

Official Transcript of Proceedings
NUCLEAR REGULATORY COMMISSION

Title: Public Meeting on Part 53

Docket Number: (n/a)

Location: teleconference

Date: Tuesday, September 22, 2020

Work Order No.: NRC-1056

Pages 1-126

NEAL R. GROSS AND CO., INC.
Court Reporters and Transcribers
1323 Rhode Island Avenue, N.W.
Washington, D.C. 20005
(202) 234-4433

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

+ + + + +

PUBLIC MEETING ON PART 53

+ + + + +

TUESDAY,

SEPTEMBER 22, 2020

+ + + + +

The Public Meeting convened via Video
Teleconference, at 12:00 p.m. EDT, Bob Beall, Project
Manager, presiding.

PRESENT:

JOHN SEGALA, NRR, Chief, Advanced Reactor Policy
Branch

BOB BEALL, NMSS, Rulemaking Project Manager

BILL RECKLEY, NRR, Technical Lead

MARC NICHOL, Nuclear Energy Institute

CYRIL DRAFFIN, U.S. Nuclear Industry Council

JEFF MERRIFIELD, U.S. Nuclear Industry Council

ED LYMAN, Union of Concerned Scientists

PRASAD KADAMBI, Independent Consultant

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

ALSO PRESENT:

GLENN KELLY, President, Nuclear Safety Management

RALPH HILL, past-Chair, ASME

MICHAEL KELLER, President, Hybrid Power Technologies

CHIP MARTIN, NQA-1 Main Committee

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

C-O-N-T-E-N-T-S

	<u>PAGE</u>
Welcome/Introductions.....	4
Topic 1 - Defining appropriate safety criteria & risk metrics.....	13
Topic 2 - Addressing the life cycle of a facility - from design through decommissioning.....	44
Topic 3 - Quality Assurance requirements & related standards and certifications.....	51
Topic 4 - Integration of various requirements & programs	51
Topic 5 - Incorporation and use of performance-based requirements	58
Topic 6 - Requirements & processing for initial licensing & maintaining licensing basis information throughout life cycle	90
Additional Public Comments, Questions, Suggestions, and Closing Remarks	124

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

P R O C E E D I N G S

12:03 p.m.

MR. BEALL: Good afternoon, everyone. I want to welcome everyone and thank you for participating in today's meeting to discuss the risk-informed, technology-inclusive regulatory framework for advanced reactors or the Part 53 rulemaking. My name is Bob Beall, and I'm from the NRC's Office of Nuclear Material Safety and Safeguards.

I'm the project manager for the Part 53 rulemaking and will be serving as the facilitator for today's meeting. My role is to help ensure that today's meeting is informative and productive. This is a Category 3 public meeting to encourage active participation and information exchange with the public to help facilitate the development of the Part 53 rulemaking. The feedback that the NRC receives today is not considered a formal public comment, so there will be no formal response to any of today's discussion. Slide 2, please.

The agenda for today's meeting includes NRC staff and external stakeholder presentations on six topics related to the Part 53 rulemaking. Questions from the public and further discussion will

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

follow after each topic presentation. We have also included one 15-minute break after Topic 3. Slide 3, please.

I would now like to introduce John Segala.

John is the Branch Chief of the Advanced Reactor Policy Branch in the Office of Nuclear Reactor Regulation. John will give the opening remarks for today's meeting. John?

MR. SEGALA: Thank you, Bob. I'd like to welcome everybody. Good afternoon. As Bob mentioned, the purpose of today's meeting is to discuss our plans to develop a new technology-inclusive, risk-informed performance-based regulation for advanced reactors which we are calling 10 CFR Part 53 and to obtain early feedback from external stakeholders on some important topics associated with this new framework.

As we are at the early stages of developing this new rule, we are looking for new and innovative ways to regulate advanced reactors. Although NRC's mid and long-term implementation action plans for enhancing our readiness to effectively and efficiently review and regulate advanced reactors included a future activity to assess whether a new regulatory framework should be developed for advanced reactors. In January of 2019, the Nuclear Energy

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

Innovation and Modernization Act, or NEIMA, was signed into law and required that NRC complete a technology-inclusive, risk-informed, performance-based regulation for advanced reactors by no later than the end of 2027.

On April 13 of 2020, we issued the rulemaking plan in SECY-20-0032 which is currently with the Commission for a vote. On July 13th, we issued a draft white paper with questions to help facilitate discussions today and with the ACRS on Part 53. We briefed the ACRS Future Plant subcommittee on July 20th and the ACRS full committee on September 10th.

This is our first public stakeholder meeting dedicated to Part 53, and we are planning for this meeting to be the first of many interactions with external stakeholders. We are expecting to leverage our ongoing advanced reactor readiness activities to serve as guidance for this new rule. For example, in June of 2020, we issued Regulatory Guide 1.233 which endorses the licensing modernization project methodology described in NEI 1804 document as one acceptable method for non-light water reactor designers to use for establishing key parts of the licensing basis and content of application.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

LMP focuses on identifying the licensing basis events, classifying the structure systems and components, and ensuring adequate defense in depth. As a follow-up to LMP, we have started to engage during several public meetings with the Southern led NEI coordinated and DOE cost-shared Technology-Inclusive Content of Application Project or TICAP. The purpose of TICAP is to provide guidance for developing the content for specific portions of an application that are within the scope of LMP.

In addition, the NRC is leading the Advanced Reactor Content of Application Project or ARCAP which will provide technology-inclusive, risk-informed, and performance-based application content guidance. ARCAP is broader and encompasses the industry-led TICAP program. ARCAP includes those portions of an application outside the scope of LMP.

Our next public meeting on TICAP and ARCAP is scheduled for October 22nd. We are looking forward to having discussions today and hearing any feedback you all may have. Before we start into the meeting, I would like to turn it over to Ho Nieh, the Director of the Office of Nuclear Reactor Regulations, to say a few opening remarks.

MR. NIEH: Yes, thank you very much, John.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

My name is Ho Nieh. I'm the Director of the Office of Nuclear Reactor Regulation, and I want to wish you a welcome and good afternoon. And I appreciate your interest in joining this event. And I do also hope that you all are doing well during these times facing us with the COVID-19 public health emergency.

I would like to thank the staff in the Office of Nuclear Reactor Regulation as well as the staff in the Office of Nuclear Material Safety and Safeguards for organizing this event. As you heard from John Segala's remarks, NRC is doing a lot in the area of ensuring our readiness for the regulatory reviews and licensing of advanced reactor technology.

As many of you know, over the last several years, there's been growing interest in new reactor technologies and engagement with the NRC, and this Part 53 rulemaking effort is going to be a significant undertaking in being responsive to this growing interest.

This rulemaking is also an opportunity for the NRC to demonstrate regulatory transformation toward becoming a modern risk-informed regulator as well as how we can work effectively with all of our stakeholders to help make the safe use of nuclear technology possible for the United States. As John

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

mentioned, the Commission is currently deliberating on the staff's rulemaking plan for Part 53, and that's in SECY-20-0032. And in that paper, if you look at it, you'll see that the staff had preliminarily categorized this as a high priority rulemaking because of its significant contribution toward the NRC safety mission, its role in further risk-informing our regulatory framework, and its support to implementing the requirements of NEIMA that were referred to by John Segala which directed the NRC to develop a technology-inclusive framework for a variety of new reactor technologies.

So today really is an important milestone in our journey to deliver on this rulemaking. And as noted already, it will be the first of several that we'll be having after receive final direction from the Commission. And our goal here is to develop a rule that is risk-informed and performance-based. Those terms come up often in our lexicon here in the regulatory world. And in today's agenda, there'll be specific opportunities to deepen our understanding of what those terms really mean in the context of this rulemaking.

And my final point in the opening is to really stress the importance of having meaningful

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

stakeholder engagement and participation in this rulemaking process. That, to me, would certainly be the key to our success in developing successful rulemaking here in this project. So with that, I'd like to turn it back over to Bob Beall. Thank you.

MR. BEALL: Okay. Thank you, Ho. I would now like to introduce the NRC staff who will be making presentations at today's meeting, myself, of course, as the rulemaking project manager and today's meeting facilitator, and also Bill Reckley from NRR. Bill is the Part 53 technical lead for this rulemaking.

In addition, we will have members of the public who have requested to make presentations on one or more of the topics from the Nuclear Energy Institute, the U.S. Nuclear Industry Council, the Union of Concerned Scientists, and Mr. Kadambi who's an independent consultant. If you're not on the Webex program and would like to view the presentation slides, they are located in the NRC's ADAMS document database. You can go to ADAMS and look up the accession number for today's slides which is ML20254A as in alpha, 014. Again, that ADAMS number again is ML20254A as in alpha, 014. Slide 4, please.

The purpose of today's meeting is to exchange information, answer questions, and discuss

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

the Part 53 rulemaking. This is a Category 3 public meeting which means that public participation is actively sought as we discuss the regulatory issues. Because of the number of attendees, we may need to limit the time, excuse me, for individual questions or discussion on a topic to make sure everyone has a chance to participate.

After everyone has a chance to ask questions, we will circle back and allow people to ask additional questions if we have the time. Please note that this is just the first of many public meetings the NRC staff will be hosting on the Part 53 rulemaking. If there is a particular topic you would like to discuss, please send me an email after the meeting and we'll try to include it in a future public meeting.

This meeting is being transcribed. So in order to get a clean transcription and to minimize distractions during the meeting, we do ask panelists to turn off or mute their cell phones when they are not speaking. With attendees on the phone, you will be in a listening mode only until the discussion portion of the meeting.

If you would like to speak, please contact the operator by pressing *1 -- again, that's *1 -- and

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

she will put you in a queue and announce when it's your turn to make your presentation or just ask a question. We will not be using the Webex text function to take written questions during this meeting. All questions have to go through the operator.

A summary and the transcript of today's meeting will be publicly available on or before October 22nd, 2020. Finally, this meeting is not designed or intended to solicit or receive comments on topics other than this rulemaking activity. Also, no regulatory decisions will be made at today's meeting.

Please note that the last slide in the presentation contains acronyms and abbreviations that may be used during today's presentation. So if we say -- if I say an acronym or abbreviation, you can go to that slide to look up what it means. And with that, I'd like to turn the meeting over to Bill Reckley to start our discussion on the first topic. Bill?

MR. RECKLEY: Thanks, Bob. If we can go to Slide 5. Thank you. I have some background information I plan to go through just quickly. We've used these same slides at periodic stakeholder meetings and other venues in the discussions on our development of Part 53.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

Again, just quickly, we have looked at the development of regulatory requirements for advanced reactors in the past. The first bullet there references back to an advanced notice of proposed rulemaking we did in 2006. More recently, we've undertaken activities and John Segala mentioned a few of the key ones in the development of regulatory guidance and a framework for advanced reactors. And ultimately then in 2019, NEIMA was passed and told us to undertake this rulemaking.

So if we can go to Slide 6, just some definitions that are provided in NEIMA for advanced reactor or advanced nuclear reactor. And it includes fission or fusion with improvements over the existing operating fleet. And those improvements are listed in the NEIMA language. Definitions for a framework and the technology-inclusive framework, that's important because it's both a challenge and perhaps a blessing that if we develop this in a technology-inclusive way, my own opinion is that it's going to keep us at a high level and perhaps facilitate actually completing this rulemaking.

If you go to Slide 7, I did want to mention that sometimes we often notice that the definition in NEIMA does include fusion facilities.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

Just a little background on fusion, and then this will be the last we speak of it today. The NRC did decide in 2009 that to the degree that fusion facilities presented a risk to public health and safety, the NRC did have jurisdiction to regulate them.

We are currently exploring possible approaches and such approaches might look at fusion facilities similar to how we currently do nuclear power plants, that is as utilization facilities under our rules. We might look at them closer to how we do the materials licensees like an accelerator, or it might be a combination of approaches. We don't -- as I mentioned, we don't really plan to talk about fusion today. We understand that at some point we will in the development of Part 53 need to come up with a plan of how to incorporate that activity into the Part 53 discussion.

For the next step on fusion, we and the Department of Energy are having a public forum on developing a regulatory framework for fusion. And that is going to be held on October 6th. It's not currently posted, but I will post on our NRC meeting system, information on how to participate in that meeting. You can go to Slide 8.

As Ho mentioned, we did present a

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

rulemaking plan to the Commission. It's currently under consideration, a few of the key aspects of that rulemaking plan. Yeah, we mentioned to the Commission would be our intent to focus on risk-informed functional requirements, and that has been said already a few times. We expect that this activity will involve extensive interactions, not only with external stakeholders, various internal NRC organizations, and with the Advisory Committee on Reactor Safeguards. If we can go to Slide 9.

We've used this slide in several of the periodic stakeholder meetings to kind of provide a representation of our initial thinking on how Part 53 might be constructed. And the purple box gives what we would hope we can agree on which are, what are the actual performance metrics? What are the safety criteria that we would use to basically be the foundation for the whole Part 53 activity?

So some of the things that are routinely talked about, the fundamental safety functions that are defined routinely for nuclear power plants, the various criteria that we've historically used to try to balance prevention and mitigation measures. We would need to include normal operations, the effluents that are primarily defined within Part 20. So the

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

thinking is that if we can define those safety metrics, performance metrics, then the rest of Part 53 would basically look at the design, siting, construction, operation, and ultimately decommissioning of the facility and look at things like the design process and define the requirements for design in the context of those performance requirements.

So how does design help meet the safety criteria? Likewise, siting. Likewise, construction.

Likewise, operation. So that's what I mean by the purple box really providing the foundation for how all of Part 53 would fit together. In addition to those technical requirements, we would also address the licensing requirement that are kind of represented at the bottom of that slide.

If we go to Slide 10, you start to see the possible layout of Part 53 which is they become a section that talks about general provisions, then a section that would provide that foundation which is the technology-inclusive safety objectives. What are the regulatory examples of that as I've talked about, then we get into the first topic in detail. What are the regulatory limits? How would we use the NRC safety goals within this activity? And then other

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

sections of Part 53 would talk about design, siting, construction, et cetera. And then there would be dedicated parts to talk about the licensing processing. Slide 11.

Now one of the things that makes this, as Ho mentioned, an opportunity and also a challenge is that our existing requirements for the operating fleet has been constructed or built over decades. And it addresses various aspects of both prevention and mitigation activities to ensure that the safety criteria are ultimately met. The Part 53 will have to do that from the beginning, and so that's the opportunity.

But within this, you can also start to see some of the challenges that we'll face. A statement that's often made is advanced reactors will be safer and therefore we can change the regulatory requirements. And I kind of look at it as a little differently in that we will not presume that advanced reactors are by definition safer.

But we will acknowledge that if advanced reactors, as expected, reflect beneficial attributes as defined, for instance, in the NRC's advanced reactor policy statement, they can certainly offer certain advantages such as extended response times to

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

upsets. That's usually provided by increased thermal capacity as compared to light-water reactors. In some cases, smaller source term or alternative barriers to the release of radionuclides.

So all of those things can be included in the design. And the expectation, however, is that those things on this graph largely show up on the prevention side. And from that improved prevention, we expect advanced reactor designers and applicants will be looking for operating flexibility to trade off against those added margins on the prevention side.

And so one ongoing example of that is that the NRC has a proposed rule that's published for comment coming up with a performance-based, a consequence-based emergency planning provisions for small modular reactors and other new pathologies which includes the advanced reactors we're talking about. And so within that proposal then, if an advanced reactor can demonstrate that the offsite consequences are below a certain threshold, then they would be open to use that alternative requirement. We have a paper before the Commission that makes a similar proposal for population-related siting guidance.

We believe that there'll be other tradeoffs that advanced reactors will propose. So

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

this is kind of a performance-based approach, and that's good. But it will make things more interconnected. And we'll have to think about all of that ahead of time that as you're developing a requirement, the performance measure may differ depending on how an advanced reactor applicant wants to use whatever margin is included in the design.

So hopefully, this will become a little more clear as we go forward. But again, it's an opportunity but it's also a challenge as to how we'll construct Part 53 and how we'll make the various parts interact. So if we can go then to the next slide, Slide 12.

We developed a white paper where we just ask some general questions, and that's, in part, the purpose of today's meeting. We kind of refined it instead of trying to go through all 14 questions and binning some of this into higher level topics. So if we go to Slide 13.

All of these, we'll try to reflect what our objective is which, by and large, are listed here on this slide. At least these are the objectives that we put in the white paper as a proposed starting point. The first two are just to make sure that whatever we do provides the same degree of protection

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

as we currently provide for the operating reactors.

The third one is, as I mentioned, to provide greater operational flexibility where they can be justified by the margins in an advanced reactor design. And then more traditional kind of principles of good regulation objectives, make sure they're clear and concise. And then as part of this activity, the last bullet, make sure we're on a path to identify and define and resolve issues that we've identified as well as issues that stakeholders have identified through this process. If we can go to Slide 14.

Today's discussion topics, and Bob has this identified on an earlier slide. For us, we think the first and most important is to see if we can begin the process of putting to a general consensus on what the safety criteria and risk metrics for Part 53 would be. Then the second topic is how we would use that foundation to define the requirements for the life cycle of a facility.

One particular topic we wanted to talk about is quality assurance and the possible use of standards other than the traditional NRC Appendix B and ASME NQA-1 standards. As I mentioned in that bow-tie figure, how will we integrate all of the various areas that the NRC regulates including not

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

only safety but environmental and security and innovative emergency planning, for example? Fifth one is performance-based requirements. How do we make this requirement get into the overall agency goal to move to not only risk-informed but also performance-based platforms?

And then lastly, some initial discussions on the licensing aspects. So the bold bullet at the bottom, we know this is just the beginning of a topic.

Some of the other topics that have been mentioned to us we think will be brought up in today's discussion. And certainly as Bob mentioned, we can add them to the agenda for future meetings.

So if we can go to Slide 15, the first topic we wanted to talk about is the foundational one, safety criteria and risk metrics. And I just listed here some of the questions out of our white paper that relate to this topic. As examples, if we can go to Slide 16.

A general rule that we're going to be trying to follow as we develop Part 53 as an initial point, the staff has been giving this some thought. And so although we listed a bunch of questions and we certainly are amenable and want to hear people's comments, sometimes I might slip up and actually talk

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

like a general rule that we'll be following because that's our operating assumption. But in this particular case, a rule we have at least adopted from the beginning is the existing standard in terms of how we define safety are acceptable.

And this has been tested in a number of interactions between the staff and the Commission and the Commission direction in regards to papers and so forth over the decade has been pretty clearly defined by the Commission that the existing safety requirements are good enough for future reactors. And so the criteria that are listed on this slide are basically the same ones that we use now.

And so for normal operation, we would expect that Part 53 as a starting point would reflect the same limits on normal operations and effluents not to exceed 100 millirem to any member of the public. And secondarily, that licensees would take measures to keep those releases and any exposures to the public as low as reasonably achievable. So those are basically the requirements out of Part 20.

For transients and postulated accidents, the existing criteria that is given in both Part 50 and Part 52 and reflected also in Part 100 under the siting requirements is that any individual located at

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

the outer boundary of a low population would not exceed 25 rem over the course of the accident. And another one that's taken from the NRC safety goals are the last bullet there, that the estimated frequency of a member of the public receiving the radiation dose with immediate health effects is less than five in 10 million years. And for a dose with the potential to cause latent health effects, that was below two in 1 million years. So those are just values from the NRC safety goals.

So our initial thinking is that these are the type of criteria that we would incorporate into Part 53 as that purple box on the original foundation. That is to define the foundation on which we would build all of the other requirements. So with that, if we can go to Slide 17.

We're going to basically have a couple of discussions, first from the people we know had expressed an interest. This slide is from Cyril and the U.S. Nuclear Industry Council. Then I think the Nuclear Energy Institute might have a comment or two. And then we can open it up to the general list of participants by hitting *1 and asking the operator to connect. So with that, I went through some materials relatively quickly. But we do want to get through the

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

discussions and hear from stakeholders. So with that, I'll turn it over to you, Cyril.

MR. DRAFFIN: Thank you, Bill. We'll be making some comments on each of the six topics. And then U.S. Nuclear Industry Council will have some comments at the end of the meeting as well as part of closing remarks where a number of organizations will be commenting.

I'm Cyril Draffin. I'm the Senior Fellow for Advanced Nuclear at the U.S. Nuclear Industry Council. And we appreciate the dialogue because this is the first, then there'll be more detailed comments in future meetings.

The approach that Bill indicated regarding requirements definition makes sense, going back to the Atomic Energy Act, what's really required. The high-level goals is important. We think it's important to meet the adequate protection standards, but in a way that focuses primary on public health and safety, that the criteria should be focused on what is essential to demonstrating the safety case with a level of detail that's commensurate and its contribution with safety arguments.

And not that other requirements aren't necessary, though indicated that there's a lot of

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

interrelationships and there's some tradeoffs to be made and that's true. And so it'll be challenging to work through the process but setting up some understanding of what the requirements are up front is useful, that there is a reduced source term for the advanced reactors and they have better performance-based requirements. And that gives us opportunities to do a tradeoff or how that could be used to reduce -- to provide operational flexibility as was stated earlier.

And so those tradeoffs are important to recognize and to add the flexibility so future applicants can take advantage of that process and also their improved source terms. And although as we're all focused on how to make this better, we also want to keep in mind -- we want to be careful not to have a development of this rule that doesn't result in unnecessarily ratcheting requirements or surprises. It is optional to choose, but we just want to be mindful of the ramifications. We don't want any unintended consequences, but the approach laid out by the NRC as to the starting position I think makes sense to us. And with that, I'll turn it over to NEI or others who would have comments or Jeff or anybody.

MR. RECKLEY: Okay. Anybody else on the

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

leader bridge, Marc Nichol, Jeff Merrifield, anyone?

MR. NICHOL: Hey, Bill. This is Marc Nichol. Can you hear me?

MR. RECKLEY: Yes, Marc.

MR. NICHOL: Okay, great. Thanks. Yeah, Marc Nichol from NEI. We didn't have prepared slides, but I do have maybe some questions. So there might be a little bit of back and forth.

And one, I want to say that I think that the safety criteria that is established for Part 53 is one of the key questions in establishing Part 53, a couple of others, some we'll hit on today. But this is certainly one of the most important is to get the safety criteria right and define safety in a way that is associated with the risk to the public health and safety. So I do appreciate you all putting together some ideas on how to go about it.

One of my first questions is, is the NRC considering more recent science on the potential beneficial impacts from low doses of radiation and how you might factor that in? The current model is linear no-threshold. More recent science suggests that perhaps those lead to lower -- more stringent requirements than are actually necessary to protect public health and safety. Have you thought anything

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

about looking into that?

MR. RECKLEY: I believe that we will track that. And if there was actually an agreement and that was reflected in standards or reports or if we were starting from that within our own Part 20 requirements, it would be kind of straightforward for us to do it. But since much of that discussion is ongoing, I think we would not be able to really plan on incorporating that into this activity.

I think one way that could work, though, is if we establish sound criteria and in the future you use -- adopt a different model or agree that different values would be appropriate, it at least could then set us up to just maybe more easily adopt a new value. So on the slide I had, if ever the science showed that 100 millirem is not the right number for routine operation then the number could be changed. And that actually could then just carry through all of the rest of Part 53 since that number is set up as the foundational value. But I don't think we would have time and it would complicate this activity a lot to try to undertake that.

MR. NICHOL: Okay. Thank you for that response. And the one you just pointed out, the 100 millirem under normal operations, this is one of the

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

ones where sort of I see you may have taken what's already in Part 50, 52 and started to apply to Part 53. And that may be as much as we could possibly do in this rulemaking.

But I would encourage sort of taking a step back and looking at alternatives, trying to think outside the box for different ways to define safety for Part 53. And just a couple of questions. I'll pause between each one in case you have a reaction, and it's okay if you don't. But is it possible to define safety without having to put a dose value around normal operations, for example?

MR. RECKLEY: It may be. And certainly during the discussions that we'll have over the next few months, if people have a thought on how we might do that. When we talk later about performance-based approaches, one of the challenges is you kind of need to set a metric in order to assess your performance.

And if we don't have clear metrics, it might have certain advantages. But it would also make things more difficult and more subject to interpretation down the road. So it would be -- if people have thoughts, we're certainly open to hear them.

MR. NICHOL: Okay, thanks. Yeah, and I'm

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

not trying to put you on the spot and I'm not expecting a conclusive answer. But many of these questions are sort of intended to help all of us sort of think outside the box a little bit on this as we're thinking through it. So I do appreciate your openness to sort of the evolving nature of this effort. A second question in this area, so you have under transient --

MR. MERRIFIELD: Hey, Marc? Yeah, Marc? This is Jeff Merrifield. Do you mind if I chime in on the question -- the previous question there?

MR. NICHOL: Oh, go ahead.

MR. MERRIFIELD: Yeah. So this is not an area that NIC had prepared to present on today, and I appreciate Marc raising the issue. Just for the record, there are a variety of large studies that had been undertaken in the last several decades to evaluate the effectiveness of the zero no threshold measurement or standard. And I think Marc is quite right in recognizing there is a body of science, albeit some may disagree with it. But there is a body of science that would call that existing standard in question as being unnecessarily conservative in its approach which does feed into a variety of regulations that the NRC has to deal with.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

Where I would want to reinforce part of what Marc said was to the extent as you are putting together Part 53, trying to be reflective that the science could, in fact, change. I think the staff should create a rule that would allow the flexibility to change that down the line based on science and based on what would have to be a Commission determination to change that rule or that standard. But do so in a way that could happen at a later point if the Commission determined it to be appropriate.

It does make life more complicated. And Bill, I appreciate your comment in that regard. And you have to have a standard upon which to set it. And until the Commission changes that standard, you currently have what you have. But I think it's important to build it in such a way that it can be flexible if the Commission goes a different way.

And certainly historically bringing it back to when I was there, the Commission has engendered to reduce unnecessary burdens. And if the current standards are overly conservative, certainly I think the Commission will want to consider whether or not those should be amended. So thank you, Marc.

MR. NICHOL: Yeah, thanks. And I completely agree with Jeff. Just recognizing how long

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

the schedule is for this rulemaking. And even if the Commission accelerates it that a lot of things could change. So being able to incorporate the latest science would be really, really important.

MR. DRAFFIN: Well, I think it's worthy to consider expanding how NRC approaches quality assurance. There's a lot of sources of energy supply, and petrochemical, and sophisticated industries that maintain safety. And the number of accidents that have occurred, again, from nuclear plants is, you know, is very, very low relative to other facilities.

But, you also want to make sure, as was said earlier, we want these things to be built. You know, if you're really trying to address climate change, you really want these things built and used, and so, therefore, you don't want to put burdens on that are unnecessary. And certainly Part 53 provides an opportunity for the NRC to take a fresh look at Appendix B and the NQA-1 program and consider alternatives.

The level of quality of commercially available components can equal or even exceed required nuclear standards which were developed decades ago without the need for overly-burdensome reporting requirements. And these industries offer it safely.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

So, it would be wise to consider these other QA programs which are widely adopted, widely used, and tested. And one of the advantages of it and has merit because they get vetted in many different types of plants and improved as appropriate, become refreshed, and they're more modern, and they're relevant.

An alternative approach would be to set the requirements for an approved quality assurance program and use guidance to establish how it could be done.

So, in other words, you mentioned ISO 9000 series. That certainly has merit to be considered; 9001. Its less prescriptive program would allow the use of alternatives like that. And so, maybe it's a high level guidance in -- high level environment in Part 53, and allow the guidance to say you could use Appendix B, you could use an NQA program, you could use an ISO standard, you could use something else. You just have to make sure you get back to addressing the safety case, but you don't have to put extra stuff on that's not required for the safety case.

And also there's the commercial grade dedication programs should be also an acceptable approach for meeting Part 53. The goal is to also

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

have the safe U.S. reactors licensed worldwide: Canada, Europe, Asia. And so, therefore, the more we move to a quality standard accepted overseas, the better we are to have standardization, which hopefully would improve safety and deployment. And there's many advantages of that.

So, if the goal is to have the safety case met, the goal should be to allow people to use the quality assurance requirements that are most appropriate and not to be wedded to something established years ago which may be too much, and particularly for the ones with a lower, you know, improved characteristics as described in the advanced reactors.

So, I think there is a major opportunity to change the quality assurance in Part 53. And that might have some positive ripple effects in other parts of the NRC planning process as to whether it should be at the high level, yes; but whether if you leave it to guidance, then people can decide what quality program to use in each, as you mentioned, kind of selection or component, and so, therefore, that adds additional flexibility which we've talked about already today.

So, I'll pause there and see if Jeff Merrifield wants to pick up and elaborate.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

MR. MERRIFIELD: Yes. Thank you, Cyril.
And I would, I would add a couple of things.

One of them is if you sit back for a moment and you look at the historic context of the reasons for Appendix B, it really, it really goes back to the early days of the Atomic Energy Commission, and early days when these reactors were being built and there was a recognition that there needed to be a robust quality assurance program. Ultimately we got there kind of easy because in the market we couldn't demonstrate that, that was really occurring in the absence of a more prescriptive, deterministic program.

Even at the point -- and I know, it's been a while since I've read SECY-03-0117. I remember being involved with it as a commissioner, and we were wrestling with some of these issues at that time. And, you know, that is years ago. A lot of water has gone over the dam.

And I think what, part of what we have seen is was the advent of many of the advanced manufacturing techniques, the development of things like digital twinings and advanced construction techniques, that we are in a quite different place today than we were back in the '50s and '60s, and certainly still different than we were back 17 years

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

ago.

So, I think in that regard, you know, we do believe that the quality of items outside of the nuclear arena are already of a level that would meet the adequate protection standard. And that there are methodologies that are used outside of the nuclear industry that can provide the level of quality assurance and the pedigree to validate that those are manufactured appropriately and would meet the requirements to protect public health and safety.

So, in sum, I think what we're really trying to say in this slide is there are other programs out there, such as the ISO standards, that can be used to meet some of these requirements. We think those should be embraced by the Commission to the extent possible. As it would not only reduce, in our view, what is an unnecessary burden that is placed by the way in which a standard is put forward, but would also enable the ability of advanced reactor developers and builders to deploy these reactors both domestically and internationally in a market that could embrace those standards as well.

And with that, I'll pass it back to the staff.

MR. RECKLEY: Okay. Cyril, did you have

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

anything else, or Marc.

MR. NICHOL: Yeah. This is Marc Nichol, NEI.

And I have a lot of similar thoughts to Cyril and Jeff. And so I just wanted to start out, the QA I think is one area we have a great opportunity to make a lot of improvements.

Like the previous comments, my view of Appendix B is that it was formed very early in the '70s, yes, when there really were no commercial QA programs out there. And so the NRC did a great job putting the QA program together.

The rest of the world has caught up. And, you know, some might argue has surpassed those quality standards, ISO 9001 being one of them.

So, it is a recognition that the Appendix B isn't the only way to get to a quality part, and a quality part that gives reasonable assurance of adequate protection.

My memory of SECY-03-0117 is similar to Jeff's, that when I last read it there were very few differences between ISO 9001 and Appendix B. And the differences that do exist, in my opinion have very little impact on the resultant quality of the component.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

Now, the NRC's evaluation in that SECY was answering a question: Does ISO 9001 meet the Appendix B requirement? And the answer was no, close but no.

If you ask a different question: Does it result in acceptable quality for reasonable assurance of adequate protection? It think the answer would be yes.

So, we should recognize there are, there's more than one quality standard out there that will result in that.

So, so what does that mean? Well, I talked about the importance of flexibility because if you look at the Appendix B supply, supply chain, it's continuing to diminish. And, yes, we can do commercial grade dedication to bring it, to bring an ISO 9001 component up to an Appendix B compliance, but, you know, the question you should ask is are you actually improving the quality of that component? I would argue that, essentially, no. But you are adding in a lot of additional activity which has cost and other things associated with it.

So, so the goal in my mind should be opening up the aperture of acceptable quality programs, not trying to see how everything can force fit through Appendix B.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

So, so then that leads me to the question of, well, how would you handle it in a Part 53 regulatory framework? You've got the rules. What should we say in the rules? You have guidance. What should be addressed in guidance?

And that's a really good question. So, one, should the regulations themselves spell out all of the quality assurance requirements? I don't know if that's perhaps the best because that could limit the flexibility and ability to use an acceptable quality program, similar to what we found in SECY-03-0117.

So, perhaps a better way to do it is to, yes, require that you have to have quality, a quality assurance program, and define when you have to have a quality assurance program. And many of the things you identify in that slide 23 are the right ones. And then open it up.

And now, the other thing is the NRC is going to have to evaluate different quality assurance programs and deem them acceptable for this reasonable assurance of adequate protection that they're going to have to find. So, the NRC is going to have to agree that certain programs can be used.

But what the NRC could do is in the

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

regulations say that we've evaluated X, Y, and Z QA programs and we find them acceptable. So, you can just go ahead and use them. If you want to use something else, you would have to get that reviewed by the staff, perhaps as part of your application.

As a starting point, I would say the NRC in Part 53 should find ISO 9001 acceptable. There shouldn't be a reason why somebody couldn't come back in and use Appendix B if that's what they wanted to do.

And I do point out, NQA-1 is going to be very important. So, a lot of people are going to be using the ASME code to build their plants. The ASME code does in many cases require the use of NQA-1. And so we would want the ability to use ASME NQA-1.

Now, within that, the question is could an applicant come in and use multiple QA programs depending on which portion of the design or which stage of the process they're in? And the answer is perhaps.

That might be a little bit more, more challenging question to answer: How do you manage an applicant with multiple QA programs? But I don't think we should foreclose on that, that question, so.

I think that's essentially everything I

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

thought about.

MR. RECKLEY: Okay. Operator, if you can ask everyone to hit Star-1 if they had an additional question or suggestion.

OPERATOR: Absolutely.

If there are any questions or suggestions, please press Star-1 at this time, and unmute your line to record your name. Again, that's Star-1.

One moment, please.

MR. NICHOL: And, Bill, this is Marc. I did have another thought if there are no other, other people that want to speak.

MR. RECKLEY: Well, go ahead as we wait.

MR. NICHOL: Okay. The thought I had is another question we should be asking is not just which quality assurance programs are acceptable, but what does use of a quality assurance program actually enable?

So, so for example, in today's world an applicant will have, or, you know, a licensee will have a quality assurance program and they will follow that quality assurance program to do a lot of their design analysis activities.

And, yet, at the same time many -- often the NRC will re-review all of those analyses and

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

calculations as if, you know, not having any, any trust in the quality assurance program of the applicant.

So, is there an ability, that's just, you know, in the licensing application, is there an ability to put more faith in the quality assurance program such that the NRC has confidence that the quality assurance program will behave the way it's intended to, that perhaps the NRC doesn't have to review as much in the application. Or, you know, the same concept can be extended to oversight and inspections and that sort of thing.

So, I think that's something to think about. What does a QA program enable to sort of the NRC can rely on rather than have to duplicate work?

MR. RECKLEY: Okay, thanks. Thanks, Marc.

Operator, did we get any?

OPERATOR: Yes. We do have our first question. It comes from Mike Keller, with Hybrid Power Technologies.

Go ahead, please. Your line is open.

MR. KELLER: Thank you for the opportunity to add a comment.

Rather than being overly prescriptive, why not just allow the applicant to -- the NRC would have,

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

you know, the major topics in the Appendix B, and it's up to the applicant how he applies the general issue, say design control, relative to the significance of the safety functions that the applicant defines?

In other words, keep the regulations really simple and allow the applicant the leeway to establish his requirement.

Thank you.

MR. RECKLEY: Okay, thank you.

OPERATOR: And our next question comes from Chip Martin. Go ahead, please. Your line is open.

MR. MARTIN: My question is related to quality assurance standards that might be invoked. And I sit on the NQA-1 Main Committee, and I'm wondering what is the appropriate way to address, to risk-inform a standard like NQA-1? What are the key things to focus on?

MR. RECKLEY: That's an interesting question. I don't know.

I mean, to some degree the notion of quality assurance and development, developing it commensurate with the safety implications which you're addressing it to, it is built into some degree in the current construct.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

We've also seen in the development of 50.69 and some other activities, and to some degree the licensing modernization described in NEI 18-04, a similar concept of how to apply quality assurance measures to the degree they're helping in a risk-informed manner.

So, let me think about the broader question other than that. Or if anybody else has a thought, certainly would welcome anybody else weighing in on that.

(Pause.)

MR. RECKLEY: Hello, Operator, do we have any more in the queue?

OPERATOR: There are no further questions at this time.

MR. RECKLEY: And going to the last question, and then I'll just turn it around a little bit, for both NEI and USNIC and others. As we've talked about leaving flexibility within the rule, and trying to address it in guidance documents, that can be a good approach for writing the rule, and we could take that approach.

But to some degree it does then put a burden on whatever groups or organizations are preparing the guidance. To go into the last session

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

from Mr. Martin, you know, would ASME and the traditional NQA-1 group, or would USNIC and NEI be amenable to undertaking trying to develop this guidance?

And kind of has come out in the conversation that it ranges. There may be cases -- I'm not a QA expert -- but there may be cases where a particular license standard for any given activity might be, might be okay as written.

It might also be the case that a particular ISO standard could be okay if it were supplemented a little bit to address a nuclear application. And I think as described in that SECY paper 03-0117, you seen other industries do that where they supplement the ISO structure by coming up with industry-specific enhancements. Because the ISO standards are basically developed for a particular purpose in the terms of manufacturing and delivering product.

And there might be elements of the nuclear industry that would warrant going beyond that.

So, and I'm not asking for volunteers, unless anybody really wants to step up at the present time and volunteer, but I think one of the important things as we get into this Part 53 development will be

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

the guidance. And we didn't include that as a specific topic today. But QA would be an area. And there will be a number of other areas where you will potentially stay at a high level within the rule, with an expectation that guidance can provide necessary explanation and detail.

That then presupposes that someone is going to write the guidance. And, traditionally, guidance works best when it's done not solely by the NRC but also involves stakeholders in preparing it.

So, just I leave that as a thought, like I say, unless someone wants to step up immediately and volunteer to start working on this.

MR. MERRIFIELD: Bill, this is Jeff Merrifield. If I can, I'm not stepping up to volunteer.

Let me just say on behalf of NIC, I appreciate your comment. And that is a framework, as you have outlined, that has traditionally taken place with the agency. And I'll leave it to Marc to comment on that.

Much of that is a function of a good portion of the rulemaking activities in an agency are dedicated toward the oversight and regulation of operating nuclear reactors. The utilities to operate

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

those reactors has substantial resources and, obviously, involvement in how that comes out.

NEI has a longstanding role on behalf of utilities in terms of assisting in developing some of that guidance.

NIC is a different type of organization. Rather than utility-led, supplier-led, it does not have the same financial or human resources that would accommodate the ability to put together guidance documents in that regard.

So, just to make it quite clear, NIC is not in a position to write and draft guidance documents, nor do I anticipate that will change in the near term. Thank you.

MR. RECKLEY: Yeah, thank you, Jeff. I mean that, I acknowledge. I wasn't meaning to be too glib there.

It is just it's going to be a challenge and, I think, something we have to acknowledge. But the organization and what we've encountered in other standard development organizations as we've tried to do this for advanced reactors is, I think it's been brought out in both the standards forum and our periodic stakeholder meetings is many of the developers that are in this current advanced reactor

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

community are not -- are resource-challenged. And even participation in standards development organizations, which takes a fair amount of time and dedication, is a challenge to them.

So, we understand the difficulty. It's just going to be another thing to keep in mind as we go forward, that guidance development is supposed to or at least traditionally has accompanied the development of a proposed rule, so.

MR. DRAFFIN: Bill, this is Cyril.

Go ahead, Marc. And then I'll have a comment after you.

MR. NICHOL: Okay, thanks, Cyril.

Yeah, Bill, this is Marc Nichol, NEI. So, I'm not volunteering for guidance either, but just to add some additional context.

So, I think this is, sort of the area of the conversation going forward is, you know, how, how is QA addressed in the regulations? And what is sort of regulated to guidance? And, you know, how can we build in flexibility to incorporate these multiple QA approaches?

I would say that, you know, flexibility is important, having some clarity is important, too. That's why part of my idea was that perhaps the NRC

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

endorses standards in the regulations, you know, similar to what you might do for ASME.

And so, you know, ISO 9001, NQA-1, those being some potential ones to look at.

It is possible to sort of write up a guidance document and try to get endorsement from the NRC. Just to give some context of how it's been done in the past, we've done QA templates based on NQA-1 in the past. So, so what we've provided to the NRC wasn't actually a guidance, you know, on necessarily on, you know, the acceptability of NQA-1, it was more in terms of what would a QA program look like that is based on NQA-1.

And so that's sort of, like, a lower level order of information beyond just sort of the NRC looking at NQA-1 and saying it's an acceptable approach, which is sort of where I'm focused right now, and similarly on ISO 9001

The other thing we've done a guidance document for was ISO 1702.5. This was testing and calibration standards. And the NRC found that acceptable in the original. We wrote a guidance document on how it would meet Appendix B requirements.

And, actually, you had to add in a contracting requirement to be able to meet the requirement.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

You know, that's not to say that it couldn't be an acceptable QA approach without that, it's just that it had to meet the requirements, and so that's why it had to be added in. So, that's why I had the earlier comment is let's look at how can we allow multiple QA programs? They may not all be identical and so, you know, today they may not all meet Appendix B criteria.

I don't think that's the measure we're looking for. The measure we're looking for is, is the QA program -- does it, does it meet the criteria for reasonable assurance of adequate protection. And I think the aperture that meets that is much larger, it's larger than the aperture that meets Appendix B requirements strictly. So, so that was sort of my comment.

MR. RECKLEY: Thank you.

Cyril, you had something?

MR. DRAFFIN: Yes. As we're wrapping up the first three topics, maybe I'll open up the aperture even more and talk about guidance.

In my introductory comments I said that, you know, under you're preparing the Part 53 and guidance to go along at the same time as the ACRS meeting, that was what your plan was as indicated as

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

well.

You might indicate -- not necessarily today but certainly for the next meeting -- where and how many guidance documents would you have in mind?

It doesn't have to be a layout in terms of the order, but at least keeping a running tally of, you know, this is where we think guidance will be required and perhaps the scope of it would be helpful. So, running kind of in parallel with what goes in Part 53, what goes in the ancillary documents that are going to be guidance.

This one, the QA would be used as an example, but I'm sure that you have others in mind and others will bubble up in the course of the day.

MR. RECKLEY: Okay. Yeah, we can add that.

Or, as we do the discussions it will become apparent, perhaps, where additional guidance is going to be necessary. And we might have to find ourselves deviating a little bit from standard practice in having all the guidance developed by the time the proposed rule is done.

So, Operator, if there's no additional people in the queue, I guess, Bob, it's time for a break.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

MR. BEALL: Yes. If you can go to the next slide.

Okay,. So, we're pretty close to being on schedule here. So, we're going to take a 15-minute break here. I would like to shorten the break a little bit and have everybody back by 2:15, and that way we can start off with Topic No. 4, which is integration of various requirements and programs, things like environmental security and emergency preparedness.

So, that will be the next topic. We will start at 2:15 p.m.

So, Operator, can you put everybody on break, please.

OPERATOR: Absolutely. One moment.

(Whereupon, at 2:04 p.m., the above-entitled matter went off the record, and reconvened at 2:17 p.m.)

MR. BEALL: Hello, everyone. Welcome back to the second part of the public meeting on the Part 53 rulemaking. We are going to start off now with Topic 4, Integration of Various Requirements and Programs. And so, I'd like to turn it back over to Bill Reckley who will lead us through this topic.

Bill.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

MR. RECKLEY: Thanks, Bob.

So, the fourth topic, and we touched on this early in the discussions today, is the construct of Part 53 to try to take an integrated approach and look at various requirements and how a designer has the flexibility to -- (Telephonic interference.)

They basically define the controls with a -- (Telephonic interference.) -- and then demonstrate that if margin is available they might get into these and other areas. Traditionally that's been to amplify the importance of prevention measures in order to get an alternative on the mitigation side.

The challenge on that is basically it's a challenge in defining the specific performance measures. For example, I mentioned this morning that, or earlier today, that one of the criteria that we traditionally use, and this would be on the bow tie figure this would be under health effects, what is the performance measure for health effects, is the 25 number at the low population point.

And in both emergency planning and siting proposals the staff has put together alternatives that are more based on thresholds for possible evacuation of populations. And that's a one run number over a specified duration.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

So, we might complicate matters, as we even have more performance measures tied to specific alternatives in other areas.

The other thing that I was hoping a discussion and people giving thought to integrating various requirements together are potentially, as Marc Nichol had mentioned, maybe there is a different way to organize Part 53. And so I just threw up on this slide two different representations of how things get integrated.

One is the bow tie figure that I use on occasion. And the other is an older slide from originated in a next generation nuclear plant, but it also was referred to in the licensing modernization. And it's just a way to construct from a radioactive inventory to a potential release, and all of the measures and barriers that one puts in place to limit that release.

So, in your own mind, if you can have a picture of these or others, you know, there's other approaches, systems engineering approaches and others that I heard Ralph Hill earlier, if he's still on, you know, going to work on ASME on how to put together basic approaches to the fixed cycle of a facility and the control of risk from the facility. We're really

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

open to any different way of organizing Part 53 that might help us in the integration of activities.

So, if we can go to slide 28.

Going back to our working construct of kind of a life cycle approach to organizing it, I just tried to put up a few, a few of the challenges in integrating, integrating requirements.

One that we're faced with right from the start is various reactor technologies. We all know that.

But the one at the bottom, also in kind of a red color, is the one I'd mentioned just a minute ago, the trade-offs of performance-basis approaches. And, for example, how might the design be used to justify alternatives to the emergency planning program?

How might the design or inherent reactor features be used to try to -- as an alternative to staffing requirements?

And how does the rule kind of hold together when you're trading off these various things of, again, for example design vs. staffing?

And then over in the tan color just a few of the other things that we've talked about, defining the safety objectives. And traditionally what has

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

been the assumption for the operating piece is basically that a core melt is possible. And if you get a core melt, you're likely to have a release. And, therefore, a program like security was able to be formulated based on preventing core melt.

And that works for large light. For other reactor designs you may have a different, in the bow tie of the center circle called the high-level event, you may have a different high-level event than core melt.

And how then can security be adjusted? And the slide has a little bullet that says, you know, make some preliminary attempts to see if a different approach to security can be taken in the proposed limited scope rulemaking.

Likewise, in emergency preparedness for emergency planning zones, how might that tie into a performance-based approach?

Talked about quality assurance and how does that tie together through the various potential parts of, or subparts of Part 53?

I just mentioned operations and staffing.

There are, and Duke Energy I think, some others, have mentioned that, that might, that would be an area we have to address. And whether we have to do it to

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

Marc's point, whether we have to do it as a high-priority item, or whether we can defer some of that maybe to batch two, but at some point the financial implications of both decommissioning and also the financial capabilities of a licensee come into play.

Environmental assessments, and they are tied to radiological toxicity and there are non-radiological things, like water use, land use, construction activity, some of the things that are likely for advanced reactors than has traditionally been the case for light water reactors.

And then as has been mentioned several times, NRC oversight and how would that work with the advances in technology?

So, all of this kind of just lays out the challenges and as a way to tee up today's discussion.

And then as we go forward, hopefully some suggestions.

If we go to 29 and, Cyril, you have some initial thoughts on the integration?

MR. DRAFFIN: I do. This is complex. And you may take a different approach.

I mean, for instance, you talked about having requirements with this section. There might need to be a trade-off discussions section. But you

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

also want to get ready for people down the road going through the detailed licensing thing, like, whoa, we really don't like this. We don't like this openness and flexibility. And, you know, you really need to codify that, that's an okay thing to do.

So, you don't want to have, you know, staff years from now putting Part 53 and not recognizing the kind of trade-offs that exist, whether it's in the guidance documents that might be ancillary or in the Part 53, I don't know.

Same thing with resources. Referencing, you know, the emergency preparedness activities that NRC is doing right now, that TVA teed up; the low population discussion we had earlier today; maybe there might be some work in the future that would be on staffing.

So, there's kind of a set of resources that might be captured as part of the 53 process. Which may not be in Part 53 itself, it might be in ancillary documents. But a go to place and say here's the resources you can pick it from, you know. ISO standards, maybe QA, it may be others, so if nothing else, keeping a delineation that might not be in the regs but, you know, that people can use and rely upon because people will be making these trade-offs going

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

forward.

And as more information is learned, the trade-offs that people are thinking of now may be slightly different in the future.

So, I don't have an answer, but I do think it's important to consider building blocks because, particularly if you have a schedule which is accelerated from 2017 to 2020 -- 2017 to 2024, you're going to have to rely upon some peak parts to build from. And maybe Part 53 is the roadmap for how they tie together and the priorities for that.

So, I'm not really answering the question except to agree with you that it has a complexity to it which is substantial.

Under a more narrow point, the comment there is, it's not necessary to incorporate other, all the other parts but, you know, things like Part 30 on byproduct material, that might be relevant for fusion programs that have radioactive materials that they're swapping out in order to keep the facility going or fission components. So, there may be in addition to the ones that the NRC mentioned in their policies issue paper in April, there may be other parts that are worthy of at least considering or maybe even taking efficiencies from.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

And, you know, maybe Part 20 and Part 100 might be used for performance metrics.

So, I think the secret is how do you identify the building blocks and how do you integrate them together. And I think that's something that we don't have the answers for just yet.

Maybe Jeff, who is a more seasoned person, has some perspective on what's worked in the past and how it could work here.

MR. MERRIFIELD: At this point, Cyril, I don't. I don't have any additional thoughts to add on what you said so far.

MR. RECKLEY: Marc, do you have anything?

MR. NICHOL: Yeah, thanks, Bill. This is Marc Nichol. Can you hear me?

MR. RECKLEY: Yes.

MR. NICHOL: Okay, thanks.

Yeah, I really appreciate these two slides that you've put together. As I mentioned earlier in the presentation, there are a few things, a few key things that I think are really going to enable us to do something different in Part 53 that protects public health and safety but can do it in a more efficient, and I'd even venture to say simpler manner.

The integrated approach is one of them.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

And it's sort of the core to what I call to the safety construct for Part 53. There's some other things that might go around with it.

But I do appreciate the graphs you have on slide 27, both the bow tie and the other one, which I'm not as familiar with. And while these may not be what we come out with at the end, I think they are a great place to start the conversation.

And, you know, looking at what benefits can we get out of integrating the safety security EP considerations. Recognizing that, you know, the life, over the life of Part 50 regulations some of these sort of were developed earlier in time, and some came later in time. And so, we have a unique opportunity to consider them all at once right now. And that's pretty exciting.

So, so the first is really, one, I just wanted to put out there how I sort of am thinking about the safety construct as we go through all of this. I think about it in a very simplistic model first.

And I think about it as we've got this radiological hazard, or let's just say radioactive material on the one side. And then on the far other side you have the public that we're trying to protect.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

And in the middle we have everything that we've put in place to protect the public to an adequate level.

And so those things might be design features that preclude or reduce the probability of an accident, or they might be barriers to prevent the release of radioactive material if we have an accident.

They may be programs to ensure, you know, lower probability of events, or even programs to respond to events, mitigate them.

And so we have all these things in the middle. And so how do we construct that safety or put together that safety construct, this integrated approach, to make that middle part the simplest possible in relation to the hazard that we're protecting against and the public that we're protecting is how I think about it.

So that's why I think your graph sort of helps to -- or, you know, reconstruct how that, that would look.

It brings up some pretty important questions, so, for example, just in the emergency preparedness construct. So, you, we have things that you can do on the design side, and then things you can do on I'll call it the response or mitigation side, emergency

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

preparedness.

And so there's a concept that the more you do in design space, perhaps the less you need to do in response, in mitigation space. Or maybe the other way around is if you don't have as much in design space, then perhaps you need to do more in emergency response space.

And this, you know, has the benefit of providing a lot of flexibility to applicants. Some may find one, you know, a design-centered approach better; others may find a response-centered approach better for them.

Just a side note, I think much of the designs these days are looking at more how do you build it into the design so you don't have to do as much response. But others may come after us, years later, and say, well, that really doesn't work for me, I want a little bit more flexibility, and it's, you know, more efficient if I do more things in a response space. So, we should allow that, that flexibility.

The other thing it brings up is, okay, so for integrating safety and security, how do you do that? Today we have a very bright line and we consider safety completely separate from security. And, you know, almost never the two meet.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

But one of the things that we find, especially if we've been engaged in the NRC on the Part 73 SMR physical security rule, is that the more that is built into the design on the safety side, the less of a security consequence that you may have -- I'm not going to say security event -- but the consequences of a security event become less. And so there is some interrelationship there that, you know, I think has not been well explored and we should look at as part of this.

So, all of that is to say that I think there's great opportunity here. It is a large undertaking to look at this. I think this is perhaps the most important thing that we do as the Part 53 rulemaking is the safety construct, and especially this integrated approach.

Cyril's slide brings up some great question. As you start to integrate this safety security emergency preparedness construct -- and there may be a couple of those things that need to be included that I didn't mention there -- what, how do you handle other regulations, other than Part 50 and 52, that are touched by these things?

So, take emergency preparedness, for example, do we just reference the EP rules that are on

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

the books or do we need to redraw those EP requirements under Part 53 because of the way it's addressed in an integrated approach sort of lends itself better to a different way of doing it? That's a really open question.

You know, one of the silver linings there is that the current Part 50 EP rule for SMRs and other advanced reactors is very consequence based. So, perhaps there's a lot to be gained there.

The Part 73 SMR physical security rule is only -- is very I'll say small scope at looking at how it can be more consequent space. So there's probably a lot, a lot less that -- or a lot more that would need to be addressed in Part 53 in that respect.

And then there may be some parts that just don't make sense to try to take on in Part 53, one, because the more we take on the bigger the rule is, the more work we have. And there may be some things, and one that just came up in our discussions as we were preparing for the meeting is, like, fitness for - - excuse me, fitness for duty requirements. You know, we may not need to do anything different for those under an integrated approach under Part 53.

So, really, how we shape the safety construct is the first question. And then we can look

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

at based on this new safety construct that is more efficient, which of the rules do we need to integrate into Part 53 that just sort of aren't plug and play currently today.

So that will be a big question. And, you know, my personal perspective is that it may be very, very challenging and may require a lot of effort to develop this new safety construct for Part 53. I'm okay with a lot of difficult work to get there if the end result is a rule that is much simpler and inefficient -- and much simpler and efficient for both the NRC and for applicants and licensees. I think it will be well worth the effort.

MR. RECKLEY: Okay, thank you, Marc.

Operator, could you please -- Go ahead.

MR. DRAFFIN: Well, and one other observation. This is Cyril from USNIC. And that is visualization.

The audience for Part 53 is, obviously, developers and the NRC. But it's also the public. It's other regulators around the world. It's investors. And so, the concept of having charts, trying to tie this complex issue together, I think it's very beneficial. And you might have maybe a series of charts that as part of the regulation or at

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

least part of the PowerPoint describing the regulations would be helpful to include, because a visualization sometimes captures ideas, maybe not with the complexity of the text, but I think it's a good task to consider. Whether you put it in Part 53, that really depends on the NRC commissioners.

But I do encourage you to, as you make decisions, to try to visualize how the parts fit together, particularly in this integration topic that we're talking about now.

MR. RECKLEY: Thank you, Cyril.

Operator, could you see if we have questions or comments from other participants?

OPERATOR: Absolutely.

As a reminder, if anyone does have a question they may press star and then 1. And then please remember to unmute your phone and record your name clearly when prompted.

It looks like we do have one question. One moment.

It looks like our first question is from a Michael Keller. Go ahead, your line is open.

MR. KELLER: Yeah, this is Mike Keller, Hybrid Power Technologies.

As a general observation, it strikes me

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

that the intent of the proposed rule could be identify basic requirements, not provide guidance. It seems to me you're falling into the same trap that overregulated the current reactors.

If the rule is simple, then it will provide the maximum flexibility. And also, you're likely to get done, you know, in our current lifetime.

But, anyway, just a general observation that simple is better.

Thank you.

MR. RECKLEY: Thank you. And it's a great observation. I'll leave off the last to keep it simple.

And, okay, Operator, are there any other?

OPERATOR: I see no further questions or comments at this time.

MR. RECKLEY: Okay. So, so again, you know, anybody that gives it some thought, I tend to agree with Cyril. People think and organize in their minds differently. I'm a visual thinker, so I tend to try to draw. And people make fun of my drawings sometimes.

But if you can, if you can try to visualize and put together, it could very well be helpful to, again, defining how we construct it, how

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

we organize it. If anybody comes across what they think is either existing processes or guidance, or they think of something on their own, please share it, because it would be helpful to us to try to think about how to put this, how to put this together.

And, again, it's a difficulty, I know, being repetitive, the difficulty that these different parts and the ability to tradeoff between particular barriers or programs just makes the whole thing very interrelated. And so makes it difficult to visualize and organize.

So, I guess we can then go to the next slide which was the topic of performance-based approaches. And, again, the NRC has had a general policy for decades that we should have risk-informed and performance-based approaches.

The actual incorporation of performance-based approaches has, however, at least for the operating fleet, been a bit of a challenge. And we typically point to a couple of examples or success stories on performance-based approaches. But there's just a couple of over 20 years of having a policy to move towards performance-based approaches.

So, that's the challenge. It's probably also, as I've said a couple times, also an

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

opportunity. As we're building this from scratch, maybe it's a way for time and opportunity to actually build in performance-based concepts into Part 53.

So, got that background. We have in the development of that some guidance, NUREG/BR-0303, Guidance for Performance-Based Regulation, and also the associated staff requirements that laid out the policy on risk-informed, performance-based.

So, Prasad Kadambi, if you could go ahead and Star-1 now so that the operator can recognize and open your telephone.

The first commenter is Prasad Kadambi, who was a major part of developing that previous guidance when he worked at the NRC. So, Prasad, are you on?

OPERATOR: Go ahead, sir. Your line is open now.

MR. KADAMBI: Can you hear me?

MR. RECKLEY: Yes. We can now, Prasad.

MR. KADAMBI: Oh, okay. Sorry. Thank you, Bill for the opportunity to speak about my work at the NRC about 20 years ago.

My name is Prasad Kadambi. I retired from the NRC at the end of 2008. I produced NUREG/BR-0303 in 2002 based on work that I had done over the previous five years. Next slide.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

So, it's likely that very few people at the NRC know much about the background for NUREG/BR-0303. So, I'd like to begin with just what this guidance set out to do.

Then I'll cover the expected products, the expected outcomes, the relevance to Part 53, the current state-of-play of this guidance, especially in standards, and the future promise of this approach that is contained there. Next slide.

So, in my mind, the story begins with the SRM to SECY-98-0144, the so-called White Paper. Also, in my mind, the Commission captured a lot of thinking on regulatory reform formally in the white paper.

The Commission's expectations are as valid today as they were then. Other than NUREG/BR-03030, I'm not aware of any other NRC staff efforts to formally address the Commission's expectations on performance-based safety.

It seems to me that if an applicant chose formal conformance to Commission expectations, the staff is very likely to approve the application. This type of argument is frequently used with Commission policy statements, such as the advanced reactor policy statement.

At the ANS, we are trying to attempt this

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

type of an approach to constructing or to developing our standards. I'm not aware of any part of industry that's doing it this way. Next slide.

Taken formally, there are four essential attributes to performance-based safety. There should be measurable parameters.

There should be criteria for decision making. There should be licensing flexibility, but that is conditional on appropriate monitoring.

And the last is important. There should be a framework for margins. And the requirements associated at margins can be either physical or temporal.

Conceptually, a physical margin is something like the stress in a pipe wall. A temporal margin might be when an event progression may allow for operator action.

The scope of NUREG/BR-0303 was a set out to cover all NRC activities. So the guidance was meant to apply for reactors, materials, and waste.

So, given this, the guidance divided the issues into two categories, simple scenarios, and complex scenarios. Next slide.

The simple scenarios are defined as those where the relevant safety functions are quite clear.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

Also, it is easy to, relatively easy to evaluate the margins associated with the functions.

For such scenarios, the guidance offers high level guidelines. Occupational exposure is an example where physical and temporal margins maybe significant.

In fact, this is being used in the advanced reactor content of applications program, the part of the section having to do with occupational exposure, I believe. I've tried to bring this work to the attention of the people involved.

Also, for industrial source users, such as for nondestructive evaluations, the high-level guidelines maybe appropriate.

The high-level guidelines suggest consideration of viability of the performance-based approach, and assessing different alternatives or options. The options could include consideration of a deterministic approach, or a risk-informed approach.

It could include design changes or operational changes. Something along the line of what's being talked about today.

As the attributes of measuring and monitoring are so important for a performance-based approach, where and how measuring happens, maybe too

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

difficult for a high-level guideline approach. For these conditions, the guidance has proposed constructing objective hierarchy as a way to structure performance objectives.

And this is done formally to facilitate implementation so that there is attention paid to each of the performance-based attributes. This kind of an objective hierarchy, leads to a logical decomposition of relationships and dependencies among the performance objectives.

This approach has been used and is used in the guidance NUREG/BR-0303, and the example is the reactor oversight process, which has the high-level goal of accomplishing reasonable assurance of adequate protection. And I believe an objective hierarchy is the most efficient way to get to that kind of a deficient structure. Next slide.

NUREG/BR-0303 proposes that performance objectives can be thought of as fundamental objectives or mean objectives. It uses the ROP model to think of reactive safety as being a fundamental objective.

So the fundamental objective reactor safety is decomposed into these objectives that are recognized as initiating events, boundary integrity, mitigating systems, and emergency preparedness, as

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

four of the cornerstones of safety.

This slide shows mitigating systems performance as an example. And it is decomposed to show related and dependent performance objectives.

The slide shows notionally what type of parameters maybe employed. Margins can be considered at the function or the system or the component levels.

Notionally, one can identify capability and programmatic objectives and parameters associated with these objectives. The figure also shows how prescriptive and compliance type of requirements maybe applied at lower levels in the objectives hierarchy but can be made more performance-based at the higher levels.

The point is that if margins are lost at the lower levels for the lower down performance objectives and the objectives hierarchy, one can still have enough margin to fulfill the functional requirement at the higher level. So, this can be shown explicitly. Next slide.

So, basically NUREG/BR-0303 offers a decision-making framework. It works toward proposing alternatives and making decisions on optimization among performance objectives.

So, these can be prescriptive versus

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

performance-based. And the idea is that the more margin you have, the more performance-based you can be. And the less margin you have, the more prescriptive you can be.

Or you can make a choice between deterministic and risk informed, depending on the magnitude of, and the confidence in the margins.

So, all this can be put in the framework of a requirement management system. And you can use blends of different implementation approaches.

It's also, I think, a more transparent way to do cost benefit analysis. I believe that it is much better suited for considering performance on a life cycle basis, and tends to apply systems engineering models.

It is important to think of this type of a framework within the context of the flexibility that is actually afforded by the U.S. Regulatory framework.

So, the guidance in NUREG/BR-0303 and the model that it uses, was put into effect with no new regulations required. However, it did require a formal decision-making process with the Commission, you know, having to make the final decision.

So, the success of the ROP, I think, has bolstered the staff's current confidence in going

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

toward a performance-based approach.

In this context I think it is important to go back to what Chairman Jackson put out as a yellow announcement back then in 1997. It was called discussion of safety and compliance and it remains as relevant today as it was then. Next slide.

So, NUREG/BR-0303 offers a way to deal with what I think will be an inevitable issue with Part 53. This issue is the potential for conflict and inefficiencies between regulations that have been developed over 50 years, and you know, so many years apart with so many changes happening in between.

The solution is to adopt a higher level of structure and build on improvements that the staff has been making recently. This is why I think the staff should move a model-based systems engineering approach to build in early consideration of relationships and dependencies.

And you know, there has been talk about this even today. And I believe an objective hierarchy is the way to do it.

But, it should be clear that when you lay out the performance objectives, we should have, at least aspirationally no unnecessary requirements.

In other words, the requirement management

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

should be such that, you know, we get actual performance improvement for everything that is required as part of the operation or process. Next slide, please.

This slide just shows that, you know, there are other documents where some of the details have been worked out. And I've listed them.

In fact, this is not a comprehensive list.

There are more documents I could provide references to.

But, the point is, that we are using it in ANS standards, and I believe ASME, as part of the plant systems design standard is also going to be referring to it. Next slide.

So, the promise of NUREG/BR-0303, and the structure that it offers, lies in the farsightedness of the Commission's vision, going back to the last 1990s, related to performance-based safety.

The fact is that you cannot have flexibility without enforceability in a regulatory system. And this is recognized.

What is unique about this guidance is that it is based on monitoring of margins, both physical and temporal appropriately. This approach also has blending of structuralist and rationalists'

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

perspectives, I think, in a way that is amenable for the current way we make decisions.

It offers a way to use the current innovations taking place with model-based systems engineering. For example, with the use of digital twin concepts.

It offers a way to handle uncertainty and ambiguity in decision making that goes beyond just PRA uncertainty. It offers a way for NRC to address public health and safety objectives simultaneously with things like common defense and security.

Lastly, I really think that it offers a way for the current Commission to be accountable for outcomes that were laid out 20 years ago.

Thank you very much, Bill. And I'm available to answer questions.

MR. RECKLEY: Okay. Thank you, Prasad. Let's -- Operator, if you can leave Prasad's line open, and Prasad, if you can mute, but we will move onto observations from Cyril and Mark. And then open it up for discussion.

Cyril, do you want to go ahead?

MR. DRAFFIN: My comments will be on the high-level side. It's appropriate to have performance-based requirements, but we want those

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

requirements for licensing and regulating advanced reactors to be clear, simple, appropriate, efficient, and focus just on the protection of public health and safety.

We talked about making things simple, and that's good. In terms of, we also want to avoid regulations that are not needed to provide a reasonable assurance of adequate protection of health and safety, and eliminate or streamline requirements that are not, that are overly prescriptive.

The -- one way of measuring that would be needed for future exemptions. It's one of the benefits listed in Part 53 in the 13 May 2020 NRC rulemaking policy. The thing was to reduce the amount of exemptions.

And so, that should be kind of a goal. It might be a metric for how we do going forward. So, that's -- I'll just, since we heard lots of details from our previous speaker, I'll just leave at the high level and turn it back to you and Mark.

MR. RECKLEY: Okay. Mark, did you have questions or observations?

MR. NICHOL: Just a few, just to be quick. So, we do -- we do agree that the requirement, the regulation should be performance-based. And just some

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

experience over the years, I think there's been a lot of progress in that area.

If we just look at the EP rulemaking, or the pursual of security rulemaking, they're looking to be much more performance-based. And they're doing it in a way that's much -- that's focused on the consequences.

And what we found is that the benefit of focusing on consequence-based performance-based requirements is that it really is then defined in terms of the safety hazards. And it's done in a way that's technology neutral.

So, for example something that would not be performance-based that would be more prescriptive is, that you have to have a certain system as part of your design. Well, some designs may not even need that system for whatever reason that the regulations may have required it.

Or, even if you have to analyze a particular type of event, that that event may not be relevant. So, those would be more on the prescriptive side.

I think we've gotten a lot of experience that says, we want to be on the more, on the performance-based side. Which I think there's a lot

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

of consensus around that.

I think we all need to hold each other accountable to make sure we don't slip back to the prescription way of doing things. And that we do stay performance-based.

But, I do have a lot of, a lot of optimism that that's where this rule will go. Thanks.

MR. RECKLEY: Operator, could you prompt the other participants?

OPERATOR: Absolutely. If you would like to ask a question at this time, please press star one on your phone, unmute your line and record your name as it will be required to introduce your question.

Again, to ask a question, that is star one. One moment, please.

And our first question comes from Glenn Kelly. Go ahead, please. Your line is open.

MR. KELLY: Hi. My comment is, really has to do with the overall process. One thing that comes to mind is that it's going to be highly important that in making this regulation risk-informed, that we make it risk-informed and not risk-based.

It's going to be very easy to slip into a situation where we believe that we really know the numbers coming out of the PRAs of other risk

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

calculations to the point that we can make all our decisions based on those bottom-line numbers.

And get away from some of the determinants that design basis type criteria that we had that we built into Part 50 and 52. So, I think we'll have to consider how that really ends up being balanced.

And the second thing is just a thought that has come to me in thinking about this. And it's a little bit off this topic.

But, I think if you don't want exemptions, if you want to keep things at a high level, then you're going to need to have some level of Reg Guides.

But, almost associated with each one of the many design types.

Because I'm expecting that you're going to have -- in order for NRC to regulate it, it's going to need to regulate against certain criteria.

And unless, and if industry wants this to be predictable, I think it has to be a level of understanding of what NRC's expectations are going to be regarding what they're going to see in applications and in the features of the design itself.

Anyway, those are my comments. Thanks.

MR. RECKLEY: Thank you.

OPERATOR: Our next question comes from

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

Chip Martin. Go ahead please, your line is open.

MR. MARTIN: Thank you. This has to do with the, it was an IAEA document, GSR-2 management system requirements. And a lot of international organizations in particular are required to comply with that as well as the QA program of record such as NQA-1.

My question is, given that GSR-2 is intended to address things like organizational culture, or safety culture, and it's written in a way that looks prescriptive, how might one address those kinds of topics in a performance-based manner?

MR. RECKLEY: Great, great question. And that, I don't have an answer for. That will be -- that will be one of the challenges.

And you know, when Prasad had put the ROP up as an example, and as the ROP was developed, you know, that -- some of those same questions came up in terms of, could you rely, for example, on performance indicators?

And in theory, some of those things you mentioned would show up in performance indicators. But, if you have a bad culture, then wouldn't it show up in unreliable equipment?

But, in the end, that was, you know,

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

considered maybe a step too far, or a step too late, going to Prasad's temporal discussions, that such things might not show up in time.

And so, those are the remaining important areas to keep in mind. And we'll have to -- we'll have to have something to reflect that Commission policy.

For example, the one you mentioned on safety culture. We'll have to keep that in mind along with all the other objectives that we've identified.

So, thank you.

MR. MARTIN: Thank you.

OPERATOR: We show no further questions at this time.

MR. MERRIFIELD: Bill Reckley? This is Jeff Merrifield.

MR. RECKLEY: Yes?

MR. MERRIFIELD: You know, I appreciate the context of the question that was just asked. And having been around when we put the safety culture policy into place.

I don't, well obviously this is an important objective for agencies to meet, and for operators to make sure that they are living in conformance with that.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

Having signed off on the original policies as a Commissioner, I wouldn't have envisioned trying to capture that in the context of Part 53, rule for advanced reactors.

It's an important issue, but I don't -- and this is my personal view, nothing strikes me as that would be incorporated in this regard.

And while there are many elements of the IAEA program that the agency has tried to emulate or have parallels to, you know, it doesn't mean that each and every one of those needs to be adopted in the context of the agency process.

And the one that was referenced is one I think the Commission would have to think long and hard about it. And it would also require additional Commission decisions in order to enable that type of approach. Thank you.

MR. RECKLEY: Okay. Thank you. So, I guess we're running to the end of this session. And I would just offer to, if Prasad or anyone that again, going to how -- going to the point of how do you capture and organize information, the slide that Prasad had on the objectives hierarchy, you know, that has some similarity to the safety function procedures that were developed by next generation nuclear plant

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

and licensing modernization.

In terms of breaking down safety functions, the particular challenge, and maybe the means objective, hierarchy slide is, is close, I'm not sure, as to how to make it technology inclusive.

Because as you break down the particular higher-level objective, you will have differences on how different technologies, or even different designers using the same technology, would address the higher-level objective.

So, if you have thoughts, we certainly will go back and reread, I will anyway, go back and reread BR-0303. But, if anybody has any thoughts, it would be appreciated in terms of organizing and structuring Part 53 or subpart of the regulation.

MR. KADAMBI: Bill, can you hear me?

MR. RECKLEY: Yes, Prasad. Go ahead.

MR. KADAMBI: Well, let's see, you've made me an offer I cannot refuse. How would you like suggestions along these lines?

MR. RECKLEY: Just as we were going to get to get to it at the end of the meeting. But just, you know, as a general observation, Bob Beall and my emails are at the end. Just send us your suggestions.

As Bob mentioned, this isn't the way to

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

provide formal comment. And but as a follow up to the meeting, if you get some thoughts, or you have a thought that you wanted to express and didn't, our emails are on the last slide.

MR. BEALL: Okay. And we'll be talking about that at the end Prasad. So, and for anybody else, about how to submit any additional topics you wish to have for future meetings.

And any additional comments or thoughts on this meeting. So, we'll cover that at the end.

MR. KADAMBI: Okay. Thank you.

MR. NICHOL: Bill, this is Marc Nichol. Just a comment on your last point about, you know, how do we use the NUREG, the brochure in formulating the actual requirement.

My sort of initial reaction is that the things that Prasad went through were a lot more detailed than I think should be in the regulations.

As I'm thinking about the regulations, we may define that, you know, you have to identify and analyze events. And you have to provide mitigation

And you have to -- the applicant has to do all these things. But, not define how the applicant has to do it.

Let the applicant propose how they want to

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

do it. Maybe guidance is developed for an approach to do it.

I note that the LMP and TICAP is one approach that if we design Part 50, you know, in a very inclusive manner, that it could be used automatically.

You know, others may not want to use that LMP and TICAP approach. They may want to do something different.

But, I would just generally caution away from trying to define and be very detailed in the requirements themselves.

MR. RECKLEY: Okay. Yeah then -- yeah, and I wasn't trying to imply that. But, it's a good - - it's a good point that I think there's a general agreement at least among the people talking today that in order to be technology inclusive, and to provide flexibility, it will require us to stay at a relatively high level, so.

Well, I think we can go on to slide 44 then. I don't really have much to queue up a discussion on licensing related processes.

But I did want to include it as a topic today because I think this one will be, be one that we have to talk about kind of throughout the period

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

that's available to us to do this rulemaking.

And although it's obviously related to what I would call the technical requirements in most of the other areas we've talked about today, we will have to start to construct how the licensing would work under Part 53.

And as we mentioned in the rulemaking plan, we would like to reflect the availability of the Part 52 staff construction permit operating license. Or the construct of the Part 52 processes.

It was useful to hear some of the discussion from Cyril. And we've heard similar comments over the period of the last couple of years on whether Part 53 could kind of do a better job with first of a kind, and then how that can transition into the nth of a kind unit.

And so, there may be ways to look at 50 and 52, and actually their relationship. And actually move between the two processes to take advantage of the Part 50 process for first of a kind allowing some changes during construction, because there always seems to be lessons and changes during that first unit.

And then the transition into Part 52 for the subsequent units after the first of a kind has

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

been constructed and the operating license issued.

So, we're having some of those discussions internally. In the White Paper with the 14 questions, we were at even a higher level as to whether the Part 53 should be only technical requirements and not address alternate licensing processes.

Again, we proposed in the rulemaking plan that it not be like that. But, we wanted to pose the question to stakeholders.

And then related to another topic that for operating license plants, for the current fleet, has proven to be a challenge during certain periods that we, again, would try to address from the beginning here, is the maintenance of the licensing basis throughout the facility.

And that may have been worked out for the operating fleet in the 1990s, I guess. Much of the issues were resolved.

But, we want to look at that and make sure we have a good process defined, not only for original licensing, but then also licensing changes, maintenance of SARs and safety analysis reports, and other things that were not at least originally done for the operating fleet.

So again, I didn't really have any

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

specifics in mind for this topic. But, we will need to talk about those parts, the Part 53 that are related to the licensing.

And with that, I'll turn it over to Cyril, who has a slide on this topic.

MR. DRAFFIN: Yes, this is Cyril Draffin.

And we do support that licensing should, process should be part of the Part 53 in a technology inclusive manner, the administrative procedure reporting matters as well.

You usually want it to have relatively comprehensive, particularly at the high level. And the idea that you mentioned that, you know, that we mentioned earlier that you want to have a migration for these advanced reactors, including fusion reactors, from the first of a kind to an improved version, to something that could be replicated on a rapid basis.

So, the idea of going from 50 to 52, those Parts, has merit. And it may, at least at a high level, to provide that that's something that's possible to do and without being too arduous.

We do note, as we did earlier today, that some of the advanced reactors have a 60-year life cycle. And that needs to be considered by a licensing

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

framework.

And therefore, you should plan on a streamlined process for relicensing after the first 40 years. For these large LWRs, perhaps they weren't thinking that initially when built we're going to have a 40 or 60 or 80 year license.

Maybe that's also true of some of the aircraft that the Department of Defense has and is still flying for, you know, it's fly the plane our grandfather used to fly.

And so, the point to be made is, we -- that we ought to think also about the relicensing process. Particularly those that might, you know, last for 60 years, might even be buried in it for that long period of time.

And to build that still the licensing process is a lot quicker then, you know, a couple of years or longer. And that's just part of thinking through the entire life cycle.

And also the inspection requirements. We talked about whether it needs to be people onsite. Whether the instructors need to be there.

But, how do you do record retention? Do you refer to the SARS? How should that be most efficiently done?

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

How much discretion does the applicant have versus what the NRC would like to have? Or should have.

And so those, so we don't have that much more level of detail at this point. Perhaps Jeff, do you have something to add?

MR. MERRIFIELD: No. I think one of the things that we're all going to have to think about, and I think this is really sort of looking ahead. But, the ability of utilities and other operators include payments in the future to maintain these units with digital tools that aren't prevalent right now.

I made a reference earlier to digital twins. I think this is going to be a key element in the design of a number of reactors going forward. It's also part of the effort, I think that is underway for TR by INL.

The other issue, and again, I don't -- I'm not -- I don't have a specific concept of how these could be captured in Part 53. But, I think we are going to see in the coming years the use of artificial intelligence that will capture a lot of the data coming off of these plants.

And enable a much more refined understanding of how they operate. And you know, give

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

tools, make tools available to the operators, and attention to the NRC to give a better online understanding of performance and how they're meeting the safety objectives.

So, I think these are things that going forward, what has been the traditional process for monitoring, evaluating, inspecting these plants, may evolve given the future tools that may become available.

Bill, back to you.

MR. RECKLEY: Okay. Thank you. And before I forget, I got -- and turn it over to Marc, I guess one of the things that we have brought up from time to time under advanced reactor stakeholder meetings, and the possibility of preparing guidance, or even undertaken a rulemaking, is the manufacturing license provisions that are currently in Part 52.

Much of the discussion on advanced reactors, and in particular the subset referred to as micro-reactors, would seem as they are being described, to be a candidate for that kind of a licensing process.

And so, one of the other things that's in the licensing discussion that we would like to include, is the degree to which this is an opportunity

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

to relook at manufacturing licenses as they're currently described in 52, and see if that description, that methodology is, would work for what is envisioned to be the manufacture and deployment of micro-reactors.

So, just something to keep in mind that we'll likely have that within the agenda for future meetings on licensing. And so, Marc, did you have some thoughts on licensing in general? Or manufacturing license?

MR. NICHOL: Yeah. Thanks, Bill. I'll start with the last topic just because it's an easy launching point.

So, one yes, I think the concept of manufacturing license should be sort of brought forward into Part 53. We've even thought that, you know, something for micro-reactors that even more enabling than that.

We call it a general license type of approach where the NRC wouldn't have to review and approve every site that a micro-reactor is deployed, if it can meet certain conditions, would be appropriate.

I don't think at the current moment the Atomic Energy Act allows that kind of concept of

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

Atomic Energy Act. So, we're not asking the NRC to develop Part 53 around something that it could be -- couldn't comply with the Atomic Energy Act.

But, you know, we might see -- there's always a possibility the Atomic Energy Act could be modified to allow that. So, that's just sort of a marker to put out there.

Going back to the sort of what I was planning on saying is, I think you asked two very good questions here in terms of what else beyond the technical requirements should we be looking at for Part 53?

The licensing process, I alluded to this earlier, you know, we don't see a need to modify Part 50 and 52 licenses and permits dramatically, if at all.

So, for example, you know, under the Part 50, the concept of being able to do a construction permit, construct the plant. And then come in with an operating license at the end.

It should be a viable option under Part 53. Similar, a combined operating license should be a viable option under Part 53.

And so, -- sorry, I lost my train of thought. The -- so, within that, it's not a matter of

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

whether those processes should be available or not, it's more a matter how do we incorporate them into Part 53?

And I don't know the answer. But, one could be Part 53 outlines if you want a COL, then you license, you know, you follow these provisions in Part 52, and you get your Part 53 COL.

Another might be to require some modification to Part 52 itself, to be able to enable Part 53 to use it. Or maybe we even find that just based on the way the regulations are written, we kind of have to create the whole process within Part 53 that's identical to what's in 50 and 52.

But just that's the only way it can be handled from a legalistic standpoint. So, I don't know the solution. But, whichever -- the path we go should allow for a Part 50 and 52 licensing.

While we do this, we should also look at, are there potential things that could be added that allow flexibility? And I don't think this should be the, you know, a huge focus of this effort. But we should at least ask the question.

I brought up earlier that under Part 50, there's no possibility for a designer to come in and interact with the NRC and get some, some review of

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

their design prior to, you know, and some finality of that design prior to coming in for a construction permit.

So, is there some need in that regard? We'll have to ask our members to find out. But, just those types of things, we should see if there's additional flexibility that's needed.

On the second part of your question, the facility life cycle, and you talk about things like change control process, and absolutely Part 53 should have those types of things.

Part 53 should have an ability to submit a license amendment request. Should have the ability for the licensee to make certain changes under their control, like a 50.59.

We're going to need things like backfit protection. All of those things that are sort of the maintenance of the license over the lifetime of the facility, are all going to be needed.

I think it's the same question, do we need to recreate them in Part 53? Or are we able to refer back to Part 50, where most of those lie?

So, for example, backfit protection, can we just have a requirement in Part 53 that says, you know, there's this requirement for backfit protection

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

that is in Part 50 that applies to a Part 53 licensee.

Those are sort of, I think, the implementation questions. But, I think in terms of the content questions, all of them should belong in Part 53. Thanks.

MR. RECKLEY: Okay. Thank you.

MR. MERRIFIELD: Bill?

MR. RECKLEY: And --

MR. MERRIFIELD: Bill?

MR. RECKLEY: Yeah, go ahead, Jeff.

MR. MERRIFIELD: Yeah. Just one, just one more comment before you open it up for others. And this plays a bit off of a comment that Marc initially made.

For those who may not be aware, the Commission has made a determination to move forward with a generic environmental impact statement process. This is something that ClearPath and Nick, and certainly in my role in Pillsbury, had been calling for.

And certainly, you'd want to thank and recognize the hard work of the NRC staff in making this happen. We believe this is a very positive step forward and appreciate the decision of the Commission to go ahead with that process.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

But, the related issue as Marc referenced, the potential for a general license could be considered for certain micro-reactors. And I think, you know, that's an idea that is worthy of considering.

It would obviously require a congressional action. But, for small reactors in combination with, that would certainly provide a significant opportunity to have the agency meet its requirements, yet at the same time streamline the ability to deploy these reactors in a variety of predetermined locations.

So, I just want to say again, thank you all for your assistance in making that happen. And certainly there's some, it opens up some additional opportunities that Congress and others may consider going forward. Bill?

MR. NICHOL: Bill, this is Marc. I had one more comment, too. And it sort of gets into guidance space and sort of considering how to go.

So, just take 50.59 as an example. So, I -- hopefully we all agree that there should be a licensee change control process under Part 53.

And so then you get into implementation questions. And do you reference Part 50 as 50.59, or do you recreate it?

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

One -- just one of the benefits of, if we're able to reference 50.59, and say it applies to Part 53 licensees, is that guidance already exists for 50.59, so you don't have to recreate the guidance.

A similar consideration, although maybe a different determination, is on the oversight and the ROP program. So, I think we'll agree that the NRC has an oversight role over the lifetime of the plant.

But, when I look at the ROP program that exists today, and I look at advanced reactors, I don't know if the program should look exactly the same for advanced reactors.

And most of my investigation was this part of micro-reactors. And our determination there is that the significance determination process and even the performance indicators just didn't make sense for those types of designs.

I'm assuming that the same thing would be -- the same conclusion would apply for other advanced reactors with much lower potential for consequences.

So, that's just in the implementation and the guidance space that the ROP may look different for advanced reactors than they do today. Thank you.

MR. RECKLEY: Okay. Thank you. And I guess a couple of points. And then Operator, if

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

people want to hit star one for this topic.

A couple of points, to Marc's observation that as we're constructing Part 53, I think we'll be constantly faced with how much to refer to other regulations if we can.

How much we might actually cut and paste if it is a better way to make things fit together. I think that will be something we can kind of address in the, as we develop it. And kind of make decisions as to which is the, which is the better way to do that.

So, Operator, anybody in the queue for questions?

OPERATOR: Not currently. But, if you would like to ask a question or make a comment, please press star one at this time. Unmute your line and record your name.

Again, that's star one. Thank you.

MR. RECKLEY: And our thanks to Jeff Merrifield for mentioning the guidance and the decision to pursue that. Sure to mention that.

And then there's all these balls in the air that we're going to have to keep track of and to coordinate how they might -- how they might fit together.

I think I only mentioned environmental on

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

one bullet. But, obviously that a -- it's a big and important area that we need to coordinate with Part 50, with Part 53 to make sure that those activities go together.

Any questions, Operator?

OPERATOR: We are still showing no questions at this time.

MR. RECKLEY: Okay. I think we can go then to the next topic. We're a couple of minutes ahead. But, slide 47.

MR. BEALL: Operator, is Ed Lyman from the Union of Concerned Scientists on the line?

OPERATOR: One moment while I try and locate them. I do not have a line labeled as such. But, Ed, if you are on the call, please press star zero at this time so I can identify your line.

I'm not receiving any alerts from Ed at this time.

MR. RECKLEY: Okay. Dr. Lyman had some schedule conflicts. So, we'll -- we're going to give him a chance to speak.

But, in the meantime, Bob, I guess we can go onto slide 48. And Cyril, if it's okay with you, are you prepared to go through your additional comments?

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

MR. DRAFFIN: I am indeed.

MR. RECKLEY: Okay, let's do that then.

MR. DRAFFIN: Again, Cyril Draffin from the U.S. Nuclear Industry Council. I have seven slides to kind of cover a series of points. First, on perspective, we welcome the opportunity to engage with the NRC on this Part 53. It's important.

The approach that the NRC has taken for a flexible technology-inclusive voluntary process available to all reactor technologies and have clearer advantages over 50 and 52 is good, and that's already been stated.

We're just kind of reconfirming that, you know, advanced reactor developers should not be compelled to use Part 53 and should be allowed to use other parts of 50 or 52.

Just for the record, we provided comments to the NRC, about 50 of them addressing each of the 14 issues that the NRC raised in their July NRC staff white paper, and that's available on the ADAMS program with the ML number listed at the end. So, if we could go onto slide 49?

To avoid -- this one's really on scope and it's just worth clarifying in the write-up. You're going to be including advanced nuclear reactors and

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

fusion reactors. Today, we talked about it and we want to make sure that you pick up manufacturing for microreactors.

A question we have is, should it include subcritical reactors, you know, like just clarify, and although the current policy approach says that the larger LWRs are not going to be included, you know, it might be possible to write the Part 53 so that it's generic enough it can handle all plants, but doesn't necessarily call out the older technologies.

If we go onto the next slide, in terms of regulatory objectives, as you talk to the ACRS, it should be augmented to provide currently, outcomes. So, what are the outcomes we expect to get with this that are going to have substantial improvements in the process rather than incremental improvements, and perhaps identifying metrics for success.

Now, you've identified on the policy issue paper on page four and seven, a series of benefits, and slide 13 today on rulemaking objectives. You know, is there a way of measuring them, perhaps quantifying and saying, yes, we've done a good job at meeting those objectives and achieving those benefits?

A more mundane one that we're just tossing out for consideration is perhaps a page limit. We

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

talked about keeping this simple. You know, if people had, you know -- that's one way in terms of constraining yourselves: A) time.

It has to get done by 2024, but maybe a page limit that by its nature and making it technology-inclusive may make it a higher-level document, and that might be one metric, but there's more important metrics in terms of judging it.

So, we've been through this process both in terms of writing it and also maybe looking back and implementing it over ten years to be able to say, yeah, we did that, and this is a way of measuring that we were successful.

As planned, the objectives should be technology-inclusive, risk-informed, performance-based, and understanding exactly what that means and clarifying that, adding depth to that is something that was mentioned a little earlier today, and something we'll be doing in ensuing meetings.

And, you know, as we've mentioned today and Marc has in the past, we want to pick up the lessons learned from 50 years of light water reactor regulatory experience to make this as efficient and streamlined as possible while providing reasonable assurance of adequate protection.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

So, there's no reason not to build on what's worked in the past and components that are relevant to use and to refer to that, either allowing it in the regulations or in the related guidance so there's kind of a game plan for how we can use the best of what we've done and move forward expeditiously.

On the next slide, which is 51 for anybody who is following it because they downloaded it, the advanced reactors obviously are going to be used for power generation, but we ought to be -- and therefore, they have to be flexible and efficient, but they could be used for things other than power generation.

There could be the high temperature reactors, the gas reactors may be used for process heat. There was discussion, I guess just yesterday, regarding Sodium which is with TerraPower and General Electric about how they plan on bifurcating their facility.

They hope to have a nuclear island which is physically separated from the energy storage and electrical generating processes, and so we talked today about maybe there should be a fence or the site boundary. Well, it's possible it could even be a portion of the site boundary, a component of it, a

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

smaller scale.

And so as you start thinking about power generation, particularly if there's bifurcation between the nuclear side and the industrial side that might be located nearby, it raises the question to make sure that the Part 53 addresses that and allows that flexibility because we do hope that these reactors will be used for additional items, additional needs and requirements besides just power generation.

We've indicated before that it should go back and consider the Atomic Energy Act as a building block and only include the necessary legal and statutory requirements that are necessary for the protection of health and safety and not add on additional things.

And we referred earlier today regarding the TICAP program which is kind of the implementation of the licensing modernization project, and they have an affirmative safety case, and that approach deserves strong consideration by the NRC of how can you use that? So, it's not the components, but that logic path and their analysis done behind that, what portion of that has merit in consideration in Part 53?

Moving on to the next slide, the timely development -- I guess, did we miss a slide on -- can

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

we go back one? Yeah, I think -- thank you. I really need -- it's 51, which we covered. How about the next slide is 52? Okay, thanks. I got my slides out of order, which is not always beneficial to do.

The timely development is important, but we also want to make sure that the current regulatory approval process should continue. People are counting on DOE awards for demonstration and they will be coming forward to the NRC for licensing, and we wanted them to move forward without momentum being lost.

And so the Part 53 development, although it's certainly important, should not interfere with ongoing reviews by establishing new requirements that the applicants under review would not meet, recognizing the years it will take, so it's a little bit of the backfit, and how does it get developed?

So, although we really want Part 53 to go forward in a good and timely manner, we also don't want to have the current regulatory process disrupted because we do want the near-term advanced reactors deployed.

So, now we're ready for, or at least I'm ready for slide 53. And every element of the licensing process, which also includes, as we mentioned, the review by the Advisory Committee on

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

Reactor Safeguards, the Atomic Safety and Licensing Board, should be subject to a fresh look. They will be commenting on Part 53, but how should they be involved going forward in thinking about and the implementation of Part 53?

We also want to raise the role of state and local permits in meeting safety requirements. The agency should avoid regulatory duplication of requirements already established under state and local law.

In other words, in order to get a plant built, you have to have local permits. You have to have discussions. You have to meet their requirements.

Well, that's a screening that should in theory and in reality rule out plants that don't have safety requirements, and if they're requiring certain things to be done as part of maintaining their permits, it's not necessary for the NRC to require the same thing in a different way that would cause duplicate requirements of work for no benefit.

Another factor is international regulatory agencies. The NRC is working closely with Canada and with other parts around the world, so we do want Part 53 to enable efficient international licensing, for

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

them to understand the process, to accept the process, and so that when reactors get through the Part 53 process here, particularly if they're using, as we mentioned earlier, the international ISO standards or others that other regulatory agencies accept, that they can then be used.

So, it's not the focal point of the activity, but it's something to keep in the back of our mind, that how can we make Part 53 as internationally valuable as possible, particularly for at least the people going through the regulatory process in the U.S.

And in those few cases where innovative approaches to licensing cannot be achieved under the current statutory authority, the Commission and its staff should seek legislative changes that make sense.

For instance, we talked about microreactors. Can you have a general license for microreactors? So, there may be a couple of specific areas where legislative changes could be made, and that could be raised as something to be done concurrently.

So, in conclusion --

MR. MERRIFIELD: Cyril, before you leave that point, there is a fine line here because

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

obviously the Commission and its staff cannot lobby Congress on statutory changes, but in the context of the agency's yearly budgetary process, there is a series of recommendations that are frequently made of things that the agency would like to see changed to make it more efficient and effective.

And I think the point that we're really trying to make here is not helpful for anyone if there are big portions of the Atomic Energy Act that are hindering the agency from effectively conducting its review and not allowing it to do so in an efficient and effective manner.

I think there is some obligation on the part of the staff to inform the Commission of those activities, and certainly inform Congress of some of those impediments, and Congress can take the action as it sees fit to either accept that or reject it.

But I think in the context of reviewing Part 53, I think we really want to leave, to the extent that we ought to be thinking in a very big picture, and if there are elements of the existing statutory framework that are a hindrance to an efficient review, that's something that certainly should be made available for the record. Cyril?

MR. DRAFFIN: Okay, on the -- thank you,

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

Jeff. And on the next slide which we have up is the next steps, and so just to reiterate, we think this is an important first step.

When available, we look forward to understanding the timeline for the Commission to implement 53, you know, kind of how soon do they want it done, and then working backwards from that, you have steps that need to be achieved and milestones in order to achieve the goal that the Commission sets, and that will impact on the intensity of the effort and also the breadth of it.

So, we welcome the opportunity to go forward. We do want these reactors to be licensed and deployed with efficiency and effectiveness. The goal is to get them deployed safely and to be contributors to avoiding carbon emissions.

So, with that, I'll maybe see if Jeff Merrifield has some additional comments to make and then turn it back to the NRC.

MR. MERRIFIELD: No, just to thank the staff for being patient and listening to our comments and appreciate all of the hard work you're continuing to do on behalf of moving this forward. Thank you.

MR. DRAFFIN: So, if you have any reactions, Bill, to what we just covered, or anybody

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

else, we'd be happy to hear.

MR. RECKLEY: No, I mean, in addition to what you all mentioned on the last point, NEIMA also directs us to identify if legislative changes are needed to do what they called out in terms of developing this framework, and we're looking at that not only in respect to what we've talked about today, but also for fusion, so thank you for that observation and we are looking for those opportunities.

Just a couple of other points, I think you mentioned subcritical reactors or sometimes called accelerator-driven systems. I believe under a technology-inclusive approach those would be captured, or I don't see a reason why they would not need to be.

There are some things that we would need to address as we did for the SHINE Medical Isotope facility in terms of definitions, but I think that's doable.

Process heat, you mentioned. That was something we talked in detail when we were looking at next generation nuclear plant projects because it was in part aimed at possibly using it for hydrogen production, so there, I would refer people to some of the references that were produced by DOE and Idaho National Lab related to NGNP.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

We didn't, at the time, see that as a major obstacle, but there may be elements within Part 53 that we have to address.

And your notion of having demarcation between the facilities, at that time, it was seen as relatively important because, and maybe things have changed, but the customers of process heat at that time wanted process heat and they didn't want to be considered or fall under the scope of the NRC.

So, if the landscape has changed, then that would be useful to know in terms of deployment models that we might have to address.

I don't know, John, or anybody, Nan, did you have any other thoughts or --

MS. VALLIERE: I don't have any particular thoughts. I think that the stakeholders have raised some very good issues for our consideration and I look forward to having some more in-depth, some back and forth discussions in our future meetings, you know, starting with our next meeting on the safety criteria.

I think we're going to have a lot of very good discussions and I look forward to that.

MR. SEGULA: Yeah, Bill, this is John Segula. I echo what Nan just said. I think there's been really good discussions today, a lot of different

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

ideas that we can take back and consider as we move forward. I think when we get the Commission's SRM, there might be some, you know, additional information on schedule that we can then share and lay out, you know, next steps.

I think that, you know, moving forward, I think, you know, we'll continue to reach out to stakeholders, and so as Bill had already said, if anybody has additional thoughts or ideas, you know, please feel free to share them with us.

MR. NICHOL: This is Marc Nichol. I had some final thoughts if there's time.

MR. RECKLEY: Yeah, please, go ahead, and then I do want to, if Ed Lyman has joined us, if you could hit star, one so the operator can identify you. In the meantime, Marc, go ahead.

MR. NICHOL: Okay, well, first Bill, I want to take the opportunity to thank you for this meeting. I think the conversation was very productive, a lot of stuff to talk about.

I do want to encourage the NRC to put together or at least communicate if you already have it what I'll call sort of a project schedule for developing Part 53. Just in the past, myself having managed big projects like this rulemaking, always a

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

better chance of success if you have a plan from the beginning and you're sort of working from the plan.

The other benefit is that it helps us as stakeholders understand when we're going to be engaging with you, where you're going to be doing other things, and it sort of helps us focus our efforts.

So, just for example, we've stood up a Part 53 task force. We're really increasing our activities in this Part 53 rulemaking area, and we've decided to take a more systematic approach to thinking through the rulemaking and how to go forward, and so where we've started is really looking at the objectives.

I know we talked about them last meeting and you had them here. I think there's still more discussion that needs to happen on the objectives so that they're much more crisp and clear, but then also looking in this sort of first step type of thing, which is getting the right scope around the rulemaking effort, not the Part 53 rule, but the rulemaking effort is looking at the underlying requirements of the Atomic Energy Act.

We're actually going through that review ourselves, looking at and defining what are the NRC

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

regulatory functions and decisions, because those are really going to drive what's necessary in the rule itself, and then defining sort of what are the principles of safety that are going to need to be met within, or maybe just the principles of Part 53 that need to be met.

That sort of phase one I call it is sort of setting, you know, establishing the scope of the rulemaking effort, and then moving into what I think is the next more important thing, which would be the safety construct, which is going to be the core of Part 53 technical requirements, and that many of those topics we hit on today, integrated analysis, safety metrics, you know, QA, all of those things come together, and then you get into later-order activities.

But I would encourage the NRC to look at putting that project plan together. It really would help us align our activities with your activities. You know, the things we're working on, we think, you know, are the first-step things, and weren't exactly the topics you were talking about today, which is fine. We had a great conversation, but I do encourage you to think about that. Thank you.

MR. BEALL: Hey, Marc, this is Bob Beall

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

from the rulemaking branch. Yeah, once we get any directions from the Commission on the rulemaking plan we set up in April, we'll be able to share some more details on how the Part 53 rulemaking will progress and the timelines we have for the proposal and the final rule, and then be able to share when those documents will be made public and when the comment period and things like that will be available. So, once we get that information, we can start sharing that kind of detailed information with the public.

MR. RECKLEY: Okay, Operator, could you check for Dr. Ed Lyman or if anybody else on the phones has additional discussions or questions?

OPERATOR: Absolutely, Dr. Lyman's line is open as of right now, and then if anyone else has any other questions or comments, please press star-one, record your name, and I will present your question. Thank you.

MR. LYMAN: Hi, it's Ed Lyman. Can you hear me?

MR. RECKLEY: Yes, we can.

MR. LYMAN: Yeah, hi, Bill. I'm sorry for missing the entire meeting and not having the benefit of all of the discussion, but I appreciate the opportunity just to give a few high-level responses to

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

some of the issues in the white paper, and I will provide more detail in writing.

But I think the first observation I would have is that if you're really going to undertake this effort and rethink the entire strategy for licensing new nuclear reactors, the NRC should reconsider its position on, quote, advanced reactors, unquote, as articulated in the policy statement.

There's no reason why you can't aspire to a higher safety and security standard for new reactors and for the current fleet at this point. Otherwise, I think the whole effort would be fruitless.

I do think that the scope of this new rule should be limited to not only advanced reactors as defined by NEIMA, but those where some standard is met, that there is, you know, a kind of clear overall improvement in multiple safety and security categories, and that you are not sacrificing safety in one aspect for an improvement in another.

There really should be some -- of course it's hard to really put a numerical number on safety since the PRAs are not going to be well developed, but there should be some semi-quantitative way of evaluating so that you don't allow applications to have the benefit of this new rule without a

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

substantial basis for thinking that it is going to be safer.

And I just raise NuScale as an example. You know, they can claim this is passively safe, but I think as the design certification has disclosed, that slogan may not stand up to detailed scrutiny and, you know, unfortunately the ACRS letter on NuScale lessons learned and how it might relate to Part 53 is not public yet, I don't think, but that's certainly going to have a bearing on these issues, so that would have been my first comment.

And related to that, the safety criteria, and I see that you have postulated some new ones here, but certainly the existing safety goals are not adequate for meeting the kind of standard that I'm proposing here.

They were set essentially to normalize the existing fleet decades ago, and again, that's not aspiring to a higher standard, and so they need to be rethought.

In particular, they need to be expanded, that the use of the societal safety goal, the early contamination safety goal really also needs to be addressed because that's a gap in the framework that's been laid out, and it only addresses individual risk

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

and leads to potentially deficient mechanisms in siting and licensing new facilities.

Another aspect that I would think needs to be addressed in any new process is consideration of equity and disproportionate impacts of risk. Unfortunately, the current NRC processes do not, are not sensitive or do not take into account the potential for disproportionate impacts of a nuclear reactor accident or terrorist attack on communities of color or economically disadvantaged groups.

And this is a crosscutting deficiency in NRC's processes that's now only addressed through the environmental justice paragraph in an EIS, which is not adequate. So, clearly to be in step with the direction of this country, I think these gaps have to be addressed.

My last comment would have to do with you raised the issue of quality assurance, and one thing that I think is missing from the framework that's already been approved for performance-based, risk-informed licensing is the lack of a firm analogy to the design basis accident framework for the current fleet, and the need for a firm quality assurance standard comparable to Appendix B.

Without having that basic set of events

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

which are protected to the highest standard, to a nuclear-grade standard with regard to all of the quality assurance criteria, you are not going to achieve even a comparable level of protection as the current fleet now has.

So, there has to be some foundation which is comparable, if not exceeds what is required for the current fleet, and without having that, you're just building a house of cards.

The final initial issue I would have, which I guess would fall under other issues, is addressing the issue of prototype, and the current prototype requirements are too vague and, I think, lead to confusion.

And I think you should really clarify when prototypes are needed and how the safety and security issues, let's say with a prototype, when there are uncertainties in its safety performance will be addressed to protect the public during the operation of a first of the kind facility.

So, I think the current vagueness in the discussion of prototypes in the rules should also be addressed in any Part 53, and that's all I have for now and I appreciate the opportunity to share these views. Thank you.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

MR. RECKLEY: Thank you, Ed, and as Bob mentioned earlier, a transcript of this meeting will be available if you wanted to look through it, and maybe that would trigger some other observations.

MR. LYMAN: Thank you.

MR. RECKLEY: Operator, any other participants in the queue?

OPERATOR: We are not showing any at this time, but you may still press star, one if you have a question or comment. Again, that's star, one. Thank you.

We are still showing no questions at this time.

MR. RECKLEY: Turn it back to you, Bob.

MR. BEALL: Okay, thanks, Bill. Slide 56, please. As I mentioned earlier, the staff is planning to host several meetings every four to six weeks. These public meetings will cover additional topics and may include the release of preliminary Part 53 rule language.

The staff will post any preliminary Part 53 rule language on regulations.gov under docket ID NRC-2019-0062 prior to the public meeting. Again, that docket number is very important. It's NRC-2019-0062.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

The next public meeting for Part 53 is tentatively scheduled for early November 2020. In addition, the NRC staff will be meeting with the ACRS Future Plants subcommittee to receive feedback on the Part 53 rulemakings. These meetings will start in January of 2021 and will occur approximately every two months. Slide 57, please.

If you have any additional input or suggestions for future topics related to the Part 53 rulemaking, please send an email to Bill and me at the address shown on this slide. Your interest and comments will improve our rulemaking effort.

I also encourage you to monitor the Part 53 rulemaking docket on regulations.gov. Again, that docket ID NRC-2019-0062 for updates and important documents related to this rulemaking.

Finally, we are always looking for ways to improve our public meetings, and your feedback is important to us. At the end of this meeting, please go to the NRC public meeting website and click on the recently held meetings button and look for this meeting. The meeting feedback form will be at the bottom of the meeting announcement.

I'd like to thank everyone for participating in today's meeting and I hope everyone

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

has a good evening. Unless there's any additional comments?

Okay, thank you very much for your participation in the Part 53 rulemaking public meeting and I look forward to talking to everyone again in early November. Thank you very much for your assistance today.

(Whereupon, the above-entitled matter went off the record at 4:16 p.m.)

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

NEAL R. GROSS
COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701