Official Transcript of Proceedings

NUCLEAR REGULATORY COMMISSION

Title: Public Meeting to Discuss the Part 53 Risk-informed, Technology-Inclusive Regulatory Framework for Advanced Reactors Rulemaking

Docket Number: (n/a)

Location: teleconference

Date: Tuesday, February 8, 2022

Work Order No.: NRC-1830 Pages 1-131

NEAL R. GROSS AND CO., INC.
Court Reporters and Transcribers
1716 14th Street, N.W.
Washington, D.C. 20009
(202) 234-4433

UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

+ + + + +

PUBLIC MEETING TO DISCUSS THE PART 53 RISK-INFORMED, TECHNOLOGY-INCLUSIVE REGULATORY FRAMEWORK FOR ADVANCED REACTORS RULEMAKING

+ + + + +

TUESDAY,

FEBRUARY 8, 2022

+ + + + +

The meeting convened via Video Teleconference, at 1:00 p.m. EST, Dan Mussatti, Meeting Facilitator, presiding.

NRC STAFF PRESENT:

DAN MUSSATTI, Office of Nuclear Material Safety and Safeguards (NMSS), Meeting Facilitator

ROB TAYLOR, Office of Nuclear Reactor Regulation (NRR)

JORDAN HOELLMAN, NRR

BOB BEALL, NMSS -- Rulemaking Project Manager

STEVE VITTO, Office of Nuclear Security and Incident Response

P R O C E E D I N G S

1:01 p.m.

MR. MUSSATTI: Welcome, everybody, let's get started. My name is Daniel Mussatti, I'm from the NRC's Facilitation Corps, and I want to welcome you to this public meeting to discuss Part 53 advanced nuclear reactor issues.

Our agenda for the day can be found through the announcements for this public meeting, and we will be following it closely throughout the afternoon.

If you don't have a copy of that agenda, take a moment during these opening remarks to go to that link and download a copy for yourself. You can access supporting documents from our ADAMS site at NRC.gov.

Grab a pencil if you need the extension number. Give me a second here to get a pencil and paper. Are you ready? The extension number is ML20289A534 for the current and past preliminary rule language. Once again, for the current and past rule language, ML20289A534. The ADAMS extension number for today's public meeting agenda is ML22027A377. Once again, ML22027A377. And the NRC has consolidated the Part 53 proposed language into one document at

ML202024A066. Again ML202024A066. All of these are listed at the announcement for this meeting that's on the NRC's website under announcements.

Before we get to the heart of the meeting, I would like to introduce to you Rob Taylor, Deputy Director of the Office of Nuclear Reactor Regulations.

Rob, are you there?

MR. TAYLOR: I'm here, Dan.

MR. MUSSATTI: I can hear you.

MR. TAYLOR: Thanks for the introduction, Dan. I just wanted the opportunity to provide some opening remarks for today's meeting given the importance of this meeting.

So first and foremost good afternoon to everyone who is joining us. I'd like to welcome and thank all of you for joining us today, for taking the time out of your busy schedules to participate in this discussion about one of the NRC's critical efforts related to the licensing of new and advanced reactors.

We recognize that for some of you, this may be the first chance to hear about the NRC's Part 53 rulemaking effort. For those that have already been following this effort, we appreciate your participation to date.

In the rulemaking plan we provided to the

Commission, the NRC Staff identified that an accelerated timeline for this comprehensive rulemaking could challenge the ability of some stakeholders to participate effectively in the rulemaking process. This meeting is one effort we're undertaking to provide a dedicated forum for those stakeholders to share their perspectives.

The NRC plans to use the Commission's recently approved nine-month extension to continue developing the rulemaking language associated with alternative approaches, systematically reviewing the comments received by stakeholders on key elements of the rule to assess what additional changes should be made, and conduct focused public meetings on many of these topics to elicit additional input and discussion.

The Staff remains committed to the vision outlined for this rulemaking when it provided it to the Commission. This rule must accomplish the goal of developing a technology-inclusive, risk-informed, and performance-based regulatory framework for future reactors in accordance with the Commission's approved schedule. Such a rule will allow for a more streamlined, safety-focused licensing reviews, enabling the deployment of these technologies that

demonstrate the same level of safety as currently required by NRC's regulations.

For those designs which demonstrate enhanced safety performance, this rulemaking will provide an opportunity to take new and different approaches to traditional regulatory requirements related to aspects such as operator licensing, safety classification of equipment, and many others.

The Staff has been implementing a novel approach of releasing preliminary proposed rule language to facilitate discussion, reflect on internal and external stakeholder feedback, and release additional information as the rule language is refined.

This will not replace our responsibility under the Administrative Procedures Act to issue a proposed rule for public comment, assess and make changes, as appropriate, based on those comments, and provide the Commission a draft final rule in accordance with their statutory responsibility to establish regulations to ensure adequate protection of public health and safety.

The Staff understands the challenges that releasing the Part 53 rule in small pieces has presented to some stakeholders, and we recently

released a consolidated version of the preliminary proposed rule language to have it all in one place for stakeholders to review.

We hope this will give stakeholders a more holistic view of the NRC Staff's vision for Part 53. Additionally, the Staff remains committed to a regulatory framework that achieves the goals of the Commission's advanced reactor policy statement and the NRC's principles of good regulation.

We look forward to your feedback today and in the future on the Staff's proposals of achieving a technology-inclusive, risk-informed, and performance-based framework for advanced reactors.

With that, Dan, I'll turn it over back over to you.

MR. MUSSATTI: Thank you, Rob.

As you can see from our agenda, we have a lot of presenters today. On I think it's the next slide we have a list of the presenters. The organizations listed on this slide are not the entire set of non-governmental organizations that are attending this meeting. This is just a list of those non-governmental organizations that are presenting with slides so you can access the link to their slides through the ADAMS system and through the chatroom for

this meeting.

As your facilitator, my role is to help ensure the meeting is informative, productive, and on time. We have a long way to go and a short time to do it, but before we get into the meat of the meeting, I would like to cover some basics.

Today's meeting is what used to be called a Category 3 meeting, but we've changed that to add clarity to our names. Now the meeting is classified as a comment gathering meeting designed for the NRC Staff to meet with individuals to inform them and take their feedback comments on a specific topic.

During the business portion of the meeting, the audience is encouraged to listen to the speakers, reserving their questions and comments until the end of each presentation or during the discussion session.

Somebody's got their microphone on and you need to mute your microphone, please. Thank you very much. This will become later on. We've got a court reporter and I'll tell you about that more in a minute.

We're running our meeting through Microsoft Teams which means everyone in the meeting has their own microphone. To ensure everyone can hear

the discussions, when you are not speaking, we ask that you please turn off or mute your headset or microphone.

And then when it is your turn to talk, please be sure you have eliminated any background noise that could affect getting a clear record for your comments. If you want to talk, click on the raise-hand icon in Teams and wait your turn in line, microphone muted, until I call on you to speak.

For the most part, I plan on following the order in which people raise their hands to speak, so please raise your hand and wait item in line until I indicate it is your turn. And for those of you who are on the phone but cannot raise your hand to speak, we will offer you an opportunity to speak. If we get to the end of the meeting and we still have people who want to speak, I will poll the audience to see if we should remain maybe an extra 15 minutes or so to hear from more of the audience.

We have a court reporter with us today so when you speak, please start with your name and affiliation, speak clearly and directly into the microphone, and to ensure we can get that accurate transcript of the meeting, please let's have one speaker at a time.

One last point about Teams, Teams has a chat function that allows folks to have sidebar discussions but without affecting the flow of the main meeting. We are not using that function because there is no permanent record of the chats that we can attach to the official file. The NRC Staff will occasionally use the chat line to provide information for the audience or to address meeting logistics, so please do not use the chat function for discussion with your peers or with the NRC Staff. Use the raised-hand feature and the microphone instead.

We have a limited amount of time and a lot to cover and we need to limit our comments to two or three minutes. If you take too much time or wander off topic, it is my job to put us back on track, so please be precise. If you feel you have more to say, you can always send us your comments to the NRC at robert.beall@nrc.gov. That's Beall with two Ls, B-E-A-L-L. Or online through regulations.gov.

One last thing before we get down to business, please be careful not to discuss any proprietary information and although we intend to have an open dialog, please take note that we will not discuss ongoing reviews in neither industry, nor will the NRC make any regulatory commitments during this

conference.

It is best in a meeting like this to consider all microphones to be hot, they're always on so please be careful. Does anyone have any questions? Going once. Okay, let's get started.

I'd like to introduce Jordan Holman, he's a Project Manager for the Office of Nuclear Reactor Regulation, Advanced Reactor Policy Branch, and he's going to start our presentations today.

MR. HOELLMAN: Good afternoon, everyone. I'm just going to have my camera on for a second just to introduce myself and get started, and then I'll turn it off to save bandwidth.

So we can move to Slide 4, please, or Slide 5, I guess.

Thanks to both Dan and Rob for their remarks and generally, the timing of this meeting is essentially corresponding to the release of the first iteration of all of the portions of the preliminary proposed rule language. And late last week, as Dan mentioned, we released the preliminary proposed rule language in a consolidated file, which included some new revisions but also recognizes that there are a number of public comment submittals that we continue to consider as we develop the proposed rule package.

And looking for additional feedback from you all today and as we continue throughout the rest of the year in developing the rule package.

So we wanted to start today's presentation in recognizing that some of you may not have been able to participate fully on this rulemaking, and we wanted to provide some additional background on the NRC's advanced reactor program to give everyone an understanding with respect to the activities that we've completed, that we have underway, or have planned to prepare for the safe deployment of future commercial nuclear facilities.

This slide is just an intro slide but it does highlight the six strategies that we focused our efforts on, and that includes increasing Staff knowledge, capacity, and expertise, ensuring analytical tools and modeling simulation tools that are capable of supporting the evaluation of future applications. Closing technical gaps in guidance, facilitating the use of consensus codes and standards through endorsements, and resolving key policy and licensing issues and stakeholder outreach and engagement.

So these efforts were underway before the enactment of the Nuclear Energy Innovation and

Modernization Act, or NEIMA, and that act requires the NRC to establish a technology-inclusive regulatory framework for licensing advanced reactors by 2027. The Staff has interactions with the Department of Energy industry stakeholders, the National Labs, the Advisory Committee on Reactor Safeguards, and the public to inform the NRC's activities in these areas. And that helps us prioritize activities to pursue based on future plans. So can we move to the next slide, please? So this slide tries to indicate the broad landscape of advanced reactor technologies that are being considered and the various sizes.

This includes alternative coolants to light water and that includes high-temperature gas-cooled reactors, molten salt reactors, liquid metal fast reactors, as well as light water small modular reactors, and micro reactors. A number of these technologies have past systems and inherent characteristics that reduce the need for active equipment such as AC power to operate safety systems.

This means that defense in-depth may be different than the current operating fleet and the role of the operator may be different as well. The hazards with these technologies is likely to vary with power level and radionuclide inventory. That affects

things like siting and emergency planning.

And consistent with the Commission's advanced reactor policy statement, we have paradigm shift or the opportunity for more preventative applications of certain design features. That would mean they would rely less on mitigation and an area where that's specifically called out in the advanced reactor policy statement is the opportunity for safety and security aspects to be handled during the design phase of the reactor.

So the Staff has implemented and is leveraging flexible review strategies to meet the challenges associated with the broad landscape of advanced reactors. We've been encouraging prospective Applicants to engage with the Staff early in pre-application space, which is also consistent with the Commission's advanced reactor policy statement.

We encourage the use of regulatory engagement plans, or licensing project plans. We've implemented a core review team approach, which consists of an interdisciplinary team assigned to the review of a specific application. This is intended to promote more efficient reviews driving by an integrated look at the holistic safety of the design. A core team can then be supplemented by

subject-matter experts as needed to focus on aspects of the design that are identified based on their risk or safety significance.

We've developed a regulatory review roadmap, which offers many flexibilities and regulatory pathways for stakeholders and shows the various ways the existing licensing processes can be used as stages in the licensing process. So the broad landscape here drives the need for a flexible approach to the development of Part 53. The development of a new regulatory framework for advanced reactors provides an opportunity to take an integrated approach to regulations.

Our existing requirements for the operating fleet have been constructed over decades and addresses various aspects of both prevention and mitigation activities to ensure the regulations are met. And sometimes that was done in technology-specific ways. So Part 53 will have to do this in a technology-inclusive way from the beginning.

So let's move to Slide 7.

This is just some additional history on how we got to where we are today. So following the issuance of the advanced reactor policy statement in the late 1980s, the NRC interacted with DOE and

reactor developers regarding the protection licensing of advanced reactor designs. The NRC Staff identified several potential policy issues during its assessments of advanced reactor designs and proposed approaches to resolve some of the policy issues.

During the 1990s, we continued to develop licensing approaches for advanced reactors. These activities were done in parallel with and sometimes interwoven with NRC's efforts to improve risk-informed and performance-based approaches within the Agency, such as the Commission's policy statement on probabilistic risk assessment.

In August of 2008, the NRC and DOE jointly issued a report to Congress, the Next-Generation Nuclear Plant Licensing Strategy. The Staff continued activities related to advanced reactors following the specific work related to NGNP. That's Next-Generation Nuclear Plant. And the NRC published its strategies for an approach to preparing for the licensing of advanced reactors in a report to Congress titled Advanced Reactor Licensing.

In 2016 we issued our vision and strategy for safely achieving effective and efficient non-light water reactor mission readiness in response to increasing interest in advanced reactor designs. The

NRC issued the document in the same timeframe that DOE issued its vision and strategy for the development and deployment of advanced reactors. The NRC considered DOE's advanced reactor deployment goals when setting priorities for its readiness activities. To achieve the goals and objectives stated in the advanced reactor vision strategy document, we developed implementation action plans, or IAPs, which we issued in their final form in 2017.

Based on input received from stakeholders and the ACRS, the Staff assigned priority to its execution of Strategies 3 and 5, which is flexible review strategies and the resolution of policy issues. However, activities were completed and are ongoing in support of all six strategies.

Near-term implementation action plans focused on the infrastructure improvements needed to support pre-application interactions and licensing for non-light water deployment strategies within the existing regulatory framework.

The enactment of NEIMA in 2019 put additional emphasis on specific activities the NRC had identified in the vision, strategy, and implementation action plans, and directed the Staff to complete the rulemaking by 2027. NEIMA also directed the Staff to

provide reports to Congress on a number of the topics that we were working on, including increasing the use of risk-informed, performance-based approaches, establishing stages in the licensing process, and developing guidance to account for unique aspects of advanced reactor technologies.

The NRC issues an annual SECY paper to the Commission every year titled Advanced Reactor Program Status and this year's vision of that paper should be issued shortly.

So let's move to Slide 8.

This slide just shows some of the additional activities in addition to Part 53 that the Staff has undertaken. And these are consistent with the vision, strategy, and implementation action plans that I was just describing.

So we're working in parallel to modernize other parts of our regulations and guidance to embody the technology-inclusive, risk-informed framework. There are many activities underway to support the licensing and regulation of advanced reactors. And the circles represented on this slide reflect some of the areas the NRC focused on under the implementation action plans and that are specifically called out in the Nuclear Energy Innovation Modernization Act.

These areas need to be considered in the design and licensing of advanced reactors and the NRC is building an advanced reactor framework that recognizes technological advancement in reactor design and allows credit in the form of operational flexibilities when a reactor design can show increased margin of safety, including slower transient response times and relatively small and slow release of fission products.

These activities were or are being developed to support licensing under the existing Part 50 and 52 regulatory frameworks, but we intend to leverage the activities and make conforming changes to the guidance documents to make sure they are applicable to the Part 53 framework.

So let's move to the next slide. We're on Slide 9 and this is just an overview of the Licensing Modernization Project, or LMP.

As I was mentioning on the previous slide, a lot of these activities are being developed under the Part 50 or Part 52 licensing framework, but they are being developed with the explicit considerations of the LMP methodology.

The LMP produced the transformative methodology for licensing non-light water reactor

technologies that is documented in guidance funded by the Department of Energy and developed by the nuclear industry. The guidance was approved by the Commission and endorsed by the NRC in Regulatory Guide 1.233. It's based on over 20 years of work on risk-informed regulatory approaches and lessons learned from a number of industry tabletop exercises covering different technologies and designs. The results of the tabletop exercises confirm that the LMP process can be effectively executed for a spectrum of different non-light water reactor concepts, that design decisions can be optimized through an integrated and realistic analysis of the plant's response, and that information obtained through the LMP base design evaluation can be used for building a strong operational risk management program.

The LMP is an alternative to the use of deterministic methods for licensing nuclear plants. It uses risk information to select and evaluate licensing basis events, which are a collection of unplanned events considered in the design and licensing of a commercial nuclear plant. It also uses information to classify equipment or structure, systems, and components, SSCs, based on their contribution to risk and determine defense in-depth adequacy.

We are also using the LMP and the consequence-oriented concepts to define the level of detail in regulatory focus on the various attributes of a design proportional to the risk for safety significance. These efforts are underway under the industry-led, technology-inclusive content of application project and the NRC-led advanced reactor content of application project. And the NRC holds separate public meetings on these topics.

So I think we'll move to Slide 10 now and I will turn it over to Bob Bell, who is our rulemaking Project Manager to discuss the rulemaking plan and schedules associated with this rulemaking.

MR. BEALL: Thanks, Jordan, can you hear me?

MR. HOELLMAN: Yes, I can.

MR. BEALL: Good afternoon, everyone, my name is Bob Bell and I'm from the NRC's Office of Nuclear Material Safety and Safeguards. As Jordan said, I'm the Project Manager for the Part 53 rulemaking and will be providing a status update of the Part 53 rulemaking and an overview of the recent changes to the rulemaking schedule.

The Part 53 rulemaking activity started when the Staff submitted a rulemaking plan to the

Commission in April of 2020. The rulemaking plan included recommendations to develop a new 10 CFR part that would address the future requirements, design features, and programmatic controls for a wide variety of advanced nuclear reactors throughout the life of a facility, and to seek extensive interactions with external stakeholders and the Advisory Committee on Reactor Safeguards, or ACRS, on the content of the rule. The Commission reviewed the Staff's recommendations and issued their direction to proceed with the Part 53 rulemaking to achieve publication of the final rule by October 2024.

In early November of 2020, the Staff provided additional information to the Commission about the Part 53 rulemaking. This included resources estimates, scheduling information, and key uncertainties to support completing the Part 53 rulemaking by the 2024 date.

In November of 2021, the Commission approved the Staff's request for a nine-month extension of the Part 53 rulemaking. The revised rulemaking schedule provides additional time for the Staff to continue our outreach activities with external stakeholders on the scope of the rulemaking and to further develop the proposed Part 53 rule

language.

Next slide, please.

This slide provides an overview of the proposed and final Part 53 rulemaking process and where we currently are, which is the ''You are here'' circle on this slide. We have completed the rulemaking trigger step, which is when the NEIMA statute was signed by the President and the ''Commission review and approval'' step when the Commission approved the Part 53 rulemaking plan in 2020. We are currently in the public outreach and stakeholder input phase of the proposed rulemaking. This phase will continue throughout the summer of 2020.

Next slide, please.

Since the fall of 2020, the Staff has held numerous public meetings to discuss and receive comments on the Part 53 rulemaking. These public interactions have added up to over 90 hours spent in 14 public meetings, and approximately the same number of hours in 15 meetings with the ACRS full Committee and Future Plant Designs Subcommittee.

The Staff will continue to release initial and revised preliminary proposed rule language for Part 53. Going forward, any new or revised

preliminary proposed rule language will be incorporated into a consolidated rule text file. Please note that all the previously released Part 53 subparts, along with the associated discussion tables, are still publicly available on ADAMS and on regulations.gov. The Staff will be releasing new and revised preliminary proposed rule language as soon as it becomes available but in the new consolidated format.

As part of the stakeholder engagement, over 200 public comment submittals have been received in response to the preliminary proposed rule language so far. The Staff has and will continue to accept comments on the preliminary proposed rule language via regulations.gov until August of 2022. The Staff is taking these comments into consideration in the development of the draft proposed rule, but the Staff is not responding in writing to comments on the preliminary proposed rule language. In contrast, the Staff will respond in writing to public comments on the proposed rule.

Next slide, please.

This slide shows the estimated dates to complete the proposed and final Part 53 rules. These dates are based on the nine-month extension request by

the Staff and approved by the Commission. As I stated previously, we are currently in the public outreach step and will be developing the proposed rule later this year. The Staff is expected to complete the proposed rule and provide it to the Commission by February of 2023.

After the Staff receives the Commission's approval, the proposed rule will be published for a 60-day comment period. After the public comment period closes, the Staff will review the public comments and take them into consideration while developing the final rule. During the public comment period and the generation of the draft final rule, the Staff will continue our public outreach activities. Based on the current schedule, the Staff is expecting to publish the final Part 53 rule by July of 2025.

With that, I'll turn the meeting back over to Jordan to continue discussions of Part 53 rulemaking. Jordan?

MR. HOELLMAN: Thanks a lot, Bob. Let's move to Slide 14.

In this portion of the meeting, what we intend to do is just give a high-level overview of what's included in each of the released portions of the preliminary proposed rule language.

Let's move to Slide 15 if we can.

So here is the rulemaking objectives as stated in the rulemaking plan. As Bob mentioned and as directed by the Commission, we've been releasing preliminary proposed rule text building off of recent developments for advanced reactors including the licensing modernization project guidance as a method to identify licensing basis events, classify the equipment based on safety significance, and ensure defense in-depth adequacy.

The vision for Part 53 is to establish a transformative regulatory framework for advanced reactors consistent with Commission direction and policies, including the advanced reactor policy statement and the policy statement on probabilistic risk assessment to develop an innovative, predictable, and appropriately flexible framework to enable an efficient licensing process for advanced reactors.

To remove the prescriptive nature of the current requirements and replace them with technology-inclusive performance-based framework to recognize technological advancement in reactor design and allow the credit in the form of operational flexibilities when an advanced reactor design can demonstrate increased margins of safety to reduce requests for

exemptions from the current requirements in Parts 50 or 52 that would be necessary for an advanced reactor applicant now. And in developing options for demonstrating the safety case, we strive to provide predictable licensing paths that can accommodate a variety of approaches.

So let's move to Slide 16 and as we've been sharing our proposed list with stakeholders, we found that it was useful to provide a comparison to their reactor licensing requirements as they currently exist in Part 50 and 52 to what we're proposing under Part 53.

In Part 53, the approach we've taken is to lay out a high-level top-down approach, which focuses on the primary objective of eliminating the release of radioactive material. And that is then supported by controlling radioactivity, heat removal, and controlling chemical interactions.

The rule language sets out qualitative objectives and that is the commercial nuclear plant must be designed, constructed, operated, and decommissioned to limit the possibility of an immediate threat to the public health and safety. And additional measures are taken as may be appropriate when considering potential risk to public health and

safety. We're intending to develop Part 53 with little or no cross-references to Part 50 and Part 52. This will require replicating some Part 50 or 52 where appropriate in Part 53.

In the design and analysis area in Part 50 and 52, there is a prescriptive and generally highly conservative analysis that's done for the design basis accident. And this history of why it's done that way goes all the way back to the initial licensing of the current reactor fleet with the identification of the large-break loss of coolant accident as the maximum credible accident. And the conservatism there addresses the reason and the licensing and the safety case that other event sequences weren't looked at, in part because the design basis accidents were done in such a conservative manner.

In Part 53 we're proposing a little differently structured approach and it's a little less conservative when it comes to the development of the design basis accident. This is enabled because very unlikely event sequences are not only analyzed but there are actually regulatory controls specifically put in place to address those sequences. And in Part 53, some requirements were added to address events such as station blackout or anticipated transient

without scram, based on the operating experience or studies to address particular or beyond-design basis accidents as opposed to a systematic assessment of the events that were requiring in Part 53.

So let's move to the outline slide of Part 53.

So this slide then provides a general structure for how we've been developing Part 53, which intends to cover the entire project lifecycle of a nuclear plant. Subpart A addresses the general provisions and the definitions for this part. Subpart B sets the technology-inclusive safety criteria, Subpart C contains the requirements for the design and analysis equipment categorization and special treatments. Subpart D provides the siting requirements, Subpart E is the requirements for construction and manufacturing, Subpart F is operational requirements, that is controls on equipment, staffing, and operational programs. Subpart G is the decommissioning subpart. Subparts H and I are the content of the applications for the various licensing or permit types, and requirements for maintaining the licensing basis. That is the process for controlling changes to the plant and Subpart J is the reporting requirements. And Subpart

K, which is a new subpart we added in a consolidated file, groups the quality assurance criteria that had been interspersed throughout the initial releases of the preliminary rule language and puts them in a separate subpart that is comparable to what is in Part 50, Appendix B.

So Part 53 is organized by providing high-level performance criteria and defining requirements to meet those performance criteria throughout major parts of the lifecycle of the nuclear plant. This organization supports an integrated approach to the design, licensing, operation, and ultimately decommissioning of future nuclear plants. The construct of requirements in this manner also supports performance-based approaches where programs and monitoring during the operations phase can be used to confirm assumptions made at the design phase and possibility compensate for uncertainties associated with reactor technologies materials and other innovations that currently lack operating experience.

The performance-based approach incorporated in Part 53 also includes a flexible and graded approach to regulatory controls based on the role of particular equipment, human actions, or programs in limiting and maintaining the overall risk

to the public through balanced measures to prevent and mitigate possible events.

Let's move to Slide 18 and we have I think one slide that covers each subpart in a little more detail.

Subpart A includes the scope definitions, written communications, employee protections, completeness and accuracy of information, exemptions combining licenses, jurisdictional limits of tax and destructive acts and information collection requirements. Largely, Subpart A incorporates the general provisions that are included in Part 50. The definitions leverage concepts in the license modernization project methodology and consensus codes and standards to enable implementation of those methodologies.

We did make a change in the definition of advanced nuclear plant and we changed that to commercial nuclear plant. And this really goes back to what Rob mentioned in his early remarks. And that we didn't see a technical reason to limit the applicability of Part 53 given that it is expected to provide an equivalent level of safety as it would be under either Parts 50 or 52. And that is driven by the technology-inclusiveness of the requirements and

consistent with Commission policy.

It is important to note, I think, that the term commercial nuclear plant does include a utilization facility that consists of one or more advanced nuclear reactors and the associated co-located support facilities. So it may include more than one unit or reactor module and we have incorporated the use of these -- these things can be used for either producing power for commercial electric or for other commercial purposes.

Let's move to Subpart B, which provides the technology-inclusive safety requirements. Subpart B defines high-level performance standards that are used throughout Part 53. Subsequent subparts define how specific activities during various stages of the lifecycle of the commercial nuclear plant support meeting those high-level performance standards.

So as I previously mentioned, we provide the overall qualitative safety goals of ensuring a nuclear plant must be designed, constructed, operated, and decommissioned to limit the possibility of an immediate threat to public health and safety. And additional measures are taken as may be appropriate to consider potential risk to public health and safety.

In describing the safety paradigm, we've

included in Part 53, which starts with the qualitative safety objectives of reasonable assurance of adequate protection of public health and safety and minimizing danger to life and property. We establish safety criteria which are radiation limits based on established regulations and Commission policy. These are dose limits from 10 C.F.R. Part 20, the dose requirements for an individual during a two-hour period at the exclusionary boundary during a design basis accident and the quantitative health objectives in the NRC safety goal policy statement that considers the overall cumulative plant risk from licensing basis events.

The safety functions are primarily the limiting of the release of radioactive material and supporting that is radioactivity control of heat removal and controlling of the chemistry interactions.

Design features must be provided to ensure that the safety functions are fulfilled during unplanned events and normal operations, and functional design criteria must be defined for each design feature relied upon to meet the safety criteria. So as a connection and as we move into Subpart C, the general hierarchy established throughout Part 53 goes from the plant-level safety criteria to safety

functions needed to fulfil the safety criteria. And that is design features that are needed to fulfil the safety functions and functional design criteria that established performance requirements for those design features.

So let's move to Subpart C on the next slide and this subpart addresses requirements to be provided for by the design of commercial nuclear plants and the supporting analysis included in the analysis of the licensing basis events to demonstrate that the safety criteria in Subpart B will be satisfied.

Subpart C is where we require a PRA, or probabilistic risk assessment, and the use of systematic approach to defining the licensing basis event. We establish a requirement for design features to address the underlying safety criteria and safety functions from Subpart B. And that is to ensure they're fulfilled during both licensing basis events and normal operations.

And then subsequent sections in this Subpart address the need to further define the needed capabilities and reliabilities for equipment by establishing functional design criteria fulfilling design requirements performing analysis of licensing

basis events and categorizing equipment based on their roles in preventing or mitigating licensing basis events.

We'll move to Slide 21 I guess it is.

So as I mentioned before, Subpart D is the siting requirements. These addresses requirements associated with the siting of commercial nuclear plants and assumes the role provided in Part 100 for those facilities license under Parts 50 or 52. We're proposing to include the siting requirements within this subpart to reflect the Part 53 framework that is organized to address various phases of a project lifecycle, including the siting requirements for commercial nuclear plants to be licensed under Part 53 within a dedicated subpart. Also it precludes the need to revises Part 100 to address these reactors. This section also establishes the overall siting relating considerations in relation to the safety criteria in Subpart B and interfaces with areas such as design. So those are things like external hazards.

And then as I alluded to earlier, Subpart D does recognize that some Applicants may propose designs that would allow them to essentially collapse the exclusionary and low-population zone to the site boundary by demonstrating the design basis accident

does not challenge the dose-related criteria in this section.

Next slide, please.

Subpart E addresses requirements for the construction of advanced nuclear plants and the possible factory fabrication of reactors using a manufacturing license. The preliminary language for construction-related activity reflects the current requirements without any fundamental changes.

Subpart E for manufacturing activities largely mirrors the construction-related activities and includes new requirements related to the possible loading of fuel at a manufacturing facility and the transport of fueled reactors to installation at a licensed site.

In Part 53, we are intending to allow flexibility for a manufacturing license to load fuel at the manufacturing facility but we're precluding the allowance of any criticality testing at a manufacturing facility.

We'll move to Slide 23 I guess it is.

Subpart F defines the requirements during the operation phase of a commercial nuclear plant to ensure that safety criteria in Subpart B in other areas of Part 53 continue to be satisfied throughout

the plant's lifetime. This Subpart provides the overall objectives and general organization of Subpart F, which is to define requirements for plan equipment. That's things like configuration control and testing to define requirements on plant personnel, that's licensing and training, and to define requirements for plant programs. These are things like radiation protection program, emergency preparedness, security programs, which I've shown later in some proposed changes to Part 73. The fire protection programs, in-service inspection, and in-service testing programs, and criticality safety program. The requirements ensure the nuclear plant is maintained and operated such that the safety criteria are met during all modes of normal operation.

Let's go to Slide 24, please.

Subpart G includes requirements related to maintaining financial assurance for decommissioning, requirements for transitioning from operations to decommissioning, termination of commercial nuclear plant licenses, and ultimately supporting unrestricted use of the site.

The NRC is also currently engaged in a rulemaking, a decommissioning rulemaking, and as that rulemaking and the Part 53 rulemaking progressed, the

Staff will consider revisions to Subpart G in Part 53 to align the two rulemakings.

One area that's a little different in Part 53 in the decommissioning space is the specific decommissioning cost estimate for light water reactors, that's pressurized water reactors and boiling water reactors that are currently provided in Part 53, would not be replicated in Part 53. Instead, Subpart G would include a requirement to perform site-specific cost estimates for decommissioning and our initial thoughts that this could be supported by guidance documents and generic analysis that would be shown to be applicable to a subject design and site.

Moving to Subpart H, this is where we have the license certifications and approvals. These are basically the general requirements for the content of the applications for all NRC licenses approvals and certifications. There are several issues in Subpart H that relate to ongoing rulemaking, the alignment of licensing process and lessons learned from new reactor licensing for Parts 50 and 52. That's also known has the Parts 50 and 52 lessons learned rulemaking. So reconciliation of similar issues between that rulemaking and the Part 53 rulemaking will occur at a later date. And what has currently been released

largely reflects the current version of Parts 50 and 52.

And as I was mentioning earlier, the guidance being developed under the industry-led technology-inclusive content of the application project and the NRC Staff-led advanced reactor content of application projects are being developed to provide guidance in this area.

On the next slide, we just tried to indicate or visually show that we intend to leverage all of the licensing processes contained in Parts 50 and 52, and integrate them accordingly in Part 53. This is in part to leverage some of the work we've done previously on stage licensing and the regulatory review roadmap. And to not preclude any potential licensing strategy a prospective applicant may pursue.

The dotted lines indicate that we're proposing to allow a design certification to reference an issued operating license or a custom combined license. In this case, the issue operating license or custom combined license would be able to leverage the NRC Staff safety evaluation report. It would provide some safety review finality and it would provide efficiency on the Staff's review side in that the finality must be used and relied upon by the Staff

understanding significant new information that affects an earlier determination is identified.

Construction permit application level of detail is an area that we've received interest from both external stakeholders and the Advisory Committee on Reactor Safeguards. We're developing guidance to address the level of detail required for a construction permit for both light water and non-light water reactors.

So let's move to Subpart I.

Subpart I defines the requirements and processes for maintaining licensing basis information by holders of early site permits, construction permits, operating licenses, and combined licenses. The Subpart is generally organized into those sections dealing with either licensing basis information that licensees are not authorized to change without NRC approval.

Those are things like the actual license, including the technical specifications and license conditions. And the other category, I guess, is licensing basis documents that licensees may change unless specified criteria are not specified. So these are things like program descriptions or information in the final safety analysis report that would trip a

specified criteria that would require NRC approval.

Subpart J is another one where most of the sections in this subpart were largely copied over from Part 50. It addresses reporting and other administrative requirements; these are things like each Applicant and licensee will ensure that NRC inspectors have unfettered access to the site and facilities license. And they shall maintain records and make reports to the NRC in accordance with the requirements, meeting financial qualifications, and obtaining and maintaining required financial protections in case of an accident. So like I said, most of this stuff was just carried over from Part 50.

Next slide is Subpart K, which is a newly added subpart that we've added in response to some stakeholder feedback we've received.

Subpart K provides a consolidated set of the quantity assurance criteria that were previously contained in other sections of Part 53. And they're based on that found in Part 50 Appendix B. The special treatments for safety-related equipment must include meeting the applicable quality assurance criteria from Subpart K of this part, and special treatments for non-safety-related but safety-significant equipment may include meeting

selected quality assurance criteria from Subpart K when such treatment is needed to address performance requirements, equipment reliability, or uncertainties to meet the safety criteria.

On the next slide, we'll talk about Part 5X.

Our development began based on stakeholder requests for an option for a more traditional deterministic licensing framework for advanced reactors. So Part 53 in its current form would provide a risk-informed, technology-inclusive licensing pathway for advanced reactors. It's based on the licensing modernization project methodology that I discussed earlier and that's endorsed in Reg Guide 1.233. And it includes and enhanced use of the probabilistic risk assessment, which the Staff believes is consistent with the Commission's policy on the use of PRA.

External stakeholder feedback suggested that there might be a need for a technology-inclusive licensing approach where PRA is used in a more supporting role or traditional approach. The traditional approaches in Part 50 and 52 are largely based on large light water reactor technologies and so we saw merit in the stakeholder feedback, especially

for vendors who may initially pursue international markets using the IAEA standards. We thought they would benefit from a technology-inclusive framework that more closely resembles Part 50 and 52.

So the initial framework of Part 5X was developed in the latter half of last year, 2021, to address light-water-reactor-specific regulations and address differences between the licensing modernization project and traditional approaches. And those are things like the single failure criterion and defense in-depth. Part 5X provided a starting point for developing several options to address the broader need for a technology-inclusive traditional licensing framework.

In addition to what was released in the first iteration of Part 5X, the Staff recently developed language to support low-consequence reactors that could use a deterministic approach similar to licensing for research and test reactors. We're calling this the technology-inclusive, risk-informed maximum accident approach. And that would use a dose-based deterministic option. PRA would not be required, and we would develop conservative risk estimate and qualitative risk insights. The approach is a subset of the Part 5X approach and focused on

limiting accident scenarios.

And so to support these efforts we're developing guidance for systematic searches for hazards, initiating events, and accident scenarios to provide better detail on how to do that for initial licensing.

So with that, I will turn the presentation over to Steve Vitto in our Office of Nuclear Security and Incident Response to talk about some of the proposed changes in Part 73.

MR. VITTO: Thank you, Jordan. Next slide, please.

Good afternoon, as Jordan mentioned, my name is Steve Vitto, I'm a security specialist within NSIR, Nuclear Security and Incident Response. I intend to present a high-level overview of the proposed security and fitness for duty sections.

So starting with Section 73.100, the physical security requirements, the proposed section provides a regulatory framework based on performance requirements that minimize prescriptive requirements and permit the Applicant flexibility to determine how it will design and implement the physical protection necessary to protect against a design basis threat of radiological sabotage. The current physical security

requirements use a combination of performance criteria and a number of prescriptive requirements to achieve the performance objective. So in a performance-based approach, the physical security performance criteria and objectives are the primary basis for the regulatory decision-making.

For Section 110, cybersecurity, the proposed section implements a graded approach to determine the level of cybersecurity protection required for digital computer communication systems and networks. It's a graded approach based on consequences, it is intended to facilitate reinforce approaches, results, and insights for a wide range of reactor technologies to be assess by the NRC. The primary proposed rule will recognize the more significant role that may be played by those digital and computer communication systems for future reactor designs. This rule leverages the operating experience and lessons learned over the past 12 years from the power reactor's implementation of the current cybersecurity regulations in 10 CFR 3.54.

73.120, access authorization, the existing regulatory framework for access authorization provides reasonable assurance that individuals subject to an access authorization program are trustworthy and

reliable, such that they do not constitute an unreasonable risk to the public health and safety, or common defense and security regardless of the reactor technology. The primary proposed rule language stems from 73.120 and will provide flexibility through the availability of an alternate approach commensurate with risk and consequences to public health and safety.

The proposed requirements would model that of access authorization programs similar to non-power reactors and material licensees, and the most important program elements that are associated with power and reactor access authorization programs under 7356 are applied as well.

We're moving on to Part 26, the fitness for duty programs. The Staff is proposing a risk-informed performance-based approach for the application of drug and alcohol testing and fatigue management requirements for facilities licensed under Part 53. Applicants that meet the criterion would be able to implement a fitness for duty program described in the proposed new Part 26, Subpart M, that is similar to the requirements applied to research and test reactors.

For example, drug and alcohol testing

would not be required, however, other requirements like behavioral observation and performance monitoring program would be required. Applicants that do not meet the criterion would be subject to an alternate fitness for duty program that is also prescribed in Subpart M, or a fitness for duty program that implements all Part 26 requirements.

So next slide please.

That completes my discussion on the security program. At this point I would like to turn it back over to the meeting facilitator, Dan. Thank you very much.

MR. MUSSATTI: Okay, I found the unmute button, thank you. Where are we? We have a few minutes right now for questions from the audience before we begin our formal presentation at 2:30 p.m.

Does anybody have their hand raised? I see we have about four people with their hands raised. Let's start with Mike Keller. Please start with your name and affiliation.

MR. KELLER: This is Mike Keller, I'm with Hybrid Power Technologies. I have a few questions for the NRC and then a comment. Has the NRC management and/or legal participated in the public stakeholder meetings?

Is the NRC management and/or legal aware of the extensive nature of formal public comments and concerns on 10 CFR 53?

Did the NRC management and/or legal approve of not providing responses to formal public comments and concerns on the new version of 10 CFR 53?

I'd like an answer to that, a simple yes or no, now.

MR. TAYLOR: This is Robert Taylor, I'm the Deputy Office Director for New Reactors so I am part of the NRC management team. I'm fully aware of all the issues that have been raised and we are considering all of those as we develop our rule. The process we're in is consistent with our regulatory process for developing rules so we're not doing anything different relative to not responding to comments in the preliminary rulemaking process. We respond to comments during the proposed rules that are issued but we do welcome and have dialog during the public meetings on these issues.

MR. KELLER: So the answer is yes, you approve not providing responses to formal comments? Okay, I just wanted to verify that. Now, I have a comment.

The proposed 10 CFR 53 contains massive

numbers of new requirements relative to 10 CFR 50 and 52 and public participation has been solicited by the NRC. It's unclear how meaningful public participation is possible if the NRC Staff refuses to address formal public questions and concerns. Oddly, the NRC Staff responds to 10 CFR questions and concerns during stakeholder meetings and likely other forms as well. There is no doubt the NRC Staff is attempting to ram through a completely new licensing methodology.

However, the associated licensing-related financial risks which wash through all aspects of plant design, construction, and operation vastly exceeds the public's risks from fully passively fail-safe advanced reactors employing extensive passive defense in-depth features. The bottom line is advanced reactors will not be commercially viable in the U.S. because of the immense, unjustified and unbounded regulatory-driven cost. The nation's security will be directly threatened.

That ends my remarks, thank you.

MR. TAYLOR: Thank you for those comments. Of course, I think it's clear that we've had a substantial amount of stakeholder engagement, more on this rulemaking than we've ever had before. And while I recognize there may be different perspectives

relative to the regulatory requirements, we are listening and we are making changes to the rule as reflected in revisions that we've proposed.

And as I've stated in my opening remarks, we're now going to go through the comments we've received in greater depth and look at assessing each and having focused meetings relative to the stakeholder comments as we progress during this nine-month window.

So we look forward to your continued engagement during that time.

MR. MUSSATTI: Thanks, Rob. Jason Christensen, would you like make a comment or have a question?

MR. CHRISTENSEN: Yes, this is Jason Christensen with Idaho National Lab. One of the items we've been working on under the microreactor program involves that manufacturing license under Subpart E. One of the questions I have that maybe I missed, Jordan said that you're now going to allow for factory fueling but not for criticality testing at the factory.

My question here is as far as the Part 70 for possession license and Part 71 for transportation and Part 72 for the spent fuel, are those going to be

incorporated into Subpart E? Or will they be referenced such as maybe the fitness for duty? Although I know he just discussed something a little different there that I hadn't heard yet. But how is that going to be addressed in Subpart E?

MS. VALLIERE: This is Nan Valliere, I'm a Senior Project Manager in Our Office of Nuclear Reactor Regulation, responsible for Part 53 rulemaking.

And so the current version of the preliminary proposed rule text is on the manufacturing license section, which is in Subpart E does reference Part 70, 71 does not incorporate them into Part 53. So that's where we are currently with the preliminary proposed rule language. As has been stated many times, we are considering to refine and improve language as we receive feedback. So we welcome any feedback you have on that issue.

MR. CHRISTENSEN: I know initially the factory fueling wasn't on the table and I appreciate that's now being considered in there. I think that's a help for a lot of the companies pursuing the manufacturing license.

So thank you very much.

MR. MUSSATTI: Thank you, Jason. We have

Narasimha Prasad Kadambi. I hope I pronounced that correctly.

MR. KADAMBI: You did very well, thank you, can you hear me?

MR. MUSSATTI: I can hear you very well.

MR. KADAMBI: Thank you for the opportunity. My name is Prasad Kadambi, I'm a consultant, ex-NRC. My question has to do with Subpart E and the definition for performance-based.

One of the definitions offered about performance-based is it's substantially similar but not the same as the definition that the Commission provided in SRM-SECY-98-144, the white paper on risk-informed and performance-based regulation.

The reason I bring this up is that the Commission's definition in the white paper offers opportunities for improvement in the process of a performance-based approach that the definition that is currently included in Subpart E may or may not, it depends on how the Staff would view this. So my question is will people be able to use the definition in the white paper on risk-informed performance-based regulation instead of what's offered in Subpart A currently?

MS. VALLIERE: Thank you, Prasad, again,

this is Nan Valliere. So, as you know, the definition that will ultimately end up in the rule will be the definition by which applications will be judged. But without having the two definitions side by side and comparing them here, I can't answer definitively as to whether the definition from the earlier SECY paper would meet the current definition in Subpart A.

But I certainly appreciate that feedback and it's something we can take a look at to try to make sure we optimize the definition we're going to include in Subpart A. So I appreciate that feedback, I'm taking some notes to make sure we go back and take a look at the earlier definition.

MR. KADAMBI: The other part of my question is then given the distinction between the prescriptive approach and the performance-based approach, to the extent that Part 53 may include prescriptive criteria that are unnecessarily prescriptive, will an Applicant be able to interpret the requirement in a performance-based manner so that the objective of the requirement is met? If not specifically, how has it met that aspect of the rule?

MS. VALLIERE: Prasad, that's a very difficult question to answer with a generic answer. You know that such things will be judged by looking at

the information that the Applicant provides with their application, it may be in some cases that an exemption request might be necessary if the words in the rule are not being met but the NRC Staff is always willing to consider that particular situation for a particular design or a particular Applicant may not result in the need to meet the letter of a particular rule because it's not wholly applicable to that design or that application the particular way that was intended when the rule was written.

MR. KADAMBI: Thank you, Nan.

MS. VALLIERE: Dan, I think we have a few more hands raised. Kalene Walker?

MS. WALKER: Hi, this is Kalene Walker, I have two quick questions. I saw you mentioned the IAEA standards. I asked this before and just wanted to make sure I got the answer right, is the NRC planning to enforce or require meeting ASME standards or other consensus codes?

MR. HOELLMAN: This is Jordan Holman. Yes, we have a number of endorsement efforts going on for ASME standards and other standards, and we intend to endorse them via Regulatory Guide.

And there's specific requirements in Part 53 that say components and equipment should be

designed in conformance with consensus codes and standards. So we intentionally are endorsing codes and standards a little differently than what's done in Part 50 under 10 CFR 50.55a. But we do have requirements for the use of codes and standards in the design of future nuclear plants.

MS. WALKER: You're saying endorse the code, that's different than enforcing the code. For example, in Part 72, for the sturge (phonetic) of the ways, they reference ASME codes a lot but they have a long list of exemptions, which leads me to my second question about I know there's a lot of novel fuels and higher burnups. I'm wondering if Part 72 will be -- you answered this and I wanted to clarification on it. Part 72, how will that be incorporated into Part 53? Will there be a specific correlated part on that?

MS. VALLIERE: Kalene, this is Nan Valliere again from the Office of Nuclear Reactor Regulation. Our partners in our Office of Nuclear Material Safety and Safeguards also have some rulemaking activities underway and I know they have some activities I believe just before the Commission related to fuel-related rulemaking efforts.

And I apologize, I don't know if we have anyone from that office on the line who might able to

say anything more on that but there are parallel activities going on in that area, not directly within the Part 53 rulemaking effort.

MS. WALKER: That seems like a pretty consequential -- you will be creating some consequential waves and I think that would be a serious thing for the NRC to consider, considering the current state of the nuclear waste debacle, stranded waste at sites.

But thank you.

MR. BEALL: Okay, Dan, we have a few more hands up. Maybe we lost Dan.

MS. VALLIERE: Sarah?

MR. BEALL: We can hear you, Sarah, go ahead. Can you hear us?

MS. VALLIERE: You're muted.

MS. FIELDS: Yes, in the beginning of the discussion someone mentioned ascension numbers and the pronunciation of that is accession. So I just wanted to clarify that. And also sometimes the NRC Staff calls them ML numbers but there are a lot of NRC accession numbers that do not begin with ML. I just wanted to clarify that.

Also I want to discuss a very serious problem with the NRC and that is the NRC is currently

failing to properly accession documents related to so-called advanced reactor applications. I brought this to the attention to the NRC but it appears to still be a problem. I checked the Kairos application and pre-application dockets about a week and a half ago.

So you have a pre-application docket and the Part 50 docket. The Applicant had submitted its application, which should have been accessioned and docketed to the Part 50 docket, however, it was put on the pre-application docket.

Those pre-application dockets now begin with 999. Also I found 84 records with the title Kairos that related to their application and pre-application processes that were not on either the pre-application or application docket.

I found the same kind of situation with the Oklo application and the Terra Power application. So you have a real fundamental breakdown in how the NRC accessions these documents and the NRC's oversight over making documents readily available to the public.

Documents that relate to a specific docket should be accessioned to that docket. Also I have a question about why the NRC is still using the term advanced in this whole rulemaking process.

You've removed the term advanced from the

scope of the rulemaking and from the definitions and any reference to the federal statute's definition of advanced reactors. Advanced is a public relations term, it has no technical or regulatory definition at this time. And I think it's disingenuous for the NRC Staff to continue to use this terminology. I think it was removed from the rulemaking because the federal statute's definition of advanced reactors was so vague and contradictory.

So I think you should come up with something else. I personally don't see anything advanced about a technology that produces a type of high-level nuclear waste for which you'd have no permanent repository.

And in my lifetime there will be no permanent repository. Thank you. I'll have more comments later in the discussion.

MR. MUSSATTI: Thank you, Sarah. At this time, the agenda shows that we're moving on into the discussion with our non-government officials' partners and our first speaker is Dr. Ed Lyman from the Union of Concerned Scientists.

Dr. Lyman, are you there?

DR. LYMAN: I am, thanks. Can you hear me?

MR. MUSSATTI: Yes, the floor is yours.

DR. LYMAN: Do you have my slides?

MR. MUSSATTI: That's a good question.

MR. BEALL: We do, they'll be up in a minute.

DR. LYMAN: How much time do I have?

MR. MUSSATTI: We have an hour scheduled for all of the speakers from the NGO groups and we have about five NGO groups, so I would say about 5 or 10 minutes apiece is about right.

DR. LYMAN: Let me know if my audio goes bad. I'm going to provide some perspectives on Part 53. This is largely a reprise of my presentation to the Commission in December, but since my views have not really changed, I think it bears repeating. I also have a lot of concerns with the revised text.

Could you go to the next slide, please?

We believe that any new reactor licensing rule needs to clearly show how the current level of safety and security are going to be maintained. And as I said before, I think the Commission is missing an opportunity to actually increase the required level of safety for the next generation of reactors but that's the policy. But the way you are writing Part 53, it is very hard to map the existing requirements in 50 and 52 to 53, especially since you were planning not

to cross-reference.

And so what would be very helpful I've realized is if you have a cross-walk where you clearly show what the existing -- for each existing requirement in 50 and 52, show how it maps into 53 and what changes there are. Because otherwise, it's very hard to understand that.

We are skeptical of the whole risk-informed approach to new reactors, especially when there's so little actual data and operating experience and so we are very concerned that licensing is going to get ahead of the actual state of the arts for how you do risk evaluations for these paper reactors. And so we think to conform to Commission policies, especially with the PRA policy statement, it should not get ahead of that state of the art where PRA is going to be required.

We think defense in-depth has to be robust, we think the rule has to have clear requirements for prototype testing, in fact clearer than the existing rule. And that does not seem to be the case now in Part 53. In fact, you seem to be backing away from the existing language for prototypes, which is a concern.

And finally, any provision that could result

in disproportionate health and safety outcomes to disadvantaged communities needs to be rejected.

Next slide, please.

So I'm concerned that I know you've got Commission direction for this high level of stakeholder involvement and the sausage-making in this process, but it does not appear to have been very efficient to say the least. And instead of that, I think it would have been much more helpful to have a regulatory basis document as is normal for a rulemaking of this complexity, because simply, it's too hard to document all of the technical basis for so many of the changes you're making in just a proposed rule text. So I would urge you to reconsider this timeline and consider doing a regulatory basis document so that it's as clear as possible what the underlying technical basis for all these changes are.

Next slide, please.

So I've come to the conclusion that I don't think the separate part is necessary or appropriate. The actual range of technologies that are in the landscape for the foreseeable future is not really that broad that you couldn't address this through reactor and fuel-specific appendices to Part 50 and 52. We're really only dealing with a small number of

coolants, fuels, and sizes in the landscape and I think that could be handled in a more targeted way than to have this broad-brush new rule.

Next slide, please.

So I think it makes more sense instead to have appendices to Part 50 and 52 to address those aspects which would require exemptions from Part 50 and 52, including the coolant and fuel types. And then you could systematically and clearly outline which rules do not apply by virtue of the fact that they have different coolants or fuels, and go from there instead of really starting from scratch.

And it is tricky to define the analog of what the accident spectrum is going to be. The LMP provides one approach to that but it has to be implemented with sufficient attention to uncertainty. And it should be complemented with that kind of systematic search for hazards, initiating events, and accident scenarios as recommended by ACRS.

So although I'm not a big fan of expert elicitation, I'd say you could say the original accident spectrum for light water reactors was extra elicitation over a long time period. So that might be a good start but it should be a living process where, again, there's always the potential for things you've

missed and the need to address additional accident sequences.

Next slide, please.

So, again, part of this mapping between the existing requirements of Part 53, there really has to be this fundamental core of safety requirements that are clearly applicable to both. And to my mind, those include having the same requirements for quality assurance for safety-related SSCs as in Appendix B and retaining a clear single failure criterion for the same level of defense in-depth. And the approach should not allow for severe accident risks that are actually higher than those characteristics to the operating fleet.

Next slide, please.

So another concern I have is this broad approach where you're trying to remake the entire suite of regulations, not just the fundamental safety requirements but also everything from soup to nuts, security, fitness for duty, emergency planning, decommissioning, everything. That is really biting off more than we can chew and that is again making it harder to see how there's going to be an equivalence.

Could you go back?

So really, this approach should be focused

on those fundamental aspects of design and construction and then other programs should more or less stay where they are for the time being instead of trying to do it all, remake everything at once. I think that again makes it a lot harder to understand what you're doing and now these new licenses are going to meet the same level of safety as the operating fleet.

I'm also concerned about how these analytical safety margins are going to be applied to operating flexibilities. The language currently is pretty obscure in the rule and I'd suggest that you make that a lot clearer, and also the process, how that would actually be carried out I think should be detailed in more depth.

Next slide, please.

Now, with regards to severe accidents I don't think there's any credible way to risk-inform licensing without a PRA. These other methods I don't really consider risk-informed and so if they're deterministic, we call it that. And I see Part 5X does essentially do that. But there really is no plausible way to define this maximum accident, whether you call it a credible accident or a potential accident or a postulated accident. That maximum,

you're inviting trouble by incorporating that into the rules, which would lead to I think I very hard determination of how big is maximum.

And again, the analogies to non-power reactors are not necessarily applicable because, as you know, the standards for licensing non-power reactors are not as stringent as they are for power reactors under the Atomic Energy Act. So going too much in that direction I think is a problem.

Next slide, please.

Another concern is the incorporation of the quantitative health subjects as they're currently written as regulatory requirements for a variety of reasons. One, I think they're not conservative enough, they're too high. In fact, you can show the existing latent fatality QHO really corresponds to you can have a plant with a core advantage frequency up in the 10 to the -2 range if you look at the EPRI margin study that was done in 2018. And that's a lot higher than the operating fleet. So strictly speaking, you could actually lead to larger or higher severe accident risks under this rule that is the characteristic of the operating fleet. The QHOs as we all know is not one corresponding to the very real risk of long-term contamination and the economic and

public health and psychological consequences of that kind of occurrence.

And again, anything that's based on a population average, radiological risk, and this doesn't just go for the QHOs but also for all the dose-based standards in the regulations. If the NRC is really serious about environmental justice, it needs to take a look at how those averages blur or conceal disproportionate impacts of radiological risk on disadvantaged populations.

Next slide, please.

So I do think the extension provides some breathing room to possibly rethink some of the strategy and in particular that regulatory basis I think would be really important for documenting and allowing the public to understand all the technical aspects of this rule.

I do have some additional things that I've noticed in the draft that have concerned me, things like the language for the substitute for 50.59, where you seem to be defining or making significant changes to 50.59 in this rule. And I don't know what the justification is for that.

Also the siting and security and the way that's all being folded into this and I'll provide

those details later but I have great concerns about a lot of the specific details in this rule.

I'll stop there. Thank you.

MR. MUSSATTI: Thank you very much. At this time I'd like to move on to our next speaker, Sarah Fields from Uranium Watch. Sarah?

MS. FIELDS: It takes me a while to unmute. I actually was not aware that I was on the agenda for this Part 53, or maybe I missed something. I want to make one additional comment.

There was a recent development in the NRC where the NRC issued a public notice for the Oklo Aurora application and provided an opportunity for affected members of the public to intervene. And this happened prior to the NRC Staff making a determination that the application was complete.

And there was a lot of public concern about this new possibility for intervention before a complete application was submitted and before the NRC Staff had really decided what kind of application and review process would be conducted. And as it turned out, eventually, the NRC Staff determined that Oklo had not properly responded to the various requests for additional information, and the NRC Staff ended their application review process.

Now, it could have turned out that, and it's a concern with this Part 53 going forward with the way the NRC Staff will engage the public in these review processes. It's a big concern. Thank you.

MR. MUSSATTI: Thank you very much. I was about ready to remind everyone that we needed to make sure we stayed on topic with Part 53 and at the end there you just tied it up in a nice little knot for us. So thank you for your comment.

I'm sure we'll take that under consideration as we go along. At this time, our next speaker is Dr. Patrick White from Nuclear Innovation Alliance. Dr. White, are you there?

DR. WHITE: Yes, I am.

MR. MUSSATTI: We can hear you.

DR. WHITE: Perfect, I'll just wait a moment for the slides to come up.

MR. MUSSATTI: I can see them now.

DR. WHITE: If we can go back to Slide 1 of the deck?

I first want to thank the NRC Staff and Management for setting up this meeting and setting up this opportunity for a lot of both our organization and a lot of the other NGOs to really participate in a lot of this important rulemaking process.

Next slide.

For anyone that is not familiar with our organization, we are the Nuclear Innovation Alliance, we're a think-and-do-tank focused on achieving the conditions for success for advanced reactors so they can be part of the climate solution. So we really approach the larger questions related to advanced reactors in how can we use this as a clean energy source for the future, and what are the conditions that are really needed to achieve that?

And so a key focus of NIA is really helping to modernize the NRC licensing processes so we can enable clean, safe, and affordable clean energy to the climate solution. We're deeply engaged throughout the advanced reactor community as well as the broader energy and climate community. We're basically looking for places where we can engage with different stakeholders to solve some of the challenges facing the industry and the larger community.

NIA's core strengths include analysis, advocacy, stakeholder collaboration, really focusing on things as an independent non-partisan focus. We have a strong track record for our analyses and thought leadership. One thing that's really unique about the Nuclear Innovation Alliance as opposed to

maybe some other industry groups is that we receive no funding from any companies or developers with a commercial interest in advanced reactors. Our organization is purely based on nuclear as a potential climate solution.

Next slide, please.

So the reason that NIA is really interested in Part 53 is we believe that developing modern and effective regulation is going to be critical to any potential future success of advanced nuclear energy. We find that effective nuclear regulation is really at the heart of all aspects of societal relationships with nuclear energy, whether or not it's an economically competitive and viable energy source, whether it can be deployed in a timely fashion to meet our climate goals, to ensure that it's safely operate and doesn't represent an undue burden on society, and really get into this idea of societal acceptance, recognizing that in the future we need to make sure that we have holistic energy systems that meet society's needs and having a very strong and fundamental effective set of nuclear regulation principles to really help provide the type of societal assurances you need to have advanced nuclear energy as a future energy source.

Next slide, please.

One thing that NIA has found engaging in the Part 53 rulemaking process is that we really believe that Part 53 could be developed in a way that enables both evolutionary and innovative approaches to nuclear regulation. So what do I mean when I say evolutionary regulation versus innovative regulation? When we look at the regulatory paradigms that were used to license, for example, the Westinghouse AP1000 reactor, they represent decades of lessons learned with the licensing regulation of large, primarily light-water cooled reactors.

And so it's led to certain regulatory requirements, analysis methods, regulatory assumptions, and there's a whole list of paradigms here you can read that are really designed and suited to have the efficient and effective regulation of these technologies.

When we start looking forward to the reactor technologies we hope to see deployed in the next 10 to 30 years, and even moving past that, they might not look like these large light-water reactors.

They might be significantly smaller, they might use different technologies or different fuel forms. And so as a result, some of the regulatory

paradigms that were really appropriate for the existing technologies might not be adequate or might not be the most effective method for the future technologies going forward.

So one thing that NAI is really interested in pushing as we start looking at Part 53 is being a generational opportunity for NRC rulemaking is how can we incentivize innovative regulation that still gets us the same level of safety and public trust that we expect out of nuclear regulation?

Next slide, please.

So NIA has already submitted some comments more broadly on the Part 53 draft text so far and these include both joint comments with other NGOs and some detailed comments we submitted separately. Our larger view for the Part 53 regulatory framework is how it could be reimagined to facilitate both evolutionary and innovative regulations. In our view, starting out a rule with a clear regulatory purpose statement, a set of uniform performance requirements, and self-consistent project-specific performance requirements for reactors really set a fundamental safety basis that all reactor technologies under Part 53 rule would be required to meet.

From there, Applicants would have the option

of either developing a project safety case basis in which they would define their own methods and their own procedures for demonstrating compliance with these performance safety requirements.

Or they would be able to use optional prescriptive methods that are more reflective of the evolutionary history and the regulatory paradigms that are currently used for other technologies. In our mind, we see the optional prescriptive methods being very similar to many of the rules that are currently laid out in the Part 53 draft text, and this project safety case basis would be more of a broad approach that would allow Applicants to develop their own methodologies that the NRC could then evaluate.

We're starting to see some move towards this we think with the 5X and we look forward to ongoing conversation with NRC Staff about how they can think about innovative regulation.

All of this, of course, would be underpinned by supporting materials including application-specific regulatory decisions to help really provide clarification on important policy issues facing nuclear regulation and these new reactors, and the regulatory guidance and approvals that could be applicable to a wide range of technologies. And with

this we believe you'd really set up a Part 53 regulatory framework that meets the needs of reactor developers that are interested in using existing methods and reactor developers that are interested in using more innovative methods.

Next slide, please.

One observation that I wanted to highlight as part of my comments today at this NGO Part 53 meeting is really the importance of continued communication and engagement with stakeholders in the future of the Part 53 rulemaking, specifically over the next few months of public engagement. One thing that we've seen both being an observer and a participant in some of the Part 53 public meetings is there seem to be communication breakdowns between different groups of stakeholders. And that can sometimes lead to misunderstanding or frustration on the part of both members of the public, companies, and members of the NRC Staff. And so there are a few items I wanted to make sure I highlighted as potential areas of improvement moving forward.

The first is the idea of trying to provide some type of technical feedback on stakeholder comments. As already has been alluded to several times during this meeting, we recognize this is a very

informal process, this is a very novel process that the NRC is using to try to develop a Part 53 rule. And so they're not providing formal responses to the detailed comments and at a certain point, it might be bandwidth-limiting for them to do so.

But instead, providing some avenue or some method, whether it's in public meetings or maybe through a set of focused public meetings, an opportunity to provide more technical feedback could help stakeholders feel heard and could allow them to also focus their engagement on future technical topic. There might be sometimes a misunderstanding amongst stakeholders where their comments may be misinterpreted or misunderstood by Staff, and how could they change their communication to try to get their point across better if they believe things aren't being correctly understood.

The second point is trying to get more insights regarding Staff positions on open policy topics that are currently part of the Part 53 rulemaking process.

Another concern that we had heard from some stakeholders that we work with is that they aren't sure what options are under consideration by NRC Staff and where they're looking to get more specific

feedback. So the idea of trying to provide more insights on what issues are currently being worked through could allow stakeholders to more effectively engage with Staff and help inform policymaking in a more effective manner.

The third is thinking about how to have more proactive NGO engagement on technical issues and this one, I really want to commend and thank the NRC Staff for organizing this meeting. I think it was a really, really effective way to bring in a lot of organizations and a lot of stakeholders that might otherwise have not been a part of the process. I think this could be really useful going forward so that NGO stakeholders have a clear pathway for continued involvement.

While it is very clear that any of the NRC public meetings are open for presentations or for public comments, I think this kind of proactive engagement can help bring more people in the fold and provide a wider view of stakeholder inputs that hopefully lead to a more effective Part 53 rule.

And the final point I want to make is just hoping to get some clear expectations from Staff on the Part 53 draft text revision process. One of the things that can sometimes be challenging is the

uncertainty associated with looking at a 400-page draft rule and saying, okay, what parts are really open for significant revision and what parts have been fairly settled by NRC Staff?

I know it's been clear that NRC Staff has been open to making changes to large swaths of the rule based on continuing conversation and dialog and feedback from stakeholders, but I think providing expectations regarding the revision timeline and what parts are most up for revision or for focused revision would allow stakeholders to more effectively utilize their resources and perhaps their limited engagement time to talk about the issues that are going to be most relevant to NRC Staff as they try to finish this draft rule.

Next slide.

So just to summarize, at NIA we really seek to continue providing technical feedback and facilitating stakeholder engagement around Part 53. On the left here I've just listed the public comments that we have provided along with a number of other NGOs, including Breakthrough Institute, Good Energy Collective, Clear Path, and Third Way. Our detailed public comments that go into some more depth on this idea of innovative and evolutionary regulatory

frameworks, and finally, a briefing we've provided to the Commission on Part 53 this last December. And we really see this as an important step moving forward to try to develop the regulatory basis that can ultimately allow for the successful development and deployment of advanced reactors in a way that meets society's needs.

With that, I thank you and turn it over to the next speaker.

MR. MUSSATTI: Thank you very much. We've got a handful of speakers to go and we've got a half an hour to do it. I believe our next speaker is Nicholas McMurray from Clear Path, is that correct?

DR. WHITE: I think it is actually Adam from Breakthrough Institute.

MR. MUSSATTI: I skipped one, I'm sorry. Let's go to Adam Stein then, I'm sorry about that, at the Breakthrough Institute. Dr. Stein?

DR. STEIN: This is Dr. Adam Stein from the Breakthrough Institute. The Breakthrough Institute appreciates this opportunity to meet with the NRC Staff and be involved in the Part 53 rulemaking. We and our partners look forward to continued engagement during this rulemaking process.

Next slide, please.

The Breakthrough Institute is an independent 501C3 global research center that identifies and promotes technical solutions in environmental and human development challenges. As such, we represent society and its collective interests. We advocate appropriate regulation for licensing and oversight of advanced nuclear reactors to enable the timely development of safe, innovative, and economically viable emerging nuclear technologies. We believe new and advanced reactors represent critical pathways to climate mitigation, deep decarbonization. The Breakthrough Institute does not receive funding from the industry.

Next slide, please.

Part 53 needs to be an innovative look at regulation, not just making existing frameworks that exist performance-based. Old innovation is fully consistent with the NRC's mandate and principles of good regulation, and particularly, the principle of efficiency and clarity. Moving to a risk-informed and performance-based framework has been the goal of the NRC for some time. Many of the challenges of moving to that paradigm are related to fitting in with existing regulations. Prior speakers have suggested that requirements should stay where they are for now

instead of remaking the entire licensing process.

Other efforts are already underway to risk-inform and align Part 50 and 52. The purpose of this rulemaking is to intentionally integrate those efforts into a single new framework. This is an opportunity to design such a rule without being constrained by existing language. It is not to be wasted. In several respects, Part 5X could provide a more performance-based and internationally aligned rule.

An option to use PRA in a leading rule would more easily extend from such a basis than the current reverse design that requires a separate Subpart, 5X. The NRC Staff should be disciplined and focus on the NRC's mandate of reasonable assurance of adequate protection by identifying the most important issues to focus on. That is being risk-informed.

Next slide, please.

NRC safety goals provide guidance to the NRC Staff on how new regulations should be considered. In a new regulatory paradigm, the qualitative goals should be considered, not just the lower-level objectives that were derived for prior rules. The risk relative to competing technologies for electricity generation should be considered when determining what risk is reasonable. Once again, the

mandate is on adequate protection, not zero risk.

You have heard from others that it's necessary to maintain existing safety requirements but there are already multiple standards. For example, NUREG-1860 has one definition, LMP has another definition, and the draft Part 53 has a third definition. The NRC Staff has flexibility to design safety requirements that may be different than past requirements but still meets the safety mandate of reasonable assurance of adequate protection.

Next slide, please.

There has been some question as to how the NRC Staff will use the nine-month extension to provide additional time to develop the rule that will be used and useful. The NRC Staff has provided some feedback on that in this meeting that was developed prior to these slides being submitted. Major policy issues should be elevated to the Commission to avoid major changes in the proposed rule. This is also supported by ACRS feedback. The iterative process that has been used is less straightforward than the normal rulemaking process but it does allow for more stakeholder interaction, and therefore, be back in development of the rule that could be used and useful.

The NRC Staff in this meeting has already

said that direct disposition of this feedback won't occur until a proposed rule stage but it would be still useful to provide clarity as a stakeholder for why the Staff has made a particular choice in the draft language so that can be used to develop further comment on this rulemaking. It has also been noticed that questions by stakeholders are often taken back for consideration in public stakeholder meetings whereas similar questions posed by the ACRS are answered immediately.

Next slide, please.

One example of a major policy issue that has received extensive stakeholder feedback in the Part 53 rulemaking is the quantitative health objectives. Many stakeholder comments have recommended not including the QHOs in the Part 53 rule, however, the NRC has not provided justification for inclusion, nor revised the draft language to remove the QHOs. The purpose of the QHOs has not been made clear or dispositioned. The Commission has affirmed the safety goals should remain high-level guidance and should be used to provide guidance to the Staff on how new regulations should be considered. The quantitative health objectives should not be directly in the rule, it is our position, because the QHOs are not a viable

performance method. I have provided a technical basis for this statement in a recently submitted comment white paper that has not received an ML number at this point.

I request an opportunity to discuss this further with the NRC Staff at a later date.

Next slide, please.

In closing, society has a vested interest in a timely and effective Part 53 rulemaking for safe, innovative, and commercially viable nuclear energy. Overly burdensome rulemaking would be costly to society in terms of resources spent on the rulemaking but also potentially miss climate goals continuing environmental and public health damages due to other energy sources and pollution.

The NRC should consider how does the safety nexus support the appropriate level of safety relative to other energy sources? How does the rule design and support the Staff's safety finding?

How does the rule enable an efficient review? As a representative of society and not industry, we seek a seat at the table during the rulemaking process. We will continue to provide engagement and technical feedback.

Thank you for the opportunity to speak

today.

MR. MUSSATTI: Thank you very much. Sorry about that confusion there a minute ago. Nicholas, it's now time for you from Clear Path, are you ready?

MR. MCMURRAY: I am ready.

MR. MUSSATTI: I can hear you.

MR. MCMURRAY: As my slides are coming up I first just want to thank the NRC Staff for the opportunity to present today, I really appreciate the Staff reaching out and trying to seek additional perspectives and substantial feedback from other organizations. I think this has definitely been a big change to where we were a few years ago but there's a number of NGOs and organizations that now have a lot of expertise and interest in the NRC's regulatory process. I know there is a couple others, Good Energy Collective was mentioned before, American Nuclear Society also provided comments to this rulemaking. So I look forward to continued engagements.

Next slide, please.

My name is Niko McMurray, I'm the managing Director for Public Policy at Clear Path. A quick background on who is Clear Path. We were founded in 2014, we are a D.C.-based organization that primarily focuses on federal clean energy policy. As you can

see, nuclear is one of the several technologies that we work on but we have an interest in a lot of other power sectors, technologies, and industrial technologies. We focus very broadly on a number of areas in order to advance and commercialize these technologies. So we have an interest in nuclear and an interest in the NRC's process because we see nuclear energy as important for climate and national security goals.

And while we recognize that is not the NRC's safety and security mission, but the NRC's role is a necessary and important part of this process. So NRC can still meet its mission and have an efficient and effective rule. And I think moving forward you have to continue to balance those two things because they're not mutually exclusive. We also have a really big opportunity with Congressional support.

We mentioned the Nuclear Energy Innovation Modernization Act, as well as specific resources directed to the NRC for its broader advanced reactor efforts.

Next slide, please.

As I mentioned, the NRC is a key part of this process. Previously, Clear Path has focused on other NRC activities, like the generic environmental

impact statement for advanced reactors, the emergency planning rulemaking, and categorical exclusion rulemaking. Part 53 is no different.

Next slide, please.

This slide is a summary of our public comment. You can see the ADAMS number at the top. It similarly pulls in a couple comments from the joint letter that was previously mentioned. And I want to commend the Staff because they've received I think it was about 200 public comments, some fairly short, but some also very long, like the NEI and U.S. NIC joint letter, and our comments as well are fairly in-depth from both Breakthrough, Third Way, and other organizations as well.

So below, just a couple of major areas and this was mentioned, this is really a once in a generation opportunity. If we look at when Part 52 was promulgated in the late 1980s, it's about 30-some years from then. So we don't have that level of time for the deployment of future reactors and Part 53 can really be a step-change in how the NRC reviews these new applications. So I'm going to go through a couple of these other topics and try not to be redundant with both Adam and Patrick, but addressing some of these major topics like QHOs, PRA, ALARA, and operational

programs.

And I think in some of these cases looking at making sure the Commission is aligned with what are some of these fundamental topics moving forward. And so when it gets to the Commission vote it doesn't have to go back and extend the timeline of the rulemaking.

Similarly, the rule needs to be performance-based. This is the core of the rule because if you can make a performance-based rule, then you can have different methods, different risk-informed methods to meet the rule.

And then the rule itself becomes more technology-inclusive as different companies and different technologies can determine how to justify safety to meet those performance-based requirements.

So that really has to be the core the rule text is built around. I'm going to come back predictable because I think that is actually one of the most important things.

Implementation-ready, how the rule gets implemented is really important, not just for industry but also for the NRC Staff.

Now that the rule has been published or consolidated a couple days ago, looking at how all those requirements fit together holistically is really

important for the Staff because then they know there aren't overlapping requirements, duplicative requirements.

It gives them the ability to focus on what are those new and novel aspects. Are there some kind of smaller policy topics that need to be addressed or considered or elevated? And so a burdensome rule also negatively impacts the NRC and going back to making sure the rule is performance-based can help address those things. And finally, a lot of folks have mentioned about incorporating feedback, going back and revisiting what is the plan for the next nine months. Rob Taylor mentioned that. What is the vision for developing Part 53?

I think one way that would be very helpful is publishing more rule text options and that can be used with, say, alternative text that was provided from groups like NEI, U.S. NIC, Breakthrough, Nuclear Innovation Alliance and others to understand what are those pros and cons. I think that will also help address some of the dispositioning comments.

Public meetings on specific comments, Rob mentioned that right at the beginning, and so focusing on these to figure out what is the most important topics that need to be addressed, and then working

towards addressing those.

I'm going to go back to predictable. And so if you make the rule performance-based and technology-inclusive and you try to be able to accommodate the number of different technologies, you have to build in a predictable review outside of the rule text. Obviously, there are benefits for an Applicant to understand how the review will go. There are also benefits for the Staff so they can understand what do they need to look at holistically from how an application is justifying safety, but also which topics need to be addressed first?

Whether it's something like licensing basis event selection or use and rule of PRA or things like that, that can then build around for the rest of the application. My public comment goes into more detail about this but, again, it's looking at things like audits and core teams and guidance. And if you really build in how to review an application along with developing the rule text, it really can be that step change moving forward.

Next slide, please.

So just a few other things, outstanding questions, some of which I think the Staff have discussed today and I think moving forward will help

make the next nine months as effective and create a rule that is both efficient and effective and useful for industry. And so again, clearly articulating what is that next nine months going to be? Dispositioning the feedback, and we heard some comments about a formal comment.

In response, I strongly disagree with that as I do think this informal public comment period is very beneficial for getting a lot of feedback, a lot of different feedback.

And I think targeted public meetings potentially providing options of text can help make this discussion a lot more two-way communication, a lot more interactive, because there is a lot of stakeholder resources that are also very interested in the outcome of this.

This is not new. During the development of the advanced reactor design criteria or the ARDCs, there was also an informal public comment period to really try to get that feedback, determine that feedback, and then of course there was a formal public comment period moving forward.

And so I think that's a big opportunity as well. The safety nexus, Adam briefly mentioned this, but again, looking through the rule, this is making

sure that rule is implementation-ready, they're not duplicative operational programs or requirements. You have performance-based regulations you can point to, making sure there is not this perception of increased burden. So it's looking at what actually is required for the Staff to make their safety finding.

I mentioned the review process. Again, I think this could be one of the most impactful things to pair this with the development of the rule text. It would help with the duration of a review, which was something mentioned in the joint letter with the NGOs. So aligning and considering both of these things now is very helpful.

And then finally, piloting the rule. I think part of this is on industry and there might be an opportunity for them to work with the Department of Energy to look at how to pilot the rule. But again, also for the NRC, could other approaches or technologies realistically look at the draft text? How could Part 5X be used differently? As Adam mentioned, that may be something more central to the rule, something that looks like LMP or a PRA-leading role could be one method to do that. And so there's a lot of opportunities there for actually figuring out what is the rule text, how would you implement it

moving forward?

So I really do want to thank the Staff again. I'm looking forward to continuing these meaningful conversations and I thank them for really seeking feedback from a lot of other stakeholders. Clear Path and others are looking forward to continuing to be a resource and thank you again.

MR. MUSSATTI: Thank you, Niko. At this time, I'd like to point out that we have about 11 minutes to go and we have 2 more speakers. I know this is asking a lot of everybody but what I'd like to do is run a little bit into the Q&A session so that the last two speakers have an opportunity to get their voices heard. The whole purpose of this meeting was to get the information from the NGOs and I would like to not cut that short in favor of just questions from the audience.

So, at this time, I would like to announce our next speaker as Ann Weeks from the Clean Air Taskforce. Ann, are you ready?

MS. WEEKS: I sure am. Can you hear me?

MR. MUSSATTI: We can hear you.

MS. WEEKS: Thanks so much. I don't have beautiful slides the way the previous speakers did, I'm just going to introduce us briefly and try not to

take the entire 11 minutes you have left on the agenda for this.

I'm really grateful for the opportunity to participate today. I am the Legal Director at Clean Air Taskforce and mostly relevant to this meeting, I provide advice to our nuclear innovation team. Just to describe us to people who may never have heard of us before, we are a global nonprofit advocacy organization. We were begun over 25 years ago, we have experience working on climate and a broad array of air quality issues.

So we come at this as climate advocates and we think that nuclear energy, both fission and eventually fusion energy have a really important role, obviously, to play in decarbonizing the economy. To that end, we press for strategies that will catalyze rapid development and deployment of advanced nuclear energy sources, recognizing the issues that everyone has raised. We take a technology-inclusive and evidence-based approach to the energy transition. And we are also mindful as well of the need in particular to be aware of and account for impacts on overburdened communities as the energy transition moves forward. So that is the context in which we are thinking about this.

We work on nuclear energy in the public interest because the science tells us that the world cannot decarbonize enough and quickly enough without a really significant role for these technologies, including the advanced technologies that we're discussing today.

My particular background as an attorney is in performance-based regulatory approaches in the EPA air quality space, and I have a background as well in nuclear waste disposal as a graduate student.

So because nuclear energy is an essential tool, we need to think about how to promote it. And there are a few challenges left, as we heard today, that regulatory actors in the nuclear industry really have to address if creative emerging technologies with merit are going to reach their potential. A new licensing pathway at the NRC is needed to support development and deployment of advanced reactors on a time scale that's relevant for climate goals while maintaining public health and safety.

I think that's clear to all of us. So in support of these goals we submitted comments earlier this year and those are available at accession number ML22011A284 for anyone who would like to access them. And in those comments we outlined our recommendations

for what we think will be a successful licensing regime for advanced reactor technologies. I'm not obviously going to have time or I don't have slides presenting all of the details of the comments this afternoon because the time constraints. But I can say these recommendations largely align with many of the thinking that has been the case presented by our colleagues today.

And in particular, with respect to the importance of a performance-based licensing regime that's risk-informed, as NEIMA appropriately requires. There are better and more creative ways to get there than we are seeing at this point. We think there are opportunities and the NRC should implement some performance-based and risk-informed licensing evaluation techniques within the existing regulatory framework. NEIMA requires the NRC to implement those techniques where it's appropriate and this could benefit current licensees while also providing information and knowledge for the further development of Part 53 rules for new technologies.

At the same time, to support innovation these new requirements should remain high-level and performance-based. That would enable promising projects at even as yet unforeseen designs, because

I'm thinking looking forward instead of looking back, to be able to comply with the important safety and other requirements that the NRC has to consider.

In our comments we lay out the framework for this. At this point, we think work on Part 53 should be focused on identifying high-level performance requirements and creating a process for identifying methods of evaluating new technologies against those performance goals.

This should be a living process, as one of the previous speakers said. Applicants should have the opportunity to obtain timely approvals for new methods, criteria, and design aspects of reactor designs. These approved methods, criteria, and design aspects could then be incorporated by reference into the rule, perhaps through annual or biannual reviews for optional use by other Applicants and others using the same methods. Having approved methods in the rules provides certainty to licensees and reduces the potential for repetitive regulatory litigation. It should be the ultimate goal of this Part 53 process to incorporate as many approved methods and alternatives as possible.

So in closing, we think this approach would better achieve the simultaneous goals of

predictability and flexibility in the rule and would support an effective licensing process to be used in the decades to come. Under NEIMA, final rules do not need to be in place until 2027, so the NRC does have time to think through an approach that will support innovation and technology while preserving public health and safety. The NRC should take the time it needs to allow innovation and progress while it does so. So I appreciate your time and Clean Air Taskforce looks forward to continued engagement in this important rulemaking.

Thank you.

MR. MUSSATTI: Thank you, Anne, we appreciate your input into this process here. Our final speaker today is Steven Burns from the Third Way. Steven, please feel like you're under no extreme pressure to finish exactly on time. We can go over a little bit here.

MR. BURNS: Yes, I should only take about six to seven minutes. So it will be close to that time.

So I appreciate the opportunity today to offer perspective on behalf of Third Way on the progress toward formulation of the risk informed technology inclusive licensing process in the proposed Part 53.

Third Way is a national think tank that champions modern center-left ideas. And I currently serve as a senior visiting fellow on Third Way's Climate and Energy Team.

That team develops and advocates for policies that will drive innovation and deployment of clean energy technologies to deliver the emissions cuts needed to reach net zero by 2050 at the latest.

Since 2015 Third Way has been tracking the evolution and growth of advanced nuclear innovation projects, initially just in the United States and Canada, but eventually around the world. And we have available on our website the 2022 advanced nuclear map, charting a breakout year.

Third Way recognizes advanced nuclear promise is a key tool for decarbonization, whether pairing with renewables to generate electricity, providing heat and power for industry, or producing carbon-free hydrogen to displace fossil fuels. Our joint research on the potential of innovative technologies, part of the Decarb America Research Initiative, also suggests that breakthroughs in advance technologies could reduce the cost of achieving net zero by over $200 billion a year by 2050.

Part 53 poses an important challenge for the NRC. For more than a decade, the NRC has worked to prepare itself for the possibility that small modular and advanced reactors would come to the forefront as new facilities undergo regulatory review.

In addition to the review of NuScale's design certification application for a small modular reactor, staff began to focus on strategies to lay the groundwork for regulatory review of advanced technologies. These efforts, including the development of the vision and strategy described in the 2016 report, which the staff referenced in its opening comments.

And as well as being followed by the implementation action plan in 2017 that identified activities needed in the coming decade and beyond to achieve readiness for considering non-light water reactors. At a time when the staff was working through the road map on a number of initiatives, Congress passed the Nuclear Energy Innovation and Modernization Act, or NEIMA, which was signed into law in January 2019.

And Section 103 of NEIMA requires the NRC to adopt a technology inclusive regulatory framework for optional use by applicants of new commercial advance nuclear

reactors by the end of 2027.

As noted in last year's report, SECY-21-10 issued in February 2021, the staff considers that many of its activities support those required by NEIMA to develop a rulemaking that would build on previous agency efforts in this area. And consistent with NEIMA, the staff has articulated as its goal as, quote, to develop an innovative, predictable, yet appropriately flexible framework with regulations encompassing various attributes of advanced reactor technologies, prioritizing risk informed and performance based licensing approaches to ensure the public health and safety through the life of a facility. To put the objectives in a more colloquial context, the staff's task is really to help straighten and smooth out what is now a crooked, bumpy road for new technology developers. A path that has been largely shaped by the larger light water technologies that have dominated the existing fleet of commercial power reactors.

Although the staff and potential applicants have been engaged in identifying the appropriate strategies and applicable requirements to work through the existing framework, Part 53 should set the path for considering new designs effectively and efficiency

within the NRC safety and security mandate. And here I would emphasize that the issue is not so much the procedural steps through which an applicant seeks NRC approval, as it is the necessary content and focus of the application.

I appreciate that the staff has sought and received Commission approval to take additional time to prepare the proposed text of Part 53 and is still working in a timeframe for issuance of a final rule, well within the deadline set in NEIMA. That request came in the face of strong stakeholder comment on the approaches reflected in the early text of the proposed rule.

And as the staff considers those comments and the content of the rule, it's worth noting that the regulatory framework adopted in the rule, to enable flexibility and adaptability, avoid undue and unnecessary burden without diminishing the necessary standards for ensuring safety and security in the development and installation of new technologies. That also means being prepared to address the need for change even after the new licensing framework in Part 53 is put into place. It means vigilance and prompt response to make adjustments if problems arise in its implementation.

The need for such adaptation is a lesson learned when the implementation of Part 52, particularly as we saw minor changes in its certified design, necessitated adjustment to the process for approving such changes, and in order to avoid delays unnecessary to ensure the safety of plants under construction.

To its credit, the NRC staff has pursued a strategy to develop the proposed rule, which includes sharing the proposed text with stakeholders, prior to its inclusion in the more formal proposed rulemaking document, as it would be required under the Administrative Procedure Act and the Commission's implementing procedural regulations. Continued engagement with the stakeholders is important as the staff moves forward to present a proposed rule to the Commission.

But one suggestion that colleagues in a number of nongovernmental organizations, and you've heard that today, have expressed is to make the dialogue as the rule develops more of a two-way conversation.

The challenge before the NRC is great as it tries to develop a workable, effective set of rules in the proposed Part 53. But the NRC has stepped up to those

challenges before. And among other examples during my career, the development of Part 52, the license renewal process, and the reactor oversight process come to mind.

In the oft referenced statement of the court in the Siegel v. Atomic Energy Commission case decided in 1968, the Atomic Energy Act is virtually unique in the degree to which broad responsibility is reposed in the administrating agency. Free of close prescription in its charter as to how it shall proceed in achieving its statutory objectives. Within that framework, the NRC has extraordinary discretion to establish a flexible and efficient framework for advance technologies to meet the Act's overarching standard of reasonable assurance of public health and safety and the common defense and security.

Again, I appreciate the opportunity to provide these remarks today on behalf of Third Way, and I've submitted a written version of my statement, which I understand will be included with the record of today's meeting.

Thanks very much.

MR. MUSSATTI: Yes, you're absolutely correct about that being included in the record.

Right now, we are jumping into the Q&A

session, and we're only like three minutes late. So we are doing very well here. And what I would like to do is ask everybody to please raise your hand in Teams, using that hand raising function at the top of the screen. And when you are asked to speak, please remember to speak clearly and distinctly so we can get a complete record of this.

Let's see who our first speaker is. I need to run down the page and see who's got their hand raised. I don't see any hands raised here unless I'm doing something wrong. I'm going to call on my auxiliary backup people to help me on this.

MS. VALLIERE: We have a couple hands raised at this point in time.

MR. MUSSATTI: Oh, there they are.

MS. VALLIERE: Sarah Fields, I think, was first.

MR. MUSSATTI: Okay.

MS. VALLIERE: Sarah, go ahead.

MS. FIELDS: I have a question. Has the NRC staff in any way engaged agreement states for comments on this Part 53 rulemaking?

Most states in the U.S. are NRC agreement states in one way or another. And I live in a state that's even an agreement state for 11e2 byproduct

material. So there's been a lot of engagement between the state and the NRC over the years. And I would expect that some agreement states would have comments on the rulemaking. And I just wondered how the NRC staff has reached out to agreement states.

MR. MUSSATTI: All right, Bob, do you want to handle that?

MR. BEALL: Yes, this is Bob Beall at NMSS.

We'll be talking to the, sending out a letter to the agreement states notifying them of the proposed rule availability. So we'll be in contact with them also through working with our regional offices and state liaisons to ensure that the states are aware of the Part 53 rulemaking activity.

MR. MUSSATTI: Okay, thank you.

Paul Gunter, you're on deck.

MR. GUNTER: Thank you, can you hear me?

MR. MUSSATTI: I can hear you well.

MR. GUNTER: Yes, Paul Gunter, Beyond Nuclear.

I have a question with regard to the Price Anderson Act. It's coming up for renewal in 2025, and --

(Simultaneous speaking.)

MR. MUSSATTI: We're trying to keep this on

topic on Part 53.

MR. GUNTER: I understand.

MR. MUSSATTI: Okay.

MR. GUNTER: I understand, but if, what are you considering in terms of the bold steps you're making on risk and consequences?

How are you addressing that assuredness with regard to Price Anderson? Will these designs be looking for Price Anderson coverage, and what are you doing with that regard, I guess particularly with Subpart J?

MR. RECKLEY: Yes, Paul, this is Bill Reckley of the staff. Part 53 simply refers to the existing requirements in other NRC parts in regards to the insurance requirements in Price Anderson. So the action to make recommendations to Congress, whatever that turns out to be, then would get incorporated into those rules. And then Part 53 refers to those rules. So we're not proposing any changes in that arena for reactors that would be licensed under Part 53.

MR. GUNTER: So you're expecting no changes to risk and consequence in terms of not seeking limited liability coverage?

MR. RECKLEY: We're proposing to keep the same requirements, and there are when you look at

those requirements, some relationships to power levels and things like that, that would be maintained, that might get used for future reactors that current, that hadn't been exercised in the past because all the reactors were above 300 megawatts, for example. But all of those provisions are currently in our regulations or in the Price Anderson Act itself.

MR. GUNTER: Right. So just you know, if you could just answer directly. Will NRC and the stakeholders be pursing limited liability coverage under Price Anderson Act?

I mean your timelines are, you know, converging here with the rulemaking, and the license applications, and the renewal of Price Anderson.

Are you seeing that you, again, what I hear is you're saying that you will be seeking Price Anderson coverage for advanced reactor designs.

MR. RECKLEY: We're assuming that those things will stay as they are. If Congress decides otherwise, then we would have to act accordingly.

MR. MUSSATTI: Okay, thank you Paul.

I think we need to move on to the next person to ensure that everyone gets an opportunity to speak and to get, get their one follow-up question for clarification. So I'm going to move on to Edwin Lyman

again.

DR. LYMAN: Hi, thank you, can you hear me?

MR. MUSSATTI: Yes, I can.

DR. LYMAN: I have a couple of questions about the latest draft text. So the first is how is Part 21 going to be incorporated? I see that you have something where you say there's a placeholder to insert language somewhere to 50.55e.

MS. VALLIERE: Yes, Ed, we are, one of the next stages of the rulemaking effort that we are undertaking right now is to look at conforming changes to the rest of the parts in 10 CFR.

And Part 21 is one of those, and we are currently working on how to make conforming changes to Part 21 to, you know, sort of recognize Part 53. And one of those efforts includes work to address some rule text that would be, you know, similar to 50.55e or Part 53.

DR. LYMAN: Okay. And Appendix, Subpart K, so is that for Appendix B verbatim essentially? Or are there any substantive changes to it?

MS. VALLIERE: There are very few substantive changes, or almost none. But the changes that are there are changes because of the different terminology used in Part 53 versus 50 and 52.

DR. LYMAN: Okay, but essentially design basis events or accidents, that the SSEs to mitigate them are still going to be covered by essentially the equivalent requirements to Appendix B, is that right?

MS. VALLIERE: That's right, yes.

DR. LYMAN: Okay, thanks.

MR. MUSSATTI: All right, thank you.

Cyril Draffin, please.

MR. DRAFFIN: Hello, this is Cyril Draffin from the U.S. Nuclear Industry Council. When the NRC discussed Part 5X, they presented three separate paths, you know, if Part 53 is conformed, a deterministic one, and max and accident. And the NGOs today referred to the PRA, and suggested that developers could present their own appropriate approaches.

So the question is because many applicants plan on taking a blended approach of both a risk based and a deterministic, with the 9-month extension will the staff be presenting a blended approach of risk based deterministic, not just three separate paths, but perhaps a spectrum of how applicants could choose the most appropriate ways of assessing?

MS. VALLIERE: So, Cyril, again, this is Nan Valliere.

Yes, one of the main reasons for the staff requesting the 9-month extension request was to do more work and completely develop the traditional option that, that we have previously called Part 5X. And our view is that the development of Part 5X will allow sort of the blended approach you are talking about. It will allow various methodologies in which the PRA is not used in a leading role as it is in the Part 53 methodology. So there will be, you know, continued engagement on the work on Part 5X. And I think that's where you'll see the type of discussions you're referring to.

MR. DRAFFIN: Okay, good, because I think it's, we do want the Part 53 to reflect the kinds of applications that developers are likely to be submitting.

Thank you.

MR. MUSSATTI: Okay, thank you, Cyril.

I don't see anybody else with their hand raised. If you would like -- oh, somebody just popped in here.

Paul Gunter? You're on deck.

MR. GUNTER: Yes, thank you. Paul Gunter, Beyond Nuclear.

So with the, you know, with so much emphasis

on the export of advanced reactor designs, I'm wondering if you could help shed some light on how the rulemaking process will address proliferation risks. Particularly with the advent of sodium-cooled fast reactors being, you know, very adept at nuclear weapons proliferation. This is one of those designs that's up for export. And I wonder where that is being addressed in the rulemaking process. Thank you.

MR. MUSSATTI: You're very welcome.

I have Eddie Grant who raised his hand.

You there, Eddie? Mr. Grant?

I show that you're not on mute. You must have stepped away from your microphone for a second?

Here we go. Eddie, is that you?

Okay, let's do this. I'm going to move on to Michael Keegan, and then I'll go back to Eddie afterwards because he might have had a biological emergency of some sort, or something like that.

So, Michael?

MR. KEEGAN: Hello, can you hear me?

MR. MUSSATTI: I can hear you well.

MR. KEEGAN: Very good, thank you.

I am Michael Keegan, in Michigan. And I'm from Monroe, and we've had three failed reactors. Fermi 1 had a core melt; Fermi 2 had a terrible

startup because of poor QA. The Fermi 1 melt was because of QA. And then a Fermi 3 could not come into fruition because the QA was basically missing. I would suggest that everybody take a look at NUREG-1055, a report to Congress from the NRC, circa 1985, which showed that several nuclear reactors that were far along in construction did not come to fruition because of a failure of quality assurance.

Now, as I take a look at your slide on your road map, quite a, quite a curvy road, you get down to K, and there's your quality assurance. And you say you put that in at the request of people commenting.

It clearly demonstrates to me you don't understand quality assurance. Quality assurance needs to be integrated through every single one of those steps, and you're short-changing it. And so you're doing this Chinese menu thing, and you're skipping the most fundamental quality assurance.

So I have that as a major concern, and you need to go back and look at that. And that needs to be a major axis which runs through your Part 53. In addition I want to, I know that people are compartmentalized and siloed, but there was a failure to proceed on a rulemaking on high burn up fuel, a failure to proceed on a rulemaking on High-Assay Low-

Enriched Uranium, a failure to promulgate a rule on reprocessing.

And these all seem to be central to where you're going with your advanced reactors. And I, too, share the concern of proliferation. And I just really don't see this. I see several front groups for the nuclear industry posturing as if they're the public interest when they clearly are not.

Your paradigm is in collapse. You cannot sit around for 10 years building something and then another 20 years till you get to net zero from the fossil prints you left from what you just built. This is not a way to get to net zero on climate change. This is a false fig leaf, and stop using it.

Thank you.

MR. MUSSATTI: All right, thank you, sir.

And I'm going to give Eddie Grant --

MS. VALLIERE: I'm sorry, Dan --

MR. MUSSATTI: -- Eddie Grant the chair.

MS. VALLIERE: I'm sorry, Dan?

MR. MUSSATTI: Pardon?

MS. VALLIERE: I'm sorry, Dan, this is Nan Valliere. I just wanted to provide clarity on one of Mr. Keegan's issues if I could?

MR. MUSSATTI: Okay, go right ahead.

MS. VALLIERE: Sure, that's the issue related to QA. I just wanted to clarify that when the first iteration of the preliminary proposed rule language for Part 53 was issued, we did have QA requirements spread throughout all the various subparts of the rule.

And we got quite a bit of stakeholder feedback that people would have preferred to see the QA requirements gathered together in one location, as they currently are in today's framework in 10 CFR Part 50, Appendix B.

So that is what resulted in Subpart K being added. Those QA requirements that were sprinkled throughout the Rule were then gathered together and put in one place in response to stakeholder feedback. So I just wanted to make that clarification.

Thank you.

MR. MUSSATTI: Okay, thank you very much.

MR. KEEGAN: Thank you for your clarification.

MR. MUSSATTI: Okay, Eddie, let's try you one more time. We seem to have missed you before. Are you back?

MR. GRANT: I think I have the correct microphone this time.

MR. MUSSATTI: Well, I can hear you so it must be.

MR. GRANT: All right, sorry about that.

So I would -- this is Eddie Grant with EXCEL Services.

I would second what Nan was saying there. The QA requirements as identified in Appendix B, and reflected now in Subpart K, have a long history; they're well understood. And significant changes or moving them around would only probably increase the difficulties in implementation.

Nan, you earlier said that they basically reflect Appendix B. And that's generally true with a couple of exceptions that I wonder now if they were intentional or perhaps unintentional revisions.

There was a rather significant revision in 53.1800, the general provisions, that took the language from affecting the safety related functions of structure, systems, and components to affecting the functions of safety related structure, systems, and components. And that seems to be a fairly significant change that's going to impact the scope of the QA to functions of some components that are not safety related. So that's a bit of a concern, and I would look forward to a discussion of that particular change

somewhere down the road.

There was another change in 53.1825 where it says that the instructions, procedures, and drawings shall include appropriate quantitative or qualitative acceptance criteria. And that or was changed to an and, which again, seems to be a rather significant change.

So those two changes somewhere down the road, rather than this general statement of it is based on Appendix B of Part 50. Those two changes at least would seem to deserve some specific discussion and basis.

Thank you.

MS. VALLIERE: Thank you, Eddie.

Can I just ask you real quick, can you repeat the second section number where the or was changed to an and, if you don't mind?

MR. GRANT: Sure. That would be 53.1825.

MS. VALLIERE: Okay, thank you very much. Yes, I'm making note of that so that we can take a look.

MR. GRANT: Yes, there are multiple places where commas were moved around that I haven't had yet a chance to evaluate. But one or two of those may also. 53.1835 might also have just the removal of a

comma may have a significant impact, so.

MS. VALLIERE: Thank you.

MR. GRANT: Thank you.

MS. VALLIERE: Dan, I think we still have some more hands raised.

MR. MUSSATTI: I'm sorry, I was chatting away with my microphone off so I wouldn't interfere. I was advising everybody if you are not going to speak again and you're done speaking, please put your hand down.

I have Paul Gunter showing his hand up, and Connie Kline having her hand up. And they've both spoken before. I just want to confirm that -- whether they want to speak again or are done? Paul?

MR. GUNTER: I don't know that Connie has, so I'm going to defer to her. But I do, I would like to get a response from the NRC with regard to the proliferation issue in Part 53. Thank you.

MR. MUSSATTI: All right, duly noted.

(Simultaneous speaking.)

MR. GUNTER: -- on that.

MR. MUSSATTI: All right, thank you.

Put your hand down when you're done.

Connie?

MS. KLINE: Hear me?

MR. MUSSATTI: I think I can hear you. Are

you there?

MS. KLINE: Yes. Can you hear me?

MR. MUSSATTI: Yes, I can hear you.

MS. KLINE: Okay. Couple of quick things.

Some of the issues I wanted to raise have been brought up. I'd like to see actually the proliferation issue at least briefly addressed now.

And I have a suggestion. I know this isn't going to sit well with the NRC. Could some of these meetings be conducted in the evening so potentially more participants who are working can participate?

MR. MUSSATTI: No.

MS. KLINE: And --

MR. MUSSATTI: Well, I understand your concern about the timing. It's just that we are coast-to-coast here, and if we try to get people that are not working on the West Coast to be able to come in and, at a public meeting, we wind up at our bedtime for the people on the East Coast. So we try to find a middle ground.

MS. KLINE: I understand the timing logistics, but perhaps, perhaps you know, meetings could I mean, 1:00 p.m. on the East Coast is fine. I understand that it could be somewhat problematic because you're dealing with so many time zones. But

perhaps that could be taken under consideration so that potentially some working people you know, could, could participate.

And lastly probabilistic risk assessment is extremely disturbing and troublesome to me given that there is so little data and so little experience with so-called advanced reactors, next generation reactors.

And what old experience that has been not just in the United States, but worldwide, has been abysmally catastrophic.

And that's really all I have to comment on now. Thank you.

MR. MUSSATTI: Thank you very much for that.

I just sent a note off to the rest of the team here. I think we have reached the end of the day. I would like to get some confirmation from the rest of the team as to whether we should move on to closing remarks or not.

Rob, what's your feeling on that?

MR. TAYLOR: Well, I'm wondering do we have somebody who can speak to Paul's question on non-proliferation? And it's okay if we need to take it back and get an answer to him separately. But I just, he asked for it, and I want to make sure we're responsive if we can be.

MR. MUSSATTI: Understood. I know I'm not your guy.

MS. VALLIERE: Yes.

MR. MUSSATTI: Nan?

MS. VALLIERE: So I'll make an attempt, but I think we, Paul, we probably don't have the, the agency experts with us that could address your question more directly. I will tell you that we are not in the Part 53 rulemaking, as I mentioned earlier today, we are not seeking rulemaking changes related to fuel types and fuel enrichment and things of that nature. Our sister office is currently engaging the Commission on, you know, leads in the area.

So I do expect that there might be some future activity, but unfortunately, I don't believe we have those people with us today to speak more broadly to that. But we -- certainly can take your question back and talk to those folks.

MR. LYNCH: Yes, Nan, this is Steve Lynch, the Acting Chief of the Advanced Reactor Policy branch.

I agree with Nan that we can certainly follow up on this item, but with respect to proliferation considerations, do want to reemphasize that Part 53 is not changing the NRC's stance that fuel used in these

reactors remain less than 20 percent enriched for proliferation considerations.

And also with these advanced reactors, we are also considering any separations of actinides particularly like plutonium and any technologies that may be involved with that. So proliferation is, you know, something we do consider as we are licensing any technology, whether it's under Part 53 or any of the existing parts of our regulations.

MR. MUSSATTI: Okay, thank you for that.

Well, it seems we have reached the end of our time, and I'd like to thank everybody here for your decorum in this forum. Your professionalism made this an easy meeting to manage, and I especially appreciate the fact that microphones were almost off 100 percent on the right times, so that we did not have any bleed overs.

We had one siren that went by, but I believe that was in the speaker's background, and he couldn't do anything about it. I really appreciated the input that you gave to us here today, and I know that everyone's going to take it under advisement when they go back to work.

And right now I'd like to turn the meeting over to Deputy Director Rob Taylor for some closing

remarks. Rob?

MR. TAYLOR: Thanks, Dan.

So first and foremost, I want to thank the NGOs for sharing their views today. We truly appreciate receiving these diverse perspectives. We would welcome that the NGOs continue engagement in our upcoming public meetings to ensure that we have all the voices, and we continue to hear them.

One of my key takeaways today is that it's clear that we share a common goal of having a rule that provides an effective and efficient technology inclusive means of licensing commercial advanced reactors. However, as demonstrated in the presentations made by the NRC staff and NGOs today, there are different ideas about the best way to achieve this.

I want to emphasize that the NRC staff is committed to developing a rule, rule language that considers stakeholder's perspectives, and achieves at least the same level of safety ensured by our existing regulations for currently operating plants. Feedback received either in writing or through meetings like today help us in achieving these goals.

While the NRC staff is striving to be innovative in this rulemaking by sharing the text as

we develop it to maximize exposure and feedback, I acknowledge that we still have room to grow and are learning. Meetings like today help us reconsider our approaches to engagement and ensure that we have, we are continuing to embody our principles of good regulation.

We strive to be independent, open, efficient, clear, and reliable. To this end, I wanted to note a few common themes that came up during the questions and stakeholder presentations today. Those include things like seeks clarity and understanding, continue engagement, and demonstrate that feedback has been considered. We respect and understand and appreciate those inputs.

To that end, the NRC staff will continue to leverage these public meetings to explain its rationale and perspectives on aspects of the preliminary rule language, as we have been doing over the last year. We will continue to welcome diverse views during these meetings with all stakeholders.

During the public comment period on the proposed rule, the staff will be committed as we are during all rulemakings to providing written responses to all comments received.

In addition to our Part 53 effort, the NRC

has many additional activities ongoing to enhance our regulatory framework and licensing processes. These include transformative strategies to streamline how we conduct our safety and environmental reviews.

We are holding periodic advanced reactor stakeholder meetings where we discuss these initiatives and welcome input from the participants. We welcome your participation at these meetings as well, and you can follow our efforts on our NRC public webpage, which includes all of the activities we have ongoing related to new and advanced reactors.

So with that, I'll turn it back over to you, Dan.

MR. MUSSATTI: All right, thanks, Rob.

I'd like to remind everyone here that we have meeting feedback forms online at NRC.gov. Just go to our website and type in the NRC form 659 in the search window on the upper right-hand side of the page. You can download that blank from there, and once you've completed it, just fold it up and mail it back to us.

The form folds into its own postage paid mailer for your convenience. No postage needed.

And I want to thank you one last time for having been here today and participating as you did

and ask you to be safe and we will see you soon.

I think this meeting is officially adjourned.

(Whereupon, the above-entitled matter went off the record at 4:02 p.m.)