UNITED STATES

NUCLEAR REGULATORY COMMISSION

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BRIEFING ON TRANSFORMATION AT THE NRC - SUSTAINING PROGRESS AS A MODERN, RISK-INFORMED REGULATOR

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WEDNESDAY,

JUNE 1, 2022

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The Commission met in the Commissioners' Conference Room, First Floor, One White Flint North, Rockville, Maryland, at 10:00 a.m., 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:

DANIEL DORMAN, Executive Director for Operations

CAYLEE KENNY, Project Manager, Materials Rulemaking and Project Management Branch, Office of Nuclear Material Safety and

Safeguards

TIM MOSSMAN, Acting EMBARK Venture Studio Managing Director, Office of Nuclear Reactor Regulation

ABBY OLARTE, Senior IT Program Manager, Financial System Branch, Office of the Chief Financial Officer

REBECCA RICHARDSON, Chief, Intelligence Liaison and Threat Assessment Branch, Division of Security Operations, Office of Nuclear Security and Incident Response

AIDA RIVERA-VARONA, Acting Deputy Assistant for Operations, Office of the Executive Director for Operations

JEFFERY WOOD, Reliability and Risk Analyst, Probabilistic Risk Assessment Branch, Office of Research

ANTONIOS ZOULIS, Branch Chief, PRA Oversight Branch

P R O C E E D I N G S

10:01 a.m.

CHAIRMAN HANSON: Good morning, everyone. I convene the Commission's public meeting on NRC transformation efforts. The last meeting on this subject was just about a year ago in June of 2021. I think we've got a great set of presentations lined up this morning, and I really look forward to the discussion.

We'll hear from our panel, some of which are here in the room with us in One White Flint in Rockville, Maryland; and the rest will join us online, I understand. We're going to hold questions until the end, and then we'll hear from the commissioners. But before I start, I'll ask if my colleagues have any remarks they'd like to make. Okay.

So with that, we'll begin the staff presentations, and we'll be kicked off by our Executive Director for Operations, Dan Dorman.

MR. DORMAN: Thank you, Chairman, and good morning, Chairman Hanson, Commissioner Baran, Commissioner Wright. Staff are pleased to have the opportunity this morning to highlight the progress and accomplishments that we have achieved during our transformation journey.

As we've discussed in previous meetings, the NRC has been building upon a 2019 Futures Assessment Report, which described four hypothetical future scenarios in which the NRC might be operating in the year 2030 and beyond. That report also flagged opportunities for improving how we do business, regardless of what the future brings.

So building on that report, using information we gathered from various efforts but especially the NRC's Futures Jam that we conducted within the NRC in June of 2019, we identified four focus areas: our people, use of technology, risk-informed decision making, and innovation. These form the basis for our transformation journey, and within these four focus areas we identified eight initiatives and prioritized them to provide the necessary infrastructure to support our transformation journey.

Since then, most of these initiatives have been completed. I'm happy to share with you that we are using the Be riskSMART framework and are more deliberately accepting well-managed risk in our decision making. In addition, we're using technology to work smarter, including using data analytics to highlight areas for regulatory attention and improvement. We are innovating our processes to make timely decisions that take into account different viewpoints and fully explored options. The one area that remains open is our desired agency culture initiative. The Agency Culture Team continues to work towards ensuring that behavioral norms and expectations that align with our leadership model and our vision of being a modern risk-informed regulator are incorporated into sustainable processes that will promote and sustain innovation well into the future.

Then we have worked and continue to work very deliberately to have a skilled, adaptable, and engaged workforce ready for the future that is before us today and out into the years ahead. In addition, we recently issued the NRC's Strategic Plan for fiscal years 2022 through 2026. The strategic plan provides a blueprint for how the agency will plan, implement, and monitor the work needed to ensure the safe and secure use of radioactive materials. The strategic plan also includes a new focus on the agency's efforts to continue to foster a healthy organization and inspire stakeholder confidence.

Taken together, our transformation achievements and the strategic plan goals will help ensure that the agency performs as a modern risk-informed regulator, is prepared for an evolving future, and is able to improve performance and achieve mission excellence in a diverse, inclusive, and innovative environment. And our objectives and key results, or OKRs, will keep us focused on ensuring that we sustain all of the progress we have made over the last few years. Last year's OKRs were focused on keeping our momentum for change going and transitioning our transformation efforts from the Office of the EDO to the other offices. We not only empowered the offices but empowered our staff to propose and implement innovative ideas. Today, we'll be providing some updates on our transformation journey and will discuss a few of the many achievements our offices have been making. Now I'd like to introduce my fellow presenters. Next slide, please.

First, Aida Rivera-Verona, who is currently serving as the Deputy Assistant for Operations in the Office of the Executive Director for Operations. Aida will discuss how we plan on continuing to drive and measure progress through the OKRs, as well as provide some information on the responses to a survey on transformation that was available to our external stakeholders from last September through March of this year.

She will be followed by Tim Mossman who is currently serving as Managing Director for EMBARK Venture Studios in NRR. Tim will discuss how we are using technology to inspire stakeholder confidence in the NRC by engaging stakeholders in NRC activities in an effective and transparent manner using high-quality data and information in our decision-making process. Specifically, he will discuss the external facing Mission Analytics Portal, or MAP-X.

Next, Caylee Kenny, who is a Rulemaking Project

Manager in the Office of NMSS and is currently on rotation in my office, will provide an update on some of the successes we have had with our rulemaking transformation efforts. These efforts are driving towards enhancing the quality and timeliness of our rulemaking products and further strengthening staff and stakeholder engagement.

Caylee will be followed by Becca Richardson, Branch Chief in the Office of Nuclear Security and Incident Response. Becca will discuss how we are effectively applying our Be riskSMART framework to the NRC's security oversight program and ensuring that we continue to achieve our important security mission.

The next speaker, Jeffery Wood, a Reliability and Risk Analyst in the Office of Nuclear Regulatory Research, will be discussing how we are using SPAR-DASH data dashboards to make risk results for operating nuclear power plants accessible to the NRC staff to better support risk-informed decision-making activities throughout the agency.

He will be followed by Antonios Zoulis, Branch Chief in the Office of NRR. Antonios will provide an update on the risk-informed process for evaluations, or RIPE, the NRC's streamlined licensing review process for low safety significance issues. Like so many other things we will discuss today, RIPE is a risk-informed process that helps inform our decision making while still meeting our important safety goals.

And, finally, Abby Olarte, a Senior IT Program Manager in the Office of the Chief Financial Officer, will discuss recent enhancements to the eBilling platform to provide our licensees an efficient and transparent process for understanding and paying their fees. This concludes my introductory remarks, and I'll now turn the presentation over to Aida.

MS. RIVERA-VARONA: Thank you, Dan. Good morning, Chairman and Commissioners. My name is Aida Rivera and for the last two and a half years, I have been leading the futures core team in the Office of the Executive Director for Operations, leading implementation of the overall NRC transformation strategy. Today, I'm here to talk to you about the methodology that we use for measuring our goals, as well as sharing some results of our first external survey. Next slide, please.

The staff selected the objective and key results, or OKR, methodology as a transformation performance management tool, as it has been used by highly-performing organizations to set challenges, ambitions, and aspirational goals with measurable results. OKRs are intended to be time bound, both to motivate near-term actions and in recognition of the fact that organization goals evolve in response of internal and external drivers. The staff has adopted an annual cycle where the EDO establishes the agency OKRs at the beginning of the calendar year, evaluates the progress at the end of the year, and then reformulates the OKRs for the following year based on new goals and priorities.

In 2020, the principal task was the development of transformation-enabling tools and as such, the agency OKRs were largely oriented to drive actions and measure progress towards this outcome. In 2021, the focus was on widespread application of these tools across the agency and the OKRs for this year were reformulated to reflect this aspiration.

In developing the 2022 OKRs, we used the results from the 2021 to set aspirational goals for 2022 that will build and maintain and sustain the progress achieved in 2021. The 2022 agency OKRs are intended to internalize and increase behaviors that will help sustain transformation progress. Our goal is that with routine practice, these transformation behaviors will become a habit, enabling the agency and its workforce to remain adaptable, agile, and able to meet operational challenges in the future. Next slide.

OKR in 2020 were successful in driving and achieving the development of tools and resources to support innovation and improve decision making. We were able to complete significant actions to enable transformation to occur in years to come. Through the innovative team, we were able to issue the Be riskSMART decision-making framework; deploy the IdeaScale innovation platform; deploy the Career Enhancement and Employee Journey tools; and through the technology adoption initiative, had the capability to successfully transition to full-time telework during the pandemic through the implementation of Office 365 and other collaborative work tools. Next slide.

Similarly, in 2021, agency-level OKRs were successful in producing the intended effect of encouraging greater familiarity and application of existing transformation tools across the agency. As a result, the agency experienced the following successes: All offices increased the application of the Be riskSMART framework to support key decision making in the technical and corporate areas. We saw more than half of the 582 successes captured in IdeaScale resulted in process improvements. The continuing implementation of agency-wide office-level culture improvement activities resulted in a modest positive increase in the 2021 Agency Culture Pulse Survey. And we have seen greater development and application of data analytic tools to inform decision-making. Specifically, from a total of 16 key results in 2021, five key results were met and 10 were unmet. Although the agency did not achieve the aspiring goal for 10 of those 10 key results, in each of those we saw great progress in a broader use of the different tools and its relation to achieving our mission goals. Next slide.

One unique aspect that we added to our OKRs in 2021 was to seek external stakeholder perspectives in our transformation efforts. To accomplish and measure this, the staff published as survey to seek external stakeholder perceptions on agency transformation efforts in the areas of risk, innovation, and technology. The survey was a structured so that the external stakeholders can provide feedback regarding how these areas have directly contributed to the agency mission performance, information sharing, quality of decision making, and timeliness of decision making. This survey was open from September 13, 2021, to March 31, 2022. NRC staff received a total of 81 survey responses from external stakeholders who responded to the survey from a broad variety of stakeholder groups and supported different business lines, as noted in this graph. Next slide.

From the review of these responses, we noted that most of the respondents were knowledgeable about the agency transformation efforts. Overall, respondents acknowledged that a lot of progress has been made, but more work can still be done. One of the areas where respondents felt great progress had been made is in the area of technology, with most impact in information sharing. Respondents felt great access to information through our public web pages and through the utilization of millions of archived documents. Respondents also acknowledged improvements in our mission performance in the areas of licensing and rulemaking process. You will hear more about these efforts later today.

On the other side, some other survey respondents are seeking more awareness and understanding on how data analytics and risk information are being used in our decision-making. The staff continues to expand the use of data and risk insights, and we know that we will have opportunities in the future to interact with our external stakeholders on how we are doing this.

Today, you will hear several examples where the staff continues to apply risk insights in different programs and how we are developing tools to better access data that ultimately help our decision making. Next slide.

Using the survey responses, we were able to measure the three external perception OKRs related to risk, innovation, and technology. While we did not meet the 75 aspirational target, the survey results provided NRC staff with useful information and will serve as a baseline for measuring progress going forward. Thank you. And now I will turn it over to Tim Mossman.

MR. MOSSMAN: Thank you, Aida. Good morning, Chairman and Commissioners. I am Tim Mossman, the Managing Director of EMBARK Venture Studio in the Office of Nuclear Reactor Regulation.

EMBARK is a change catalyst within the agency, and the EMBARK team continues to work with NRC staff from many different offices to remove real and perceived barriers to innovation. We are focused on modernizing information technology tools and systems, improving business processes, enhancing access to data, and improving stakeholder experience. Today, I'm grateful to have the opportunity to discuss our

Mission Analytics Portal External initiative, also known as MAP-X. I want to note that the Office of the Chief Information Officer has been a very valuable partner in making this initiative a reality. Next slide, please.

For the past several years, the NRC has focused on its vision of being a modern risk-informed regulator. Endeavors such as MAP-X represent our efforts to achieve the modern part of that vision. MAP-X is the NRC's initiative to exchange data with our external stakeholders via web-based platforms. MAP-X is an externally-facing portal or website that licensees can use to submit relief requests; event notification worksheets; and later this year, licensee event reports.

The NRC is quite adept at collecting and storing documents from external stakeholders, which is essential for us to perform our mission and maintain healthy openness regarding our operations. However, documents are submitted in varying formats, such that harvesting data from them can be labor intensive. MAP-X focuses on having external stakeholders submit data, rather than documents, via the web portal. External stakeholders may submit numerical values, text, and/or selections from pre-populated menus, much like all of us do when ordering goods or services online. Obtaining data directly this way enables us to regularly feed our various internal systems and support data analytics, data visualization, and data-driven decision making.

MAP-X also presents the opportunity to share data with external stakeholders. In the future, we may extract data from our own systems and selectively display information, such as status of license amendment reviews, to appropriate external stakeholders. We believe MAP-X can ultimately become a one-stop shop for external stakeholders to exchange data with the NRC. We see this as an advantage both to NRC staff and to external stakeholders. Next slide.

The advantages of MAP-X for the NRC are fairly straightforward. Receiving data in digestible form makes it much easier for us to sort and integrate information in our existing internal systems. It also creates opportunities to enhance data-driven decision making. For external stakeholders, the MAP-X system can be accessed from anywhere. Once a user is credentialed, they may use any computer to log in and interact with the system. MAP-X modules can incorporate auto-populated fields and data validation logic to minimize potential errors in submissions. Next slide.

MAP-X is still in the early stages of development. To date, we have focused on developing low-complexity modules to collect data from external stakeholders. Our initial module was for web-based relief requests, which has been available for approximately a year. In late January, we released a module for reactor licensees to submit event notifications. Next slide.

EMBARK has collaborated with NRR's Division of Operator Reactor Licensing to reach out to reactor licensees who have used these modules to solicit feedback. Early results on these modules has been mixed. We have had multiple users of the web-based relief request module but no one has yet used the system to submit an event notification. Regarding the web-based relief request module, we have some early adopters who have had very positive things to say about the system. We have also received very valid feedback regarding features of the system that stakeholders find challenging and/or have dissuaded their use of the system. We are working through a few challenges with the event notifications module. Event notifications are required to be submitted on a relatively short time line, eight hours per the regulations, and they are often handled by reactor staff who are not the staff on site who currently have credentials to log into and use MAP-X.

In addition, our regulations in 10 CFR 50.72 require licensees to call the operations center with their event notifications. So the electronic submission of information via MAP-X will be more of an efficiency for NRC staff than licensee staff. We are actively working with OCIO and the MAP-X contractors to address the feedback we have received and augment our existing modules, as appropriate. We aspire to show our stakeholder community that we have taken their feedback seriously and demonstrate that it has resulted in beneficial changes to the system. Next slide.

As noted on an earlier slide, we are actively developing a MAP-X module to allow submission of licensee event reports, or LERs. LERs, like event notifications are required by regulation, but they are not required to be submitted on a tight time line. Licensees have 60 days, as opposed to eight hours. We are also currently reflecting on the feedback received on the existing modules and have been in discussion with multiple NRC offices regarding potential new modules to support different stakeholder communities. To date, our early modules have been focused on use by the reactor licensee community under the premise that they have more infrastructure to be able to adopt use of a new system, such as MAP-X. However, we recognize that there are a much greater number of materials licensees, which represent a potential for larger returns on our investment in collecting and processing data.

We also recognize that marketing of new modules to potential users is critical to the success of this initiative. While we can readily demonstrate that NRC operations can be made much more efficient with the receipt of data via MAP-X, we need to ensure that our modules offer improvements in efficiency, effectiveness and/or overall user experience for our external stakeholders. This transformation will not happen overnight and will involve continued coordination among various NRC offices and our affected stakeholder communities. We value the lessons gained from our initial efforts, and we will be using that knowledge as we embark on developing future modules. Thank you. I will now turn it over to Caylee Kenny.

MS. KENNY: Thank you, Tim. Good morning, Chairman and Commissioners. I am Caylee Kenny, a project manager from the Rulemaking Center of Expertise, or Rulemaking COE, in the Office of Nuclear Material Safety and Safeguards. Today, I will be providing an update on the improvements and successes within the rulemaking program since the inception of our rulemaking process transformation effort. Next slide, please.

As a brief recap, in 2019, the COE self-initiated an effort to strengthen the agency's rulemaking process, focused on identifying opportunities to enhance the quality and timeliness of our rulemaking products, and further strengthen stakeholder engagement. We identified 15 opportunities for enhancements and organized them into five key enhancement areas, as summarized in this graphic.

We issued a publicly-available report about our plan in July 2020 and have been implementing and refining the associated action. This is a living and continuous effort. At this time, we have completed 13 of the original 15 initiatives and continue to integrate them into our daily work. Next slide, please.

We have achieved many successes as part of implementing these changes over the past two to three years. In terms of engagement, I'd like to highlight three improvement areas. First, the COE continues to focus on enhancing Agreement State interactions. We have increased opportunities for Organization of Agreement States, or OAS, members to provide input on issues raised in the petition for rulemaking in advance of a final action, which will inform staff recommendations to the Commission. The COE has received positive feedback from both the OAS, as well as from the NRC's Agreement State program staff about the progress in this area, and we will continue to look for ways to enhance engagement opportunities.

Secondly, COE and OGC staff have developed a training course to share efficient and effective approaches for addressing public comments received during the rulemaking process. This course focuses on improving the quality, accuracy, and consistency of NRC responses to comments and the associated documentation for the underlying regulatory decision and providing better documentation and communication of the bases for NRC's rulemaking actions. Overall, this is leading to increased public confidence in NRC's decision making and has greatly enhanced our ability to interact with the public in the rulemaking process.

Third, staff continues to create summaries of recent rulemaking actions, their impacts, and the innovations applied during the development process, as appropriate. These are posted to the public website, which provides greater public awareness and transparency.

In terms of timeliness, I'd also like to highlight three improvement areas. First, a significant portion of document development is spent in the concurrence process, and this has been identified as an important opportunity for improvement. Staff implemented division-level process changes, such as early alignment briefings and parallel concurrence, among many others, that go hand in hand with the recently implemented eConcurrence system, which allows for electronic concurrence, collaboration, integration with ADAMS, and the electronic signing of documents. The COE has been a first adopter of the system and we have already started training other NMSS staff on how to use key features, such as the collaboration tab, and how it supports the parallel concurrence path that we established. This is allowing us to continue to improve our concurrence process and we will look for additional efficiencies as we gain experience with the eConcurrence system.

Secondly, the COE has streamlined processes at the pre-rulemaking stage. Specifically, instead of routinely beginning rulemaking with a regulatory basis, the staff now evaluates whether one is needed case-by-case and provides the recommendation regarding the need for a regulatory basis to the Commission. The COE also reevaluated the need to issue a final regulatory basis when one is initiated. Typically, staff now provides the Commission a summary of the results of early stakeholder engagement in the proposed rule. This change is expected to save approximately six to nine months from the overall rulemaking schedule.

Third, staff completed a pilot using agile project management concepts in the petition for rulemaking process. The pilot proved successful by minimizing the risk of significant redirection late in the development of the project and by improving timeliness, allowing the Petition Review Board to be held 1.5 months sooner than the Milestone B. The COE is continuing to explore the use of agile methods in rulemaking and is adopting the use of an executive level project sponsor, a key agile concept, for the development of an upcoming proposed rule. Next slide, please.

We are sustaining progress through incremental improvements, incorporation of the original efforts into our daily work, and we will take a more targeted approach to future transformation efforts. In order to curb innovation fatigue, we are focusing on activities that will have the most impact to staff and our stakeholders. Specifically, the COE is looking back at our original initiatives to see if we produced the gains we thought we would. For example, staff will perform an assessment of the improvements made to our concurrence process to determine if time frames have been shortened and the number of people on concurrence has been streamlined. We will consider how we can enhance the positives of the eConcurrence system and use it to continue to simplify the concurrence process and realize further benefits. Next slide, please.

Overall, these innovations have provided positive outcomes and results. We received encouraging feedback in several areas, including on the use of (audio interference) professional perspectives, has enhanced collaboration and added efficiencies to each phase of the concurrence process. The use of agile project management concepts, especially the use of a project sponsor, has shown to be beneficial to communication, alignment, and quick decision making. And we have received positive feedback on the opportunity for Agreement States to participate in working groups and review products earlier in the development process.

Rulemaking is, by design, a deliberative process bound by statute and other legal constraints. The COE uses risk-informed processes and adopts IT and other modern innovations whenever possible within the strictures of the federal rulemaking environment. These recent incremental improvements directly align with the agency's strategic plan objective and associated strategies regarding stakeholder confidence and will provide stakeholders with requirements that are well designed on the most optimal schedule possible.

Our rulemaking innovation efforts are expected to mature, grow, and adapt over time. NRC's Rulemaking COE is committed to continuously strengthening the agency's rulemaking process and serving as a model of federal rulemaking excellence. I will now turn it over to Becca Richardson. Thank you.

MS. RICHARDSON: Thank you, Caylee. And good morning, Chairman Hanson, Commissioner Baran, and Commissioner Wright. For those that don't know me, I'm Becca Richardson, Chief of the Intelligence Liaison and Threat Assessment Branch in the Office of Nuclear Security and Incident Response. Having worked on the Be riskSMART initiative since 2019, it is an honor to be here today to share how my office has been utilizing the Be riskSMART framework in our decision making. Next slide, please.

As you know, the NRC has a long history and firm foundation in risk-informed decision making that includes many successful applications of the risk triplet. While we have continuously improved how we use risk insights to make better informed decisions to meet our important safety and security mission, risk-informed decision making was not consistently applied across the agency or used for all types of decisions.

This slide summarizes the key steps of the Be riskSMART framework. I'm not going to walk through each step here today, but I'm happy to answer any questions you may have. I did want to highlight the importance of the first step, though; that is to be clear about the problem. The problem could range from a simple binary question that one faces on a daily basis to a more complex decision involving multiple individuals or organizations, such as how to enhance a process to more fully realize the NRC's principles of good regulation. I also wanted to note that the framework does not revise or change existing requirements or criteria, such as those supporting oversight or licensing decisions. Rather, it serves as an umbrella to increase consistency, awareness, and usability of existing risk-informed approaches. Next slide, please.

The Be riskSMART framework recognizes the multifaceted nature of risk and helps staff consider those systematically and in a transparent manner, whether those risks are technical, programmatic, reputational, information technology, human capital, or others. By doing so, it supports consistent approaches in applying risk insights for all NRC decisions and gives NRC staff confidence in accepting well-managed risk in its decision-making without compromising the NRC's mission.

The structured framework of Be riskSMART gives us confidence that we are adequately considering what we need to, even when there's uncertainty about what could happen or how likely it is. What we have found is that it has really improved conversations for us when working through challenges we face. It serves as a good platform for discussion between staff on challenges, how to best address those challenges, and why. And this improves conversation on both sides. It has encouraged better conversations by tackling problems together in a systematic approach.

By using this Be riskSMART framework in NSIR, we have been able to evaluate problems in a way that when discussing them with others, we are able to explain our perspective on a given issue clearly and concisely. This way, any differences, particularly as a result of the inherent uncertainty in some of the information we use, can be quickly identified and resolved. On the next few slides, I will briefly walk through three examples that demonstrate how NSIR has applied this framework in both security oversight and policy. Next slide, please.

As we know, conducting effective oversight supports NRC's critical safety and security mission. The COVID-19 public health emergency presented some unique challenges to completing some of our inspections that support this oversight. The Be riskSMART framework was a perfect tool to address this challenge in NSIR for completing the tri-annual NRC-evaluated force-on-force inspections. For those that don't know what our force-on-force inspections are, these are performance-based inspections to test the licensee strategy for defending against the design basis threats, and they involve a significant amount of people in close proximity in order to properly control, observe, and perform the inspection.

Through use of the framework, the staff was able to develop a plan to conduct the inspections while balancing the health and safety of both our inspectors and site personnel. As part of this effort, the staff also developed a matrix that weighed the principles of good regulation for each of the options identified in the framework. We have been able to reuse this framework as a model to help us risk inform our decisions in the areas of efficiency, openness, clarity, reliability, and independence. In this case, using the Be riskSMART framework not only help staff identify options to continue to provide effective oversight during the public health emergency, but they also identified additional options that can be considered to better inform the future of the security program. Next slide, please.

In 2019, the NRC Office of the Inspector General challenged the staff to consider how cybersecurity inspections could be more efficient and more performance based. The Be riskSMART framework supported the staff's evaluation to address this challenge by weighing the risk and benefits for multiple options for the acceptance of performance metrics from licensees in advance of inspections to inform evaluation of cybersecurity program effectiveness and for improving the inspection process efficiency. By using the Be riskSMART framework, the staff were able to determine a way for licensees to voluntarily submit cybersecurity performance metrics in advance of an inspection. This alleviates some on-site inspection needs and results in a more efficient inspection overall. The staff also developed an option in the inspection procedure to allow for performance-based testing of the licensee's cybersecurity architecture and controls. Next slide, please.

Lastly, in 2020, staff provided the Commission with SECY-20-0070, Technical Evaluation of the Security Bounding Time Concept for Operating Nuclear Power Plants. In this Commission paper, we explored ways to provide credit for operator actions, including the use of flex equipment and law enforcement response at operating nuclear power plants.

The staff were able to apply the Be riskSMART framework throughout the Commission paper to guide the staff's assessment of the challenges and developing viable approaches to provide this credit. For example, each of the staff's recommendations for providing additional credit for elements, such as law enforcement response and flex equipment, consider factors that may impact the likelihood and consequences of an attack. As a result, the reasonable assurance of protection time, or RAPT, was established. RAPT is an eight-hour time frame that recognizes existing layers of protection, both safety and security, that work together to support the site's protective strategy. Industry stakeholders have expressed that the RAPT concept adds a greater level of regulatory clarity because it provides a consistent framework for targets in development. It also enables licensees to refine protective strategies to focus on the most risk significant target sets, while continuing to maintain physical protection of the site. And it risk informs force-on-force exercises by focusing on target sets that are within the eight-hour RAPT. This ensures licensees are continuing to protect all front-line systems and supporting systems with a prompt functional failure that could result in core damage before the eight-hour RAPT.

Thank you for the opportunity to present today. And with that, I'll turn it over to Jeffery.

MR. WOOD: Thank you, Becca. Good morning, Chairman and Commissioners. I am Jeff Wood, and I am a Reliability and Risk Analyst in NRC's Office of Research. I'm going to be discussing the SPAR-DASH project. Next slide, please.

The SPAR-DASH project was developed to make risk assessment results accessible to the NRC staff to help support our risk-informed decision-making activities for our operating reactor programs. We believe this tool will have many useful applications for our inspectors and license reviewers for operating reactors. What we want to achieve with this project is to make risk information accessible to the staff in an easy-to-use and interactive dashboard format, support communication of risk insights, and support our Be riskSMART framework. As we're continuing on our path to becoming a modern, risk-informed regulator, we recognize that having access to the right risk information is important, and we need to deliver those risk results to the staff in an innovative way. Next slide, please.

The approach we've taken with SPAR-DASH is to develop a series of data dashboards that summarize risk results from the agency's probabilistic risk assessment, or PRA models. SPAR-DASH leverages NRC's existing PRA tools, the SPAR models and Sapphire software; and having these independent risk assessment tools are very important for supporting our risk-informed regulatory programs, and it allows us to be creative in new ways to analyze the results like we're doing with the SPAR-DASH project.

The SPAR models are available for the staff to support using risk in their work, and there are many staff that use these models in a routine basis. However, we want to make risk information broadly available to support our reactor oversight and licensing activities, and we recognize that there are some barriers to getting more staff using these complex risk tools. Using these models requires set up and installation of software. It requires specialized knowledge and training to generate and interpret results. With SPAR-DASH, we bypass these barriers to provide easy access to useful risk results.

The approach we've taken with SPAR-DASH is to first extract the key risk results from the models, then we developed data processing tools to summarize the results in a visual and interactive format. We've automated much of the process. We are handling results from 68 site- and plant-specific SPAR models and collecting results in different file formats. We have a few thousand individual file inputs to our process, and our data processing tools allow us to officially collect the key information, format the data, and update the dashboard visuals. This is really an innovation in how we are using the results of our risk models.

And this project began as a summer student project in the summer of 2020. And with a small team, we were able to develop the process and the tools, and SPAR-DASH was published for internal use in January 2022. The end result is a visual and interactive data dashboard. It allows the staff to quickly see risk results and help to focus their work on the most risk-significant issues. Next slide, please.

So here we see an example of events contributing to a plant's core damage frequency, and this gives our license reviewers, inspectors, and other risk users a quick snapshot of a plant's risk profile and can help to focus users on the types of events that are most risk significant for a specific plant. Types of risk results that we include in SPAR-DASH allow the staff to rank important contributors to a plant's risk, to assess risk associated with different events and types of hazards, to consider off-normal conditions, and to perform plant-to-plant comparisons of risk results.

SPAR-DASH also includes embedded links to guidance documents. Users can click on a button right in the tool to access reference material. We are using Nuclepedia, the NRC’s knowledge management tool. And here we have references to define the PRA-related terms and types of results that are used in the dashboard and guidance on how to interpret results. This provides a very efficient tool for the staff to develop an understanding of risk. SPAR-DASH can be used as one input into our decision making, along with other analyses, technical bases, and accounting for uncertainties. And SPAR-DASH itself is a tool, it's not a process, but it can be used to support many of our risk informed processes, such as Be riskSMART or our integrated risk informed decision making for license reviews, and many other NRC risk informed programs.

While SPAR-DASH still requires careful interpretation when implying risk results in our work, the accessibility and easy to use visual format provides a great starting point for gaining risk insights and focusing on areas for further investigation and questioning. Next slide please.

The SPAR-DASH tool can support improved efficiency in incorporating risk into our operating reactor licensing and oversight work activities. And here we see an example of a comparison of core damage frequency results for different hazard categories, such as fires and seismic events, and users can sort and filter the display to focus on the types of results that relate to their review area or the question they're trying to answer.

You see several possible applications for the staff to use SPAR-DASH, and some examples include planning and prioritizing activities to support license amendment reviews, assessing emergent issues and generic safety issues, risk-informed selection of systems and components for inspection, and it provides an independent tool for comparing to licensee-provided risk results.

And since the initial launch of SPAR-DASH at the end of January of this year, we've already seen some applications of this tool. We have staff that have used this to help inform their licensing reviews, to gather information for dispositioning of proposed generic safety issues, and to help with risk-informed assessment of an emergent issue.

SPAR-DASH is currently available internally for the staff to use. And although it's developed for internal use, we think that external stakeholders can also benefit from the staff's efficient use of risk in many of our reactor licensing and oversight activities. We feel that SPAR-DASH is going to be a valuable tool in the agency's continued risk-informed development. Thank you. And I will now turn it over to Antonios Zoulis.

MR. ZOULIS: Thanks, Jeff. Good morning, Chairman and Commissioners. I'm Antonios Zoulis, the Branch Chief of the PRA Oversight Branch in the Division of Risk Assessment in the Office of Nuclear Reactor Regulation.

Today, I will be discussing with you a new and innovative approach in dispositioning very low safety significant licensing issues using our existing regulatory structure and regulations. This new process helps both licensees and the NRC to focus its time, attention, and resources on issues of greater safety significance. Next slide, please.

In an ever-changing environment with plant shutdowns and reduced resources, it was imperative that NRR develop ways to address low-safety significant issues effectively and efficiently in this dynamic environment. As such, staff were tasked to identify transformative approaches in meeting our mission using resources commiserate with the safety-significant issue, while leveraging ways to enhance the use of risk insights and risk-informed decision making in our licensing reviews and activities. Thus, the idea of the risk-informed process for evaluations, or RIPE. Next slide, please.

Initially, NRC staff were focused on addressing issues that were very low safety significant but not clearly within the licensing basis. Those issues were addressed by the Very Low Safety Significance Issue Resolution process, or VLSSIR. It quickly became apparent that there was also a subset of issues that could be of low safety significance and that were clearly within the licensing basis. In 2021, as an extension of VLSSIR, the NRC developed an innovative and novel process, the risk-informed process for evaluations, to resolve very low safety significant issues commiserate with the risk significance using existing regulations under 10 CFR 50.12 and 50.90.

The idea for RIPE was born from my work done in support of the risk prioritization initiative and my observation of licensee use of an integrated decision-making panel, or IDP. An IDP leverages a multi-disciplinary team to assess an issue using criteria that is consistent with NRC's key principles of risk-informed decision making under Regulatory Guide 1.174. The RIPE process allowed staff and licensees to develop a method that is objective, scrutable, and repeatable to identify issues that are very low safety significance. It leverages both risk insights and other key engineering principles to evaluate the issue against a defined set of criteria.

I'd like to note that when we presented RIPE to the HRS, the committee members were very supportive and complimentary of the process and its novel approach in determining the safety significance of issues. In developing a streamlined review process, we leveraged previously-approved risk-informed initiatives, such as TFTF 505 and 425, to determine the quality of the PRA information that would support a risk-informed review. That coupled with the licensee's IDP evaluation of the other key engineering principles together support our integrated decision-making process, which helps characterize the issue and thus inform the level of review for a RIPE submittal. Next slide, please.

The licensee is using PRA information from their previously-approved risk-informed initiatives coupled with an approved IDP process: define the issue, evaluate the issue using safety impact characterization guidance developed by staff, identify any risk management actions as applicable, and then assess potential impacts of the change. Once that is completed and the issue is identified to have minimal safety impact, the licensees will then submit the application under the RIPE process to the NRC for a streamlined review.

RIPE is a significant change in how the staff conducts their licensing reviews. Only the acceptance review of a RIPE application is conducted by a cross-divisional staff team. If the application is accepted under RIPE, then staff from my branch will conduct the streamlined review of the application, which is commensurate with the fact that the review is of a low safety significant issue. Next slide, please.

Why RIPE? RIPE focuses the NRC and licensee resources on the most safety significant issues. It addresses very low safety significant issues in an efficient and particular manner consistent with NRC's principles of good regulation. It leverages existing regulations and risk-informed initiatives, and it also incentivizes the further development and use of probabilistic risk assessment models and risk-informed applications. Next slide, please.

Earlier this year, staff received the first-of-a-kind exemption request using RIPE. While there were challenges associated with this review, the staff accepted and reviewed the application using the RIPE process within eight weeks and under 100 hours of review time. Staff are in the process of leveraging lessons learned from the first RIPE submittal, which will take the form of future planned workshops on risk-informed decision making that will demonstrate real-world examples that use risk insights to inform a review. The workshops will center on what level of review is needed for low safety significant issues with a focus on defense-in-depth, safety margins, et cetera.

Staff are also evaluating guidance updates to provide for additional clarity to staff that leverages the lessons learned from the first RIPE review. These initiatives will facilitate positive change management to support the staff's future views of application using RIPE. Next slide, please.

Change is hard and regardless of what process is being implemented for the first time, effective change management is important. Incorporating risk information in our everyday activities is not always easy. However, the more opportunities that we provide to staff in understanding RIPE and the benefits of the process, as well as having additional opportunities and experience in using RIPE, we believe that the staff's confidence in implementing RIPE will increase.

Without the review structure provided by RIPE, the review of this low safety significant issue would most likely have taken more time and resulted in considerable more hours of fee-billable review time. With RIPE, we overcame the challenges and took one big step toward our journey of becoming a modern risk-informed regulator. RIPE constitutes a significant step forward in NRC's endeavor to advance risk-informed decision-making in our regulatory processes.

And plans are underway to expand the use of RIPE. Currently, staff have completed work to allow technical specifications to be within the scope of RIPE reviews. Updated guidance for expanding the use of RIPE for technical specifications was issued last month. Furthermore, staff are participating in workshops and public meetings with industry to support their development of a RIPE-like process that could be used to determine the safety significance of generic issues.

RIPE ensures that staff focus their time, attention, and resource on the most safety significant issues, thus ensuring the safe operation of the commercial operating fleet, while also protecting the health and safety of the public and of the environment. With the successful implementation of the first RIPE review, NRC staff continue to demonstrate regulatory certainty and confidence in our regulatory process and pave the way for potentially more low safety significant issues to be reviewed in an efficient and effective manner consistent with our principles of good regulations. I will now turn it over to Abby Olarte. Thank you.

MS. OLARTE: Great. Thank you, Antonios. Good morning, Chairman and Commissioners. My name is Abby Olarte from the Office of the Chief Financial Officer and I serve as the project manager for the NRC's electronic billing application, otherwise known as eBilling. Next slide, please.

eBilling is a public facing online platform through which licensees can receive and view their NRC invoices. It originally launched in FY20 and was a key initiative in the effort to streamline and digitize NRC's license fee billing process, which is consistent with the agency meeting its vision as a modern risk-informed regulator.

NRC sends roughly 3800 invoices to our licensees annually. Prior to the implementation of eBilling, the generation of these invoices was an intricate and heavily manual process, requiring NRC staff to print large volumes of paper invoices, stuff them into envelopes, and mail them to thousands of licensees.

In order to modernize this process and improve the billing experience for our licensees, the NRC developed the eBilling application in the course of one year. Recognizing the importance of taking a customer-centric approach to build the application, we engaged with a group of licensees throughout the development process, obtaining iterative feedback as the application was built. This approach significantly contributed to the success of the eBilling application, as the insights gained from this collaboration shaped the functionality and user interface of the system. I'd like to now highlight some of the benefits that eBilling provides to our licensees. Next slide, please.

Prior to the implementation of eBilling, licensees needed to wait several days to receive their paper invoice in the mail. By receiving their invoices electronically, licensees now have additional time to review their invoices and submit payment before the due date. Another benefit that eBilling offers is its ability to send out automated email alerts to licensees. Licensees are notified immediately when activity has occurred on any of their invoices, including when a new invoice is issued or when a payment has been processed. These alerts are completely configurable by the user, allowing them to choose the types of activity that they want to receive notifications for.

The eBilling application also provides licensees with a user-friendly dashboard that gives them as snapshot of their invoice statuses and the total amount owed. Keeping licensees aware of these types of activities in a timely manner not only allows them to know the status of their invoices at any given time, but it also reduces the risk of erroneous payments being made to the NRC.

Another key feature that benefits our licensees is the digitalization of the small entity application form. Licensees have the ability to submit an application to qualify as a small entity, allowing them to pay reduced fee amounts to the NRC. Prior to eBilling, the small entity application form was mailed to the licensees to be filled out manually and returned to the NRC. With eBilling, the small entity application is now available in an online form.

Details pertinent to the invoice, such as the docket number and invoice number, are automatically defaulted for the user, reducing the amount of data entry required from the licensee. Additionally, making the small entity application available online decreases the number of instances where NRC staff are unable to read the handwritten information provided on the paper small entity application. NRC is also able to indicate whether a small entity application is approved or rejected in eBilling, which automatically sends a notification to the licensee of the decision. Incorporating the small entity application into eBilling has gone a long way into streamlining the application and decision process. Next slide, please.

Now, as the eBilling application continues to evolve and mature, there are two new features I'd like to bring your attention to, as they also provide some additional benefits to our licensees. When eBilling was initially developed, the one feature that licensees requested the most was that they wanted to be able to see their invoice details in Excel format so that they can perform their own analysis. It was understandably difficult to work with a paper invoice. The feature was incorporated in the initial rollout of the application. However, eBilling was recently enhanced to introduce more robust reporting capabilities in which licensees can filter invoice data across a user-specified period of time for specific dockets, cost activity codes, enterprise project IDs, and fee categories for which they were billed. The detailed results can be exported to Excel where the user is provided with the raw detail, as well as a pre-bill pivot table.

Providing licensees with their invoice details in an easily-consumable manner, address the key pain point that they previously expressed, and these new reporting features were implemented to make it even easier for them to extract their invoice data. This increases the transparency that we have with our licensees and places more accountability on the oversight work performed by the NRC program offices.

Lastly, we recently integrated Part 170 charge accruals into eBilling. In order to provide licensees with an idea of what their Part 170 charges are as a billing quarter progresses, NRC previously sent spreadsheets of accrued charges to those licensee organizations that requested the data. These spreadsheets would be sent via email to each individual licensee organization by NRC staff. eBilling was recently enhanced to incorporate the Part 170 accruals into the application, allowing licensees to view and download their Part 170 accruals directly from eBilling. By making the Part 170 accruals available to the licensees online, the amount of time and effort on NRC's part to put together spreadsheets and email the licensees is significantly reduced and licensees are able to receive the data the instant that it becomes available.

eBilling has facilitated the digital transformation in our licensee fee billing process. Not only does eBilling significantly improve the billing experience for NRC's licensees, but it also strengthens stakeholder confidence in the agency's regulatory processes, as it provides easier access to the details behind the oversight work that the NRC performs. We continue to look for other innovative opportunities to make the invoicing process easier for our licensees. Next slide, please.

User adoption of eBilling has steadily increased over time, but we do hope to see additional growth and enrollment. Higher user adoption will allow all of us to realize the full benefits of transforming and modernizing the invoicing process. If a licensee is not yet enrolled in eBilling, we highly encourage them to consider enrolling. We've recently implemented an online registration feature so that the process is easier for an organization to sign up. To do so, licensees can navigate to the URL that you see there on the screen. But should you have any questions at all, you can also submit a support request through the eBilling website.

Thank you. And I'll now turn it back to Dan Dorman.

MR. DORMAN: Thank you, Abby. And thank you to all of the presenters, to all of the staff involved in these initiatives, as well as so many other initiatives throughout the agency. Next slide, please.

As you can see, we have done and are doing a lot and are focused on sustaining the progress we have made over the last several years to respond to the dynamic environment in which we operate. Our experience over the last few years, including our ability to transition to mandatory telework in response to the pandemic, has shown us how essential transformation is in preparing us for a complex and uncertain future.

We will continue to monitor our external environment, adapt and innovate as needed, in order to ensure we are effectively and efficiently achieving our important safety and security mission. In addition, we established 2022 objectives and key results with the goal of sustaining and pushing forward our transformational efforts and aligning those efforts with our agency strategic plan. We will carry forward the valuable lessons we have learned throughout our transformation journey to best position ourselves for a successful future.

As we carry our transformation journey forward, we will do so with many new employees who we are recruiting to join the agency. This will be one of our major challenges in the years ahead, and we are laser focused on ensuring that we have a high-performing, diverse, engaged, and flexible workforce with the skills needed to carry out the NRC's mission now and in the future.

We will continue to work towards realizing our desired agency culture, a culture that supports creativity and diversity in all its forms, appreciates the need for change, and helps us to sustain all that we have achieved during our transformation journey so far.

This concludes our presentation, and we look forward to your questions.

CHAIRMAN HANSON: Thanks very much, Dan. Thanks, everyone, for your presentations. We'll begin questions this morning with Commissioner Wright.

COMMISSIONER WRIGHT: Thank you so much, Mr. Chairman. And thank you, each of you, for your presentations today and the updates of where we are with everything, and I really personally look forward to hearing from the staff on this every year, especially hearing from those staff who are actually putting boots on the ground to get it done.

I've got a few questions that I'm going to ask, but I can't get to everybody, you know. I just can't. So Antonios and Abby and Becca, I'm not going to have any questions for you today, but I may reach out to you separately as we get further into this, but thank you for your presentations. I found them very informative.

Caylee, I don't have a question for you, but I do want to call out something that was in your presentation on slide 21, believe it or not, right in the middle, you had a bullet there that highlighted that rulemaking is a deliberative process; there is still room to innovate. I think that's a critical message and something that really resonates with me because innovation and transformation, they don't mean excluding the public or limiting stakeholder feedback or introducing shortcuts to anything to our deliberations or anything like that. So it does mean looking at our processes to see how we can do things better and I really appreciate your message. Thank you for your work in this area and look forward to hearing more and more good things from you. So thank you.

So now I'm going to turn over to the questions. So, Dan, I'm going to start with you. You know, a critical part of the transformation effort is defining our goal, right, and having a common vision. The staff has indicated that its efforts to have each office and region formulate their own organization-specific OKRs here, objectives and key results, that support the agency-wide OKRs as a way to accomplish that goal, right? So I wanted to get an update on this from you. And have the OKRs been reviewed and compared to each other, and are you seeing alignment the way you thought you might?

MR. DORMAN: Thank you, Commissioner. So, you talked about the goal, and you used the word vision, and one of the first things that I did as EDO was to work with the senior leadership team to lay out a vision that as a modern risk informed regulator will achieve mission excellence in a diverse, inclusive, and innovative environment with a highly skilled, adaptable, and engaged workforce.

So, you can find all of the focus areas of transformation embedded in that vision, and there's room for all of the organization to find itself and come on board with that, and the key to that is the OKRs. And so we lay out OKRs at the EDO level for the agency, and then share those. We did that in December time frame, shared those out to the offices in the January time frame, and each of the offices then built out their OKRs for the year using that framework to ensure that we are aligning to that vision.

But how we achieve, as you heard from so many offices today, and there are so many offices that you didn't hear from today, that are -- how they work their work into that vision is a little different in every program of the agency, but they're all aligned to that goal.

COMMISSIONER WRIGHT: Good, I appreciate your answer on that. Because with so many parts that are moving, you just want to be sure, and it sounds like you're confident that they are working towards a common purpose.

MR. DORMAN: You did ask if we review that, those OKRs do come back to the EDO, and the EDO's transformation team looks through and makes sure that we are achieving that alignment.

COMMISSIONER WRIGHT: Okay, thank you. So, the NRC has acknowledged the success in transformation really comes down to a change in our culture, and I agree with that. We need to embrace new ways of doing things, reward innovation, break down barriers, things like that. You noted that the agency culture team is continuing to work to align behavior of norms, and expectations with our leadership model. Can you give me an example, or two in this area, and whether they are having the desired effect?

MR. DORMAN: Yeah, so there's a number of things that fall under the umbrella of culture; historically, we've talked a lot about the Federal Employee Viewpoint Survey, and the focus on employee engagement, and environment that we have for our employees. We also have periodically, our Office of Inspector General does a safety culture and climate survey, and a safety culture review.

The initiative under transformation was focused on what we called the desired agency culture, and it's a culture that promotes and enables innovation in the organization. And so that initiative, all of those elements of culture are all part of the agency culture transformation. We did establish a culture team within the office of the EDO to support the offices in achieving all of those elements of culture, but particularly the desired agency culture.

We did a baseline survey of the staff in 2020 for the desired agency culture, and it included both a piece that we're looking at, what is the culture relative to certain measures, as well as where would we like to be to have this innovative environment? So, then we have that yard stick to measure against as we go forward. And we did a follow-on survey in 2021, we showed some progress toward that desired agency culture, but we still have work to do.

So, the culture team in the EDO's office works with change agents across the agency, and I'm really excited by the number of people who raised their hand to be a part of this effort, and support the offices in their culture initiatives as well. And identifying again, as you move across the agency, there are different areas of priority, and focus in enhancing the culture. And so that works across the agency, and that's the initiative that we have open because changing culture takes time.

COMMISSIONER WRIGHT: Right, and I did pick up on that takes time theme earlier in the presentations. So, that brings me to this question; I think it's an important question, because alignment in your culture, next to initiatives, are really important. There have been some concerns raised both internally, and externally as you know, that there are different cultures at headquarters, and at each of our regions, right? With very different risk appetites evident in some of our new processes, like Be riskSMART, and VLSSIR. I mean obviously it can lead to different applications of the processes, and different outcomes for licensees on similar issues. And I'm interested in your perspective on this and have you found this to be true, or do you see consistency in application of these processes at headquarters and across the regions?

MR. DORMAN: I think there's always a challenge in a large organization. There's different cultures among the offices in headquarters. It's not a question of where you are, it's a question of where you identify, and what behaviors and norms you identify with. So, we're always working to align the whole agency around those standards. I think it's most visible for some of our licensees who have equities that are subject to oversight by different regions.

And so they perceive perhaps differences there. And that's a continuous effort for the program offices working with the regions to ensure that we are aligning across the agency, consistent with risk informed decision making on the most important decisions that we engage. We have management review boards of various types to bring issues to multi office decision makers to make sure that we're applying the standards of the agency in a consistent way where it's most important.

COMMISSIONER WRIGHT: Thank you. And I've got about a minute, and a half left. And being a southerner, ladies first, so Tim, I'm going to apologize to you and to Jeff for not being able to get to a question for you. So, it was good to see you and thanks for your presentation. And I appreciate that the staff sought external feedback on how our transformation efforts are going. It's important that we not only self-monitor our efforts, but get feedback from stakeholders, right? I took a look at the dashboard survey from this external feedback, and there were a couple of things. It looked like the stakeholders rated us above seven on information sharing and quality of decision making, and mission performance. But they gave us a six on timeliness for decision making.

So, could you provide your perspectives - do you agree with that? On the results, and what, if anything, are we doing to improve the timeliness of our decision making?

MS. RIVERA-VARONA: Thank you for the question. So, yes, so we did acknowledge, we see that from the external stakeholders, they don't see the improvement of the timeliness of our decision making from our transformation efforts. We don't know what's driving that, we are looking for opportunities to engage with our external stakeholders to learn more, why is that. And finding ways like this Commission meeting that provide us the opportunity to showcase some of the enhancements we have made, and how that has impacted our timeliness of decision making. So, we look forward for more opportunities to learn more and to showcase how we can do better.

COMMISSIONER WRIGHT: Thank you so much. Mr. Chairman?

CHAIRMAN HANSON: Perfect timing. Thank you, Commissioner Wright. And thank you all for your presentations this morning, I thought this was a really great discussion, and a great way to kind of showcase some really significant successes that the agency has had. I keep talking about transformation in my RIC speeches, because it's genuinely really important to me.

I agree, I think it was Margie Doane who said that transformation is really about making better regulatory decisions, and I completely agree with Dan, that it's also about preparing for a range of possible futures. Because we really do have, I think -- I don't want to say a significant amount of uncertainty, but just a range of possible outcomes kind of facing the agency depending on where industry goes, and how industry develops.

And I think folks are coming in to talk to each of us Commissioners about those possible range of futures, and I look to transformation as being really a key enabler in the agency's ability to meet those future challenges. And I want to emphasize too, that I continue to think of transformation as going hand in hand with the hiring initiative that Dan is spearheading in collaboration with Mary Lamary, and others in the agency for a couple of different reasons.

In a lot of ways, transformation has been collateral duty for a lot of people within the agency. They do their regular jobs, and then they do transformation and innovation activities on top of that. And gee, wouldn't it be nice to get a few more people in the door to relieve that burden? I think Dan heard that acutely from some of the branch chiefs earlier in the year when he met them, about how busy and occasionally overwhelmed they are. And we don't want that situation to continue for any real length of time. So, let's get some more folks in here. But also I see transformation as a defense in depth for future hiring initiatives. Hiring is hard right now. We know that there are vendors and utilities, and others who are hiring like crazy too. We're competing with those entities for smart folks.

And I think there are a lot of really good reasons to come, and work at the NRC; innovation, and our culture, and the importance of our mission being among them. But our ability to transform and focus on the most mission critical tasks, to focus on the most risk significant and safety significant areas is also really important in the event that not all of the people that we want to have come through the door actually do, down the road.

And that's going to be a significant journey, although let me just say I understand we're having some success in that area, too, that I want to recognize, and celebrate. So, I think that's all to the good. I wanted to touch on just a couple of things.

I think Aida, it was in your presentation, and I think Caylee had something in hers as well about institutionalizing, and sustaining these innovation efforts, and not having change fatigue. I think that was Caylee's turn of phrase that I thought was really eloquent. And that the transformation doesn't become just kind of change for change sake, right? That we're really trying to accomplish, tackle concrete problems, and achieve concrete objectives. And with some of these things, recognizing also that with things like the future's jam, and other initiatives that we had, it followed the 80/20 rule, right? We got a lot of low hanging fruit in that 583 initiatives that we've seen, and now we're starting to move into a phase where we're tackling the harder stuff. Although I think things like MAP-X, and RIPE and VLSSIR, MAP-X, SPAR-DASH, that was another one, sorry I said MAP-X twice, are really moving ahead, and tackling some of these bigger things. Rulemaking is another really great example of that. Increasing participation in eBilling is -- that first 30 percent, probably pretty easy, right? Those are the people who wanted to do this already. Moving that up is going to be harder, it's going to have that kind of curve that levels off. And so, I want to encourage everyone to just kind of keep moving ahead and keep thinking about this. Believe it, or not, I do actually have a question, so I'll start with Aida.

So, Aida, in SECY-22-0027, we got some of the transformation performance measures. I want to appreciate that those performance measures and the OKRs that we've had around transformation are aspirational. We set big goals. I mean 90 percent of -- I've got it here. 90 percent of surveyed staff by NRC during 2021 agree that during the past year the agency's use of technology, data analytics has strengthened our decision making, and regulatory processes.

Well, we didn't meet that because we had 81 percent, which is pretty good. So, let's recognize that. Even as I think it's important that we have some stability in OKRs, right, so that we're measuring across time, and we're seeing progress, right? As a runner, I appreciate the idea that sometimes direction is more important than speed on some of these things. But maybe, Aida, can you give me a couple of examples? I guess where we're taking a couple of OKRs that are in that red zone, so to speak, right, were not met, and we're having some management attention on those, and whether that's in Be riskSMART, or some other areas.

MS. RIVERA-VARONA: So, yes, thank you for the question. So, for 2022, we do take a look at that, and we didn't have -- for 2021, we didn't have any baseline. So 2021 became our baseline for the 2022. And the way that we are focusing in 2022, some of them are -- you know, we are aspiring for a ten percent increase in some of those survey results so that we can see a progress, but you know we are managing some of that as well.

For other OKRs, we turn to, as you said institutional analyzing some of them. And so the action changed from the use of the tool to more embedding some of how we are using the tool in our processes. So, even though we didn't need it in 2021, we are taking an additional step to make it more meaningful going forward for the agency.

CHAIRMAN HANSON: Okay, thanks. Well, and when it comes to Be riskSMART, and getting that training out, I think at the end of 2021 we were at 53 percent, and we really want to be -- I think we've made the training at this point mandatory, but maybe you or Dan, can just talk about institutionalizing Be riskSMART thinking across the agency.

I had an interesting conversation with someone from Region III earlier this week about how Be riskSMART kind of provides a baseline in a way. It's kind of a risk thinking 101. But then you have really mature practitioners, you have senior managers, you have corporate support folks. How are we kind of varying our message or our training for those folks so that they get more comfortable in applying risk informed decision making?

MR. DORMAN: Just to be clear, for the folks who are not practitioners?

CHAIRMAN HANSON: Right, not practitioners, exactly. Some of the people like Antonios, and some of the folks, these guys are kind of black belts. But there are others who maybe are not, or there are senior managers who are going to look at it in a different way.

MR. DORMAN: Right. So, I think the key is that Be riskSMART is that 101 framework, so we can apply it to any, I think it was touched on by Becca that it can apply to any decision making, it's reputational risk, it's litigative risk, it's technology investment risks. So, it can be applied to any framework, and that's why we've made it mandatory through the end of this year for everybody to get the training on it.

But then it's a question of really management leading the way, and saying hey, we're engaging a decision here, how have we applied the riskSMART framework to it? And the great thing about the Be riskSMART framework is it doesn't have to be hugely resource intensive. Yes, we have these very advanced models for core damage frequency, that's appropriate for the decisions we're making there.

But this can be a relatively simple framework, but it causes you to consciously think about the risks inherent in the decisions you're considering, both to inform how much effort is worth spending on this decision given the insight of the associated risk, as well as the risk insights associated with the decision itself.

So, I think as we get more people trained up on it, and we become more intentional about using it broadly in everything that we do, that will build in that institutional muscle memory.

MS. RIVERA-VARONA: Can I add something more?

MR. DORMAN: Please.

MS. RIVERA-VARONA: Also the Be riskSMART team, even though they completed their work as a team, as an initiative, they continued to also conduct work with ambassadors across the agency. So, they continued to have workshops, they continued to have sharing of the use of Be riskSMART in different aspects, that helps staff get comfortable, understand, and use it in their daily aspects as well.

CHAIRMAN HANSON: Okay, very good, thank you. Commissioner Baran?

COMMISSIONER BARAN: Thanks. Well, thank you all for your presentations, and for the progress you've made on so many innovation efforts. Jeff, thanks for spending some time talking about SPAR-DASH. The SPAR models are so important to NRC's independent oversight role, and the staff is really, I think, taking their usefulness to a whole new level with SPAR-DASH. It's great to see that we're leveraging those models to gain risk insights for our licensing, and oversight work.

I know that the staff is just starting to take advantage of this new tool, but can you give us a couple of specific concrete examples of how the staff is using SPAR-DASH?

MR. WOOD: Yes, thank you for the question, Commissioner Baran. We do have a few examples, it's still a relatively new product, but we did have recently a risk analyst in NRR perform an evaluation of an emergent issue using their risk informed process. And this was related to the Office of Inspector General's audit of the NRC's oversight of counterfeit and fraudulent parts.

And the evaluation used SPAR-DASH to quickly gain some insights on the potential risk impacts associated with some of the systems that could be impacted. And we also have an ongoing proposed safety issue related to emergency diesel generator protected trips, and we're using SPAR-DASH to gather some risk information about the operating reactor fleet in general. And we have several anecdotes of our resident inspectors, and senior resident inspectors viewing the tool. No details on specific applications, but we know it's getting a lot of looks.

COMMISSIONER BARAN: That's great. The risk insights from SPAR-DASH are only going to be as good as the underlying models of course, which I think are pretty good. What's the staff's view about the current frequency of SPAR model updates? There have been resource challenges in the past, but should we be updating our SPAR models more often than we are now?

MR. WOOD: Yes. Well, our current program for updating the models provides sufficient support to meet our needs for the reactor oversight program and our other risk informed program. We are performing six model updates with an extensive bench marking, and a comparison against licensee PRA results. We're performing six of those a year. But we also address model changes as needed, on an as needed basis. We're making multiple updates every month in support of our different risk informed programs.

But we do recognize an increase in the use of the SPAR models, and especially with things like SPAR-DASH, we're seeing increased needs. So, we are pursuing increasing the number of models that are updated with that significant bench marking exercise. We're planning to increase that number that are performed each year.

We're looking at working with our contractors at the Idaho National Lab and having more NRC staff involved in that process over the next few years. This would reduce the number of those ad hoc model changes that we do, and overall improve our efficiency. And it will also be a great knowledge management development tool for our staff that are involved.

COMMISSIONER BARAN: Good, that's good to hear. Caylee, I think the improvements to the rule making process are important and positive. Even with these improvements, rulemaking can still take a very long time at NRC, I think we all realize that. We recently got a rulemaking plan that's pretty typical. It included a time estimate of 57 months, if there were no unexpected delays. So, that's about five years, which if we're being honest with ourselves, is just too long. That kind of schedule usually involves 16 months to develop a draft proposed rule, and 16 months after the public comment period to develop a draft final rule. Those 16 months don't include the public comment periods themselves. We've seen other agencies prepare draft proposed rules, draft final rules in more like a 12 month period, even for complex rule makings.

Is the staff looking at ideas for getting to those kinds of shorter time frames, so that an entire rule making can be completed in two, to three years without doing anything that shortens public comment periods?

MS. KENNY: Absolutely, thanks for the question, Commissioner Baran. Yeah, so as I mentioned, our original intent was to really take a full holistic look at our rulemaking process, and we did actually benchmark with four other government agencies. So, we gained a lot of ideas from them, and a lot of our original initiatives kind of sprung from the lessons learned, should I say, from the processes that these other agencies use.

So, as we continue to institutionalize, and add a lot of these improvements that we've made into our processes, and procedures, they become more ingrained in our day-to-day culture, I think we'll see those time frames start to come down a little bit. As I mentioned, that regulatory basis efficiency is expected to save us about six to nine months from any given rule making depending on the complexity. That was an idea taken from the benchmarking of those other government agencies. Certainly the concurrence process, we can do some work there. As I mentioned, we are going to be doing a review of the improvements that we've made so far to see kind of where we are at compared to our baseline prior to starting our initiative. Certainly we can make some more streamlining there in terms of who is actually on concurrence, versus who needs to be there for awareness.

Making sure our partners are well aligned, and involved earlier on to preclude any potential rework or show stoppers or whatnot. And as we continue to make use of the agile concept, we know we've seen it in play in the PRM process, where that was ahead of schedule, and it's been really helpful in terms of maintaining alignment, and moving things on throughout the product development process at a smoother pace.

So, certainly we are consistently and always looking for ways to do so. We know we can do better. We do think we will see continued improvements as these process changes are more institutionalized, and whatnot. And then we're trying to make it a safe space for staff to voice their new ideas, and ingrain innovation into our culture. So, we're always hoping that they'll bring up new ideas for us to tackle as potential improvements.

COMMISSIONER BARAN: Good. Well, I'm glad to see, and hear that the effort overall is making progress, and that the effort to streamline the concurrence process is moving along. I'm looking forward to hearing are we seeing meaningful reductions in the length of time to get through concurrence, as you all look more at that.

Antonios, you mentioned that the staff is looking at extending RIPE to technical specification. Can you talk a little bit about that? What's the staff envisioning in this area? Would it be for administrative items, or are you thinking more broadly than that?

MR. ZOULIS: Thanks for the question, Commissioner Baran. Right now, what we're looking for, you still need to meet the criteria of the RIPE process, essentially the issue still needs to be well represented by the probabilistic risk assessment of the plant licensees. And kind of initially we didn't think the tech specs low safety significance issues, so essentially we excluded that from the RIPE Process.

But then we were thinking that there could be opportunities where a licensee may come in for an exemption, for example, where the system may be in tech specs. So, they would come in for the exemption and then also the license amendment change in one fell swoop under the RIPE process. So, that's kind of where we were picturing it. Not for administrative changes at this point. We're still trying to ensure that the risk is well defined, and it's truly a low safety significance issue. Another example could be perhaps a focus, the tech spec IOT extension for some system maybe that is, that for some reason has a higher IOT than the risk represents in the plant. So, maybe they would come in for something of that nature.

COMMISSIONER BARAN: A lot of the equipment addressed by tech specs provides defense in depth. How do we make sure that RIPE doesn't result in any kind of whittling away of defense in depth at nuclear power plants over time? Is the staff going to build something into the process that's going to look at the cumulative effect of RIPE changes to tech specs and RIPE changes generally?

MR. ZOULIS: That's a great question. So, fundamental to the RIPE process is to evaluate cumulatively. I think I mentioned that in my discussion. So, another beauty of the RIPE process, it's consistent with our application Reg Guide 1.174. And in Reg Guide 1.174, you need to consider cumulative impacts, so that needs to be an evaluation the IDP must consider, as well as defense in depth. So, when we're looking at these issues, you need to ensure there's minimal impact to defense in depth, and the risk is low. So, this is truly a risk informed process. It's not just about risk, it's about all the other elements of the risk informed decision making process.

COMMISSIONER BARAN: Good. Tim, I see that MAP-X effort is very valuable. It sounds like we're still at the stage right now where it's mostly a portal for applicants, and licensees to provide the agency with information. When do we think stakeholders will be able to obtain more information through the portal, and how do we make sure the information provided by NRC through MAP-X is available to all stakeholders, and not just a subset of stakeholders?

MR. MOSSMAN: So, we're working right now with a variety of internal stakeholders in the NRC about what kind of modules they would see as valuable. I think based upon the lessons learned we've gotten to date we want to be very careful about the next modules we take on board. I think even though I would always say I want more, more, more, I want to go as fast as we can on this.

I think it's kind of important that we went out at the pace we did. We were able to put out some relatively simple modules, learn some lessons. I think with those lessons now, I think we can make a little more informed decisions about what modules we take on going forward. Given EMBARK's size, we are a change catalyst, so it's very important for us to work with offices. Whether if it's in the materials side, whether that's the NMSS MSST, if it's the reactor side, we have very valuable partners in DORL. It's going to be important for us to hear from them, and be working through them from the stakeholder communities, what kind of information both internally we want to share, what the stakeholder communities want to receive.

We've got some ideas of things that would be relatively straightforward to share out. Still working on the prioritization of that. The other thing that's kind of important inherent in that, is to make sure that the databases we're pulling from are kind of -- the data is collected, and maintained in a way that it's going to be reliable information we put out.

In terms of putting stuff out to a wider variety of stakeholders, like more public stuff, we're not even constrained by MAP-X to do that. We've talked internally about a number of different opportunities, and in our weekly pitch meetings at EMBARK, we talk about some of the things we still publish reports for because we've been doing it for half a century.

And there might be opportunities to -- let's do a web representation of that report, and we can put that information out in near real time, and maybe get rid of the need to publish a NUREG every year doing that. But we also need to make sure that again, the database that data is kept in is not only sufficiently robust, but controlled in a way that we don't inadvertently put something out. But we're looking forward to those opportunities going forward. I think that's definitely an area EMBARK wants to be squarely involved in to work with our different internal stakeholders to make more information available.

COMMISSIONER BARAN: Great. Well, I want to take just one more minute, and close with a couple of kudos for the staff. First, the eBilling effort that Abby talked about is a terrific development. I remember sitting here a few years ago listening to how our billing process was slow, it was prone to errors because it required so much manual effort. We were using traditional mail service. Everyone agreed that it needed to improve, but that it would take a lot of work. And OCFO, OCIO, the staff generally did that work, it resulted in a huge improvement, and the staff really deserves recognition for that. It's really a great accomplishment.

In the realm of Be riskSMART, I was struck by a very positive example of using risk to get to a result that was protective of safety recently. And it's one that Becca mentioned actually a little bit in her presentation. The staff was looking at how to make cyber security inspections more efficient. And one idea was to reduce the size of the inspection team if a licensee voluntarily submitted performance metrics in advance. The staff evaluated that idea, realized the potential for significant negative impact on the inspection team if contractor support was dropped, and decided not to reduce the team size. Instead the decision was that inspectors would look at voluntary performance metrics, which could make the inspection more efficient, but they weren't going to reduce the capabilities by shrinking the team. I think that was the right outcome, and it's great to see the decision making process consider all the pros, and cons of a potential change, so good job. Thanks.

CHAIRMAN HANSON: Thank you, Commissioner Baran. Since you took a few minutes extra, which I think is a great thing, and I think we could go all day probably on this, and have a good time. I did want to give Commissioner Wright an opportunity to make any closing remarks, or ask any remaining questions, or what have you.

COMMISSIONER WRIGHT: You know what they say about a politician and a microphone, right? No, I want to echo what Commissioner Baran said. I'm always amazed, I'm a huge EMBARK fan - I promote that anywhere I go. I'm really very proud of everything that the staff is doing, and having done it in this environment even, I mean that's even bigger and better. So, thank you for the opportunity.

CHAIRMAN HANSON: Thank you, Commissioner Wright. And thank you both for your questions. I think we just kind of barely scratched the surface here. There's a lot going on. In case folks hadn't noticed, I agree with Colin Powell, who said that optimism is a force multiplier. I think we heard a lot this morning to be optimistic about. I did want to give -- in the spirit of both my colleagues, I did want to give a shout out.

There's a new, I don't know what to call it, a video blog. I'm so behind the times. But Taylor Lamb is taking her formidable enthusiasm for innovation and transformation, and whereas in case any of you had missed her TAYtalks around the Agreement State program and so forth, she's now pointing that at transformation. She's got an innovation education series that she started. And the first episode is out with Niav Hughes Green and Audrey Thomas. I think it dropped sometime this week, but it's a whole conversation about IdeaScale, about the power of IdeaScale for capturing transformation and innovation ideas. I thought it was a really good conversation and want to applaud them for exploring these other avenues, and vectors for engaging staff. And for encouraging continued enthusiasm around this even as -- and I think IdeaScale continues to be a really great tool that the staff can use. I think Taylor made a really good point in that conversation when she said, hey, look, if you've got an idea, and your manager is onboard, just go do it. You don't have to put it in IdeaScale. I mean that's a good place to capture it, and track it, and lots of other things, it's a great tool. But don't let that constrain you. I think that it's really important, and that's just one area in which I think we all continue to just be impressed by what a creative and engaged workforce can accomplish. And as I think Commissioner Wright just said, in a pretty tough environment in the last two years, and yet it's driven a lot of creativity as well.

So, I'm just really glad this morning to have the opportunity to celebrate some of these successes and I continue to be proud of what the agency has done. And with that, thank you, we're adjourned.

(Whereupon, the above-entitled matter went off the record at 11:36 a.m.)