendment before, and that would count as one of the licensing actions, now we're seeing major new fuel facilities as part of those licensing actions, and that's the real difference.

COMMISSIONER CROWELL: Yeah, and so then that gets you to your staffing situation, and being strategic, and thoughtful about being appropriately resourced. You said somewhere in the presentation that you all are quote working to hire in areas where we have less depth in necessary skill sets. Can you give some flavor about what areas, or skill sets those are?

MS. KOCK: Yeah, and I'll lean on Shana, but I mentioned that we're doing strategic workforce planning, and what I meant by that is we sat down and looked in a disciplined way about what the work is that we expect, and what skills are needed to support that work, what our attrition looks like, what retirements might look like.

And then we did an assessment to say how many of each type of expert do we have versus what we need. So, I called that strategic work force planning light, because we didn't use some big tool. But we did see that we don't have gaps, but we have areas where we may only have one or two people, and those areas are structural.

Would be number one, structural engineering is where we need to hire, fire protection was another area that we need to hire, and project managers is another area where we need to hire. And so we have a list of prioritization for postings that we'd like to make, and staffing actions that we'd like to take, and we've put those at the top of the priority list.

COMMISSIONER CROWELL: And it sounds like under those criteria we're

talking about headquarters and Region II placement types, right?

MS. KOCK: That's right.

COMMISSIONER CROWELL: Yeah, okay.

MS. HELTON: And actually I'd just like to add that I really appreciate the help that we've received from Region II, because a number of the skill sets that we need reside with our inspection staff, and we've been -- you heard Chad talk about the partnership that we've had where we've been able to leverage not just for supporting us on certain framework developments, but the construction oversight program.

We took the construction oversight experts from the Vogtle experience, and those were the same staff who helped us with our program. So, it has been tight, this is always a Kabuki dance between having the right amount of staffing for the small business line without driving up fees. And we've been able to manage so far, but looking ahead, I agree with Andrea, we're going to have to staff up.

MS. KOCK: And not just Region II, but before we're bringing people into the business line to support, we are looking across Agency. And just in the last two months we've been able to bring in people from all of the regions to help support in the licensing area.

COMMISSIONER CROWELL: So, I don't know much about this area, but it piqued my interest in the conversation today about what's billable and non-billable in terms of the work we do. And I don't want to get into necessarily the semantics of all that today, but it does strike me a little bit, if I follow the conversation correctly, that guidance associated with rulemakings is not direct billable work.

I would think that since it's licensees who pay the bills, who need the guidance to implement the rule, that that would be direct. Can you give some flavor about what's direct and indirect in billable, or just give me your unfettered how to fix this conundrum?

Because there is clearly some disconnect here, but it doesn't seem like it's rocket science to figure it out.

MS. KOCK: Yeah, Samantha is actually one of our resident experts on this, but --

MS. LAV: And she's leaving, so let her have it if you want.

MS. KOCK: Right, yeah, and in my mind Samantha will fill in the details. Direct work is licensing and inspection, it's directly working on a license application or doing an inspection, and you're correct, guidance development is not, it's indirect. So, indirect things are things like guidance development, rulemaking, like I said, training of our staff. All of the things that support that --

COMMISSIONER CROWELL: It may not be direct to the licensee, but it's direct to the benefit of the licensee, and I think that maybe that's the --

MS. KOCK: Right, and so one of the answers, and I'll let Samantha jump in. One of the ways that this could be solved is to really think about really what is direct work.

COMMISSIONER CROWELL: Yeah.

MS. KOCK: And being very specific in our budget about how we link the activities to what's direct and indirect, and that is something that we're thinking about. But let me let the expert jump in.

COMMISSIONER CROWELL: Yeah, please.

MS. LAV: Yeah, I think we're using the words direct and indirect colloquially, right? So, the activities that fall under 10 CFR Part 170 fees, so those are fee for service, that's what Andrea is referring to as direct work. That is the licensing or inspection work that is benefit to one entity. There is other billable work which falls under 10 CFR 171, what she's referring to as indirect in this case.

That's the guidance development, rulemaking, allegations enforcement, our OGC support. And then there is other work that like Shana mentioned that is actually indirect, and that is our admin, our supervisors, rent and utilities, all of our corporate support stuff. And that gets spread out across the business line.

So, there is kind of like three buckets, and then also the stuff that falls as excluded activities off the fee base.

COMMISSIONER CROWELL: That's, as we look to our budget future, it may be, Mr. Chairman, something we have to explore, how we build and characterize what falls in what budget buckets, and where the money comes from. Because we may be able to solve some of our issues just by realigning things, and redefining things.

But I think there's probably more of a nexus between direct work that should be billable than we're necessarily applying right now. So, hopefully we can look at that. And I know if the results, the math comes out where that's going to be an unacceptable burden on a small number of licensees, we're going to have to figure that out too, because it's not fair.

So, it's just something we've got to solve, but these are solvable things if we be creative, and put our efforts to it. So, thank you, Mr. Chair.

CHAIRMAN NIEH: Thank you, Commissioner Crowell, I appreciate it, and interesting thought, I appreciate you raising it. So, we're concluding this portion of the staff's briefing today. You said it's small but mighty program, it's a mighty program, and it's very important to the work of the Agency. I have the utmost trust and confidence in your ability to lead, innovate, and execute this program efficiently with a strong safety focus.

Before we collapse this session, any final comments from the commissioners? No? Madam Secretary, can you let us know what time we should come back please?

MS. SAFFORD: Come back at 10:40.

CHAIRMAN NIEH: Okay, 10:40, thanks.

(Whereupon, the above-entitled matter went off the record at 10:34 a.m. and resumed at 10:40 a.m.)

CHAIRMAN NIEH: It's 10:40, we're going to continue the second half of this Commission briefing, and now we're going to focus on spent fuel storage and transportation. Mike, over to you.

MR. KING: Yeah, good morning again. So, the spent fuel storage and transportation business line really forms the backbone of the nuclear fuel cycle. Without safe, predictable storage and transportations, reactors can't operate reliably, and new technologies can't move forward. Our team has done a terrific job modernizing the way we approach this work.

They're strengthening technical depth, applying lessons learned, and adapting to new needs, whether it's advanced fuels, or transport of microreactors. In short, we are building the capability we need for the future, while keeping our focus exactly where it should be on safety. Next slide please. In this next panel you'll hear how the business line is putting our strategic leadership and operational excellence model into action.

That means holding ourselves accountable, building the technical skill sets we need, and continuously adjusting our approaches as we learn more. We're also looking ahead, keeping an eye on new developments, and making sure our licensing and oversight processes stay predictable as the technology evolves.

Now, let me take a moment to introduce our panelists. Andrea Kock will start with an overview of the business line, and how we're preparing for what's next. Cinthya Roman will walk through accomplishments, efficiencies, and our readiness for microreactor

transportation. Yoira Diaz will cover ongoing licensing, and how we line up that work with fuel supply needs.

And Bill Lin will share our regional oversight perspective, the trends, training, retention, and how risk insights are improving our field work. Andrea, go ahead.

MS. KOCK: Good morning again, Chairman Nieh, and commissioners. I appreciate the opportunity to brief you on the spent fuel storage and transportation business line. Next slide please. This business line does serve an essential function by maintaining safe and timely fuel transport, storage, and disposal.

Reactors are able to generate power reliably, upholding the nation's energy stability goals. Here is a scale of what that looks like for us today. We oversee 82 independent spent fuel storage installations in 36 different states. We maintain 98 certified transportation package designs, and then about another 50 for international package designs.

And in recent years we reviewed about 80 licensing actions per fiscal year for storage and transportation, and on average there are between 50 and 100 shipments of spent fuel in this country that are done safely every year. One of our major areas of focus is new fuels. These advanced fuel types, they're no longer the future.

I know I have said in several of these Commission meetings where we talked about how we're preparing for these new fuel types, they are here now, they are reshaping the way we're doing work. To date we've completed more than 30 licensing actions for new fuels since 2018. These are the regulatory decisions that make timely fuel delivery to reactor sites possible.

Yoira Diaz will discuss some examples of licensing actions that we've completed, and how we delivered on our core mission with accountability in this area. Next slide please. As noted earlier, accountability and budget execution remains a priority. As

you can see on this slide, for this year, the business line was budgeted about 90 FTE.

And we are currently projecting to execute about 73 FTE, or about 81 percent. This is consistent with other business lines across the Agency, but it's not consistent for this business line that executed at 100 percent last year. There are some factors that contribute to this year's under burn. First the government shutdown, which was roughly 11 percent of the year contributed to this.

Secondly, we had fewer submittals so far, about 20 percent, as vendors shifted their priorities. We also had budgeted for our microreactor package transportation review that did not come to fruition and was delayed. Third, we are carrying vacancies due to staff losses, and lastly, emerging demands in the fuel facilities business line caused us to shift resources to cover licensing work in that business line.

I think that's a good news story. And to mitigate this under execution, we are supplementing our regional inspectors in the region with staff from headquarters to make up inspections that we missed during the shutdown. We're also making adjustments through the implementation plan and midyear resource reviews that we discussed during the last panel.

And even with this under burn, we don't expect annual fees to increase for this year, because overall the fee roll includes a .3 million dollar annual decrease in the business line due to reduced resources. I do want to acknowledge that budget execution is an area where we can always improve, and we are taking proactive steps to do exactly that.

In addition to the broader efforts that we talked about this morning, we have invested in building our team's understanding of how their day to day work impacts fees and resource execution. For example last year we trained our staff to reinforce how actions just like accurate time reporting directly impact fees.

These steps, and our commitment to continuous improvement ensure that

we use our resources responsibly, transparently, and in full support of the Agency's mission. Next slide please. The nation's clean energy goals amplify the importance of the back end of the fuel cycle, and transportation to support new technologies.

And the business line is responding boldly. We're accomplishing this by strengthening our processes with clarity, discipline, and shared accountability. In addition to the 15 percent reduction in schedule and resources we applied last year through implementing licensing efficiencies, we expect to save about five percent, or five FTE this year through the materials licensing efficiencies process team actions.

These are things like early identification of the risks associated with the review that Cinthya will cover in more detail later. We're also proactively aligning our inspection program to meet future needs. Later today Bill Lin will provide an overview of the efficiencies achieved through the ADVANCE Act Section 507 actions.

And when we consider all of the improvements that we've made over the past six years, our efforts have resulted in an overall savings of nearly 18 percent in resources, while maintaining safety. Next slide please. We are investing heavily in preparing our people for the future. Our technical staff oversee multiple facilities across both business lines, fuel cycle, and spent fuel.

So, cross training remains an essential part of our program to maintain capability. These steps ensure we remain agile and prepared for the advanced fuel landscape ahead. Thank you for your time, I will now turn the presentation over to Cinthya Roman.

MS. ROMAN-CUEVAS: Good morning, Chairman, commissioners. Today I'm going to be providing you an overview of how we performed this year, and how we are preparing for the future, including how we are expecting to license microreactors. Next

slide please. I am happy to report that our staff delivered, and we are moving faster than ever.

Last year we completed 100 percent of our licensing actions within our NEIMA metrics of 36 months. As you can see in the graph, when we compare our performance from fiscal year '24 and 2025, we improve across the board. Most of our licensing actions were completed within 12 months, and we also began implementing the new NEIMA metrics of 12 and 18 months.

While in 2025 we were not there yet, we are moving very quickly in that direction. As you can see in the graph, 94 percent of our actions were completed within 18 months, and more than half were completed under 6 months. This is attributed to a few important changes on how we work, including using the new EDO guidance for communicating with applicants, and improving our risk informed approaches.

This is a good indication that we are moving to -- we are going to be successful in meeting the new NEIMA metrics, and holding ourselves accountable. Next slide please. As you heard this morning, our landscape is changing. Therefore, it is important to modernize the way we do business, including having the right tools, data, and expertise in house.

We are looking for opportunities to collaborate with others so we can all benefit from ongoing research. For example, we are working with DOE on criticality benchmark experiments to support HALEU fuel cycles and transportation. This effort, mandated by the Energy Act of 2020, will generate the data needed to enable the use of HALEU across the fuel cycle.

This data is important because it will help us to have more realistic safety margins, and to validate our computer codes. Criticality experiments are expensive, and there are only a few facilities in the world that can perform them. For the criticality benchmark

experiments, DOE is investing about $40 million to build and operate a new critical experiment capability at Idaho National Lab.

So, how are we contributing? NRC brings decades of experience in criticality safety and licensing. By contributing a modest amount of staff time, we can help ensure this works meets regulatory needs, and support the safe deployment of HALEU technologies. We are also leveraging international partnerships, and to learn more, Yoira is going to cover that in her remarks.

Next slide. Last year we talked about the changes we made under the ADVANCE Act for this business line. Now I want to discuss how we are using those changes to update how we operate. A few years ago we created the risk tool to streamline the review of spent fuel storage licensing actions. The tool uses probabilistic risk assessment or PRA insights to better focus our reviews.

We have now updated the risk tool to reflect the efficiencies expected under the ADVANCE Act, and to make it more practical for the staff. As part of this update, we created new guidance that uses historical data to estimate the number of hours each review type requires. We then applied a 15 percent reduction in the number of review hours to reflect the efficiencies we anticipate from implementing the act.

This slide shows a simplified view of how the guidance works. A low risk action might not need any confirmatory analysis, and only a few RAIs. So, that review might take about 40 to 80 hours. On the other hand, a high risk review might need a confirmatory analysis, therefore it might need more time.

This approach helps us to be more consistent, transparent, and efficient. We are also carrying several ideas from the ADVANCE Act into the EO 14300 rulemakings. Our divisions support multiple rulemakings, including in the area of storage, transportation, and

waste disposal. And we are looking at changes that can help us expedite our reviews, and add flexibility where appropriate.

Now I want to spend some of my time, or the rest of my time in one of those rulemakings, Part 57, and how we can support the safe transportation of microreactors. Next slide please. First I want to start by highlighting some of the transportation aspects we have been considering for microreactors.

It's important to recognize that Part 71 testing requirements are intentionally conservative. They were developed to cover roughly 99 percent of all potential transportation accidents. For some microreactors, meeting those tests and conditions might be challenging, not because they are unsafe, but because the designs are different from the packages Part 71 was written for.

Second, some microreactors, especially those for emergency response, they might need to move soon after operation. This could mean high radiation dose rates during transportation. This is why understanding how those rates vary with time, the assumptions surrounding transport, and how it could impact members of the public is important.

Third, weigh matters. So, microreactors and their packages are heavy, and that can create transportation challenges. Early coordination with federal partners is needed to address those potential challenges. From all this we can agree that having early clarity on how the microreactor will be used is key to choosing the best transportation method.

For example, will the package be transported domestically versus internationally? What will be the specific mode of transportation, how much pre-operational testing they're planning to do before transporting? All those are important questions, and together these considerations will help us understand the full picture before an application is submitted. Next slide.

Now to Part 57. Last year I shared that Part 71 works well for near term microreactor application, and that is still true today. However, Part 57 gave us the opportunity to add a few targeted improvements that support efficiency and flexibility. Today I'll focus on the main transportation change under Part 57.

And that is that under the proposed rule, applicants could use an NRC endorsed risk methodology that shows they meet Part 71 both for normal or accident conditions. So, how would that work? For example in 2024 we endorsed a risk methodology for the transportation of Project Pele. If an applicant for a TRISO based microreactor meets the same assumptions, they could reference that approach without needing an exemption.

This year we are reviewing a similar method from BNL for maritime transport. If we endorse it, applicants could use it under Part 57. This keeps us from reinventing the wheel. Once we endorse a risk methodology, others can rely on it, saving time, adding flexibility, and giving a clear path while still meeting the safety standards.

Next slide please. We are also evaluating how microreactors are transported, and what it means for public safety. We are looking at real life situations, like a person stuck in traffic, or a driver stopping for gas to understand how it could affect public safety. With the support from PNNL, our analysis shows that under defined conditions, even at higher dose rates, public exposures are very low.

And with the help of our Office of Regulatory Research, we have also improved our understanding of the shielding needed when a reactor is moved soon after operation. This work will help us make safe and well informed decisions. Next slide please. We know that staying engaged is essential.

We are having early discussions with applicants, and reviewing their technical positions so we can spot transportation issues early in the design process. We are

also communicating with the public, agreement state travel governments about changes to the transportation requirements. Finally, we are working closely with the Department of Transportation to make sure our approaches are aligned.

In closing, we remain committed to open engagement, and to using sound risk informed approaches for transporting new microreactor designs. Thank you, and I'll turn it over to Yoira Diaz-Sanabria.

MS. DIAZ-SANABRIA: Thank you, Cinthya. Good morning, chairman, and commissioners, and thanks for the opportunity to brief you today. Next slide please. I'm starting with a simple message, we are keeping the source and transportation work on track, even as the workload becomes more complex and more variable.

We are doing these with structured, data driven practices that help us set realistic schedules, manage shifting priorities, and stay aligned across both the front and the back end of the fuel cycle. Our estimating process isn't guesswork. We are using standardized methods that were built on historical data, calibrated to more aggressive NEIMA time lines.

That gives us a reliable schedule from the start, and real time visibility to balance work or spot issues early. We are seeing clear results in line with the intent of NEIMA and the ADVANCE Act. While the chart shows significant year to year swings in incoming storage and transportation casework, recent years show a much better alignment between timely completion and the incoming case work.

This has been accomplished despite staff transitions. Beyond keeping the time lines steady, we are also taking a closer look at the drivers of efficiency, and those are related to the risk tool that has been especially valuable. The risk tool assessment shows roughly more than 60 percent drop on RAIs from prior years.

Driven by clear applications and early engagement despite the casework becoming more complex due to new fuels. Last year over 70 percent of the reviews met the 90 to 100 percent of their planned time lines, up from the 64 the year prior. We keep this performance going by staying closely engaged with applicants from the start.

Regular check ins, clear RAIs, and early escalation help us to spot issues early and avoid rework. And by matching work to staff strengths, and bringing contractor support when priorities change, we keep the case work moving without losing rigor. Together, these processes and engagement improvements have cut the level of effort by about ten percent, saving roughly 100 staff hours on a typical review.

That's time we can put back into technical work, mentoring, and whatever priority comes next. And this matters because the spent fuel inventory keeps growing. There is more than 4,400 dry storage systems, nearly 200,000 fuel assemblies, and over 130 certified transport packages. With numbers like this, having a predictable, efficient licensing process isn't just helpful, it's essential.

Next slide please. I'd like to highlight several recent achievements that show how our teams are delivering results to maintain momentum, and adapt quickly to evolving needs. Over the last several months our teams have advanced a number of actions that really show what strong execution and close coordination can deliver.

There aren't abstract process wins. They're things that improve regulatory agility, reduce burden, support national research, and security missions. Just a few examples, last September we allowed applicants to rely on already approved 10 CFR Part 50 quality assurance program for a Part 71 design activity before submitting the transportation application.

This was the first time we approved that approach, and it let the licensees

start design work confidently knowing that the QA piece was already settled. Right after the government shutdown we moved quickly to approve an amendment so radiopharmaceuticals could be shipped. That change helps medical products reach patients faster, which directly increases the number of cancer treatments available.

And we finished that review in just three weeks. In March we revised the certificate of compliance so DOE And EPRI can move the high burn up research cask from North Anna to Idaho National Lab in 2027. That review came under budget, and a month early. Lastly, shown in the picture, in June 2025 we completed the Traveller CoC review under a year.

A transportation packaged designed to safely transport wide range of radioactive materials to support national security missions. Next slide please. We're also using risk insights more strategically to make timely, safety focused decisions. Let me share a recent example. We reviewed a concrete overpack design that required the concrete to reach specified strength within a set number of days.

The licensee's test samples didn't meet the strength in time. To understand the true condition of the structure, they took core samples from the actual overpack, and those samples didn't meet the requirement, but the testing fell outside the approved time frame, so NRC approval was necessary.

To resolve the issue efficiently while maintaining safety, we approved a more practical code alternative. Instead of requiring the concrete to hit strength on a specific day, we focused on what really matters. The concrete must meet the required strength before the overpack is used. Early alignment between our technical and legal teams, and the use of clarification codes instead of formal supplements kept the process moving.

As a result we completed the review in two months instead of the typical six

months, avoiding unnecessary demolition and reconstruction. We also approved the transportation CoC for DOE's high burn up research cask. This will finally give us the real data on how high burn up fuel heats, ages, and performs after long term dry storage.

Data that will directly improve our risk informed reviews, and support license renewals beyond 40 years. Earlier this year we held a risk informed showcase with industry to identify where risk informed methods can provide greatest regulatory benefit. The showcase confirmed a strong alignment on the importance of corrosion and aging management.

Areas essential for maintaining safety margins, and fully using the flexibilities in the Regulatory Guide 3.7A, the in service inspection code case for dry storage and spent fuel. Our sustained focus is paying off, a 2 million multiyear investment in corrosion research has already returned an estimated 40 million in industry savings.

And ongoing work from EPRI, including the upcoming gross rupture topical report, will provide clear criteria for evaluating fuel integrity and further strengthen the predictability of our reviews. When you put it all together, the picture is very clear, better data and stronger models are making our reviews more predictable, more efficient, and more risk informed.

Next slide please. Finally, I want to touch on how we're getting ready for what's next. As Andrea noted, we are investing in our people. Our on boarding pairs new staff with experienced reviewers, sets clear expectations, and gives them consistent guidance. Even with recent staffing losses, we kept up with the licensing, and continued to build technical depth through hands on reviews, cross training, and targeted contractor support.

We've also clarified rules, and strengthened how we work together so staff, especially those in transition get the support they need. And as fuel shipments grow, we're

building more flexibility across teams. A key enabler is our regular caucuses among project managers, technical staff, and legal. These early conversations let us spot issues quickly, and get aligned before decisions hit our desk.

A recent example was deciding whether a general licensee needs an exemption to keep loading. After looking at the issue from all angles, the caucus agreed that the exemption wasn't really needed. And because we already align, we made that call fast. That quick, well-coordinated decision now sets a clear expectation going forward.

We're also growing knowledge through international engagement embedding junior staff in the IAEA, Transport Safety Standards Committee, or TRANSSC. Paired with senior mentors, giving them the firsthand exposure to new standards, emerging technologies, and global challenges. And earlier this year, pictured on this slide, the staff presented at the IAEA Transport Conference, sharing NRC's approaches and building global connections.

Finally, our partnerships and tools keep us future ready. Working with the Office of Research provides us with analytical capabilities like TRISO package reviews, and validated criticality reviews. That improves efficiency and consistency. And because the service and transportation, and the fuel facility business lines operate as an integrated system, we can align early on package systems, heat loads, criticality controls, and material forms so new fuels are truly designed to ship.

By coordinating with applicants and federal partners, we help advance fuels more predictably through the fuel cycle, keeping licensing efficient, risk informed, and safety focused. This concludes my presentation, and now I'll turn it over to Bill.

MR. LIN: Good morning, chairman, and commissioners. I am here today to provide the reasonable perspective on the spent fuel inspection oversight and staff training.

These areas are closely linked, and central to how we're improving the inspection program. I will first touch on the oversight, and then the staff training.

Next slide please. The NRC focus of protecting public health and safety has not changed, but how we deliver that oversight is becoming smarter, and more risk informed. Consistent with the implementation of the previous initiative to enhance the SDC inspection program, and the ADVANCE Act, we have increased the use of risk informed, performance based approach in spent fuel storage so that we spend time where safety significance is highest.

As Andrea noted earlier, we realized that 18 percent total reduction in inspection hours, including 5 percent from the ADVANCE Act, and 13 percent reduction from earlier SDC enhancement, all without sacrificing safety. The revised program uses a graded approach that emphasizes importance to safety structure, systems, and components, and bringing operating experience to inform where and how we inspect.

For example, the staff recommended and implemented the changes to the inspection frequency of routine loading campaigns and monitoring operation SDC from every two years to a triennial frequency. In addition, the staff also eliminated the inspection of non-important to safety part extensions, which do not affect safety function directly.

Instead the inspections were focused more on safety significant activities such as heavy load lifts, and important to safety structures as defined by our procedures. Time saved does not equate to safety reduced. We're simply being logical, and not spending time on low-impact, not important to safety activity, and spending more time where it matters the most.

Next slide please. While we have strengthened the special oversight program by leveraging risk insights to drive more efficient and effective inspection, we're not

stopping there. Our focus now is on continuously improving how we execute the program. A key part of our approach is applying the communication principle outlined in OEDO 0235, driving regulatory decision through effective communication.

By engaging early with domestic stakeholders on emerging issues, we help prevent minor concerns from escalating into matters that demand significant NRC and licensee resources. For example, similar to what Yoira had discussed earlier, staff recently also proactively work with industry to clarify the feasibility of license exemptions for issues arising from CoC holder generated changes under 7248.

Through years of conversation with all sides, spent fuel has recognized the need to clarify the regulatory framework. Historically, staff hesitated to pursue adjustment to 7248 because of the lengthy rulemaking time line, and we instead will attempt to address the regulatory ambiguity through policy inspection guidance changes.

We addressed this in a manner consistent with the ADVANCE Act, and in support of the Agency's strategic leadership and operational excellence goal. The staff developed Interim Enforcement Policy 9.4, enforcement discretion for general license adoptions or certificate of compliance holder generated changes.

IEP 9.4 clarifies regulatory expectations, aligns enforcement with the party best positioned to address the issue, and provides enforcement discretion while pursuing regulatory changes directed by the Executive Order 14300. Along with the IEP 9.4, staff had clarified through open and transparent dialogue where corrective action responsibility lies for CoC holder generated changes.

Which reduced unnecessary licensing action requests, and enabled the industry to maintain loading schedule without delay. This in turn allowed the NRC staff to focus on higher priority licensing actions. Next slide please. The next topic I want to cover is

the reasonable perspective on staff training. While procedure guidance is the training that prepares the staff when condition changes, spent fuel training program focused on risk significant activity in the field, knowledge management through mentorship, and consistent implementation and inspection throughout the program.

The inspectors are trained on the expanded use of VLSSIR as a tool to efficiently manage very low safety significant issues, and therefore allowing the inspector to focus on risk significant activities. Currently we have strong alignment between the program office and the regional inspection staff through our regular counterpart engagement.

The alignment will be stronger through the new NRC reorganization proposal, where we are aligning the organization to the business line. This will allow targeted coordination of resources, better technical inspection resolution, and allow for inspection schedule flexibility. With this increased flexibility, staff will benefit from more balanced workload, which in turn will improve staff retention.

Sustaining program effectiveness will require continuing investment in training, knowledge management, and succession planning to maintain technical depth and institutional expertise. The program must ensure all new inspectors complete the updated SSC qualification with emphasis on sure experience, expand cross qualification opportunity to increase SSC base strength, and continuously encourage knowledge management between staff during monthly counterpart meetings.

Through continued training and investment in staff, we are well positioned to meet the evolving challenges and expectations. The organization has embraced new performance metrics to keep us accountable. An example of this is the implementation of PI 1.1.3, where we have consistently closed inspection issues with very low to no safety significant within 45 days of the schedule in the inspection.

To ensure the future success, the program must continue to improve metrics, utilize our enhanced issue resolution guidance, and to ensure that the special training program prepares our staff to rise to the occasion. Thank you very much, I will turn it over to Mike.

MR. KING: That concludes our remarks on our overview of the program, happy to answer any questions you have.

CHAIRMAN NIEH: Thank you for the presentation. Commissioner Marzano?

COMMISSIONER MARZANO: Thank you, Mr. Chairman, and thank you panel, for your presentations, and everyone who has supported this work. During last year's meeting I talked about how essential our cooperation in spent fuel management, and the transportation of nuclear material is in this environment defined by new use cases like transportable microreactors, and a shifting back end fuel cycle policy.

I maintained that we need this unified approach with our partners both across the federal government, as well as states and tribes to not only fulfill our responsibility to protect public health, safety, and the environment, but also instill public confidence as new technologies introduce new challenges in the management of the fuel cycle.

The work you do to enable the safe and secure storage and transportation of nuclear materials is very visible to the public, and directly influences the public perception of new nuclear power development. Stated more clearly, your work too supports national priorities, and helps ensure that the societal benefits of nuclear technologies can be fully realized.

So, with that, a few questions that I'd like to get to, but I'll start by dipping my toe in the budget space, at my own peril perhaps. We talked about this underutilization issue, and it seems like there were some aspects that were kind of beyond the control, government

shutdown primarily.

My interest here is with the reorganization, I think the Commission intended there to be a somewhat rethinking of the relationship between the program offices and the Office of the Chief Financial Officer. So, can you talk a little bit about how that effort has maybe revealed some opportunities for improvements in how we've managed some of these challenges where factors outside of our control may be influencing our ability to budget efficiently and effectively, and then kind of how these strategies can be applied just Agency wide?

MS. KOCK: For clarification, your question is how the reorganization will help address some of these issues?

COMMISSIONER MARZANO: Yes.

MS. KOCK: Yeah, so I think it will from a couple different perspectives. One of the ideas behind the reorganization is moving resources into the corporate offices so that we centralize decision making. And what that does is it brings consistency to the way we're approaching things, and more of a direct influence, or impact of the CFO's Office into the programmatic decision.

So, they bring, I think Shana said during the first panel, the CFO's Office brings a lot of expertise about what these things mean to us, right? This is their expertise. And so, bringing the resources from the Program Office into CFO brings that thinking closer to the Program Office decisions, and I think that's a positive thing, as well as thinking about how did we address that in reactors versus materials.

And bringing all of that together makes sure that we share best practices, and we have more consistency in the way we're approaching these things.

COMMISSIONER MARZANO: Yeah, budget is a very visible topic as well,

and our best efforts to be good stewards of rate payer and taxpayer dollars is very important, so I appreciate the efforts there. Switching gears, last week I had a chance to meet with some of the authors of the PNNL report on transportable microreactors.

And I think that this is a really great example of how we leverage the expertise, not just here at the Agency, but also across the national lab complex to support our own risk informed regulatory oversight. So, are there any other areas specific to kind of transportation itself, where collaboration with national lab partners is needed, or contemplated as expanding?

Just talk a little bit more about how we take the efforts that we're doing here and move forward.

MS. ROMAN-CUEVAS: Yes. Collaboration with the national labs is going to be key as we address some of the challenges we have with HALEU fuel and what we're to address some of the challenges that we have with microreactors right now. We are working with Oak Ridge, for example, to address some of the challenges we have in the criticality benchmark with DOE. We also work with others. Like, we work with the center as well, just to address some of the aging management issues that we have on storage. So we are constantly working with them to address issues as they arise.

COMMISSIONER MARZANO: Yeah, if we as good -- you know, this good work in some of the microreactor space, you know, the transportation of other materials, I think, may be a good opportunity for future work. So, getting --

MS. KOCK: I'll just add, like, one thing that maybe doesn't get as much discussion, but this business line also addresses disposal. And I think that's one area where we're ramping up our coordination with Department of Energy, given the reconsideration of how disposal might work in this country. We have resources that can help there, and we

recently had a meeting with them to talk about how we might be able to help them work through some of the technical issues and the various options that they're considering.

COMMISSIONER MARZANO: Okay. Thank you, Andrea. You mentioned a little bit about a methodology to demonstrate compliance with Part 71 through applicants coming in through Part 57. A lot of that was based on experience with Project Pele.

So, if an applicant were to come with something kind of new, some alternative, you know, how do we address that, given some of the experience that we have, but stay within our established metrics and timelines?

MS. ROMAN-CUEVAS: So we need them to come early. We need pre-application engagements. We need -- if they're going to need to use a risk-informed methodology, they need to come to us and submit a technical paper, almost like a topical report-type of approach, so we can review it and make sure that what they're trying to do complies with the requirements in Part 71, and then we can leverage that in future licensing actions.

So we have a good track record. I think for Project Pele, we did it in about a little bit over a year. And then we have a paper in-house that we are trying to do just in nine to ten months. So we think we can review these risk methodologies fairly quick, and then those can be used to move forward with the licensing review in, probably in a shorter time period.

COMMISSIONER MARZANO: What's kind of the long pole in terms of the methodology? Is it, you know, a criticality safety thing? Is it, I don't know, shielding, et cetera? You know, what are kind of the big aspects that drive maybe a little bit more consideration and time?

One of the things that I'm interested in as well is, you know, as we're risk-

informing, how we review transportation packages in general. Testing these packages is very expensive, very time-consuming. Where can, where -- you know, how are we deciding what would require a test, perhaps given the novelty of an approach, versus how we can risk-inform a review?

MS. ROMAN-CUEVAS: Precisely for those challenges that have been identified in terms of meeting the testing conditions, is that we are allowing the use of the risk-informed methodology. For example, it's not easy to do a 30-feet drop with a microreactor to demonstrate that it will survive the accident. So, instead, they could use a PRA approach to demonstrate that they are meeting the Part 71 requirements and demonstrate that public doses are still going to be low, and the risk is going to be low.

I think that that's going to be the biggest challenge, maybe, a microreactor testing requirements for accident conditions. We also have testing requirements for normal conditions, but we haven't heard that being an issue. But it could be, depending on the weight of the package and those considerations.

So, I think that, in terms of the review, I think it just understanding how they are approaching risk, what accident sequences they are including. They're supposed to include every accident sequence if they're going to have a different approach from what we have in part 71.

So, I don't know if I can say that there's like something that is going to take us longer, but in terms of -- it's always shielding, always understanding that it's going to maintain subcriticality margin. It's what we pay attention.

MS. DIAZ-SANABRIA: Yeah. Just to expand a little bit on what Cinthya said, we also have, in our regulatory framework, the use of specific assumptions, and we had a lot of experience approving special authorizations under that provision. So we can definitely

leverage some of the technical areas that were discussed during those specific situations.

Vessel internals being moved, shipped; these are overhauled, very heavy overhaul. So this is not going to be the first time that we're going to look at things like that. We already have been in looking at these types of issues related to accident conditions, especially because these are very heavy packages.

COMMISSIONER MARZANO: Thank you. And then real quick, and we'll stay on you, Yoira. So, high burnup fuel, we have the DOE research casks. I imagine. I think we can all imagine a world in which many more of these high burnup casks are going to be utilized.

So have we -- do we have anybody that has come to us yet, or are there applicants that may be considering pursuing a CoC for one of these high burnup casks in the commercial space?

MS. DIAZ-SANABRIA: So, just to start off that, most of the fuel discharged from reactors today are high burnup. So, pretty much every CoC amendment that we receive for new designs are for that type of fuel. So we have about -- let me see my numbers here -- 20 CoCs that we approved so far, for storage and transportation together, that is going to be used for high burnup fuel.

So, in terms of what the implications we're going to get from or what -- the results we're going to get from the high burnup research cask, I think all these licensees are going to benefit from, and specifically because aging management is one of the main contributors to the high burnup fuel, given that it's a different cladding. It's a higher burn rate. So cladding is a particular component that we need to have some aging management program in place.

So the high burnup research cask that North Anna has right now is going to

be transported and stored -- being, like, extended storage is going to give us some real data that we can use, that the licensees can leverage, as well, and they have conditions right now for aging management.

COMMISSIONER MARZANO: Okay. Thank you. I think that wraps up my questions, but I'll just, a plug for Bill. You know, we have a focus in the reorganization on how we train in the new technical training organization. I just encourage you to kind of look for opportunities to help cross-train and develop folks to support the important inspection work they do. So thank you for being here, and thank you, Mr. Chairman.

CHAIRMAN NIEH: Thank you, Commissioner Marzano. Commissioner Weaver?

COMMISSIONER WEAVER: Thank you, Chairman. So my last job at NRC, the first time around, was in spent fuel storage and transportation, so --

CHAIRMAN NIEH: You changed.

COMMISSIONER WEAVER: Well, I'm going to talk about that, actually. So, I'm really glad. So, when I was here, we were an EBB, right? So, not only were we physically separated, I think we were culturally separated. Like, so to hear you talk about risk-informing, when I brought that up in 2011 and '12, they were like, we don't do that. We don't do that in spent fuel. So, clearly, you know, we have come a long way.

And I was really gratified to hear you talking about confirmatory analyses, because when I landed in spent fuel, I was, you know, what is this confirmatory analysis thing? Because if a licensee comes in or a certificate holder and they say here's we're using an approved method, an approved code within the parameters of the code. Normally, I would expect the NRC staff to say review what was submitted.

And at the time, in spent fuel, it was very typical; well, we're going to build

our own model, and see if we can get the same results as the applicant. And that was extremely time-consuming and expensive. And so, I'm glad to hear that you're risk-informing that. I would still, you know, ask you to take a close look at to make sure they're need -- when you are using them, they're truly needed to reach your safety conclusion.

So, a few questions. Andrea, you said there were 30 licensing actions for related to new fuels. I gather those were for transportation packages?

MS. KOCK: Right. Correct.

COMMISSIONER WEAVER: Yeah. So my question is, you know, what about the back? How are we going to store these fuels when they come out of the reactors in these new types of fuels? And I'm not sure who's best to speak about that.

MS. KOCK: I can start, and maybe Yoira can finish.

So we have looked at are there unique aspects of new fuels that cause us to question if there's some issue we need to pursue in terms of disposal. We haven't found anything yet. So we don't see anything in new fuels that would say there's a safety issue or that we need to kind of rethink the disposal aspects.

That being said, I think that is the one area of our work where there could be more work to just confirm that. Because that's a future problem, I think we've spent maybe less time on that to date. So it's something that we need to keep in front of mind. But we haven't identified that's uniquely different, anything uniquely different.

Let me just see if Yoira has anything to add.

MS. DIAZ-SANABRIA: You probably cover it very well. But just to expand what we've been discussing with some of the potential applicants, particularly, I think the hurdles that we have to overcome are more in policy-related-type of things, such as the one-year cool-off period that is required for spent fuel, right? So we are looking into that to verify

if, for these specific technologies, that is needed, because they are very different in terms of the type of fuel. It's not light water reactor anymore.

COMMISSIONER WEAVER: Thank you. I think you also said there were 50 to 100 shipments of spent fuel. And I'm presuming that we're talking about like fuel rods or maybe an assembly. We're not talking about whole casks full of spent fuel, are we?

MS. KOCK: Correct.

COMMISSIONER WEAVER: Okay. And for -- I imagine to support testing, and --

MS. KOCK: To support testing and not so much for commercial shipments. A lot of that, I think, is for defense or DOE purposes.

COMMISSIONER WEAVER: Okay. Long term -- so, obviously, I don't think we're -- we don't see a geologic repository on the horizon for high-level waste. So the ISFSIs are going to be it for the foreseeable future.

Do we have -- are there any challenges that prevent us from, you know, envisioning fuel casks on ISFSI pads for the foreseeable future?

MS. KOCK: Based on what I know, there hasn't been an issue. What simply happens is that facilities build new pads and put more dry storage. Those are very safe facilities. So, for the foreseeable future, we see that as a path forward.

We did license consolidated interim storage facilities in this country. Whether those come to fruition is really a business case.

MS. DIAZ-SANABRIA: Just to expand on -- from the technical side, I mentioned the high burnup dry cask from North Anna. It's going to get us a lot of data from storage, the performance of the fuel in extended storage. That combined with what other technical areas are looking, like aging management, that is the most critical part in extended

storage. So far, we haven't seen big issues in that area.

And just to include, the waste confidence rule also provides some technical basis on what needs to be under storage, what is appropriate for being under storage.

COMMISSIONER WEAVER: Thank you. You mentioned $2 million in research resulting in $40 million in savings. Can you talk more about what was the research, and how did the -- where did the savings come from?

MS. DIAZ-SANABRIA: I probably have to turn that over to Cinthya.

MS. ROMAN-CUEVAS: So this is -- we have been working for years, as you might be aware, on corrosion stress cracking research. So we went back and looked how much have we spent. And we look; we spent about $2 million along the years. But we recently were able to make some conclusions and issue a guidance that reduces the need for in-service inspections. And this is saving. We anticipate that this will save $40 million to the industry because then they don't have to do the in-service inspections at the frequencies that they had. So that research really is helping us.

We are now expanding that research to also demonstrate that even if there is an incident in which corrosion stress cracking happens, the consequences are going to be low. So, and we think that based on the preliminary result, that's where we're going to land.

And that's not only is going to help us to save another $2 million because it's going to help us to then maybe risk-inform those sites that are close to the coastline, it will also help us with public confidence. And the question you had before about extended storage, you know, it just shows that the consequences are just low.

COMMISSIONER WEAVER: So you're talking about stress corrosion cracking of the steel portion of the canister? Is that what we're --

MS. ROMAN-CUEVAS: Yes. Yes.

COMMISSIONER WEAVER: Okay. I was at INL last week. It seems like a long time ago already, but -- and I did hear a little bit about their criticality experiments research. Apparently, it was very informative that we used to have ten of these tabletop machines, and now we have zero, and they're trying to create one. They were very complimentary of the staff's engagement on that and sought to continue that support, which seems like a good idea to me.

I'm going to yield back the balance of my time to the Chairman and thank you.

CHAIRMAN NIEH: Thank you very much, Commissioner Weaver.

Appreciate the presentation here. And I was recently reading the commission's 1999 white paper on risk-informed, performance-based regulation. I'll say you guys are doing it. You are taking actions to risk-inform this program, integrating it with some of the deterministic things that we've historically used in our frameworks, but to really achieve that vision. So thank you for doing that.

Cinthya, you are the executive sponsor for -- one of the exec sponsors for Part 57, particularly with the transportation aspects. I remember talking to you as I was getting ready to vote on that rule. Appreciate your leadership there, and you know, those elements for this draft rulemaking that we just published, which is a significant milestone for the Agency. This is enabling regulation in motion, no pun there with the transportation. But it's really adapting our frameworks to new technologies.

And Yoira, I was really listening to the high burnup cask thing, and I know that's part of the Department of Energy's Light Water Reactor Sustainability Program. What's different about these casks for high burnup fuel?

MS. DIAZ-SANABRIA: So the North Anna cask particularly came to us with

an amendment to put in instrumentation, thermocouples to measure the temperature inside of the canister. The main question that we are trying to answer is what is the performance? How is the fuel doing? What is the performance of the fuel? By the time that some of the applicants right now, or some general licensees already have canisters on their pads, it's going to pass 20 years by the time they transport those canisters.

So the importance of that is because high burnup is high-energy fuel. So cladding, the type of cladding is different, and the potential of failure of that cladding is the main concern in the storage and particularly when it goes in transportation because we want to know what is the performance of the fuel when it goes into transport, because we were expecting large-scale transportation campaigns in the country.

CHAIRMAN NIEH: So, do we envision that the storage and transportation canisters that are being used today would essentially be the same ones, but just potentially accept this higher burnup fuel?

MS. DIAZ-SANABRIA: It's pretty much, yeah, pretty much. Because, as I was saying, most of the fuel that exists in reactors is high burnup and higher enrichment.

CHAIRMAN NIEH: Okay. Okay. Hey, I was also thinking about accident-tolerant fuels. Right. That's a significant enabler for long-term operations.

And Mike, you said at the beginning, this is, you know, kind of the backbone. Hey, if we -- if the back end doesn't work, you might jam up the front and middle ends.

Is there anything else on the back end with accident-tolerant fuel or high burnup fuel that we need to be thinking about in our licensing and oversight frameworks?

MS. DIAZ-SANABRIA: Currently, I'm not aware of any issues that we have in terms of our ability to license or approve these type of CoCs. Basically, we've been getting a lot of research information from EPRI, from DOE. We've been working together with

Department of Energy, particularly on the transportation side. We have a very close connection with them.

CHAIRMAN NIEH: Good, thank you. Cinthya, slide 39, you gave this chart, examples of low risk, medium risk, high risk. Can you tell the Commission what are some examples of low-risk, medium-risk, and high-risk licensing activities?

MS. ROMAN-CUEVAS: I might let Yoira start, and then, since she sees the actions more often.

MS. DIAZ-SANABRIA: So, an example of if we receive an amendment with a change, changing heat patterns inside of the canister could be considered as a high change, like a high-risk change, because that will impact the structural configuration, the criticality configuration of the fuel. So that would be an example of that.

A low risk change might be something simple as changing some specific clearances of the canister that may not translate into ramifications down into other sections. Like, containment is something that we need to protect all the time in these canisters.

MS. ROMAN-CUEVAS: And just maybe to expand something about the risk tool, so you can have a review that you have some areas that are high risk under the risk tool, and other areas that are low risk.

So, the technical discipline that you would spend less time on that one, maybe you don't need confirmatory analysis there, but maybe shielding is higher risk. And then you have to do -- consider whether you need RAIs or additional information. So this is used. You can have a review that itself might be high risk, but you can also grade that review and have certain parts of the review be low risk, if that makes sense.

CHAIRMAN NIEH: Well, thank you. I think it's great that you're being risk-informed there.

The next area I want to explore, I want to say up front that I do not believe the issue I'm going to raise is indicative of current performance at the NRC. This is a new NRC here, one that enables safe use of technologies and one that is risk-informed and performance-based. But it's relatively a recent experience that I had, was directly impacted by when I was working as an NRC licensee, Casknado and 72.48.

I know you mentioned it in your slides. These were real issues that occurred in the industry that had a significant impact in used fuel loading operations, outage planning. I mean real impacts. And the bewilderment from the industry side was that senior officials at the NRC clearly acknowledged there was no safety significance to these issues, yet for well over a year, and even bumping up on close to two years, things really got jammed up.

So I do not believe that is the agency today. This is a new NRC, but I want to focus on learning. What did we learn from that experience, and how are we taking those experiences with Casknado and the 72.48 issue, and how are we building that into how we do business today?

MR. KING: Thanks for raising this issue, Chairman. And I'll start, and others can jump in.

First of all, I couldn't agree more that this was not the Agency's shiniest moment, and there's a lot of areas to improve from that. And we see that opportunity to do so, and we've taken action just in that area.

I think this is an area in particular where it illustrates the importance of us having a management model where we seek clear leadership alignment and understanding clear expectations. We set high standards, and we put accountability mechanisms across the board in that. We've taken a lot of steps, as mentioned already, to change our culture in that area, but I'll just highlight some of the things that I know we've done in particular.

The guidance that we put out on expectations for how you deliver results through effective communications has gone a tremendous way across all business lines in helping us to identify issues early and resolve them.

We've also implemented measures in place to hold ourselves accountable. We've got expectations that we resolve low-level inspection issues within 45 days of completing the inspection. That's now been fully implemented across all business lines.

In the areas of inspections, we're getting regular. We have dashboards in now where we track our results in that area.

We have expectations for, even in circumstances where we don't agree, where we enter our formal differing views process, that we have metrics holding ourselves accountable to how are we doing on resolving those situations, openly resolving those situations based on their merits.

And we've baked in those accountability mechanisms into how we rate our own individual performance. It's a part of our performance appraisal process.

And so, across the board, the Agency feels accountable for resolving low-level safety issues, like this was, and doing so in a timely manner commensurate with the significance of the issue, with the right amount of resources.

MS. KOCK: Yeah. And I'll just add, and it kind of relates to the communications model that Mike mentioned, but I mean, at its core, it's asking the risk triplet that's been around since 1999 but actually creating a culture where you ask yourself those questions before you go down the path of asking multiple questions. You know, how likely is this actually to happen? If it did happen, what are the consequences? So, the expectation now is that, before you start going down an enforcement path, that those questions be answered up front.

And the way the communications model helps is setting an expectation that if you have a safety issue, you need to be able to articulate the answer to the risk triplet question of how important is this and what is the risk? And so, setting those expectations and then holding ourselves to those expectations.

And I'll give Mike credit because not only did we put the VLSSIR process in place, I think when you were still in NRR, we expanded VLSSIR, to -- So if you have -- if there's uncertainty, not just with related to does this relate to a licensing basis issue, but an inspection issue comes up, and you're not sure if it's a compliance issue, and it's low risk, it needs to stop there. And so, we instituted VLSSIR, and then we went one step further and expanded it.

CHAIRMAN NIEH: Thank you very much. It was. I know. Well, I was there when we started VLSSIR. It was hard to get it to adopt. And I'm glad to see you using it.

Bill, you said time saved does not equate to safety reduced. I agree with that. I sometimes say it a little bit differently: More inspection does not always mean more safety, right? Focusing our attention and licensees' attentions on things that are not safety significant is actually a distractive -- a distraction that's counterproductive to safe and reliable operations at our nuclear facilities that we license. So, thank you for your work.

Commissioner Wright?

COMMISSIONER WRIGHT: Thank you, Chair. I'm going to come back to the Casknado thing real quick because that's not the only area that we had very low safety significant issues, and we got spun up, right? And it was very costly.

How are you -- how is the Office of General Counsel, their advice, how is that adapted to the new way of doing business in this particular situation that was raised? How has that been looked at differently? Can you all speak to that?

MR. KING: I'll just share my perspective. I think, you know, over the past couple years in particular, the relationship between program offices and the general counsel's office has become much tighter and integrated.

In fact, as part of the reorganization, we're having a key representative from OGC kind of working more exclusively with each program office. So there's a key point of contact, you know, co-located within the vicinity. The office director has an office nearby to kind of increase that level of partnership and engagement across the board.

We're also pulling general counsel's office and attorneys in early into all aspects of what we're doing, where we're in, you know, any licensing actions, activities that are significant. And to help offset some of that burden, the routine actions that we don't necessarily need OGC support on, we've worked with them, and they've said we don't need to be involved in those, to free them up to really engage heavily on issues where there is some meaty issue where we need their early engagement insights on.

MS. KOCK: And now, I can probably now -- I just said this earlier this week. Like, I'm seeing solutions-based advice from OGC on multiple issues. Like, I can name three or four in the last couple weeks, you know, the issue of pre-construction for fuel facilities. We have issues in decommissioning.

And we're moving away from a prescriptive interpretation of what the regulations say to what makes sense from a safety perspective. And so from a legal perspective, you know, you don't need to focus on the exact prescriptive words as long as we're maintaining safety. And OGC is completely on board with that. And I'm very impressed. So thank you.

COMMISSIONER WRIGHT: Yeah, I brought you up. Do you want to say anything at all about that?

MR. POCIASK: Thank you, Commissioner. Thank you for that feedback. We're continuing to get the OGC solution oriented. The options are great, but we really want to drive solutions. As long as the staff can make a defensible safety and security case, the law has got a lot of degrees of freedom, and we want to make sure we get the licensees and the applications across the finish line and to support our enablement mission. Thanks.

COMMISSIONER WRIGHT: Thank you. I just thought that was important to bring up because I haven't noticed it myself.

So, the high burnup cask issue, how is AI being used potentially, right? You got a 20-year thing you're looking at. Is AI being used at all, looking at that?

MS. KOCK: I can start, and I think Yoira has some specific examples.

So we're using it in, like, simple ways. You know, meeting summaries, we don't write those anymore. AI is doing that for us, so just process stuff, you know, is helping a great deal.

But we are exploring how to use it in licensing actions by doing things like scanning the application to tell us, like, where in the application are certain things addressed, so we can go right to there and focus our efforts. We're developing that, and I think there's more work to do as the AI tools get more and more sophisticated. But we are using it in several licensing actions and exploring how we can build on it.

And Yoira probably has some specific examples.

MS. DIAZ-SANABRIA: Yes, specifically for the high burnup research cask, that's a DOE/EPRI effort. But the way that the staff can use AI is looking at having a repository, like compendium of all the potential technical issues that are driving the safety significance of transporting and storing the cask, particularly the high burnup fuel.

COMMISSIONER WRIGHT: Okay. Thank you. And my last question,

Bill, I'm going to come to you. So I appreciate what you spoke about saving the 18 percent reduction in inspection hours with no impact on safety, right? And that's a saving of resources at every level, which I think is important.

So, as you continue to refine this approach, are there specific indicators, feedback mechanisms, or lessons learned that is going to help you guide the future on this?

MR. LIN: Yes, sir. Thank you for the question. What I'll say is we continuously to self-assess to make sure that we're realizing the safety efficiency that we're projected.

We are also in constant communication with our sites, so that way, we clearly state our expectation, and they provide us with feedback on what they have questions about those type of issues.

I think third is, we in the SSC branch, we have very strong alignment between the regional staff and the program office. So, a lot of the time, we have a lot of staff interaction to say, hey, what efficiency can we gain? What can we live with?

So, I think those are the big picture items that how we're able to, like Chairman Nieh said, not the one-off type. We're continuously to try to learn and improve on how we do the inspection program.

MR. KING: Now I'll just add, across all our programs, not just the HFC program, as we're making these adjustments to the program as part of the ADVANCE Act and the Executive Order responses, we're really focusing on monitoring the performance of those program changes on licensees that are -- and their performance.

If we see degrading trends in performance on the part of licensees, these are all living programs. If we feel like we need to increase in those areas as a result of an unexpected decrease in licensee performance, we will not hesitate to do so.

COMMISSIONER WRIGHT: Okay. Thank you so much. Mr. Chairman, thank you. I yield back.

CHAIRMAN NIEH: Mr. Crowell?

COMMISSIONER CROWELL: Thank you, Mr. Chairman. I'll try to do this in ten minutes and not steal Dave's three that he left on the table.

Thank you all for the presentations. It's very helpful, very appreciative, lots of questions and helpful information provided.

I'll say, for my typical moment of levity, I'll check Netflix tonight for Casknado. I'm not familiar with that story, but I'm definitely going to look into it now. I hope Samuel L. Jackson stars in it.

So most of my questions would be Part 57 focused for the most part, but they'll bleed in the other areas. And I just want to take a step back for a second because when we're talking about spent fuel or used fuel management in the context of microreactors, it's different than we've talked about it in the context of the operating fleet. And you know, perhaps there's some differences with fuel types and burnup rates, but it sounds like there's a lot of uniformity in that as well.

I worry a little bit that we're moving quicker on Part 57 from a rulemaking regulatory standpoint than we have the information to support the parameters that we're going to put in that rule, like some of this information that we need from the national labs about, you know, doses or transportation accident scenarios and things like that. I think we're doing a lot of guessing and hoping here, and I don't know if that's accurate or if we're going to fill in the blanks, if there's a process for that.

I'll say that if what I just characterized, I want to be wrong about what I just characterized, either now or down the road, so I look forward to that confidence.

But why is it different? Why do we treat micros different than the operating fleet in terms of spent fuel and how long it stays on site, and why, and then when it can go and where it goes?

MS. ROMAN-CUEVAS: So Part 57, so first, I want to say we did move fast with Part 57, but we had years of being working on microreactors. Since 2020, staff have been developing papers, looking at information. There was a lot of work that was done before we started the microreactor rulemaking.

We did form a really great team to work on this rule. We had staff across the Agency. The number that Doug gave me is probably 100 staff members have touched this rule, because we are trying to make sure that safety is maintained, but we are also trying to add flexibilities where it makes sense.

COMMISSIONER CROWELL: And I get the philosophy of it, but so just tell me, for example, why does -- why wouldn't we require a one-year cooling period for used fuel at a microreactor site when we do that for other reactors if -- like, why wouldn't we do that? From a safety and security perspective, which is our focus, what's the rationale?

MS. ROMAN-CUEVAS: Well, the challenge that we face ourselves is that we are asking the same question of why we couldn't. So, when we started looking at the 10 millirem per hour, for example -- and again, we haven't made that change in the rule; that's outside of the microreactor rule.

COMMISSIONER CROWELL: But related.

MS. ROMAN-CUEVAS: But that, when we look at that number, and we were trying to look at where that number came from and what data we had to kind of justify the dose, yes, we had good research that explained that 10 millirems is safe, but we didn't have data to determine if we could go up, and if that number would still be safe.

So we just wanted to do that research to try to understand, okay, what happens if the dose rate goes up? Is this still safe? And that's when we work with PNNL, and we determined that even if we go up maybe five times over of what the current limit is, members of the public still be protected and the doses are going to be very low. So we just wanted to answer that question in terms of that specific change.

I don't know if you want --

MR. KING: Yeah, great answer. I think, probably, the additional perspective I'd add is there's entry constraints into Part 57 that are much tighter than others, and that's because of that and the potential for exposure to the public and lower risk associated with these. Meeting that entry criteria deserves attention into what other areas could you potentially take a different approach to account for the lower potential consequences.

COMMISSIONER CROWELL: What do you mean by entry criteria? I'm not sure I'd follow.

MS. ROMAN-CUEVAS: Like, yes.

MR. KING: Like the one -- you go ahead.

MS. ROMAN-CUEVAS: So, before we started even envisioning the rule, we came up with an entry criteria to make sure. It's when we call entry criteria, it's who can use the rule?

You first need to demonstrate that you're not going to exceed 1 rem at the boundary in their -- under accident conditions. If you meet that also, and if your reactor doesn't have a certain mass limit over 10 metric tons, and also if you meet about six attributes that are like things about making sure that the reactor is safe, you cannot use the rule. You have to meet all those conditions to be able to use Part 57.

When we establish those principles or that entry criteria, that really helped

the team to then decide, okay, if the reactor doesn't have this concern because it's going to have excessive heat, where can I increase flexibility? So the entry criteria was really key for why Part 57 allows us to do a little bit more flexibility and ensure safety.

COMMISSIONER CROWELL: Yeah, I understand. I understand better now, at least. And just to clarify, my particular interest in this topic is it's mostly relates to the transportation issues to and from and the safety and security and public health associated with it. I think that, on-site, be it at a microreactor or a large light water reactor, we're pretty good at managing things on-site. We kind of know storage for the time being.

Although, Andrea, I want to ask you more about what you meant by disposal a second ago.

So it's the transportation of potentially hotter fuels, more often, to more places that has me concerned at a higher dose, potentially a higher dose level, in terms of what we've set for public health and safety.

And from what I gathered, Yoira, the casks aren't necessarily changing, but our ability to monitor what's going on inside the cask is what's novel and telling, and it's that data that hopefully will drive our decisions about when something is appropriate to be moved or how it's stored or how much it needs to cool off; is that correct?

MS. DIAZ-SANABRIA: Yeah, the research coming from the DOE/EPRI is going to be very telling.

As I mentioned, aging management is a key factor of the fuel, right, fuel cladding. There are provisions in the regulations to allow for failure of cladding. They can do repackaging, and that completely will satisfy the regulations for 71. So, not necessarily because the information from the EPRI/DOE is going to show that there may be some cladding failure, we don't know yet, but we have other alternatives in the regulation that allow for

maintaining safety of these canisters.

COMMISSIONER CROWELL: I know we'll do this, but we need to. I want to get the assurance, and I know the public wants the assurance that in a world where we have deployment of microreactors, that when a given microreactor needs to be refueled, so to speak, that when the current unit goes back to the manufacturing facility, presumably, that that unit with used fuel in it, I guess, or have maybe being transported with used fuel -- I don't know how it's all going to work.

But when it goes halfway back across the country, you know, do the communities have anything to worry about that it's going to be going through, in terms of dose or accidents, that's different from what we've -- our protocols now and the engagement we've had with those folks? Do they need to prepare for anything different? Is it -- you know, are those accident scenarios different? All that stuff needs to be sorted out and managed on the front end. Does that make sense?

MS. DIAZ-SANABRIA: Yeah. And I just want to add that we have a lot of engagement with stakeholders, formally established forums. We have engagements with the Tribes through DOE. So we have TEMTRECK (phonetic) is one of the conferences that we attend. So we need to collect information from these communities, which they are very vocal in terms of transportation safety.

We will definitely take that into account and ensure that they understand what the NRC is trying to accomplish, and we can get their concerns and maybe modify, you know, certain things in our regulations. But I just want to make sure that it is coming across that we are having a lot of engagement with these communities, the DOE, Department of Transportation, as well.

COMMISSIONER CROWELL: We're engaging, and we're getting answers

that we're able to leverage and use for our own purposes.

MS. ROMAN-CUEVAS: Maybe, can I add? Also, some of the research that the Office of Research has helped us also to understand what happens in terms of how much waiting time you need to cool a reactor and things like that. Just waiting three months could make a big difference. So, like, the reason --

COMMISSIONER CROWELL: But it's all relative. You can still have a long way to go before it's safe, even though you have a big drop in three months.

MS. ROMAN-CUEVAS: Well, and what I wanted to add is, too, like not every microreactor they are going to want to transport right after. We were considering this also for emergency, you know, like response-type of microreactors, if they need to move soon after, is the only case that I've heard.

COMMISSIONER CROWELL: I just want to make sure we're not letting economics or cost concerns drive our policy decisions in terms of how long we require things to cool off or be before they can be stored and moved.

MS. KOCK: And we cannot do that, and we won't. And safety will remain our North Star.

I'll just say at a high level, you know, what we're doing. So microreactors, some of them, they will be transported with used fuel, right? And so, the model for what is needed for the benefit to be obtained from the microreactor is different. And so, that's why we're looking at things like the cooling-off period, but we're using our knowledge.

Like, some of those microreactors will use TRISO fuel. TRISO fuel is not new. Like Cinthya said, we have a lot of experience about how these fuels behave, and we're using that knowledge with what we're getting from the labs to make decisions that here's where the line in the sand is with regard to safety. That's what we've put out there in the rule, the

Part 57 rule. That's what will be in the Part 71 rule that comes out.

And we're going to seek input from stakeholders. So, if there's something that we missed, we're hopeful that it will come up, but we're using the experience that we had in transportation to date to inform the safety decisions that we're making. And we will not compromise on safety questions.

COMMISSIONER CROWELL: One minute of Commissioner Wright's time here, really quickly. Do we expect -- yeah, I owe Mike four lunches, trust me.

Do we expect the existing operating fleet to request changes in their fuel storage management transportation based on whatever happens when Part 57 is out there and on the books?

MS. KOCK: I sort of doubt that because it's a tried and true system. And I mean, most of like what we're trying to do is create those flexibilities if they so choose. But it costs them time and money to change the way that they're doing things. And so, I would guess that we won't see a huge shift with regard to the operating fleet.

MR. KING: And I'll just add, you know, early on when we were considering possible changes to transporting, limits associated with transporting, you know, we challenged ourselves: what could be the possible cases which could apply this new flexibility? And that's why we engaged the labs to ensure, hey, what were the original assumptions behind the current regulatory limits for exposure for transportation?

And we've discovered some things that were kind of surprising to us, like the original limit, and some of this couldn't -- wasn't based on a safety issue at all. It's based on exposing film that would have been in the cab of the original transportation. So those sorts of discoveries helped us to kind of do a ground-up evaluation of what's safe for these and regardless of who use it, whether it's microreactors, anybody else.

COMMISSIONER CROWELL: And I appreciate you mentioning that because that's exactly the kind of stuff we're going to have to articulate when we make these changes, so folks understand that we haven't lost focus of our safety and security mission. All right. Thanks.

CHAIRMAN NIEH: Thank you, Commissioner Crowell. I'd like a lunch, too, sometime.

(Laughter.)

COMMISSIONER CROWELL: For the boss, anytime.

CHAIRMAN NIEH: This was a really great, great meeting. The presentation material from your panel and the previous panel, as well as the dialogue with the Commission, I think, really underscores for me that our focus is safety, right? That has not changed. But what this discussion this morning I think also conveys is that we, the NRC, are really delivering to America what it needs as technologies evolve, as use cases change, right?

Our mission is to enable safe and secure use of new nuclear technologies, and we're aligning regulations with actual risks and operational needs. We're adapting our frameworks for new technologies, and we're adding regulatory flexibility where safety is maintained. So I really congratulate you all on your accomplishments. Please continue the good work.

Before we adjourn, any final comments from members of the Commission?

Okay. Thank you. End of meeting.

(Whereupon, the above-entitled matter went off the record at 12:02 p.m.)