UNITED STATES

NUCLEAR REGULATORY COMMISSION

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BRIEFING ON RESULTS OF THE AGENCY ACTION REVIEW

MEETING (AARM)

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THURSDAY,

JUNE 16, 2022

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The Commission met via Videoconference, Christopher T. Hanson, Chairman, presiding.

COMMISSION MEMBERS:

CHRISTOPHER T. HANSON, Chairman

JEFF BARAN, Commissioner

DAVID A. WRIGHT, Commissioner

ALSO PRESENT:

BROOKE P. CLARK, Secretary of the Commission

MARIAN ZOBLER, General Counsel

NRC STAFF:

MARISSA BAILEY, Director, Division of Construction Oversight, Region II

THERESA CLARK, Deputy Director, Division of Materials Safety, Security, State, and Tribal Programs, Office of Nuclear Material Safety and Safeguards

VICTOR HALL, Branch Chief, Vogtle Project Office, NRR

PHILIP MCKENNA, Acting Deputy Director, Division of Reactor Oversight, Office of Nuclear Reactor Regulation (NRR)

DARRELL ROBERTS, Deputy Executive Director for Reactor and Preparedness Programs, Office of the Executive Director for Operations

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

10:01 a.m.

CHAIRMAN HANSON: Okay, good morning everyone, I'll bring the commission's public meeting to order. Today, the commission will be briefed on the results of the agency action review meeting, which was held on May 5th, 2022. The AARM as it's known, is part of an integrated evaluation process used by the agency to ensure the operational safety, construction safety, and security performance of licensees.

Since the AARM serves as a forum to review overall industry trends, and the effectiveness of the nuclear materials and waste program, the reactor oversight process, and the construction reactor oversight process, the AARM is conducted on an annual basis regardless of whether any individual licensees are scheduled to be discussed. This is an integral part of how we fulfill our safety and security mission.

I'm looking forward to the briefing today. Before we state I'll ask my colleagues if they have any remarks they'd like to make. No? Okay, with that we will begin this morning with our Deputy Executive Director for Reactor and Preparedness Programs, Darrell Roberts, then followed by staff panelists. Darrell, the floor is yours.

MR. ROBERTS: Okay, thank you, Chairman. Good morning to you, Chairman Hanson, and Commissioners Baran and Wright. My name is Darrell Roberts, and I am the Deputy Executive Director for Reactor and Preparedness Programs. Today we are here to discuss the results of this year's agency action review meeting, or AARM that was conducted on May 5th.

The AARM process is governed by Management Directive

8.14, and provides a structured and repeatable process to evaluate the effectiveness of the NRC's oversight processes during the preceding year, and the appropriateness of NRC's actions to address significant performance deficiencies for licensees within the reactor safety program, including those reactors under construction, and in the materials and waste safety program. Next slide please.

This slide shows the specific objectives of the AARM. Senior agency management from OEDO, the program offices, and all four regions participated in the AARM, bringing together a vast collection of knowledge and diverse experience. For calendar year 2021, as a bottom line up front, no operating reactor, reactor under construction, or materials licensee met the criteria laid out in Management Directive 8.14 to be discussed at the 2022 AARM. Next slide please.

Several managers from the program offices, and regions are with me here today to talk in more detail about the results of the agency action review. Theresa Clark is the Deputy Director of the Division of Materials Safety, Security, and State and Tribal Programs in the Office of Nuclear Materials Safety and Safeguards. Theresa will be presenting on the fiscal year 21 nuclear materials and waste safety program performance and trends analysis.

Phil McKenna is a Branch Chief in the Division of Reactor Oversight in the Office of Nuclear Reactor Regulation. Phil will be presenting on the calendar year 2021 reactor oversight process self-assessment program results. (Audio interference) ROP during the COVID-19 pandemic (audio interference) Victor Hall, Branch Chief in the Vogtle Project Office in the Office of Nuclear Reactor Regulation will be presenting on the calendar year 2021

construction reactor oversight process self-assessment results and the staff's preparations for the transition of Vogtle Unit 3 from construction to operations. And with that introduction, I will turn it over to Theresa Clark. Theresa, the floor is yours.

MS. CLARK: Thank you Darrell, and good morning Chairman and Commissioners. This morning I'll be giving you an overview of the issues, and trends in the nuclear materials, and waste safety program for fiscal year 2021. We have more details on all this in our commission paper, SECY-22-0041, which was issued in early May. In short, there are no significant negative trends or issues to communicate. But I'll be sharing the insights we gained through our analysis, as well as multiple self-assessments, and success stories that we have to highlight for our program. Next slide please.

Similar to the reactor program, our materials and waste safety staff continuously collect, monitor, and evaluate data across the spectrum of over 18,000 materials licensees in this country. We look at performance trends in inspection, licensing, and enforcement, as well as from the integrated materials performance evaluation program, or IMPEP. There were no licensees, as Darrell mentioned, that met the performance criteria to warrant detailed discussion at the AARM. We also didn't identify any major programmatic challenges, and we met all of our strategic goals and performance measures. Next slide please.

From last year's materials event data, there weren't any significant trends to share. The figure on this slide represents events of all types from both the NRC states and Agreement States. You will see an overall decrease in the number of events in NRC regulated states. This trend

is consistent with the decreasing number of NRC licensees, as more Agreement States come into the fold.

The overall total is fairly consistent. The two recent years, with 300-something events, are eye catching. And last year we noted that this was possibly COVID-related; for example, there were fewer elective medical procedures going on. And to determine whether this is a new norm or a pandemic related blip, we'll need more data, and we're actively working to answer that question.

As of right now, the overall pattern of events is fairly stable, and we also didn't identify any significant generic issues. In addition, the Advisory Committee on the Medical Uses of Isotopes conducts a medical event review each year. The committee concluded that the number of events in fiscal year 21 was low and consistent with previous years. They also recommended that we form a subcommittee of the ACMUI to focus on yttrium-90 events, which do make up a significant portion of all events, so that the subcommittee can propose, in coordination with the vendors, methods to decrease the number of these events. Also our escalated enforcement remains steady at 32 actions, which is in line with the average from the last few years. And we didn't identify any generic trends there that warranted detailed analysis. Next slide please.

Our annual assessment also includes an evaluation of the abnormal occurrences, or AOs that we report to Congress each year. We've provided seven potential medical related AOs to the Commission for your review, and the report is expected to be issued to Congress later this summer. The potential AOs included three associated with liver treatments, two associated with prostate treatments, and two associated with thyroid

diagnostics. We take these events seriously, and followed up extensively with the Agreement States and NRC licensees, as appropriate. It's important to note that these events represent a tiny fraction of the medical diagnostic and treatment procedures conducted every year.

We recently made a proposal to the Commission to address the criteria by which we determine what is an AO. Among other changes, we suggested focusing that medical criterion on events that cause permanent impairment of function or damage, or that needed a medical intervention to prevent such impairment or damage. I'll note that of the seven potential medical AOs, two would definitely meet this criteria, and a third might need more information for us to decide. Next slide please.

The IMPEP continues to be effective in fulfilling its objective of evaluating the adequacy, and compatibility of both agreement state, and NRC materials programs. During fiscal year 2021, in cooperation with the Agreement States, we conducted nine IMPEP reviews. All state programs were found adequate to protect public health and safety, and compatible with the NRC's regulatory program. We also conducted the NRC's IMPEP as one agency for the first time, and we were also found adequate, which is as good as it gets. We've continued to conduct IMPEPs remotely until late last summer because of COVID.

Today's we've caught up on all the IMPEPs that were deferred during COVID, too. That means that we've had a really busy IMPEP year this year, and I want to commend the teams for their flexibility and hard work under the leadership of Robert Johnson in my division. We were also able to restart our IMPEP team leader training this spring, as you can see in the picture on this slide. We're planning for an IMPEP team member training

this fall. Next slide please.

Speaking of COVID impacts, we continued to adapt our inspection scheduling and our formats throughout COVID while maintaining reasonable assurance of adequate protection. Last November, as we began a new hybrid work environment, we updated our guidance. That means that we're back to inspecting on-site, and using normal procedures for the most part.

The Inspector General also audited COVID's impacts on our programs, and found them generally effective, and gave us five recommendations to strengthen our guidance, and to use our web-based licensing, or WBL system even better, and we're working on these recommendations throughout 2022. In addition, a staff team reviewed the oversight framework that we used during the COVID-19 pandemic. They had eight recommendations to enhance the current program. These recommendations will help us return to normal in-person inspection activities, with updated guidance that'll prepare us for future pandemics, as well as clarified expectations for hybrid and remote inspections. We've met several times on these recommendations, we have alignment in principle on how to proceed. Next slide please.

Even though NMSS includes many discrete functions, we consistently look for ways to harmonize and streamline what we do, so that we can do things one way where possible and explain differences if necessary. For example, multiple program areas are taking similar approaches to modernize and risk-inform their inspection programs.

We updated several programs last year on reactor decommissioning, fuel cycle, uranium recovery, and spent fuel storage and

transportation. Now we're currently working on the materials decommissioning and nuclear materials programs. All of these updates are using risk insights to focus inspection on areas that provide the greatest safety benefit. The top image on this slide is from our materials inspection program update. Specifically, one of the knowledge management sessions we held for NRC and Agreement State inspectors to make sure they could use the updated procedures well. In addition, we're periodically reviewing and updating all of our inspection documents. We're aligning across the materials business lines on common definitions, and approaches.

Another thing we're doing is updating and centralizing our procedures for operating experience. In the past, the different business lines assessed this operating experience in different ways. We're now creating a coordinated program for this function, so that we systematically, effectively, and efficiently review operating experience.

Finally, I've spoken to you before about our data foundation. Which is the office wide approach to leverage our WBL investments for better decision-making. We've deployed ten dashboards so far this fiscal year, with many more planned by the end of the year. These dashboards are used every day, and we're measuring their effectiveness through a new survey. Initial feedback shows an overall satisfaction level that's comfortably above our set targets. And on this slide, you'll see a little grab of the dashboard that we're using to measure those satisfaction scores. Next slide please.

I'd like to highlight two ways that we're continuing to learn and grow. First, last year we did a self-assessment of the waste incidental to reprocessing, or WIR program. We found it generally effective, and that it generates high quality products for our consulting and monitoring roles.

It's particularly strong because of the deep knowledge, and expertise of the staff who are involved. In that light, and to strengthen knowledge management, we've reinstated quarterly WIR program meetings to share experiences across the staff, and we developed a hub in Microsoft Teams that will facilitate knowledge sharing.

Another important effort is our handling of very low safety significance, or VLSSIR issues on the materials side of the house. In 2021 we started an Office working group to draft screening criteria that will let us assess these low risk issues where there's uncertainty regarding the licensing basis. Consistent language on this topic is being added to all inspection programs as part of the update that I described before, and we're including it in our technical assistance request process, which is also being updated.

I'm pleased to say that we've identified a site where it's appropriate to use VLSSIR, because the licensing basis was unclear, and we decided not to expend additional inspection effort due to the very low risk. This was the first application of VLSSIR concepts in the materials program, and it's just one way that we're applying risk insights to our everyday work. Next slide please.

In summary, I'm reporting on a year that had many successes. We met all of our safety and security performance metrics, and had no significant event trends. We successfully conducted licensing, oversight, and IMPEPs during COVID, and we're starting to come out the other side with good recommendations for the future. We continued to improve consistency and guidance across all NMSS business lines with a OneNMSS approach.

And finally we demonstrated our continuing investment in

innovation, knowledge management, and risk informing across all of our program areas. You've seen some of those sprinkled throughout our slides from seminars to dashboards to new processes. Thank you for your time, and I'll turn it over to Phil McKenna now to talk about the reactor program.

MR. MCKENNA: Thank you, Theresa. Good morning Chairman and Commissioners. I'll be discussing the results of the 2021 reactor oversight process self-assessment, plans for the 2022 ROP self-assessment, the status of the ROP during COVID-19 pandemic, and the trend in green ROP inspection findings. Next slide please.

The purpose of the ROP self-assessment program is to evaluate the effectiveness of the ROP each year and to gather lessons learned to continue to improve the ROP. For 2021, the results of the ROP self-assessment program are documented in SECY-22-0029. There are three elements to the ROP self-assessment program color coded in the bullets on the slide. The first element in green is to measure regional and program office effectiveness, and uniformity in implementing the ROP. The second element in blue, is to assess the effectiveness of the recent ROP changes, and evaluate the NRC's response to significant licensee events, or declining licensee performance. And the third element in black, is to perform focused assessments of specific ROP program areas including the baseline inspection program.

In 2021, the staff assessed three ROP performance metrics as red, all due to the ongoing COVID-19 pandemic. These three ROP performance metrics, resident inspector objectivity, inspector objectivity, and performance reviews, and fully qualified inspectors were also assessed as red by the staff in 2020.

Since the cause of these red metrics was clearly the result of decisions to protect NRC staff while providing oversight amidst the pandemic, the staff does not plan to take any immediate actions related to these metrics while the COVID-19 pandemic is ongoing. These areas are relatively short-term program impacts, which are expected to fully resolve, that is the metrics will return to green once the ongoing pandemic impacts are no longer as significant.

The staff also performed an effectiveness review of the change to the definition of column three of the ROP action matrix, and in a technical review of the very low safety significance resolution process. In 2021, the staff performed a five-year comprehensive baseline inspection program review. I will say more about this review on a future slide. The staff paused the continuous baseline monitoring program in 2021 in order to bring the program into alignment with the capabilities available ROP data sources. However, baseline inspection procedure leads of these were still responsible for maintaining their assigned procedures and reviewing inspection findings, hours, trends, and issues for their procedures. In 2021, the staff did not issue any deviations from the ROP action matrix. The last ROP action matrix deviation was in 2015. Next slide please.

The three elements of the ROP self-assessment appear again here reflecting staff plans for the program in 2022. Items specific to the 2022 ROP self-assessment plan include a review of significant determination process timeliness, as related to the ROP metric. An audit of Region I's implementation of the ROP. Effectiveness reviews of the incorporation of safety culture into the ROP, and of recommendations for ROP improvement from the IP95003 lessons learned reviews for both Arkansas Nuclear One in

2017, and Pilgrim in 2018. Next slide please.

During the COVID-19 pandemic, the ROP continued to provide oversight of the nation's nuclear power plants, while taking precautions to minimize exposure to COVID-19, we conducted both on-site, and remote oversight activities at operating reactors during this pandemic. For 2021, the NRC inspection staff were able to complete the entire ROP baseline inspection program. Next slide please.

Throughout the evolution of the COVID-19 pandemic, the NRC staff has been identifying lessons learned and making recommendations to incorporate those lessons learned into the oversight program. In January 2021, a 17 member NRC team issued a report that identified COVID-19 lessons learned and best practices, and made recommendations to improve agency readiness for future emergencies and non-emergency conditions. As part of this effort, the team performed a survey of internal NRC stakeholders. The team concluded that the oversight of nuclear power reactors during the pandemic was appropriate considering the circumstances.

The 2021 comprehensive baseline inspection program review continued to build on conclusions of the initial COVID-19 lessons learned report. This was the first baseline inspection program review under the revised ROP self-assessment program. The review focused on baseline lessons learned from the COVID-19 pandemic, and flexibilities to complete the baseline during a future pandemic, or other emergent circumstances precluding on-site access.

The comprehensive baseline inspection program review recommended a revision to inspection guidance to provide the option to credit digital media in lieu of direct observation when conditions preclude site

access, and to document as part of knowledge management, COVID-19 pandemic best practices, including resident inspector assistance, maximizing digital media quality, interfacing with the licensee, and team inspections.

The staff is currently conducting a follow-on review of lessons learned, best practices, and challenges that is considering the additional experience gained from conducting inspections during the pandemic. This review includes engagement with external stakeholders, and explores the impact of the increased flexibility used during the COVID-19 pandemic in the inspection program in order to identify potential enhancements to the program for both emergency and non-emergency use. This team also includes a staff member from the Office of Nuclear Material Safety and Safeguards to coordinate efforts between the ROP and nuclear material oversight activities. Next slide please.

The average number of findings decreased by approximately 1.5 findings per site each year from 2015 through 2020. However, in 2021, the ROP had approximately 5.2 findings per site, which was slightly higher than the 4.4 findings per site issued in 2020. The staff continues to monitor and evaluate trends in inspection findings to identify any potential impact from the COVID-19 pandemic. However, any trends from the pandemic may not be evident until a few years of findings that are available after the pandemic ends. This includes the increase in findings in 2021.

Previously discussed possible drivers of the decreasing findings trend may still be factors in the inspection finding screening process. Particularly, increased NRC management oversight of the issue screening process; increased licensee engagement in the finding process; training for inspectors and updated guidance on back fit; cross regional panels to review

panels and decision making; and updated guidance and inspector training on the minor, more than minor threshold.

Breaking a number of findings out by quarter, it's possible to see how the COVID-19 pandemic may have had an impact on a number of inspection findings in 2020, driving it lower than it otherwise would have been before the process started to rebound in the second half of 2021, as vaccines became widely available, and most on-site inspection activities resumed.

Analysis of a variety of indicators of overall industry performance over this time suggests that while there has been some improvement in industry performance in certain areas, it is not at a level that would explain a nearly 70 percent drop in findings. The NRC staff continues to take appropriate actions in response to licensee performance. The staff will continue to monitor and analyze any future trends and findings. Next slide please.

In summation, the results of the 2021 self-assessment show that the ROP is effective after more than two decades of implementation, and reaching the goals of being objective, risk- informed, understandable, and predictable, as well as in supporting the agency's strategic safety and security goals in the NRC's strategic plan to ensure the safe and secure use of radioactive materials.

The ROP self-assessment program is still actively seeking feedback from all stakeholders, internal and external, with the goal of further enhancing and continuously improving the ROP. We now turn to Vic Hall and Marissa Bailey.

MS. BAILEY: Thank you, Phil. Good morning, Vic Hall and I will be briefing you on the construction reactor oversight process, or

CROP. Specifically, our oversight of construction at Vogtle Units 3 and 4, currently the only plant under the CROP, our plans for the transition to the ROP, and our efforts to capture lessons learned. Next slide please.

Vogtle 3 and 4 construction has been going on for more than ten years now, with Unit 3 construction expected to be completed this summer, and Unit 4 about a year behind. To date, NRC has performed about 49,000 hours of direct inspection at these units. And throughout this past decade, the CROP has ensured strong and effective oversight of Vogtle 3 and 4 construction, including in calendar year 2021, which was a year of firsts for the CROP. In 2021, there were no CROP action matrix deviations. Also, we met all performance metrics, except one. This metric involved reopening two previously accepted ITAAC closure notifications, because we discovered that certain in-core instruments could not be tested in their as-built location as required by the ITAAC, unless fuel was already loaded, which would first require a 10 CFR 52.103G finding. To resolve this discrepancy, the licensee submitted a license amendment that provided a basis for removing the as-built provisions from the ITAAC. NRC staff approved this amendment, and then conducted an extended condition review of all remaining ITAAC, and found no cases where an ITAAC could not be completed as required.

Thus, although we missed the metric, staff's actions demonstrated their proactiveness and willingness to challenge themselves in interpreting ITAAC language for the first Part 52 plant. Next slide please.

Regarding licensee performance, in 2021 we determined that Units 3 and 4 were being constructed in a manner that preserved public health and safety. At the end of the assessment period, Unit 3 was in the regulatory response column because two inspection findings had low to

moderate safety significance, or were white. Those findings are now closed, and I'll discuss those in the next slide. Unit 4 was in the licensee response column because all inspection findings had very low safety significance.

Also in 2021, Units 3 and 4 had 21 findings with cross cutting aspects in the performance, thus crossing the threshold for a cross cutting theme in that area. However, we determined that a substantive cross cutting issue did not exist, because this was the first occurrence in the cross cutting theme for the licensee, and it was not repetitive performance from the previous assessment period.

The licensee has entered this issue into their corrective action program and will continue to monitor their progress in addressing this cross cutting theme. This was the first occurrence of a cross cutting theme in the CROP, and we are now evaluating any lessons learned from this. Next slide please.

In November 2021, NRC issued two white findings to the licensee after a special inspection at Vogtle 3 and 4 on cable separation non-conformances. This was the first instance of having a CROP where we've issued greater than green findings. And that whole effort demonstrated that the CROP's significance determination process provided the evaluation tools and flexibility needed to get us through the risk-informed, predictable, and repeatable outcome. As a result of the two white findings, Unit 3 was placed in the regulatory response column. And in March 2022, Region II conducted a supplemental inspection using, for the first time, the CROP supplemental inspection procedure. We found the procedure to be adequate, and we were able to verify that the licensee understood the full cause and extent of the issues, and that their corrective actions were sufficient. Thus on April 1, we

were able to close the white findings, and return Unit 3 to the licensee response column. Next slide please.

Upon positive 52.103G decision, the licensee will transition to the ROP. And in anticipation of the licensee completing all Unit 3 ITAAC by this summer, we recently conducted a final assessment to evaluate the licensee's performance for placement in the ROP action matrix. First, we evaluated all open findings, specifically any greater than green findings for input into the licensee's placement in the action matrix and there are currently no open greater than green findings at this time. Next, we reviewed the open violations to ensure that we had a clear path for closing all ITAAC violations before 103G. We also reviewed all open allegations to determine potential ITAAC impacts and to ensure we had a plan to disposition them before a 103G finding. And then finally we determined the team inspections that the licensee will receive during the first 12 months in the ROP, and when the performance indicators will become valid. Based on the information reviewed, we concluded that the licensee would transition into the licensee response column, or column one. However, if any issues are identified between now and 103G, we will reconvene to discuss how that new information may change this conclusion.

The final assessment results will be captured in a letter to the licensee and communicated to them shortly before the transition to the ROP. So overall, the staff is focused on activities to support a timely 10 CFR 103G finding for Unit 3. At the same time though, we are looking beyond that by planning for the transition to operations and capturing lessons learned. And I'll now turn over to Vic Hall to discuss these two topics. Thank you.

MR. HALL: Thank you, Marissa, and good morning

Chairman Hanson, good morning Commissioner Baran, and good morning Commissioner Wright. I'll apologize up front for going off script from a traditional AARM meeting, which looks backwards at the year's performance. But I'd like to draw some of your focus forward, as we near a significant regulatory milestone for the first new commercial nuclear power plant in over 30 years, and the first plant licensed under 10 CFR Part 52.

I don't know how you can plan for the future without knowing your history, so in preparation for today, I reached out to our NRC historian, Thomas Wellock. He shared some fascinating insights into what the atmosphere was like when the Atomic Energy Commission approved the power reactor license number one at Vallecitos under 10 CFR Part 50 in the 1950s.

He shared the sense of excitement, but also the recognition that Part 50 was not perfect, having been modeled at least in part on a two phase process for radio transmission and broadcast facilities dating back to the Federal Communications Act of 1934. The sentiment back then was of newness and excitement, and a sense that we'll figure out Part 50 after the first hundred or so reactors.

Drawing parallels to Vogtle, we share the same sense of excitement, but 10 CFR Part 52 is now 33 years old, and as we complete it for the first time, it doesn't feel new. We know what to expect, and we are prepared for a smooth transition to operations. In 2014, two years after the NRC issued the combined license for Vogtle, we published a detailed transition plan with over 20 readiness issues.

In 2017, we revised our transition plan in preparation for the reorganization of the Office of New Reactors and the Office of Nuclear Reactor

Regulation. And most recently in 2020, we updated our plans to capture Commission direction on taking the passive features of the AP1000 design into account for the reactor oversight process.

The work of hundreds of NRC staff members who have contributed to rulemaking, licensing, and inspection over the last 33 years have brought us to where we are today. We are excited and we are ready for the safe operation of the first ever Part 52 plant. Next slide please.

As the agency looks forward to small modular and advanced reactors, we have a responsibility to capture the lessons learned from construction oversight. We want to be an organization that will continue to evolve, and grow, but ensuring that is no trivial task. I read a study recently by the corporate executive board that only one out of every ten organizations is able to successfully build a learning culture that is prime for innovation. The reason according to the study, is that organizations are just too busy, and busy is a very good way to describe our work today, inspecting and verifying ITAAC with deadlines, meetings, and by the way, COVID certainly hasn't helped. Despite that, we have been deliberate about carving out time to capture lessons learned. Last year, we issued a charter for the lessons learned initiative to critically evaluate our performance from the past decade. We are leveraging existing resources such as NRC's Nuclepedia. And we are planning extensive stakeholder outreach after the first 52.103G finding through public meetings, and workshops. While I'm looking forward to hearing feedback from our diverse stakeholders, I'll share a couple of early lessons learned that stand out to me at this stage of construction.

First, a positive. The Vogtle Readiness Group has been incredibly helpful, and successful at sharing information across the agency,

allowing us to make sound safety and regulatory decisions in record time. This has been evident in our performance in reviewing licensing actions. Thanks to the Vogtle Readiness Group, we have completed reviews in half the time that is routine, which has been critical for matching the dynamic pace of construction, all while maintaining the same high standard of safety.

A second lesson learned is an opportunity to improve. The staff has been challenged working with very prescriptive regulatory language, especially in the ITAAC. Marissa mentioned our ITAAC metric this year, and that is a very good example. If you translate that ITAAC into plain English, or at least engineer's English, it was for tests on in-core instruments that are installed after fuel load. And yet you need to complete those tests before authorizing the fuel load, creating a catch 22. If I can share, or find a silver lining from that example, it's that when we have been confronted with questions of compliance versus safety, our exceptional engineers, inspectors, attorneys, project managers, and all of our Vogtle Readiness Group contributors have found regulatory solutions that continue to prioritize safety, consistent with our principles of good regulation.

I am tremendously proud of what our teams have accomplished, and proud that we continue to make safe use of nuclear technology possible. Thank you for allowing me to share my excitement about the past, present, and future, and with that I will hand the virtual microphone back to Darrell.

MR. ROBERTS: Thank you Vic, appreciate that. And in closing, I'd like to thank all the Office Directors and Regional Administrators for their active engagement in the discussions at the AARM, and especially appreciate the tremendous staff efforts developing the data that informs our

discussions, and for coordinating the AARM, and supporting this Commission briefing.

The discussions at this year's AARM reaffirm that the agency's completed and planned oversight activities are consistent with our oversight processes, and appropriate for the safety, and security, performance of our licensees. And that those oversight processes continue to remain effective, and support our agency's strategic goals of ensuring safe and secure use of radioactive materials, and to inspire stakeholder confidence in the NRC. Finally, I want to take a moment to say thank you to all the inspectors out there on the front lines of our agency mission. We appreciate your contributions always, but especially during the COVID-19 pandemic, and the changing, and sometimes challenging conditions. Thank you for your time and attention, and we are now ready to respond to your questions.

CHAIRMAN HANSON: Thanks very much, Darrell, and thanks to everyone for your presentations. We're going to begin our questions this morning with Commissioner Wright. Commissioner Wright?

COMMISSIONER WRIGHT: Thank you, Mr. Chairman, and good morning to everybody, and thank you for the presentations. And to each of you, again, thank you for your continued dedication to the mission, your willingness to innovate and to be flexible, especially during this whole pandemic. For me personally, one of the biggest challenges is not being able to see people, or to meet with staff or licensees in person. So, I can imagine for many of the staff, not being able to be together, or see each other probably makes you feel a little bit like you go unnoticed sometimes. But I want you to know from where I sit, and I'm sure that the Chairman and Commissioner Baran would agree, that’s not the case. What you do matters, and it is

noticed. I mean from inspectors, to admins, to operating licensee examiners, to license reviewers, managers. You're all part of the body, you all are a key part of meeting our mission. And I just want you personally to know that. For me, I'm excited for more opportunities to be together in person. I was just out at Region IV for the first time in a couple of years, and I can't wait to get back out for more trips like that very soon. And with that, I want to go into some questions here, in the time that I've got.

Theresa, thank you for your discussion on the insights you've gained, and the success stories as well. I'm very interested in the use of data analysis and data visualization via dashboards. Can you talk to me a little bit more about the NMSS data foundation and how it uses the dashboards to improve data driven decision-making?

MS. CLARK: Thank you, Commissioner Wright for that question, and for the opportunity to highlight something that I'm really proud and excited about. This is an activity that's been going on in our office for more than a year now, and there's a little bit in a pun of the title of the data foundation if you will, because we really see this data, these dashboards, and the other data sources that we have as providing the foundation for good decisions.

So, what we were doing last year, perhaps when we spoke to you, was ensuring that we had all the data that we needed in the right place. We made sure that every business line was putting their information into our web-based licensing system; putting information into our agency's data warehouse, so that we could pull it out when we needed. And now we really have things to show for that data.

So, a few examples of that. I mentioned the large number

of dashboards that we've put out already. These are in active use all the time. Some that really spark to mind are ones that we've created for the regions to look at our materials licensing and our materials inspection data, and do a couple of things. So, for example in licensing space, the individual supervisors in the regions can see everything that's assigned, and when it's due, and make decisions about how to assign work, and make sure that the workload is level, and that we're meeting our milestones. In inspection space, and particularly as we're coming out of COVID, they can see the shape of the curve basically, of what inspections are coming due, and make sure that we get the high priority inspections done on time, and all the inspections done on time.

And seeing that visual saves us a ton of time of having to pull out information from WBL. And just kind of on that point of saving time, another set of dashboards is used for speeding up our interactions as a team. Where we used to have to pull information from lots of systems, and create spreadsheets for ourselves to be able to answer what might seem like a simple question, now a simple question can have a simple answer. And that informs other decisions, you might not make a dashboard decision the second that you're looking at that dashboard, but you don't have to slow yourself down to get the information that you need to make a decision, so I hope that helps answer that question.

COMMISSIONER WRIGHT: It does, and just to maybe get a little bit more, one more question on that. I know that there are other offices, like NRR, and other corporate offices that have been using dashboards and data to inform decision making. Did NMSS coordinate or collaborate with any of those offices in setting up this foundation?

MS. CLARK: Yes, very much so. Our cooperation with every office that you mentioned is well in place with EMBARK, and NRR in particular. We have a special agreement that we signed together, to say how we're going to share information, and use their development resources. They have tools that we don't have, and we don't need to buy because they have them. And so, our dashboard developers meet on a weekly basis to prioritize the list of dashboards that EMBARK is helping us out with. And if we've already created something for ourselves, then they don't need to. So, there's a lot of sharing across the whole dashboard community at the agency, not just NMSS.

COMMISSIONER WRIGHT: That's great, thank you so much. So, let's turn to Phil, I'm going to come to you for a second. I wanted to touch a bit more on some of the ROP self-assessment activities. You noted there's a plan to review the significance determination process timeliness, and I guess especially as related to the ROP metrics for potentially greater than green findings.

So, I was hoping you can tell me a little more about this assessment, and how it might be different from previous efforts. For instance, my understanding is the inspection finding review board was an initiative that could address these timeliness issues. Is that process no longer effective?

MR. MCKENNA: Thanks Commissioner, for that question, yes, I can address all those. So, we still have the inspection finding review board and process, it's still doing as it was intended. What we've been noticing though is that for the metric for SDP timeliness is we're always either in the yellow area for it prior to revised it in 2020, we were yellow, we were

red. So, we're always bumping up against the timeliness. Back in 2020, we combined two SDP metrics for times into one for 255 days to come to a final significant determination on an issue. So, what the timeliness review is planning on doing is figuring out what the right type of balance is between making the best available decision based on the data we have and allowing the licensee to provide time for their risk determination input. We'll also look at hey, is 255 days the right amount of time? Should there be any stoppages in that time for things that are out of control in the inspection process? So, to answer your question Commissioner, the IFRB is still doing as intended, it does provide what we need for the SDP metrics that we've realized that coming up against that 255 days a lot, we need to take a look at it.

COMMISSIONER WRIGHT: Okay, I'll stay with you for a second here. You mentioned the staff performed an effectiveness review of VLSSIR process, and I've heard mostly positive feedback from stakeholders about it, and I'm glad to see that VLSSIR's being expanded, especially in the materials program. Can you share a bit about the results of the effectiveness review? Is the process resulting in what was intended and expected?

MR. MCKENNA: Yeah, thanks, Commissioner. So, when we developed the very low safety significant issue resolution process, and implemented it in the beginning of 2020, we decided right away hey, we're going to do an effectiveness review after one year to make sure that it's doing what we intended. We didn't want it to be used a lot of times, and we didn't want it to be not used at all because there would be problems that we haven't gotten the point of the process over to the inspectors. So, what the effectiveness review did, it did determine that it is a good process for allowing the closure of very low safety significant issues that we'll have to spend a lot

of time determining the licensing basis on. It was used nine times in 2020, four times in 2021, and currently two times in 2022, which when we developed the process back at the end of 2019, that's kind of what we expected. Not used too much, but it should be being used, because there is issues out there that inspectors would spend a lot of time on trying to determine the licensing basis, and they're of very low safety significance.

Just like any new program, we are constantly evaluating it. And in fact we're going to make a change to the procedure here that would realize the issues that could spring into traditional enforcement if they were carried through, if they would be severity level four, then the very low safety significant issue resolution process could be used for those issues also.

COMMISSIONER WRIGHT: So, two more follow ups on this real quick, and maybe you can answer them for me in the time that I've got left. Speaking of changes or improvements being considered to the process, are there any that could maybe -- changes that are being considered that maybe Theresa or NMSS could use going forward? And the second question is did the review assess whether VLSSIR is being implemented consistently across all four regions? And if not, are there are some insights you can share?

MR. MCKENNA: Sure. So, as far as the VLSSIR process and NMSS, we have coordinated with NMSS in the implementation of their program. In fact, the initial working group when we did this, back in 2019, had a person from NMSS on the working group. And as far as the consistently across the region aspect, I think the data, we have a very small sample set of data. That's one of the things we need to evaluate as we go forward in the VLSSIR process.

COMMISSIONER WRIGHT: Okay, thank you so much. Mr. Chairman, I think I'm over time.

CHAIRMAN HANSON: Don't worry, Commissioner Wright, without those little timers at the table there, I think there's no problem there at all. We've got lots of time this morning. Thanks again to everyone, thank you, Commissioner Wright for your questions. I want to take this opportunity to recognize the staff for its ability to adapt our oversight programs to the pandemic challenges while maintaining reasonable assurance of adequate protection of the American public and the environment. And staff, I know, continues to adapt these lessons learned from the pandemic experience. And I think Theresa, I wanted to start with you, and can you kind of briefly share some specific initiatives, audit or assessment recommendations that are underway to kind of enhance the oversight framework based on a kind of set of lessons learned from the pandemic?

MS. CLARK: Thanks, Chairman, for the opportunity to respond to that question. So, we had a couple of different assessments as I mentioned of how we did in the materials program during the pandemic. There's the IG assessment, as well as our internal staff assessment. And I think overall, I'd say we did pretty well considering all the challenges that our staff had to do in adapting to the requirements of individual licensees, and their own abilities to travel, and that sort of thing. So, I'm really proud of how we weathered that, and that's sort of message number one. The recommendations really fall into a couple of categories, one of them is really about documenting what we learned in case we have to go through this again. And so we are putting together, and we already have some information in one of our business lines, inspection programs. But we're trying to make a

consistent short set of guidance available to all of our business lines to say when we're approached with this sort of emergency situation, and it won't be this sort of emergency situation, we don't know what to expect, but what did we learn, and how can we make sure that we can jump into that with both feet, and have some guidance already prepared for our staff when they can't work in the office for example. So, we're preparing that, and we'll be incorporating it in each of our inspection programs consistently.

Another sort of bucket of things has to do with web-based licensing and making sure that that is ready for everyone to use - both us and the Agreement States - and making sure it's used consistently. So, we're doing some tweaks to that system this summer and updating it, updating the guidance so that that continues to be useful. We found that so important, having a web-based system where we could do everything online during the pandemic. It avoided us needing to come in and deal with piles of paper, and print out a materials license on a piece of paper, we don't need to do that anymore. And then the rest of it is kind of lower detailed information. How do we define the word hybrid for an inspection? What do we define as a remote inspection? And agreeing on that across the agency is a really high priority for us, so that we don't mean one thing, and NRR means another thing when we say those words. And so, we have working groups working on that right now.

CHAIRMAN HANSON: That's great, thank you very much. So, one of the other things I think you mentioned was this, the OneNMSS approach. And we're still in a hybrid work environment, and can you talk about how that hybrid work environment, or what impacts if any have had on achieving the coordination, kind of integration, coordination goals under

OneNMSS?

MS. CLARK: Thank you, Chairman. So, the hybrid work environment is here to stay, and we're learning every day how to do it. I'm here in my office, but joining you by Teams, and I think what's really important about the OneNMSS approach is doing it, in short. Reminding everyone that we should do things consistently. If there's no good reason for fuels to do things one way, and materials to do things another way, and decommissioning to do things a third way, why should we do that? Because that's very confusing for the inspectors in the field for example, who inspect across all of these programs, or certainly for our partner offices who deal with us on a variety of things.

So, it's really a communication opportunity for us to say these are our expectations. And sure, if there's a good reason to do things differently, that makes sense, but it should be explainable. And to take it back to the hybrid work environment, I think it just ties in, because so much in that environment is communications. Making sure that we have the right ways to talk to our partner offices, whether that's through recurring meetings every other week, like we have in the materials program, we have a Teams site called OneNMSS for our Office where we share messages, it's kind of like a newsletter for us, there's some fun stuff in there too. But when we put out announcements, everybody sees the same announcement.

And I've also seen people from our partner offices jumping into that site, so they can see what we have going on. So, that's very useful, but we just have to take an across the board approach to communicating with people and sharing that this is the expectation, because we want to leverage their great ideas across the board wherever we can.

CHAIRMAN HANSON: That's great, thank you very much Theresa, I love that. The key thing is just to do it. It sounds easy, but I know there's a lot of work that goes on behind the scenes, and there's a lot of effort, and a lot of communication that goes on there too, so thank you.

One of the things I want to -- I would like to switch gears a little bit, and kind of turn to Marissa and Vic, and just thank you both for your leadership and all of the Vogtle Project Offices and the Division of Construction Oversight staff focused on ensuring the safe and secure construction of Vogtle Units 3 and 4. I really appreciate the staff's continued efforts to implement Part 52, inspect test analyses and acceptance criteria for the infamous ITAACs and that process, and provide effective oversight of licensee activities through construction oversight and inspection programs.

While as Theresa mentioned with NMSS, adapting to the public health emergency, and all of this stuff. Vic, I guess because you are the one who is looking forward, I think maybe this question is for you. Can you give us a sense of -- we've been really focused on 103G, and getting to that 103G finding for Unit 3. So, can you kind of just give us an overview of the NRC's activities after 103G, and leading up to commencement and commercial operation. And the kinds of activities that we're going to be overtaking from an oversight perspective there.

MR. HALL: Absolutely Chairman, and thank you for the question, and thanks for the recognition for the Vogtle Project Office and Division of Construction Oversight staff, who are just fantastic people, and we are a people, we are flexing them, so I'm happy to take credit for all of the work they're doing today, and all these wonderful things, but it's really all of the work they've done.

And that will continue post 103G. We have a plan in place that is outlined in that 2020 transition memo that talks about the activities that the staff will be doing, let out of the Division of Construction Oversight, who will continue inspection, through startup, and as they load fuel, with the start up, and all the low power such, and testing, and all the activities to get them to commercial operations.

So, we planned out, sketched out having the Division of Construction Oversight maintain those inspection activities up until Unit 4, which is a milestone. And similarly, the group at headquarters that does the licensing, the Vogtle Project Office, will continue to be the project management organization in charge of Vogtle 3 and 4, until Vogtle four fully transitions.

As we're doing that though, we're starting to loop in all of the standard parts of the agency. So, the Vogtle Project Office is starting to work with the Division of Operating Reactor Licensing, and we're starting to meet with those groups to bring it all together, so that we can have a smooth transition to those organizations as we get zeroed out in the budget, and go on our merry way.

And similarly, I know that the Division of Construction Oversight is doing the same thing. So, we're obviously very focused on 103G. It's the first ever, and there's a lot of excitement, but we're not blind to the fact that there's a lot of work that happens the day after. And that's the piece that we're also preparing for and ready for. And Marissa can probably talk a little more eloquently about the work being down in Region II, as they prepare as well. But it's certainly a sense of excitement that does not stop after 103G.

MS. BAILEY: So, thank you, Vic, and as Laura Dudes

likes to say, the RA at Region II, 103G is a point in time, it's an important regulatory milestone, but the day after 103G, inspectors are going to get up, go to the site, or go to the headquarters office, and continue to do inspections. There's going to be startup testing, there's going to be operational readiness, things like that.

So, we're going to continue to do work to provide the appropriate oversight to get it through commercial operations, and that's for Unit 3. And then for Unit 4 we've still got all of those activities to complete.

CHAIRMAN HANSON: Okay, good, all right. Well thank you, that's really helpful, and thanks again to both of you, and the whole team. With that, I will hand it over to Commissioner Baran.

COMMISSIONER BARAN: Great, thanks. Well, thank you all for your presentations. During past agency action review commission meetings, we've discussed the steep decline in NRC reactor inspection findings over the last several years, so mentioned the nearly 70 percent drop in findings. I appreciate that the staff is focused on this issue, and has been analyzing the potential contributors to this trend.

It's been challenging though, I think, to figure out what is driving this trend with any real certainty or analytical rigor. At the same time, the agency's use of data and data analytics is ramping up. Phil, what's the staff's thinking about whether new data analytics tools will help us to better understand what's driving this downward inspection finding trend?

MR. MCKENNA: Thanks, Commissioner. So, I think the tools that we have on our operating experience hub are fantastic. We have different models that show real time SCRAM trends, pull all the data off of RPS for inspection data, so we can see samples being completed. And then we

have an input from the industry on all equipment failure. So, we have a lot of data that is real time, that we can go and see how that compares to what we're reporting in our findings.

And in fact on those modules we have real-time data on when a finding gets issued. Most of the findings get issued at the end of the quarter, but it gets populated as the findings get issued. The one thing we don't have data on, and it's probably one of the bigger drivers in inspection finding, is the more than minor criteria. We don't track data for when a decision is made for when an issue is not more than minor.

That doesn't mean that that issue's not important, and that it doesn't get fed back to the licensee. When an inspector finds an issue that's not more than minor, he tells the licensee about it, the licensee has to place it in its corrective action program, and the licensee has to take some corrective action. So, we have a lot of good tools in the OpE hub there's just some data we don't collect. So, that will not help us in evaluating and finding trends.

COMMISSIONER BARAN: Okay, that's helpful. I had a similar question about potential reactor oversight process changes. How is the staff using data analytics tools to help inform the safety cases for any potential ROP changes?

MR. MCKENNA: Thank you for that question, Commissioner. So, the same data source is available to the inspectors and the headquarters staff who evaluate the inspection procedures for changes. In fact, we made a change to the reactor program system last year where we can see real-time, or the inspection procedure leads can see real time what samples are being done out at the resident offices and the team inspections

at the region.

So, the inspection leads can see hey, if there's inspectors that are concentrating on this one area, maybe we need to shift focus a little bit and consider changing the amount of inspection hours in that inspection procedure. It's going to take a little bit of time to develop, because it takes a lead time to see if there's a case to change the hours. But all that data is available to both the inspectors, and the IP leads, and it's very good data.

COMMISSIONER BARAN: Thanks, Phil. Let's turn to the February 3rd, 2021, event at the National Institute of Standards and Technology, or NIST test reactor. NRC inspectors found that the NIST operators did not follow technical specifications for refueling and did not have adequate procedures for emergency response refueling, or reactor startup. Moreover, NIST management did not provide the equipment, procedures, and training necessary to support safe operation.

These deficiencies led directly to a violation of the technical specification safety limit for fuel, and ultimately to the partial melting of nuclear fuel. I would have thought that this type of event would be covered at today's meeting. However, the staff's current screening process for the agency action review meeting does not consider research or test reactors like the NIST reactor. That seems like a gap that should be corrected. Darrell, or whoever makes sense, is the staff planning to address that gap in the screening process?

MR. ROBERTS: Thank you, Commissioner, I'll take that one. The staff is aware that the Management Directive that governs this process does not explicitly include or exclude research, and test reactors such as the reactor at NIST as a part of the agency action review meeting process.

But the staff is considering a possible revision to Management Directive 8.14 to clarify the applicability to categories of licensees like this that are not explicitly delineated there, but perhaps for clarity purposes, we could enhance the procedure, or the directive by adding some specificity, or some specific references to non-power production facilities, small modular reactors, advanced reactors, research and test reactors, spent fuel storage installation. All of these things that are not explicitly referenced in the procedure, but could -- we obviously could benefit from assessing that under this process.

I will add though, Commissioner, that the agency is still able, and as you are aware, we have taken the appropriate regulatory oversight steps for this licensee, or any other licensee based on their individual performances. And we're not precluded from taking whatever enforcement, and other lessons learned activities that we need to take as a result of that performance, or to ensure that the safety performance continues the way it should. So, we are looking at that management directive for that potential consideration.

COMMISSIONER BARAN: Great, thanks, I look forward to seeing what the staff comes up with there. I want to ask about the resident inspector program, which is an essential part of NRC's safety oversight of nuclear power reactors. There's been a lot of focus on resident inspector, and senior resident inspector recruitment and retention, because these positions are so critical. Are we starting to see positive results from the new efforts to retain, and recruit resident inspectors?

MR. ROBERTS: Thanks, Commissioner, I'll take that one, too. As you are aware, we have approved a number of retention initiatives for resident inspectors. We've also developed a dashboard that was

discussed earlier that brings to one place a number of elements that we can monitor to monitor the health of the resident inspector program. That dashboard was just shared with residents last week. And other efforts are in the process of being implemented. So, I would offer that it's probably too early now to make a sweeping assessment of where we stand with respect to retention. I know that from personal, from my own oversight of the regions in my current role, I've heard some stories of where we're starting to see some attrition at the resident inspector ranks.

So, we're going to have to really stay on top of the staffing of our resident inspector development program, as well as the promotion of people into senior resident positions based on some upcoming gaps that we're expecting to see, or some upcoming vacancies I should say, that we're expecting to see in those ranks. I don't know that we can draw from that any hard conclusions or sweeping conclusions about the effectiveness of our initiatives to date. With the establishment of that dashboard that I mentioned, and some longer term monitoring using the dashboard's data as a baseline, and then looking in subsequent years, we'll be able to make a broader assessment of that.

COMMISSIONER BARAN: Thanks, Darrell, and I think you're right, this is really going to require some sustained focus, it's not an issue of taking a couple of steps, and assuming that's going to get it done, we're going to have to have this as a focus area I think, in the years to come.

Marissa, and Vic, thanks for the discussion of the construction oversight lessons learned initiative. As the oversight of the construction of Vogtle winds down in the coming months, we're going to have a period where there isn't any active nuclear power plant construction in the

US. But then we may see future construction of small modular reactors and advanced reactors. How is the staff planning to ensure that NRC retains the capabilities we'll need to oversee future reactor construction?

MS. BAILEY: So, thanks for that question, I'll start, and then I'll ask Vic to chime in. So, we are implementing multiple strategies to ensure that we're maintaining our construction oversight expertise. I think first and foremost, we want to make sure that we retain the current talent that we have. So, recognizing that in a couple of years the Division of Construction Oversight will probably draw down.

Over the last few years, Region II has certainly made it a priority to ensure that our construction inspectors have meaningful assignments after Vogtle construction is complete. So, partially we've used a select now, place later approach, so that our inspectors know where they're going to be going after Vogtle is complete. And also have been actively encouraging our inspectors to cross qualify, and qualify for other inspection areas.

We're also actively looking for opportunities now to use them in other projects that can leverage their construction expertise, such as the development of new construction inspection programs for ISFSIs, for fuel facilities, and even for new reactors. So, that's the first thing.

Second, even though this year is drawing down, as a region, we're recognizing that there will be future construction. We're also bringing in new talent. So, most recently, we brought in an NRAN graduate, and the Chairman had the opportunity to meet him at Vogtle a few weeks ago. So, we brought an NRAN graduate training them in construction oversight, partnering them with experience, and seasoned construction inspectors, so

there is that firsthand knowledge transfer.

Third, Region II is working closely with NRR, and NMSS partners to stay informed, and be part of the planning for future reactor and fuel facility construction projects. So, this will facilitate our ability to ensure that we have inspection staff that can support anticipated oversight work, and that we understand what that anticipated work is, and when it's going to come.

And then finally, our lessons learned initiative includes capturing construction inspector insights, with an eye on applying them toward future reactor construction. And I'd like to ask Vic to kind of provide more details on that.

MR. HALL: Thanks, Marissa, and thanks for the question Commissioner Baran. So, in terms of lessons learned, if there's other lessons learned I can pull from it -- we don't have a crystal ball. And so being able to predict how long the construction of Vogtle is going to take would be a tough one, and so predicting what the future is going to look like for advanced reactors is equally challenging.

So, it's taking some effort now to think about, as you put it, having the down time to -- well, not down time, but having the time to put together some thought in what the future will look like. So, in the lessons learned space, we've started to work a lot with NRR's Division of Advanced Reactors and New Non-power Production Utilization Facilities, it's a mouthful, DANU, they're new.

But they're the group developing this advanced reactor construction oversight group, and we've been working with them to try to chart what the future looks like, and kind of leverage this experience in light water technology, experience from SHINE, experience from RTRs, and try to get a

feel for what the resources might look like in the future. So, it's early stages for that, but it is a good time for us to engage with them, a good time to try to predict what the future will look like, so we can be best prepared for it.

COMMISSIONER BARAN: Well, thanks so much. It's not surprising to me that you have the situation well in hand. But it's great to hear the level of thinking and thoughtfulness and planning that's going into this, so that we're ready for the future, very much appreciated. Thank you, Chairman.

CHAIRMAN HANSON: Thank you Commissioner Baran, really appreciate it. And thanks again to everyone for your questions this morning, and thanks to my colleagues as always. And also it's good when we can do these things hybrid, and virtual, and there are a lot of people behind the scenes who make that happen. So, I just want to close this morning's meeting by acknowledging the staff around the agency focused on making sure the NRC continues to have robust independent oversight programs for materials and reactors.

There's a lot of attention understandably on the future, things like transformation on nuclear new build, and so forth. But our critical oversight functions is in a lot of ways really the heart of what we do every day. And it is the thing that generates, that I think maintains the trust that the American public has in this agency. So, with that, thank you all to the staff for your service. And we are adjourned this morning.

(Whereupon, the above-entitled matter went off the record at 11:13 a.m.)