

UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
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MEETING ON STRATEGIC PROGRAMMATIC OVERVIEW  
OF THE NEW REACTORS BUSINESS LINE

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THURSDAY,  
JANUARY 25, 2018

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ROCKVILLE, MARYLAND

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The Commission met in the Commissioners' Hearing Room at the Nuclear Regulatory Commission, One White Flint North, 11555 Rockville Pike, at 10:04 a.m., Kristine L. Svinicki, Chairman, presiding.

COMMISSION MEMBERS:

KRISTINE L. SVINICKI, Chairman

JEFF BARAN, Commissioner

STEPHEN G. BURNS, Commissioner

ALSO PRESENT:

ANNETTE VIETTI-COOK, Secretary of the Commission

MARGARET DOANE, General Counsel

NRC STAFF:

FRANK AKSTULEWICZ, Director, Division of New Reactor

Licensing

MICHAEL JOHNSON, Deputy Executive Director for

Reactor and Preparedness Programs

BILL JONES, Director, Division of Construction,

Region II

TIMOTHY MCGINTY, Director, Division of Construction

Inspection and Operational Programs

JOHN MONNINGER, Director, Division of Safety

Systems, Risk Assessment, and Advanced

Reactors

VONNA L. ORDAZ, Deputy Director, Office of New

Reactors

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

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10:04 a.m.

CHAIRMAN SVINICKI: Well, good morning everyone. I call this meeting of our Commission to order.

Today, we will receive a briefing from the NRC staff Regarding Strategic Considerations Associated with the New Reactors Business Line.

This is one in a series of business line meetings that we sprinkle throughout the course of the year. I derive a lot of value from them as a Member of the Commission because it allows us to take some look at different aspects.

There's always a tremendous amount of activity in each business line, but the staff is allowed to highlight certain accomplishments and also work that's very active.

And then, going forward, challenges and other strategic considerations.

And, the Commission is given the opportunity to ask about that or any other topics related to the business line that they would like.

So, again, I find a good programmatic value in these meetings.

Before we begin, I will ask if my colleagues have any opening comments they would like to make?

(No audible response)

CHAIRMAN SVINICKI: No? Hearing none, again, we will hear from one panel today comprised of NRC staff members.

1                   And, to lead off, I will turn over to acting in the role of  
2 the Executive Director for Operations today is the Deputy EDO Mike  
3 Johnson.

4                   Michael, please proceed.

5                   MR. JOHNSON: Thank you.

6                   Good morning, Chairman and Commissioners.

7                   Today, representatives from the Office of New  
8 Reactors in Region II will brief you on the major activities in the New  
9 Reactor Business Line.

10                  The business line is at a transition point. We've  
11 completed our review of the active combined license application that  
12 are before us.

13                  We're in the early phases of a review of the first small  
14 modular reactor application.

15                  We're making progress on our review of an early site  
16 permit and design -- and a design certification application, specifically,  
17 I'm referring to the APR1400.

18                  In parallel, we're preparing for licensing the next  
19 generation of new reactors that being the advanced non-light water  
20 reactors.

21                  In the area of oversight with, certainly with support  
22 across the Agency, the New Reactors Business Line completed an  
23 effective and timely action to adjust our workload and resources in  
24 response to a significant change.

25                  That is, the VC Summer licensee cancelling their  
26 construction project.

27                  In addition, we continue to effectively oversee

1 construction and conduct reviews of license amendment requests  
2 associated with the new units at Vogtle.

3 We're also preparing to transition to operations for the  
4 new Vogtle units. And, that'll be a first for plants licensed under the  
5 Part 52 process.

6 You're going to hear in this briefing about our  
7 accomplishments, accomplishments of the new reactors program and  
8 our plans going forward.

9 And, as we've approached each endeavor, we've  
10 explored and implemented process improvements. You'll hear about  
11 those. And, those are intended to make our processes more efficient  
12 and more safety focused.

13 I also hope you take from this briefing our focus on  
14 agility and resourcefulness. I think the reactor team -- the new  
15 reactor team has been agile and resourceful.

16 And, when I say team, I'm including all of our partners  
17 across the Agency. And, we've done that in meeting our program  
18 goals with a strong focus on safety and a clear vision with plans for  
19 the future.

20 Slide two, please?

21 For today's briefing, for NRO, Vonna Ordaz, who is  
22 the Deputy Director for the Office of New Reactors is going to highlight  
23 the business line accomplishments from the past year.

24 Frank Akstulewicz is going to discuss the Large Light  
25 Water Reactor and Small Modular Reactor Licensing activities.

26 John Monninger will discuss progress and preparing  
27 for Advanced Reactor Licensing.

1                   Tim McGinty will highlight activities in the areas of  
2           Operator Licensing, Inspections, Tests, Analyses and Acceptance  
3           Criteria, known as ITAAC, vendor inspections and transition to  
4           operations.

5                   And then, finally, Bill Jones from Region II will  
6           summarize construction oversight and inspection activities.

7                   And so, now, I'll turn it over to Vonna to begin our  
8           briefing.

9                   MS. ORDAZ: Thank you, Mike.

10                   Good morning, Chairman and Commissioners.

11                   We appreciate the opportunity to brief you today on  
12           the New Reactors Business Line.

13                   As Mike mentioned, our briefing will provide an  
14           overview of the new reactor program accomplishments and progress  
15           of ongoing activities.

16                   Next slide, please?

17                   I would like to open by acknowledging the New  
18           Reactors Business Line staff, the supervisors and executives  
19           supporting the program's mission as well as our inspectors in the field.

20                   I'd also like to note that the business line successes  
21           would not be possible without the contributions from all of our  
22           business line partners.

23                   Over the last year, we made process in support of our  
24           core mission of enabling the safe, secure and environmentally  
25           responsible use of nuclear power and meeting our nation's future  
26           energy needs.

1                   We completed several milestones in our ongoing  
2 large light water reactor design reviews and made progress in  
3 reviewing the first small modular reactor design.

4                   The business line also continue to ensure that the  
5 AP1000 units are constructed in accordance with the licenses and the  
6 NRC's regulations.

7                   We accomplish this work with an emphasis on more  
8 efficient and safety focused reviews that effectively utilize our  
9 resources.

10                  While we have met many of our goals, we recognize  
11 that much work remains to complete our current workload this fiscal  
12 year and to be fully prepared to review future applications.

13                  In accomplishing its mission, the New Reactors  
14 Business Line has focused on actively engaging and communicating  
15 with the industry and external stakeholders.

16                  We use numerous public meetings, workshops,  
17 written communications to ensure that expectations and feedback are  
18 clearly communicated and that we understand the industry's plans and  
19 positions.

20                  We also continue to see benefits from our interactions  
21 with all of our international counterparts.

22                  Next slide, please?

23                  We are continuously looking at ways to improve the  
24 effectiveness and efficiency of our reviews through innovative  
25 approaches.

26                  We have identified ways to improve our review  
27 processes such as through an enhanced use of audits, which reduce

1 or eliminate the need for RAIs, more stringent measures by metrics  
2 and implementing an enhanced safety focused review for the NuScale  
3 design application.

4 We've implemented enhancements to our processes  
5 such as the operator licensing enhancements, improvements to the  
6 way we evaluate and inspect ITAAC closure notifications and the  
7 establishment of more stringent metrics for tracking ITAAC  
8 completions and also licensing actions.

9 We understand that a critical aspect of effective and  
10 efficient reviews is early resolution of key issues.

11 We began early in the NuScale review by identifying  
12 technical issues during the acceptance review. As critical issues  
13 have been identified, we've developed plans on schedule for  
14 resolution.

15 Also, a critical part of our preparation for advanced  
16 reactor applications has been the identification and resolution of  
17 advanced reactor policy issues.

18 Through enhanced outreach to applicants and  
19 stakeholders, we are able to better schedule our work, anticipate  
20 complex issues and understand the issues.

21 The new reactor's management team meets  
22 frequently with applicants and licensees to discuss schedules and also  
23 challenges.

24 We've also been diligent about reaching out to  
25 stakeholders regarding advanced reactor preparations through our  
26 routing public meetings.

27 These interactions ensure that the industry is aware

1 of the expectations and will make for more complete applications in  
2 the future.

3 You'll hear more about each of these approaches  
4 later in the presentation.

5 Next slide, please?

6 The New Reactors Business Line is continuing to  
7 prepare for changes in our workload, changes to the industry and also  
8 changes to the NRO organization to address the associated workload.

9 Changes to the industry's plans require us to be  
10 continually agile. As we look forward, we are actively preparing for  
11 future new reactor applications that include advanced reactor designs.

12 We've positioned ourselves to conduct those reviews  
13 efficiently through various framework documents that John will share  
14 during his presentation.

15 At the same time, we're implementing detailed plans  
16 for the transition of the first units from construction to operations.

17 And, we're beginning to make plans for the merger of  
18 NRR and NRO within the next few years in coordination with NRR.

19 I'll now turn the presentation over to Frank  
20 Akstulewicz to discuss the large light water and small modular reactor  
21 licensing.

22 Frank?

23 MR. AKSTULEWICZ: Slide seven, please?

24 Thank you, Vonna.

25 Good morning, Chairman and Commissioners.

26 As you're aware, this past fiscal year, we have seen  
27 changes in the nuclear industry that, by extension, have led to

1       reshaping of the new reactor licensing construction oversight work  
2       within this business line.

3               Even as the regulatory landscape has been evolving,  
4       the New Reactor Business Line has continued to make substantial  
5       progress in completing its ongoing licensing activities and have been  
6       effective and efficient at meeting our safety and licensing mission.

7               Next slide, please?

8               I want to take a few moments to summarize some of  
9       the business line accomplishments this past fiscal year before we  
10       discuss where the new light water reactor licensing activities are  
11       headed in the coming year and beyond.

12              During this fiscal year, NRO issued a combined 56  
13       license amendments to the Vogtle and Summer licensees on the  
14       schedule that always supported construction activities.

15              Even with the decision by SCANA to stop construction  
16       at the Summer site and by Duke Power to suspend the Levy and Lee  
17       projects in Florida and South Carolina, respective, NRO has an active  
18       inventory of 33 license amendment requests that are tied to Vogtle  
19       construction efforts.

20              We have instituted a process to track the timeliness of  
21       our licensing activities and we will discuss that later in this  
22       presentation.

23              The business line completed its safety and  
24       environmental reviews for the Turkey Point Combined Licensed  
25       Application, successfully completed the mandatory hearing this past  
26       December 12th and look forward to issuing the licenses for Units 6  
27       and 7 should the Commission determine it is acceptable to do so.

1                   We also successfully completed the mandatory  
2 hearing and issued the combined license to Virginia Electric Power  
3 Company for North Anna Unit 3 on June 2nd, of 2017.

4                   Next slide, please?

5                   The picture shows a bird's eye view of the proposed  
6 Clinch River site. The early site permit and environment and safety  
7 reviews for the Clinch River site are proceeding on or are slightly  
8 ahead of their public milestone schedules.

9                   Interactions with the applicant have been frequent  
10 and effective at identifying and resolving licensing questions.

11                  We met the Phase A safety evaluation review  
12 milestone which is preparing the preliminary safety evaluation report  
13 and issuing Requests for Information in just five months.

14                  And, we are currently ahead of our public milestone to  
15 issue our draft environmental impact statement by June of 2018.

16                  You may recall that the KHNP application was the first  
17 design certification for which the staff established a 42 month review  
18 schedule.

19                  While we continue to exercise strong management  
20 attention to completing the safety evaluation with no open items,  
21 KHNP has been challenged to provide the necessary information to  
22 resolve some open items on the schedule that we would need -- that  
23 would be necessary to meet the public milestone.

24                  As such, we issued a letter to KHNP that extended  
25 the public milestone for completing the safety evaluation by three  
26 months.

27                  Since that letter, submittals from KHNP have not

1 achieved the progress hoped for in resolving remaining technical  
2 matters.

3 As such, we have implemented a strategy that still  
4 hopes to preserve the overall 42 month schedule, but will require the  
5 staff to establish new milestones for completing the safety evaluation  
6 and meeting with ACRS.

7 The success of this strategy hinges on submittals  
8 arriving now through mid-March.

9 Next slide, please?

10 This past March, the staff accepted for review the  
11 NuScale design certification application. The safety review is  
12 scheduled to be completed in 42 months and the staff has completed  
13 about 80 percent of the preliminary safety evaluations with open items  
14 to date.

15 To this point, we've held over 49 public meetings and  
16 conducted over 30 technical audits as part of this review.

17 We have used the lessons learned from earlier  
18 reviews to employ a proactive approach to engage the applicant.  
19 And, we have identified about 20 technical topics that will require  
20 elevated management attention because they could adversely impact  
21 the review schedule.

22 NRC's senior managers meet with the NuScale  
23 executives on these topics quarterly. These meetings provide  
24 executives from both organizations the opportunities to discuss review  
25 progress, to identify emerging issues and to establish priorities and  
26 time lines for the resolution of regulatory topics to keep the project  
27 review on schedule.

1 Next slide, please?

2 The New Reactor Business Line is always looking  
3 proactively for ways to increase the effectiveness and efficiency of our  
4 reviews.

5 To better coordinate our licensing activities at the  
6 Vogtle site, the business line established quarterly scheduling and  
7 status meetings between NRC division level executives and  
8 executives from Southern Nuclear Company to monitor progress of  
9 licensing actions tied to construction at the site.

10 These so-named licensing activities readiness  
11 meetings provide a unique opportunity for both the NRC and Southern  
12 Nuclear Company management to be both tactical and strategic in  
13 establishing priorities and schedules for resolving topics that are tied  
14 to construction at the Vogtle site.

15 In mid-2017, the NRO management noticed a  
16 substantial upward trend in the average time to complete Vogtle  
17 license amendments and implemented a new internal process to  
18 better track license amendment reviews related to the Vogtle project.

19 Under this process, license amendments that are 120  
20 days or more in review are discussed to determine what elevated  
21 management attention is needed to support a goal of completing  
22 amendment requests in 180 days.

23 We have incorporated many of the review lessons  
24 learned into our review activities for the active design certification and  
25 the early site permit applications.

26 Our initiative last year to improve the focus of  
27 Requests for Additional Information has improved the safety focus of

1 those requests, provided the applicants greater clarity on the  
2 information the staff needs to reach its safety findings and has  
3 reduced the need for second and third round follow up questions.

4 We are also using regulatory audits earlier in the  
5 process to better inform the staff about the issues underlying the  
6 tendered application and, therefore, better focus the staff's Requests  
7 for Additional Information to those that are directly necessary to  
8 support the staff's safety findings.

9 Finally, NRO has implemented its enhanced safety  
10 focus review initiative. This initiative provided a review tool that the  
11 staff could use to optimize the NuScale design review.

12 The tool included a framework for the reviewers to  
13 place more or less emphasis on selected aspects of the design based  
14 on considerations such as the novelty of the design features,  
15 regulatory compliance, risk insights, relationship to defense in depth  
16 and the relationship to safety margins.

17 The framework does not eliminate NRC requirements  
18 or obviate the need to review the design, including the quality,  
19 accuracy and completeness of an application.

20 Using this initiative, the staff has optimized its reviews  
21 in areas such as transient and accident analysis, thermal hydraulic  
22 design, instrumentation and control system architecture and operator  
23 licensing, to name just a few.

24 But, there is still a way to go before we can achieve a  
25 consistent application of the framework.

26 We will continue to employ this initiative as we resolve  
27 questions and open items during the NuScale review. And, at the

1 appropriate time, we'll reflect the lessons learned in revised guidance  
2 and simplification of the framework tool.

3 Next slide, please?

4 As we have for the past ten years, the New Reactor  
5 Business Line is actively engaged with the industry to assess the  
6 potential licensing workload so that we can be prepared to meet our  
7 licensing mission and the applicant's needs.

8 Last month, issued Risk 2017-08 entitled Process for  
9 Scheduling and Allocating Resources for Fiscal Years 2020 through  
10 2022 for the review of new licensing applications for light water  
11 reactors and non-light water reactors, to promote early communication  
12 between the NRC and potential applicants related to future licensing  
13 applications.

14 Using information from previous Risk responses and  
15 our annual business plan meetings, we have current and potential  
16 applicants, we don't expect to receive applications for a new light  
17 water reactor combined license, early site permit or design certification  
18 in the near term.

19 Nonetheless, we have a large baseload of work  
20 resulting from a steady flow of license amendments related to the  
21 Vogtle construction efforts as well as the ongoing reviews of the  
22 KHNP APR1400 design certification, the NuScale design certification,  
23 the MHI-US-APWR design certification, the GE -- I'm sorry, the  
24 General Electric-Hitachi ABWR renewal and the TVA Clinch River  
25 early site permit applications.

26 The business line stands ready to support the license  
27 transfer reviews for the Bellefonte Units 1 and 2 should it be submitted

1 and to support licensing activities should the Bellefonte efforts move  
2 forward.

3 Finally, the business line is prepared to support  
4 pre-application interactions with the Utah Associated Municipal Power  
5 Systems, or UAMPS, and TVA as they evaluate their respective plans  
6 for future COL applications.

7 And, with Blue Castle Holdings for a COL application  
8 for a new reactor project in the Western U.S.

9 The business line will continue to be involved with  
10 Agency supported international efforts on licensing, construction and  
11 operations topics on both large light water reactor and small modular  
12 reactors via the multinational design evaluation program and other  
13 regulators, activities and forums.

14 This concludes my portion of the presentation. John  
15 Monninger will now discuss licensing activities for advanced reactors.

16 MR. MONNINGER: Thanks, Frank.

17 Good morning, Chairman and Commissioners.

18 I'm pleased to be here to provide an overview of NRC  
19 activities to prepare for the potential licensing of advanced reactors  
20 with a focus on non-light water reactors.

21 There continues to be significant stakeholder interest  
22 in advanced reactors. As such, we are proactively planning and  
23 updating our regulatory framework to be responsive to the needs of  
24 developers and applicants.

25 As I'll discuss in my presentation, we've made  
26 substantial progress this past year. And, we are continuing to do so  
27 this year.

1 Next slide, please?

2 To prepare to review and regulate non-light water  
3 reactors, this past year, we issued the NRC vision and strategy  
4 entitled *Safely Achieving Mission Readiness, Safely Achieving an*  
5 *Effective and Efficient Non-Light Water Reactor Mission Readiness*.

6 In it, we describe our goals, objectives and strategies  
7 necessary to achieve this mission readiness.

8 To do this, we developed implementation action  
9 plans, or what we call IAPs, that define the near-term, mid-term and  
10 long-term activities.

11 Following significant stakeholder interactions including  
12 the NRC's Advisory Committee on Reactor Safeguards, we issued the  
13 final IAPs this past July.

14 We are now executing our vision and strategy through  
15 the IAPs and made incremental progress consistent with available  
16 resources this past year.

17 Next slide, please?

18 For today's discussion, I'll focus on the near-term  
19 IAPs. We have six strategies under the IAPs, as noted by the blue  
20 boxes across the top.

21 Efforts are underway under each of these strategies  
22 and under each strategy and I'll highlight a few of them.

23 For example, Strategy 2 involves modifying or  
24 developing sufficient computer codes and tools to perform regulatory  
25 reviews.

26 Our efforts this past year, which have been led by the  
27 Office of Nuclear Regulatory Research have focused on evaluating

1 the capabilities of existing codes to inform the non-light water reactor  
2 code selection process.

3 Strategy 3 is focused on developing guidance for  
4 flexible regulatory review processes including conceptual design and  
5 staged review processes. I will discuss this further on the next slide.

6 Strategy 4 entails facilitating development of the  
7 industry codes and standards needed to support the non-light water  
8 reactor review cycle.

9 We are participating with standards development  
10 organizations to develop consensus codes and standards such as  
11 ASME Section 3 Division V for high temperature materials.

12 Strategy 5 is about the identification and resolution of  
13 technology inclusive policy issues that could impact the regulatory  
14 reviews of non-light water reactors.

15 We are working with our stakeholders to identify and  
16 prioritize the key issues. I'll discuss some of the higher priority issues  
17 on a later slide.

18 Progress is underway in all six strategies. I've circled  
19 Strategies 3 and 5 to highlight the priority we are placing upon them  
20 based upon stakeholder feedback and recommendations from our  
21 ACRS.

22 Many of these activities are focused on advancing  
23 risk-informed and performance-based approaches and the resolution  
24 of key policy issues.

25 Next slide, please?

26 Under Strategy 3, we developed the regulatory review  
27 roadmap for non-light water reactors. This document describes the

1 flexible end stage licensing processes within NRC's current regulatory  
2 framework.

3 This flexibility accommodated designers and  
4 applicants with a range of financial, technical and application  
5 readiness.

6 It is important to recognize that, while some non-light  
7 water reactor designs are in the pre-conceptual design stage, others  
8 are nearly in the final stages of design.

9 Designer plans for the deployment of non-light water  
10 reactor designs might include multiple projects including decisions on  
11 research and test reactors, first of a kind large-scale plants and  
12 subsequent commercial plants.

13 Their long-term deployment strategies might include  
14 combinations of licensing under both Part 50 and Part 52.

15 Our review and licensing processes are flexible and  
16 support interactions relating to this wide variation in design  
17 development.

18 The timing and scope associated with regulatory  
19 interactions are intended to align with other aspects of technology  
20 development, including plant design, research and development,  
21 finance, public policy and the fuel cycle.

22 As an example, issues related to the use of higher  
23 assay, low-enriched uranium and fuel cycle facilities have been  
24 discussed with the staff during several recent meetings.

25 We will continue to work with each developer and  
26 applicant to establish a mutually agreeable regulatory engagement  
27 plan that includes defined scope and level review, desired outcomes,

1 focus areas, estimated review costs and review schedule.

2 The roadmap also includes updated guidance on  
3 testing needs for designs which differ significantly from light water  
4 reactors and the potential use of a prototype plant demonstrate the  
5 performance of key safety features.

6 Next slide, please?

7 The staff is focused on resolving key issues early.  
8 This includes both technical issues and potential policy issues.

9 For the past couple years, we have been working on  
10 a project with the Department of Energy to develop non-light water  
11 reactor design criteria.

12 The NRC's general design criteria in Appendix A to  
13 Part 50 are light water reactor specific and they are a key aspect of  
14 licensing any nuclear power plant.

15 We are adapting these criteria to meet the unique  
16 needs of non-light water reactor designs.

17 Last year, we issued Draft Reg Guide DG-1330  
18 entitled Guidance for Developing Principle Design Criteria for  
19 Non-Light Water Reactors for public comment.

20 We are on schedule for issuing the final Reg Guide  
21 this spring.

22 Another key activity we are continuing this year is  
23 working with stakeholders to develop guidance for a risk-informed and  
24 performance-based approaches for licensing basis event selection,  
25 the use of probabilistic risk assessments, the maintenance of  
26 defense-in-depth and the classification of system structures and  
27 components.

1                   A significant issue identified during interactions with  
2 stakeholders is that identifying is defining the appropriate performance  
3 characteristics for the design features serving to retain radionuclides.  
4 This is often referred to as functional containment performance  
5 criteria.

6                   We have been interacting with stakeholders and are  
7 developing a proposal for a risk-informed and performance-based  
8 approach to be provided to the Commission later this year.

9                   Another priority issue identified during interactions  
10 with stakeholders is establishing the appropriate security  
11 requirements. The design and behavior of non-light water reactors  
12 can be significantly different from large light water reactors in terms of  
13 the potential for core damage and radiological releases.

14                  As such, we are assessing the merits of different  
15 physical security requirements. We have held a series of public  
16 stakeholder meetings. We are assessing the feedback received and  
17 will provide a recommendation and path forward later this year.

18                  Next slide, please?

19                  The non-light water reactor landscape is evolving with  
20 a broad range of domestic and international stakeholders.

21                  The NRC continues to actively interact with them as  
22 we prepare for potential applications in the next two to four years.

23                  The staff has received responses to our 2016  
24 regulatory information summary that we used to inform our budgeting  
25 process.

26                  A total of five non-light water reactor developers  
27 expressed their intent to begin regulatory interactions. We expect

1 updated responses in the near future.

2 The nuclear industry has established technology  
3 working groups around liquid metal fast reactors, high temperature  
4 gas reactors and molten salt reactors.

5 The NRC activities are likewise organized by these  
6 groupings.

7 The pace of NRC's readiness activities is dependent  
8 upon budget authority and we continue to prioritize our efforts to make  
9 the most efficient use of available resources.

10 We closely monitor the Department of Energy  
11 activities such as grants to non-light water reactor developers and  
12 potential plans for a new test reactor as they will impact the pace and  
13 direction of technology development.

14 Next slide, please?

15 As noted previously, we've received responses from  
16 five developers including Oklo, Transatomic, Terrestrial Energy,  
17 Xenergy and TerraPower. The designs are listed on this slide along  
18 with the power level and technology being pursued.

19 Our most significant recent interactions have been  
20 with Oklo. We are continuing pre-application interactions with them,  
21 including the review of a quality assurance program report and  
22 technical reports they submitted on core design, risk assessment and  
23 source term.

24 For Oklo, we are implementing the flexible and staged  
25 regulatory review process described in our regulatory roadmap. We  
26 use this to align industry resources with the needs of the developer.

27 We are using a core review team concept to provide

1 stability and consistency in the Oklo review while ensuring efficient  
2 and agile use of the available NRC resources.

3 The NRC's core review team is a group of staff  
4 dedicated to addressing non-light water reactors issues. It is  
5 comprised of staff from the Office of New Reactors, Nuclear Reactor  
6 Regulation, Nuclear Regulatory Research, Nuclear Security and  
7 Incident Response and the Office of the General Counsel.

8 This approach has been working successfully for the  
9 Oklo pre-application review and we plan to continue this approach to  
10 support future regulatory interactions with non-light water reactor  
11 developers.

12 Next slide, please?

13 Vital to our success in updating our regulatory  
14 framework is interacting with and seeking stakeholder feedback at all  
15 steps along the way.

16 We held three workshops jointly with the Department  
17 of Energy, the most recent one being last April in which we reached a  
18 wide variety of stakeholders.

19 We have now transitioned to periodic stakeholder  
20 meetings about every six weeks to discuss ongoing activities and to  
21 facilitate stakeholder input.

22 We see these meetings extending indefinitely given  
23 the broad number and range of readiness activities we have planned.

24 We're all supporting the Department of Energy's  
25 gateway for accelerated innovation and nuclear initiative. We  
26 communicate frequently with DOE to keep them apprised of our  
27 activities and to get information to inform our plans.

1                   Lastly, we continue to engage with international  
2 stakeholders. For example, the NRC chairs the group of the Safety  
3 of Advanced Reactors through the Nuclear Energy Agency.

4                   In this forum, we share information on non-light water  
5 reactor safety and regulatory issues with other international regulators.

6                   We also keep apprised of the activities of the  
7 Generation for International Forum.

8                   This completes my remarks. Tim McGinty will now  
9 provide a presentation of NRC's construction inspection program.

10                   MR. MCGINTY: Thanks, John.

11                   Good morning. I'll cover four main areas today.  
12 First will be enhancements to the operator licensing program.

13                   Next, I'll update you on how we are implementing  
14 improvements in our processing of ITAAC Closures Notices, or ICNs.

15                   Then, I'll discuss the transition to operations and  
16 describe what we are doing to have the Agency ready for oversight as  
17 the plants under construction become operating plants.

18                   And finally, I'll discuss the safety benefits being added  
19 by the Agency's vendor inspection program and changes to the  
20 vendor inspection center or expertise organizational structure.

21                   Next slide, please?

22                   As an overview, I want to emphasize that we are  
23 focused on executing on schedule and using our resources wisely.  
24 We are paying appropriate attention to project schedules and focusing  
25 on adjusting our emphasis and expertise to support those schedules.

26                   We are aiming for the early resolution of policy issues  
27 that ultimately supports timely decision making.

1                   We also solicit, consider and value external feedback,  
2 external stakeholder feedback as an essential part of our work  
3 processes.

4                   Next slide, please?

5                   As you will recall, lessons were learned from the cold  
6 licensing efforts at the AP1000 projects for VC Summer and Vogtle,  
7 including the processes for licensees to apply for Commission  
8 approved simulator status.

9                   We have embarked on an important team effort to  
10 address operating licensing and plant reference simulator issues  
11 guided by two light cold licensing charters.

12                  I'll note that part of the focus, at this point, is to ensure  
13 that the program will be improved for future new designs. This is a  
14 highly collaborative effort with NRO, Region II and NRR in  
15 consultation with OGC.

16                  It also includes vital engagement with external  
17 stakeholders.

18                  The charters are resolving lessons learned captured  
19 during the initial operating licensing activities with the AP1000  
20 licensees related to examination development, experience  
21 requirements, proficiency training and simulator readiness.

22                  One charter involves near-term actions necessary for  
23 the NRC to issue operating licenses to applicants at Vogtle as well as  
24 translating the experience and insights gained from completed  
25 activities at Vogtle and VC Summer into durable guidance for future  
26 cold licensing activities.

27                  The second charter specifically relates to licensee and

1 NRC staff interactions to classify, declare and approve plant reference  
2 simulators and Commission approved simulators to support operator  
3 licensing, training and examinations.

4 The picture on the top is the AP1000 simulator.  
5 Recommendations for the near-term tasks were proposed by the staff  
6 within the last month. Recommendations in response to generic  
7 long-term tasks are scheduled for May of 2018.

8 Together, the overall goal of our teamwork on both  
9 charters is to establish interim guidance and the steps necessary to  
10 improve the framework and structure of the cold licensing process for  
11 future use.

12 For example, we have actively engaged with NuScale  
13 to determine how to develop, administer and evaluate operator  
14 licensing examinations for SMRs.

15 The picture on the bottom shows NRO, Region II and  
16 TTC staff at NuScale's control room simulator during a visit in August  
17 of 2017 where we discussed the development of knowledge and  
18 abilities catalogues for NuScale SMR technology and made a  
19 preliminary assessment of the operator licensing process.

20 Next slide, please?

21 As you would expect, the number of ICNs received for  
22 Vogtle's Units 3 and 4 have increased since our last briefing. As of  
23 the end of calendar year 2017, we have verified 123 ICNs for Vogtle.

24 Those are shown as conditionally verified and  
25 unconditionally verified slices of the pie chart.

26 Also, at the end of calendar year 2017, we had eight  
27 ICNs under the review process.

1                   Note that the gray area in the above pie chart signifies  
2                   ITAAC notifications that have not been received yet. And, is by far,  
3                   the largest segment. I'll speak to that a little more later in my  
4                   presentation.

5                   Also, note that the number of ITAAC per unit is being  
6                   further evaluated by an ongoing ITAAC consolidation license  
7                   amendment.

8                   Last year, we discussed the implementation of  
9                   reviewing early uncompleted ITAAC notification, or UIN submittals.

10                  We began official reviews of UINs in October of 2016  
11                  and have found that the UNI review process provides earlier  
12                  communication to public stakeholders and allows for prompt  
13                  identification of potential issues related to ITAAC completion.

14                  Also, is reflected in this pie chart, at the end of  
15                  calendar year 2017, 157 UINs have been accepted to date and we  
16                  had 12 UINs under review.

17                  In an effort to make the ICN reviews more timely, the  
18                  staff is implementing a streamlined feedback process to resolve  
19                  issues with ITAAC notifications during a weekly public meeting with  
20                  licensees and interested stakeholders.

21                  Next slide, please?

22                  In the spring of 2017, the ITAAC team conducted a  
23                  demonstration project to evaluate the readiness and reliability of the  
24                  ITAAC inspection and verification processes in preparation for the  
25                  large number of ITAAC notifications expected towards the end of  
26                  construction.

27                  The final report from the demonstration project which

1 was issued in 2017 included recommendations for enhancing external  
2 stakeholder interactions, improving NRC process guidance and the  
3 creation of performance monitoring information dashboards.

4 We then issued an action plan on September 29th of  
5 2017 with deliverable milestones to implement these  
6 recommendations. Of course, as we continue to work through the  
7 action planning and complete the recommendations, we'll continue to  
8 identify new issues and challenges and we'll focus on resolving them.

9 One efficiency that I will highlight is that, in  
10 anticipation of a potential increase in ICNs submitted near the end of  
11 construction, several additional NRO staff have successfully  
12 completed and are maintaining cross qualification as ICN reviewers.

13 Should the notification submitted exceed the review  
14 capacity of the core review team, the additional review staff will be  
15 ready and available to meet the challenge.

16 More recently, on December 12th of 2017, we held a  
17 public ITAAC tabletop with Southern Nuclear Company to discuss the  
18 status of the actions that came out of the demonstration project,  
19 provide a better understanding of the NRC's ITAAC review and  
20 inspection processes by focusing on specific and complex ITAAC  
21 scenarios.

22 And our processing of the ICNs and engage on the  
23 full suite of steps associated with the staff's 10 CFR 52.103(g) finding  
24 which will occur once all ITAAC have been verified as completed.

25 Moving forward, we expect the rate of submittals to  
26 steadily increase for both units at Vogtle and we are prepared by  
27 having the necessary resources, processes and procedures in place.

1                   We are going to be highly engaged this year and next  
2 as Vogtle recently informed us that they plan to submit all ITAACs  
3 either as ICNs or UINs by the end of calendar year 2018.

4                   Next slide, please?

5                   To highlight another element of our action plan, a  
6 performance dashboard has been developed to support our ITAAC  
7 closure verification program.

8                   The dashboard depicts performance measures for  
9 ongoing ICN and UIN reviews for different aspects of the process.

10                  Our performance monitoring allows for the early  
11 identification of potential problem areas.

12                  I will note that close coordination with the Vogtle  
13 construction schedule and the completion of inspection activities is  
14 crucial for overall timely ICN review completions.

15                  For transparency, key enhancements to the public  
16 websites for the Vogtle units under construction have also been  
17 completed. And, they now provide a convenient portal for  
18 stakeholders to find ITAAC hearing related information for any  
19 particular unit, including the ITAAC hearing procedures, licensing  
20 activities and updates to the ITAAC status report which provide  
21 information on the status of the staff's review for each ITAAC with  
22 links to all relevant information for that ITAAC.

23                  Next slide, please?

24                  We were also focusing on making sure that we are  
25 ready for the next phases of construction and the transition from  
26 construction to operations.

27                  Previously, the staff published a report which

1 identified and assessed 21 readiness issues necessary to support the  
2 transition of new reactors from construction to operation.

3 We developed an implementation plan, considered  
4 stakeholder comments and we issued the plan on November 24th of  
5 2017. The implementation plan integrates all of the readiness issues  
6 and describes the various points in time that the transition of licensing  
7 and regulatory oversight functions will occur.

8 It also clarifies new reactor operational regulatory  
9 oversight and licensing responsibilities through the transfer from NRO  
10 to NRR and includes considerations for the future NRR/NRO merger  
11 and the issuance of 10 CFR 52.103(g) implementing procedures.

12 Next slide, please?

13 The vendor inspection program continues to meet our  
14 safety and programmatic objectives. We continue to verify the  
15 effective implementation of vendor quality assurance programs.

16 We are verifying that licensees are providing effective  
17 oversight of their supply chain and we continue to focus on the  
18 adequacy of commercial grade dedication of safety related  
19 components.

20 Our metric for the number of vendor inspections last  
21 year was 35, which we exceeded as we completed 37.

22 We focused on effectiveness and identifying which  
23 vendors to inspect, such as those supplying the most safety significant  
24 AP1000 components and vendors performing activities that are  
25 performed as part of ITAAC closure.

26 We also carefully chose our inspection teams to help  
27 ensure that the efficient use of resources. For example, many

1 inspection teams consisted of qualified vendor inspectors  
2 supplemented by subject matter experts.

3 We also made a point of leveraging Region II staff  
4 and inspections of vendors performing ITAAC related work.

5 The vendor inspections center of expertise also  
6 supports the operating reactor program. And, in 2017 included  
7 inspections as part of SONGS lessons learned and of the carbon  
8 segregation issue for forging manufactured by AREVA Creusot Forge  
9 and supplied to U.S. nuclear power plants.

10 I will note that as an outcome of the AREVA Creusot  
11 Forge inspection, we did not identify any information that challenged  
12 the overall determination that the safety significance of this issue to  
13 the U.S. fleet appears to be negligible.

14 Next slide, please?

15 Finally, I will cover how we are adapting to the  
16 decrease in new reactor fabrication and construction activities on the  
17 vendor inspection COE.

18 We performed a methodical evaluation of the current  
19 and future slowdown and fabrication and construction activities  
20 including the SCANA announcement to cease construction on VC  
21 Summer Units 2 and 3.

22 And, as a result, we are implementing the following  
23 program changes.

24 The number of planned vendor inspections has been  
25 reduced from 35 in fiscal year '17 to 25 in fiscal year '18 and 20 in  
26 fiscal year '19.

27 This will return us to the inspection planning level that

1 we were at prior to the start of new reactor construction.

2 We implemented associated reductions in vacancies  
3 and staffing levels in NRO.

4 And, we are reducing the number of branches that  
5 make up the vendor inspection COE from three down to two.

6 I am confident that these changes will allow us to  
7 continue to meet our safety and programmatic objectives.

8 That is my presentation and I will now turn it over to  
9 my colleague in Region II, Bill Jones.

10 MR. JONES: Thank you, Tim.

11 Good morning, Chairman, Commissioners.

12 The goals of the NRC inspection program are to  
13 ensure that the inspections at the Vogtle site are timely, with respect  
14 to the licensee's construction schedule, are coordinated with the  
15 licensee's ITAAC closure notices and that we take advantage of  
16 opportunities to move inspection activities forward to mitigate potential  
17 high inspection demand periods.

18 Today, I will tell you how we are meeting these goals.

19 In addition, we are prepared for the initial test  
20 program inspections, particularly with the digital instrumentation and  
21 control and first plant only and first three plant only testing.

22 We continue to support vendor inspection activities  
23 and inspect ITAAC related items occurring at a vendor facility.

24 We remain very active in international activities  
25 including support of multinational vendor inspection and the inspector  
26 exchange rotations to the SEM and AP1000 site.

27 Next slide, please?

1                   There was a prompt assessment of the NRC"s, and in  
2                   this case, the Division of Construction Oversight's inspection  
3                   resources needed to implement the construction inspection program  
4                   following the July 31st announcement that Summer Units 2 and 3  
5                   construction would not be continued.

6                   The resource projections were informed by the  
7                   inspection schedule for Vogtle Units 3 and 4 construction activities.

8                   This assessment identified a reduction of 16  
9                   inspection staff and two supervisors. The experienced staff needed  
10                  to implement the construction program remain in the Division of  
11                  Construction Oversight.

12                  Although some inspectors have moved to other  
13                  divisions in Region II, we continue to utilize these resources as  
14                  needed.

15                  The lead inspector -- the lead test inspector has  
16                  extensive construction and operational experience, including as the  
17                  Senior Resident Inspector at Watts Barr Unit 2 during the transition  
18                  period from construction through the initial test program and as the  
19                  Senior Resident Inspector at Summer Units 2 and 3.

20                  Having the right individuals with the right skills at the  
21                  right time is a carryover lessons learned from the Watts Barr Unit 2  
22                  construction oversight as being incorporated in our current  
23                  organization.

24                  Lastly, those inspectors who took positions outside  
25                  the New Reactor Business Line will maintain their qualifications and  
26                  will be available to support any future surge of inspection activities.

27                  The Division of Construction Oversight continues to

1 identify efficiencies and incorporate lessons learned into our  
2 inspection program.

3 Prior to cancellation of VC Summer construction, the  
4 NRC had been using one-for-four inspection approach where feasible.

5 For example, we inspected the reactor vessel  
6 hardness documentation, are able to close that inspection for all four  
7 units.

8 We are now using a similar approach, we're using the  
9 one-for-two inspections at the Vogtle site.

10 The incorporation of lessons learned by the licensee,  
11 sequencing of work and design certainty has allowed the licensee to  
12 gain efficiencies.

13 The picture in this slide is of the Vogtle Unit 3 shield  
14 building. This is an example where the licensee construction has  
15 been accelerated and, as such, the NRC inspections are being  
16 brought forward commensurate with the licensee's construction.

17 The NRC has also incorporated lessons learned from  
18 the Unit 3 inspections into our inspection plans and procedures which  
19 typically result in less inspection hours being expended on the second  
20 unit without a loss of effectiveness.

21 Next slide, please?

22 The NRC's construction inspection program  
23 completion rate for both Vogtle units are approximately 37 percent for  
24 ITAAC inspections and 21 percent for operational program  
25 inspections.

26 As with any complex project, the NRC staff continues  
27 to adapt to the dynamic construction environment through planned

1 ITAAC and programmatic inspections which includes all facets of  
2 inspection, ITAAC closure and coordination with NRO, NRR, and  
3 NSIR for activities to support operations.

4 The NRC ITAAC inspections conducted during this  
5 last year included the construction of the nuclear island and the  
6 fabrication of primary containment and structural modules.

7 Operational programs, including emergency  
8 preparedness, cybersecurity and physical security inspections.

9 We are proactively working with the other business  
10 lines on the AP1000 program development. For example, last  
11 summer, Chris Miller, who has responsibility for the reactor operating  
12 -- for the operating reactor inspection program, accompanied me at  
13 the Vogtle station to assess the plant configuration and systems to  
14 inform the development of the reactor oversight program at the  
15 AP1000 units.

16 We have proactively developed -- next slide, I'm sorry.

17 We have proactively developed an inspection  
18 program with the majority of the inspections completed prior to the  
19 ICN submittal.

20 The NRC conducted two public meetings in 2017  
21 regarding the ITAAC closure and verification demonstration project.

22 One of the objectives was to ensure an integrated  
23 management understanding of activities associated with ITAAC  
24 closure including the required inspections.

25 Associated with this effort, Region II and NRO have  
26 worked together to establish metrics to represent the different aspects  
27 of the inspection program and communications that are occurring.

1                   The inspection metrics are both performance-based  
2                   and anticipatory to allow for early management attention and to assist  
3                   in discussions with the licensee.

4                   Inspection metrics track performance, reinforce  
5                   accountability and communicate issues needing attention at the  
6                   appropriate management levels, both internal and external to the  
7                   NRC.

8                   As listed in this slide, there are five metrics being  
9                   developed. Two of these examples are, first, the inspection  
10                  scheduling metric tracks required inspections associated with the  
11                  anticipated ICN submittals and highlights any inspection that will not  
12                  be completed within 60 days following the licensee submitting their  
13                  ITAAC closure notification.

14                  This allows for early identification of inspection  
15                  resources and, if necessary, timely interactions with the licensee on  
16                  supporting the inspections.

17                  A second metric tracks the timeliness of completing  
18                  technical assistance requests and unresolved items.

19                  Each technical assistance request may be requested  
20                  from Region II to NRO to resolve technical issues related to ITAAC or  
21                  programs or from NRO to Region II to request inspection of ITAAC or  
22                  programs.

23                  These metrics enhance early engagement of NRO  
24                  and Region II management and provide a leading indicator for  
25                  inspection status. These metrics are key communication tools  
26                  between the staff and also with the licensee.

27                  Next slide, please?

1           The NRC staff utilizes the licensee's construction  
2 schedule to link with our inspection plans and to schedule inspections.

3           Through this scheduling, the NRC ensures that inspections are timely  
4 and are completed prior to the licensee submitting their ITAAC closure  
5 notice.

6           This close coordination with the licensee provides the  
7 opportunity for the NRC to adjust our inspection schedule as well as  
8 for the licensee to determine when and what they need to complete to  
9 support the ITAAC inspections.

10           This strategy was effective during this last year.  
11 However, more effective communication with the licensee  
12 management was needed to ensure that inspection support activities  
13 from the licensee were being implemented on a time line with their  
14 management's understanding.

15           The inspection scheduling metric described as part of  
16 the previous slide is used to inform these discussions.

17           We conduct numerous ITAAC and program -- we  
18 conducted numerous ITAAC and program inspections this last year.  
19 These inspections included digital I&C as part of the initial test  
20 program and the piping design acceptance criteria program.

21           For the digital I&C, the NRC inspection strategy is a  
22 combination of inspection at the Westinghouse facility and the Vogtle  
23 site with coordination of digital I&C experts from headquarters and  
24 Region II to ensure that the right inspection is performed at the right  
25 time with the right people.

26           To support the digital testing inspection activities,  
27 detailed test procedure reviews will be performed by inspectors with

1 the necessary technical skills prior to testing.

2 This allows for a broader use of inspection staff to  
3 support the actual test observations.

4 Next slide, please?

5 We continue to support inspector exchange rotations  
6 to the Sanmen and AP1000 construction site in China to leverage their  
7 construction experience and to exercise and improve our inspection  
8 procedures.

9 Recently, we had three inspectors in China as part of  
10 the exchange rotation, Tom Dunn, a licensed examiner from Region I,  
11 Scott Egli from the Technical Training Center and Lisa Castelli, one of  
12 the initial test program inspectors in the Division of Construction  
13 Oversight.

14 These individuals experiences add to our firsthand  
15 knowledge with the as-built configuration of the AP1000 and their  
16 experiences, along with their predecessors, are being carried over into  
17 our training at the Technical Training Center.

18 In 2017, NRC managers and staff supported  
19 multinational vendor inspections and the National Nuclear Safety  
20 Administration of China Steering Committee meeting that was held in  
21 China.

22 The NRC has hosted numerous international  
23 representatives with Region II hosting individuals from Poland, China  
24 and Japan.

25 Lastly, to summarize the construction program for  
26 you, we have established processes for planning and scheduling of  
27 inspection activities that account for the inherently dynamic nature of

1 large construction projects.

2 This leadership team is committed to the success of  
3 our oversight program. And, as I started out with, we are ensuring  
4 the inspections at the Vogtle site are timely, are coordinated with the  
5 licensee's ITAAC closure schedule and that we are taking advantage  
6 of opportunities to move inspection activities forward in our schedule  
7 to mitigate potential high inspection demand periods.

8 That concludes my remarks, I'll turn it back over to Mr.  
9 Johnson.

10 MR. JOHNSON: Thank you, Bill.

11 So, to summarize, we are pleased with the  
12 accomplishments of the new reactors program during the past year.

13 Our demonstrated agility and successfully adjusting to  
14 a significant workload change, our effort focused on preparing that  
15 we're ready, ensuring that we're prepared to license new technologies  
16 and our use of enhanced processes, we think will support the Agency  
17 in meeting our mission to enable the safe use of nuclear power and  
18 meeting the nation's future energy needs.

19 This concludes our presentation and we're ready to  
20 take your questions.

21 CHAIRMAN SVINICKI: Thank you all for those  
22 presentations.

23 We'll begin the Commission questions with  
24 Commissioner Burns.

25 COMMISSIONER BURNS: Thank you, Chairman.

26 And, I thank the staff for the comprehensive  
27 presentations, the overview of activities in this business line that range

1 from overseeing the construction and implementation of decisions on  
2 licensing at the sites that continues the ongoing licensing under Part  
3 52 for both combined license, ESPs and design certifications. And  
4 then, the look forward to advanced reactors.

5 Let me throw a bit of vinegar in the punch bowl  
6 because I want to start out with sort of a contrast in what we often  
7 read.

8 Staff today use the terms agile, efficient, effective.  
9 Some antonyms I read sort of in the press are sclerotic, pusillanimous,  
10 I think those are more like for the national spelling bee than the news.

11 I read that -- I read on some sites on organizations  
12 that we have to interact with that one titled Innovation Not Wanted  
13 Here, meaning the United States.

14 And, part of that that's thrown at the foot of the  
15 regulator. We received a letter yesterday, and nothing really new, but  
16 from the Nuclear Innovation Alliance, NEI and the Nuclear  
17 Infrastructure Council talking about four areas where they think NRC  
18 needs reform.

19 And, you all did, you know, to be fair, and as I say, I'm  
20 just throwing a little vinegar in there, I think you've addressed a  
21 number of these through your presentation, but I'd like to focus on a  
22 couple of them.

23 But, the four were reversing the trend of increasing  
24 regulatory costs and increasing and excessively long reviews, aligning  
25 the regulatory framework for advanced reactors with their inherent  
26 enhanced safety, defining licensing options clearly including options  
27 for staged applications and approval and providing additional flexibility

1 for changes during construction.

2 Now, I'm not going to have time to ask you questions  
3 about all these areas, but maybe two we could talk about.

4 What is -- what would the staff's response be to this  
5 notion that there has been a trend of increasing regulatory costs and  
6 excessively long review?

7 In other words, the reviews in Part 52 start at one  
8 point as we began but the accusation is that we haven't really  
9 efficiency, that they still continue to spread out.

10 I'll leave that to you and let you respond.

11 MR. JOHNSON: Thank you, Chairman, I'll start and  
12 then I think Frank and Vonna will want to weigh in as well.

13 So, can I just step back for a second and talk about  
14 the letter that you point to?

15 COMMISSIONER BURNS: Absolutely.

16 MR. JOHNSON: So, as a -- I actually opened with  
17 the statement that is, we just received the letter and we are digesting  
18 the letter.

19 And, there's much I think to be used that is contained  
20 within that letter.

21 I actually liked the last paragraph of that letter that  
22 notes the industry statement about their commitment to safety,  
23 continue to share commitment to safety. I think that's very helpful  
24 and we share, obviously, that commitment.

25 They -- I would say, personally, I don't agree with  
26 maybe every aspect of every view that is raised, but certainly, there  
27 are things that are pointed to in that letter that we're not surprised by,

1 that we've been working on, as you point out, and we're -- I believe  
2 we're beginning to make progress on including the length of our  
3 licensing reviews.

4 And so, for example, the work that we did with respect  
5 to establishing the APR1400 schedule of 42 months, the work that we  
6 did in looking at the enhanced safety focus review and scheduling, the  
7 Nuscale review, all of that recognized that we had previous reviews  
8 that were longer, that maybe looked at aspects that didn't need to be  
9 looked at and we are tailoring those reviews to be more appropriate,  
10 innovated, yet incremental way.

11 And, I want to leave you with, and there's more to be  
12 done. We recognize there's more to be done.

13 One of the things that -- one of the fundamentals  
14 about this letter that I think we all align with is that, as it relates to  
15 embracing new technologies, we've got to find a way to do that better.

16 And, we've begun that activity, the EDO issued a  
17 letter in early January, as you're aware. We're standing up an activity  
18 to look about how we can transform and make even greater gains in a  
19 way that, again, doesn't undermine our ability to meet our safety  
20 mission, but that is more efficient to address the concern that you just  
21 raised actually that is captured in that letter.

22 COMMISSIONER BURNS: But, let me move on to  
23 the one other area, because I think this is another place where -- and  
24 John touched on it, but, you know, the problem, and frankly, in the  
25 overview, it's an overview, so sometimes we can't delve through.

26 Let's try to delve deeper on the flexible licensing  
27 issue. If we could bring up slide 15 from the staff's presentation?

1                   And, actually, your slide -- I think it's slide 14 -- oh,  
2 actually go -- yes, this is a good one, but I want to talk about the next  
3 one, the slide 16.

4                   Clarify a flexible review process. Now, the interesting  
5 thing, the way this picture, this diagram shows, it says many paths are  
6 available.

7                   And, I think one of the things, you know, again, what I  
8 hear, and I think the staff, in fairness to the staff, I think the staff, you  
9 address this to an extent in the presentation here this morning. But,  
10 where those paths are going.

11                   So, one of the things you hear in terms of what you're  
12 reading, for example, we've had a lot of, and I've spent some time this  
13 summer looking at this, into the Canadian vendor design review and  
14 the United Kingdom's ONR, Office for Nuclear Regulation, that's what  
15 they call it -- Office for Nuclear Regulations of general design  
16 approval.

17                   Now, what they don't do, neither of those are a design  
18 certification a la Part 52 because a design certification was always  
19 designed as a legally binding determination.

20                   To what extent do you think that the standard -- can  
21 we leave the slide up, please?

22                   To what extent do you believe that the standard  
23 design approval, which is provided for under Part 52, matches with  
24 those concepts that have been offered to us as something that we  
25 ought to be looking at or embracing?

26                   And, maybe if there are -- if you have thought about,  
27 where do you see areas where we might learn from our Canadian and

1 British colleagues with respect to the processes there?

2 MR. MONNINGER: So, thank you for the question.

3 So, first off with regards to NRC's flexible regulatory  
4 review process, I think first you've got to think about it with regards to  
5 stakeholders and their interests.

6 They have indicated an interest in proceeding under  
7 the current framework as opposed to maybe a Part 53 process or  
8 something, you know, started from scratch.

9 So, near-term applicants, near-term developers,  
10 nuclear industry has indicated that they want to proceed under the  
11 current framework.

12 COMMISSIONER BURNS: Meaning --

13 MR. MONNINGER: Meaning, not wholesale  
14 revisions to regulatory processes, meaning not wholesale revisions to  
15 regulations.

16 Changes to some regulations, but not a grounds up  
17 approach to do that.

18 So, we've developed the near-term, mid-term and  
19 long-term. And once we gain experience, we have thought about or  
20 proposed potentially in the long-term to do some type of fundamental  
21 rewriting of the regulations.

22 COMMISSIONER BURNS: Now, let me, just for  
23 clarification, because I think I know what you mean, but I think on  
24 that side, John, you're talking primarily in terms of looking at, for  
25 example, the general design criteria or it's what I'll call the substance  
26 of the review versus the -- what I'll call the process.

27 Because there's a mix of things. Part 52 has a

1 particular process. What they're looking -- part of what they're  
2 looking at is this something less like, it's, you know, the sniff test. It's  
3 the thing that can make -- that satisfied investors.

4 It's the thing that says I can get it, you know, I can get  
5 it going.

6 MR. MONNINGER: So, that's --

7 COMMISSIONER BURNS: If you could talk to that.

8 MR. MONNINGER: Yes, yes.

9 So, the standard design and approval process has a  
10 level of finality in terms of the staff's review. So, it is in excess of or  
11 beyond, for example, the Canadian Phase 1 vendor design review.

12 You know, the terms of regulatory certainty that the  
13 NRC will provide is beyond that, is beyond what would be provided.

14 If you were to look at what is required for the SDA  
15 process, it could be a complete design or it could be major aspects of  
16 the design.

17 One of the trade groups out there, Nuclear Innovation  
18 Alliance recently sending guidance with regards to how to  
19 appropriately classify major portions.

20 It would not have to be an entire nuclear power plant,  
21 you could focus on the reactor. You could focus on subsets of the  
22 reactor.

23 You know, so that would be a defined process that  
24 would provide certainty.

25 And, what I'll go to is, for example, the feedback that a  
26 design may get from the Canadian regulator, an applicant or  
27 developer could come in with what we call a regulatory engagement

1 plan to say we are looking for NRC feedback in the following areas.

2 We're going to submit the six -- the following six  
3 technical and topical reports.

4 This is the feedback we want and this is the schedule  
5 and this is the resources.

6 You could -- they could put together a proposal, put  
7 together a plan if they wanted to that was akin to, you know, anything  
8 out there.

9 So, with regards to having a, you know, there's Path  
10 1, 2 or 3. To a certain extent, it's more of a smorgasbord that  
11 applicants could, you know.

12 COMMISSIONER BURNS: Yes, and I think I wanted  
13 to sort of end that and to use your smorgasbord, I think we have to -- I  
14 think what our responsibility is, is to make the menu clear about where  
15 -- what the choices are.

16 And, I appreciate -- I think you all are doing that.  
17 And, I know there's some other work to be done.

18 For example, on prototypes, we haven't done that. I  
19 mean, we -- in terms of our licensing history, we haven't really done  
20 that as NRC.

21 So, but that, looking at that is a potential path, looking  
22 at what is the standard design approval made?

23 And, again, I think what you get from the literature,  
24 you know, the commentaries out there is the issue about transparency  
25 in terms of what does it mean for me to take this path and, of course,  
26 the other transparency is also about what's it going to cost me?

27 Because, ultimately, they're going to have to pay for it.

1 My time's up. If I could, I want to just -- I want to  
2 compliment the staff, particularly in the ITAAC area. ITAAC, again,  
3 here's the thing, 30 years later, we're finally applying. Thirty years  
4 after, maybe not quite, but I think the proposed rule was out 30 years  
5 ago, on Part 52.

6 But, I really think the staff is to be commended with  
7 respect to these tabletops and thinking through this issue.

8 Because, ITAAC as it is, was not -- is not solely  
9 something of our invention. We got congressional help in the Energy  
10 Policy Act in 1992 with respect to the time lines and things like that.

11 But, I think you're doing a good job in there.

12 My final thought, because I've been spending a lot of  
13 time actually thinking and reviewing and looking at the history of  
14 licensing process, it's actually 60 years ago that we also earned the  
15 mandatory hearing provisions.

16 And, that was because the AEC was not transparent  
17 about some of its licensing.

18 But, there has been this constant back and forth, give  
19 and take between the Agency, whether AEC or NRC and the industry  
20 about, you know, idealizing and finding the right path to achieve our  
21 safety and security objectives and assuring that innovation can go  
22 forward.

23 So, I appreciate your continued work on that.

24 Thank you.

25 CHAIRMAN SVINICKI: Thank you, Commissioner  
26 Burns.

27 And, I might platform off a little bit of that. I was

1 going to identify some things that I think are very commendable and  
2 praiseworthy by the staff in areas where I'm residing a lot of optimism  
3 about the future on our ability to move forward.

4 Yes, there is a lot of complexity here. I view -- I know  
5 this is a business line meeting, but a lot of this is about the Office of  
6 New Reactors and we've heard a lot about the status of activities.

7 I want to communicate how impressed I am that, as  
8 the Office of New Reactors has had a diminishment in the number of  
9 discrete activities, they have also been challenged to have a vast  
10 expansion of what I term their bandwidth.

11 So, they have had to go from a long activity list where  
12 I think there were a lot of more routine matters that were very familiar  
13 to the NRC.

14 And so, as they have completed and that work has  
15 narrowed, some of it fell away, but a lot of it has just simply been  
16 pushed across the finish line which is very praiseworthy in my view.

17 But, now, they have to pivot to areas that require us to  
18 really expand the bandwidth, not only in SMRs, it's kind of good if you  
19 look at it as kind of a crawl, walk, run that we're having an SMR review  
20 for the NuScale review.

21 I think that's allowing us to do more forward looking  
22 issue resolution and requiring us to do it with a strong activity-based  
23 schedule. So that's good.

24 And then, we've also got to be continuing this  
25 substantial engagement with the advanced reactor community.

26 I'm not often accused of being overly optimistic, but  
27 my broad reaction to the white paper or non-paper that NRC received

1 from NEI and the Nuclear Innovation Alliance and the Nuclear  
2 Infrastructure Council.

3 I thought it was encouraging that there is so much  
4 identified from these groups communicated to us that are areas not  
5 only that we've already identified, but they are areas that, for some  
6 years now, we have been at least elbow deep if not deeper with  
7 external participants in identifying what goes on there.

8 As John Monninger put up in his presentation, not  
9 only do we have a vision, we have implementation plans. And,  
10 beneath those, we have strategies and then activities.

11 I know that sounds like a lot of buzz words, but in  
12 John's example of picking two strategies, talking about the activities.

13 Those activities, we don't sit here and dream those up  
14 on our own. Those are an outgrowth of all of the engagement that  
15 you all have talked about.

16 I know that the report or white paper was a little bit  
17 critical of what advanced reactor applicants are saying about our  
18 process.

19 I have to say as a counterpoint, as I have been at  
20 technical conferences and meetings I've had, I won't name names, but  
21 some of them have pulled me aside and been very complimentary of  
22 our willingness to look at, as John calls it, kind of a regulatory  
23 engagement plan.

24 But, what do you need? How are you moving  
25 through your technology development, moving through the  
26 development of your design? What, from a regulatory standpoint,  
27 would be meaningful to you at what stages? A lot of interest in

1 topical reports.

2 And, I share the view of Commissioner Burns that, we  
3 get asked a lot as Members of the Commission about, hey, the  
4 Canadians are doing this, the Brits are doing this, why don't you have  
5 something similar?

6 In truth, Congress was so wise in the Atomic Energy  
7 Act they actually gave us something that is a foreshadowing of the  
8 kind of authority, and my colleague is too humble to mention, his law  
9 article that he recently published which talks about the history of  
10 development of Part 52, but also foreshadows that we have a lot of  
11 organic statutory authorities that would allow us, in the absence of  
12 even any legislative changes, there's quite a bit we can do.

13 I know the staff is always engaged with many  
14 international counterparts. But, right now, is looking closely at work  
15 with our Canadian and British colleagues.

16 And, I think it's also meaningful where countries might  
17 have the same design under review, regulators could do a lot of --

18 Because, I think we can talk in generalities, but when  
19 we get to saying, here's a design, it manifests these safety issues.  
20 How, as independent regulators do we come at that?

21 And, I think that that's where we can share a lot of  
22 learning. And, the good news is, we have the authority to do it now.  
23 The staff is already engaging it.

24 And so, again, glass half full, glass half empty. We  
25 appreciate the feedback. We don't in any way take critical feedback  
26 with resistance.

27 But, I think -- and we'll look at that feedback where

1 they present counters to say you need to do a whole lot better on this.

2 The other thing, my other reactor was, when people  
3 talk about prolonged reviews and the cost of them, this isn't anything  
4 that we don't know.

5 So, that's the other encouraging thing about the  
6 report. Where we might have a slightly different characterization, we  
7 at least are well aware of the terrain of the issues.

8 And, the truth is, and I asked about this at one of the  
9 large light water reactor mandatory hearings, I don't remember which  
10 one, when we look at the number of staff hours between the  
11 environmental and safety reviews for those, it is a little bit of a scatter  
12 plot.

13 So, I think we, ourselves, are intrigued about why  
14 hasn't it been a linear progression? We know we're getting  
15 efficiencies, why doesn't that show up in the data?

16 We know the reviews and we can surmise, I think this  
17 one got hung up on this issue and we know kind of what it is, but we  
18 haven't done a systematic look at why it hasn't been a linear  
19 improvement and efficiency.

20 So, overall, I think that is NRO approaches its  
21 eventual joining with the Office of Nuclear Reactor Regulation, a lot of  
22 organizations would lose focus and not finish.

23 And, again, it's some time out, but I'm just really  
24 impressed with -- and it started, I think, under Glenn Tracy. It's been  
25 continued under two Directors.

26 And, Vonna, I appreciate your time in continuing that  
27 focus of continuing to push issues to closure. So, I thank you for that.

1                   Even as the Summer 2 and 3 project was  
2 discontinued and fell away, I'm impressed with the reorientation  
3 towards providing the most effective oversight of Vogtle construction.

4                   I think every time something changes, I'm impressed  
5 with how the staff takes an opportunity to refocus.

6                   Because when you're doing multiple sites, have  
7 construction oversight, I think you set up one structure. When it falls  
8 away to one project, you've reanalyzed, how can we have a real  
9 consistency of focus? Should we have dedicated, you know, legal?

10                  Should we get the same team of people on it? And,  
11 even the support functions to it.

12                  I think that that's -- if that isn't agility, I don't know  
13 what is. That looks like agility to me.

14                  And so, I do appreciate all of that.

15                  And then, I think we've got the discrete items. As my  
16 colleague mentioned with the ITAAC. I appreciate the focus on that.

17                  Also, transition to ops, I think, is very, very important  
18 for Vogtle 3 and 4. So, I appreciate that what is happening on the  
19 ground out there, that we heard some about today, I think that'll be  
20 interesting.

21                  You showed the picture of the control room and it is  
22 interesting to go to that digital control room for the AP1000.

23                  And so, I know that's going to present some novelty  
24 for us as we move forward.

25                  I don't -- hearing all that, is there -- I know we've got a  
26 focus on resolution of issues. So, again, we have this finishing strong  
27 with large light water reactors and Vogtle 3 and 4.

1                   Should it be that that might be, you know, the last of a  
2 kind of U.S. construction and then it'll go into a little bit of a dormancy  
3 period as SMRs and advanced reactors move forward.

4                   I appreciate also, though, that we're expanding that  
5 bandwidth.

6                   And with, I'll close with Mike Johnson's  
7 acknowledgment that lot more to do. Because, it was funny, I was  
8 testifying before Congress answering this same question on advanced  
9 reactors. How is NRC getting its act together? Are you going to be,  
10 you know, a long pole in the tent here?

11                  And, I said, I talked about the vision and I talked  
12 about the action plans. And, I said, but you know, we have more to  
13 do. And, the response I got was, you have a lot more to do.

14                  So, we do have a lot more to do. But maybe I'll just  
15 let Vonna or Mike, do you want to add anything to that?

16                  MS. ORDAZ: I would just offer, thank you for the  
17 feedback and the comments for the whole team here.

18                  We do look forward to the feedback from the industry.  
19 We've had it in many public meetings. So, the NEI letter, we  
20 appreciated that feedback as well.

21                  We look forward to you seeing a Commission paper  
22 that will be coming up shortly in the next week or so to the  
23 Commission on advanced reactors. And, I think it lays out nicely  
24 some of the points that you raised, Commissioner Burns.

25                  And, followed by a Commission meeting on advanced  
26 reactors in the spring.

27                  So, looking forward to interacting further on that.

1 CHAIRMAN SVINICKI: Thank you.

2 And, I think as well, the Agency soon to be launched  
3 innovation forum, the transformation initiative that EDO Victor McCree  
4 has kicked off.

5 You know, I hope others are as excited as I am. I  
6 think that there's tremendous opportunity space.

7 And, again, you know, we know this. We know this  
8 stuff. We know it well. And, I think if we unleash our problem  
9 solving abilities, they are as good as or better than anybody's because  
10 regulatory is our expertise. It's our domain.

11 And, I think that we've got a lot of people that are  
12 looking to bring their creativity forward in those areas.

13 You know, one of the engagements I had with the  
14 advanced reactor community, I synthesized their feedback in this way,  
15 it's saying that, you know, brevity is appreciated in terms of reviews of  
16 things and if we can do things efficiently and fast, brevity is  
17 appreciated, but certainty is essential.

18 And, this goes back to Commissioner Burns' point,  
19 they can't hold together a project if they don't --

20 So, I said to them, you know, are you telling me that,  
21 if I told you you could maybe have a 24 month review but it might take  
22 48 and I can't tell you? Or, would you rather have me say, it's going  
23 to take 48 months and you ought to plan on that?

24 They said, we will take Option B every time.

25 And so, I appreciate that we're trying to get  
26 efficiencies, but I think that Commissioner Burns made a really point  
27 and it was in John's slide, there's a lot of paths, but I think they want

1 us to guide them through the paths and we need to lay that out with  
2 clarity because these are technology developers going to finance  
3 communities.

4 And they said, you know, if I can just make a business  
5 case for a 48 month review and you can deliver on that, I'm almost not  
6 going to want to have you distract yourself with a 24 month review.  
7 Let's just focus on what needs to be done here.

8 So, again, they would appreciate brevity, but certainty  
9 is essential. And, I appreciate the staff's work on that.

10 And, with that, I will turn over to Commissioner Baran.

11 COMMISSIONER BARAN: Thank you for your  
12 presentations. There's a lot here to ask about.

13 I wanted to start with Tim and ask about ITAAC a little  
14 bit.

15 You mentioned that Southern recently informed us  
16 that all of the ITAAC closure notifications or uncompleted notifications  
17 would be submitted by the end of this year.

18 Based on your pie chart, it looked like about today 26  
19 percent had been submitted. So that would mean I guess the  
20 remaining 74 percent would be submitted all in calendar year 2018?

21 Is that a change from what we had been expecting?  
22 And, are we prepared for that many submittals in one calendar year?

23 MR. MCGINTY: So, that's a great question.

24 It is a change and it's an outcome of our  
25 demonstration project interactions.

26 So, we had previously identified that -- and  
27 established a process of working on UINs which is, you know, in

1 advance of actual ICN submittals.

2 And, in the course of the past year and in the  
3 outcomes from the demonstration projects, we encouraged and  
4 Southern Nuclear embraced the idea that, getting more UINs in earlier  
5 would provide more regulatory certainty and reliability in our  
6 performance.

7 And, they embraced it so much that, when we were  
8 down at the quarterly site executive meeting recently, Mark  
9 Rauckhorst conveyed that they intend to submit all ICNs in the form  
10 of, you know, UINs or ICNs by the end of this fiscal year.

11 So, previously, we have been focused on a surge  
12 right near the end of construction. That moves that up and a lot of  
13 the work that we do on processing the notification now gets moved up  
14 into the end of the year.

15 It is a large effort on the part of Southern Nuclear to  
16 get that to us this year. But we are prepared to address it. We do  
17 have the adequate resources and a surge capacity availability to turn  
18 it around in a timely way.

19 It's a -- I am very encouraged by this commitment by  
20 Southern Nuclear to move that forward.

21 COMMISSIONER BARAN: Good, I'm glad to hear  
22 that.

23 As part of the SONGS lessons learned effort, the staff  
24 initiated a pilot design inspection program at vendor facilities for the  
25 fabrication of components used in major plant modifications.

26 Can someone just give us a brief update on that  
27 initiative, where that stands?

1 MR. MCGINTY: I can.

2 So, as part of the lessons learned, we conducted a  
3 pilot inspection program at three facilities, Ensa over in Spain on the  
4 steam generators, AMETEK on invertors and Konecranes for  
5 containment for all three units at Palo Verde.

6 We are currently going to issue our recommendation  
7 in this regard. And so, it's still being developed.

8 But, I can tell you that, as a result of those  
9 inspections, we didn't find enough issues in the area of analytical  
10 code. So, we brought along technical expertise.

11 To warrant changing our baseline inspection program  
12 for vendors to include a significant increase in these types of  
13 inspections.

14 I would say that, moving forward, for discrete issues  
15 and interacting with NRR and our colleagues, if you had a major  
16 vendor facility that was going to fabricate components that we hadn't  
17 been to before, we hadn't been to in a long time, I can see us on a  
18 sampling basis going out to ensure that components are being  
19 manufactured in accordance with the requirements of Appendix B.

20 Perhaps bringing along technical expertise to make  
21 sure that we have a full understanding of the types of findings for  
22 those situations.

23 Accident tolerant fuel fabrication in the future would  
24 be another area that I would anticipate that that could be beneficial.

25 COMMISSIONER BARAN: Okay, well, thanks for  
26 that update. I look forward to reading about the results of the pilot.

27 Frank, you mentioned that there's some risk of the

1 schedule slipping on KHNP, the design certification review.

2 It's my understanding is that that involved the late  
3 submittal of probabilistic risk assessment information from the  
4 applicant.

5 Can you just take a minute to walk us through that?  
6 What's the nature of the potential delay there and where do things  
7 stand?

8 MR. AKSTULEWICZ: Thank you, Commissioner.

9 So, the challenges associated with KHNP do surface  
10 around some of late, I don't want to call them late, delayed submittals  
11 of information supporting the closeout of open items related to their  
12 PRA.

13 So, we've been working with them quite extensively to  
14 try to mitigate as much as we can the impact. In fact, we have -- we  
15 recently received a letter from them that outlined the most recent  
16 strategy for supporting the staff.

17 Their strong interest in completing the 42 month  
18 schedule on time.

19 We have looked at what it would take to do that. It's  
20 going to be difficult. It will take resourcefulness on the part of both  
21 parties to be successful. But, it is within reach.

22 And, as I've said in my talk, we think it is achievable.  
23 It's going to require close attention on the part of both management  
24 teams and the KHNP organization that's sitting up there behind me  
25 having met with us just this morning and reiterated their commitment  
26 to achieving the outcome that was expected.

27 It's equally important to them to be successful on the

1 schedule as it is for us. And so, they're committed to doing whatever  
2 it takes.

3 COMMISSIONER BARAN: Okay.

4 John, you discussed the staff's pre-application  
5 interaction with several advanced non-light water reactor developers.

6 Based on the conversations you all have had so far  
7 with vendors, do we have a sense of whether they plan to use Part 50  
8 or Part 52?

9 MR. MONNINGER: So, maybe I'll come back to the  
10 smorgasbord analogy.

11 So, we've had responses to our 2016 RIS. And, if  
12 you were to look at those, they're proprietary, generally proprietary  
13 submittals.

14 There's a range of interest between Part 50 and Part  
15 52. There's notions that some designs may originally come in with a  
16 test reactor. They could subsequently use the experience from that  
17 test reactor to use that information for a DC or a COL within Part 52 or  
18 they could perceive from that test reactor to some type of COL within  
19 a Part 50.

20 So, they've expressed an interest in all the options out  
21 there, including SDAs and all the way up to a manufacturing license.

22 So, there's a very broad range of interest.

23 COMMISSIONER BARAN: Okay.

24 And, it sounds like, at least, one or more, though, are  
25 potentially considering going down the Part 50 path of a construction  
26 permit?

27 MR. MONNINGER: Yes, sir, yes.

1                   COMMISSIONER BARAN: A while back, the  
2 Commission approved a rulemaking to update the Part 50 process to  
3 basically incorporate some of the requirements post-TMI and other  
4 things that had been over time dropped into Part 52.

5                   But, I think maybe because people didn't think Part 50  
6 was going to get used, weren't being put into Part 50.

7                   The current rulemaking schedule that was, you know,  
8 I saw in the material we got has the proposed rule coming to the  
9 Commission in 2019 and then the final rule in 2020.

10                  Is that -- is work underway on that rule and what is the  
11 latest thinking about the timing of that rule and how it marries up with  
12 the plans of some vendors who might use Part 50?

13                  MR. MONNINGER: So, thank you for the questions.

14                  So, you know, my understanding is we've prioritized  
15 that as a medium priority rule in accordance with the comment  
16 prioritization process.

17                  The staff would begin the rulemaking efforts in fiscal  
18 year 2019. So, the actual date to complete the rulemaking has not  
19 been fully pulled together yet. So, it is a rulemaking yet to being with  
20 the staff.

21                  And the schedule for those efforts are associated with  
22 a medium priority.

23                  With regards to the question to the underlying  
24 technical requirements, be it the PRA, be it the TMI action items, et  
25 cetera, you know, the Commission, if you look at back in the 1980s  
26 the Severe Accident and Policy Statement, the proposed approach to  
27 resolution of severe accidents for new reactors, for advanced reactors,

1 for anything coming down the road, fundamental, the Commission  
2 said, you shall do. It's a policy statement versus regulation.

3 But, you shall do the PRA. You shall resolve, you  
4 know, the technical applicable TMI action items, et cetera.

5 So, even before Part 52 was in place, you had  
6 designs such as the ABWR prior to Part 52 proceeding down this  
7 path.

8 COMMISSIONER BARAN: Well, I guess in terms of,  
9 and I know it's hard because there are a lot of moving parts here, but  
10 do we have a sense of whether, you know, the rulemaking to have  
11 these actually be regulatory requirements in our regulations, which I  
12 think everyone agrees makes sense to have them there, it's kind of, I  
13 think, an oversight that they weren't there.

14 But, is that -- is the timing of that rulemaking, is that  
15 work for the time, you know, when we think vendors would come in or  
16 applicants would come in under Part 50?

17 MR. MONNINGER: Yes, unfortunately, there's two  
18 responses to that question.

19 The first question is -- the first response is NRC's  
20 planning and our vision and strategy and the work we propose to do,  
21 we linked it with the Department of Energy that discuss potential  
22 construction in the 2030 time such that NRC would be fully prepared  
23 by 2025.

24 So, you know, it would be fully consistent with a 2025  
25 type licensing or even prior to that.

26 The challenges would come in if there was an early  
27 applicant -- an early license application within the next year or two and

1 we would, of course, engage with the Commission.

2 Right now, you know, we do have some interest in  
3 early applications. With that said, the question is, how much certainty  
4 do you place in that?

5 You know, in the past, we've also had interest in  
6 applications that, for one reason, the other had been delayed.

7 But, it, you know, would not be limited to just the  
8 50.52 rulemaking, there could be other changes that the Commission  
9 could want the staff to proceed in terms of rules to support early  
10 applicants.

11 COMMISSIONER BARAN: Let me ask just one  
12 more thing. I'm kind of over on my time already.

13 But, I -- on advanced reactors, you know, as you  
14 mentioned in your presentation, we want to front load some of these  
15 advanced reactor technical and policy decisions.

16 And, obviously, for us to do that as an Agency, we  
17 have to have the right technical expertise on the staff to be really  
18 ready to engage on those issues.

19 What's your assessment of where we are now on  
20 advanced reactor technical expertise within the staff? Do we have  
21 what we need for the designs we expect to see in the coming years?

22 And, if it's not entirely there, what's our -- I know this  
23 kind of falls under Strategy 1 or that bucket, what's our plan for  
24 making sure we have the expertise we need? Is it largely about  
25 identifying skills we already have on the staff and training? Is it  
26 external hiring? Is it contractor support? Is it a combination of those  
27 things?

1                   MR. MONNINGER: So as you mentioned, it's within  
2 IEP Strategy One. And when you bump it up a level, you know, one  
3 of our strategic goals was technical readiness. That's staff technical  
4 readiness via -- whether it's the bodies in seats, number of seats,  
5 knowledge management, training, familiarity with the design -- so that  
6 is all encompassed within technical readiness and IEP Strategy One  
7 as you indicated. Our early efforts in working with OCHCO, our  
8 Office of the Chief Human Capital Officer, have been associated with  
9 strategic work for planning and with our competency modeling. And  
10 so we've done efforts in that area.

11                   You know, these -- you know, they have to step back  
12 and say, yes, these designs are different. Now what does that mean  
13 to our staff? The Commission actually has a very experienced, highly  
14 competent staff. A lot of nuclear engineers, a lot of electrical  
15 engineers, chemical engineers, et cetera. We routinely move them  
16 from office to office, to project to project. So the question is, what is  
17 the difference with some of these designs?

18                   A lot of the technical disciplines, the staff -- you know,  
19 is within the current capabilities of the staff. The uniqueness comes  
20 in when you get very close to the reactor and when you get associated  
21 with some of the materials. You know, and then when you get very  
22 close the reactor, the nuclear engineers we believe, with appropriate  
23 training -- you know, within the staff -- it's within their capabilities. Of  
24 course, we have to have the staff there and train them, et cetera.  
25 But, you know, the bandwidth -- it's within the capabilities.

26                   Certain areas if you were to go, for example, like  
27 molten salt chemistry. We don't have that expertise within the staff.

1 So whether we were to go out and recruit for it or rely upon the -- rely  
2 upon contractors, you know, we'd have to make that -- that decision.  
3 But it's very important for us to have the technical readiness. You  
4 know, this past year we conducted a training on molten salt reactor  
5 technology for approximately 100 staff. This coming year we're  
6 having training for the staff on high temperature gas reactors, and  
7 we're having training on sodium fast reactors. With that a lot more  
8 has to be done. And they're just elementary, basic courses, you  
9 know, for the staff. But, you know, if you go across the disciplines,  
10 you know -- seismic -- you know, meteorology. You know, nothing is  
11 going to change in terms of the seismology of the earth with regards to  
12 a non-light water reactor. So we have the expertise. So you have to  
13 really narrow down to where are the critical skills going to be different?  
14 And where of the existing staff do we just --

15 COMMISSIONER BARAN: And you're satisfied for  
16 these more near-term actions -- you know -- setting up policy or  
17 technical issues to be resolved early, we have what we need to do  
18 that?

19 MR. MONNINGER: To address the near-term policy  
20 issues, you know, yes.

21 COMMISSIONER BARAN: All right, thank you.

22 CHAIRMAN SVINICKI: All right, thank you. I was --  
23 I had -- well, just one additional question. So I was going to turn to  
24 Commissioner Burns. Did you have anything else that you wanted to  
25 ask? It's a lightening round. We'll just go fast. Thank you.

26 COMMISSIONER BURNS: You see, we're  
27 demonstrating our agility.

1 CHAIRMAN SVINICKI: Yes.

2 COMMISSIONER BURNS: There we go. Actually,  
3 a follow-up on the -- on the question this 52 - 50, you know,  
4 harmonization, whatever. The interesting thing about it is it strikes  
5 me, just as, I think, what the staff is having to do in terms of looking at  
6 -- you know, looking at existing framework -- how does that fit or not fit  
7 say, for example, the GDC? The work that was done through DOE  
8 and then -- we have it -- you know, work done on the draft reg guide.  
9 And I guess we're coming up on potentially final -- we've had the  
10 comment period on the reg guide?

11 MR. MONNINGER: Yes.

12 COMMISSIONER BURNS: And/or coming up on  
13 that. But -- so my question would be is -- it -- and don't get me  
14 wrong. I think ultimately you would want to do that rule, but it strikes  
15 me is it may be more a nice to do because -- it sounds like to me  
16 you've communicated -- is, John, you noted the old policy. Granted,  
17 it's a policy statement, but, you know -- you want the license, you  
18 need to address the -- you know, address those types of things. So I  
19 presume that's communicated to these potential applicants in the  
20 advance reactor area.

21 MR. MONNINGER: So with regards to PRA, you  
22 know -- not to throw out numbers, but I have a 99.9 percent certainty  
23 that advanced non-light water reactors are -- are going to do this. I  
24 mean, not only is it historically been a Commission policy and we have  
25 the requirements out there for Part 52, but their design approach for  
26 many of them will be a highly -- will highly use the PRA. There's a  
27 thing called the licensing basis event selection. So if they were to

1 use that, regardless of a requirement for a PRA or not, if they come in  
2 using a PRA-based licensing basis event selection, the staff has  
3 sufficient authority to go in and -- and review and look at that PRA.

4 COMMISSIONER BURNS: Yes. And in fact if I'd --  
5 I'd say the latter, which we -- we talked about a little bit. In a sense if  
6 -- there's a provision in there that really talks about the more  
7 probabilistic and -- risk analysis and looking at the types of things that  
8 you describe.

9 MR. MONNINGER: Yes.

10 COMMISSIONER BURNS: Thank you.

11 CHAIRMAN SVINICKI: Well, thank you for that.  
12 And I noted as both of my colleagues were talking about advanced  
13 reactor technologies, there's a great curiosity that everything old is  
14 new again. The United States, if we look at the atomic history of our  
15 country and our atomic programs -- now it's very -- maybe the best  
16 thing is not training for the staff. If we could invent a time machine, it  
17 would be great. Because we could send them back to when people  
18 were demonstrating these types of reactor technologies. So I know  
19 at least one advanced reactor applicant had told me -- or not -- yet,  
20 not yet an applicant, but designer -- said that they're actually working  
21 on just archival data from experimental programs in, like, the '60s and  
22 '70s. And what would be a validation to give a pedigree to that data  
23 so that it could be cite-able in something before the NRC in the  
24 modern age? So I think that that's an interesting curiosity. And I  
25 don't doubt that some of our staff studies that history as well and  
26 probably brings some awareness.

27 But my question had to do with design certification

1 renewals, which I don't think has come up today, but is part of this  
2 business line. And speaking of, the fact that you reach a stage where  
3 you're finally doing ITAAC, we've got a number of design certification  
4 renewals in front of us. And the agency has brought so much  
5 attention to operating reactor license renewals and said, is there  
6 clarity? Is there a clear understanding of the requirements? I am  
7 not aware necessarily that we've had the same kind of focus on  
8 renewals of design certifications. And so what would the -- how  
9 would the staff characterize the level of stability in terms of that  
10 process? And as policy issues arise, how are those being handled in  
11 terms of design certification renewals? It looks like Frank wants to  
12 respond.

13 MR. AKSTULEWICZ: So, thank you for that  
14 question. How would I characterize it? Well, there is a draft of  
15 guidance out there about what would be considered appropriate for  
16 renewal. I would not say it has advanced beyond the proposal. And  
17 definitely need to go back and finish it now that we're actually almost  
18 done with the ABWR -- in terms of looking at how that guidance was  
19 applied, whether we need to change the guidance in some fashion or  
20 another to reflect the review.

21 Other than that, the -- the policy questions are an  
22 interesting one. We have exercised the back-fit rule extensively in  
23 looking at what would be the appropriate level of review for the  
24 ABWR. We -- the initial discussions between GEH and the staff were  
25 we think these are the issues that you -- we would like you to consider  
26 during the renewal. You've identified a set, we think the set is bigger.  
27 There's been exchanges of technical information between the two

1 parties that -- in fact, we're getting ready to issue a letter that says we  
2 agree with your assessment that seven or eight of these topics don't  
3 need to be discussed as part of the renewal because they don't hit the  
4 threshold for adequate protection or reasonable assurance. And so  
5 we're saying okay, yes. We've aligned on that and so that would be  
6 reflected in the guidance going forward, that these are the areas that  
7 the staff doesn't believe weighed to that magnitude where it's  
8 something that would be essential to a renewal.

9 That being said, we are in the process of discussing  
10 bringing to you an interesting dichotomy, if you will, of maybe an  
11 unintended consequence of the renewal provisions of design  
12 certification and some of the structure Part 50 -- and it gets into John's  
13 area where you look at the need to assess the peak clad temperature.

14 And, you know -- the -- the standard for the renewal was that, you  
15 know, you have to show demonstration that you were in compliance  
16 with the rule at the time that you were certified. Well, that's nice.  
17 And they did.

18 The challenge now is Part 50 tells you that when you  
19 change, or when you identify a certain percent -- temperature change  
20 over the course of a period of time, you know, then to bring that -- to  
21 the agency for re-review and -- which, the question is, well what --  
22 does that apply to a renewal? Because it's been sitting there for 15  
23 years and accumulating these variances, but the standard is you've  
24 already showed that you've complied with the rule earlier. Nothing's  
25 changed except, as you continue to calculate the changes in PCT  
26 over time, it's different. And it affects the reach and the reactor area  
27 in some of the containment areas.

1                   So, is the expectation that a renewal applicant now  
2 would then have to go back and reassess a substantial portion of the  
3 design associated with those types of changes which -- if you look at  
4 the history, it was probably not the intent for a renewal. The idea  
5 was, if you don't change anything, it's the same that you had. So --  
6 so we're looking at -- at how we were going to bring that to the  
7 Commission for -- for a decision. And whether we're going to do --  
8 tell you this is how we intend to implement that provision, or whether  
9 we're going to bring options to you and say here's what we  
10 recommend and here's what we were considering. So it's one of  
11 those little crazy subject areas where you stumble on it when you're in  
12 the middle of the review.

13                   CHAIRMAN SVINICKI: Well, I have a -- that  
14 example is very helpful because it is -- this to me has a strong  
15 resonance with the agency's history on operating reactor license  
16 renewal in terms of what is the scope of it? The difference here is  
17 that we may or may not -- the design certification license renewal, if  
18 we've -- if the U.S. has never built that reactor, it becomes more of a --  
19 it's more theoretical. And therefore I think it poses some novelty and  
20 has some -- some questions about it.

21                   But I think also we need to give meaning to the finality  
22 of the design certification. And then there is a process for its renewal.  
23                   So I think some of your exploration of back fit is clearly appropriate  
24 because we need to give meaning to the finality of the design  
25 certification. Maybe -- you know, an interesting thought exercise is if  
26 this -- if this design had been constructed in the U.S. and it was  
27 operating, would we go back and require a re-analysis? Now, the

1 difference with a physical reactor that's been built and operating is that  
2 you have all the operating experience and so one becomes a  
3 computational exercise and one is something that we can put hands  
4 on and eyes on. So I do think there's some novelty here and again,  
5 as I've been hearing about some of this I have regretted that maybe it  
6 hasn't had the same level of focus of bringing certainty to it prior to the  
7 doing of it.

8 But I do appreciate, Frank, that it sounds like the staff,  
9 as they get through the ABWR, is going to reflect on the -- the lessons  
10 learned from that. And perhaps in addition to improving the  
11 guidance, if necessary, come back to the Commission on some things  
12 of first impression and say, this maybe wasn't intended -- or was it --  
13 but we will let the Commission at least re-validate that that is an  
14 expected outcome of the way the process works now. So with that,  
15 Commissioner Baran, do you have anything else?

16 COMMISSIONER BARAN: Sure, I will go for one  
17 more.

18 CHAIRMAN SVINICKI: Okay, sure.

19 COMMISSIONER BARAN: Back on advanced  
20 reactors, you know, one of the -- one of the policy issues there is on  
21 security. And I saw that the staff put out a draft white paper in  
22 November -- potential changes to security requirements for advanced  
23 reactors. And it's a pretty high -- it's not a really in-detail document.  
24 It's a fairly high level and it lays out some options and one of which is  
25 doing a rulemaking in this area that would move more towards  
26 performance-based requirements and move away from the more  
27 prescriptive requirements like having a minimum number of

1 responders on site.

2 Can someone briefly just talk about how far along the  
3 staff is in its thinking about what performance-based requirements in  
4 this area might look like? And this is again a little bit similar to the  
5 question I was asking earlier on the other rulemaking. If it -- if it ends  
6 up being a rulemaking-type option, how does the timing of that  
7 rulemaking fit with the kind of design certification applications, or COL  
8 applications, or Part 50 applications we think we are going to be  
9 seeing in the advanced reactor space?

10 MR. MONNINGER: So I can take that. So -- so the  
11 question is, you know, where are we in that deliverable to the  
12 Commission? So we've had multiple interactions with a stakeholder.  
13 We've gotten good feedback from stakeholders. We've had internal  
14 alignment meetings. There will be various options within the paper of  
15 -- the staff hasn't finalized on the one particular option. So, you  
16 know, in the end whether it was rulemaking or some other approach  
17 that would be the decision coming back, you know, from the  
18 Commission. And we would then implement that decision.

19 You know, if you were to pontificate that it went down  
20 the line of the rulemaking -- you know, there is the examples out there  
21 for emergency planning. And, you know, some Commission direction  
22 on -- on whether changes to EP should be considered early for  
23 applicants through an exemption process or whatever. But that  
24 would, you know, be dependent upon any decisions that Commission  
25 would make with regards to the proposals, you know, coming forth.  
26 There was a second half. But I forget -

27 COMMISSIONER BARAN: Just it related to -- well,

1 or it anticipating -- I know it's a little bit hard. We're -- in some cases  
2 it may be years out. But anticipating in terms of submittals and -- you  
3 know, does that kind of line up well? Or not so well?

4 MR. MONNINGER: So I think what we would do  
5 within the paper that would come forth to the Commission would be to  
6 discuss the potential implications and the options of applications under  
7 review, near-term applications, et cetera. You know, we haven't  
8 pulled all that together yet, but that would be presented to the  
9 Commission.

10 PARTICIPANT: Yes -- go ahead.

11 MR. JOHNSON: I was just going to say, I think as a  
12 -- as a general matter in the way that we are approaching this is, we  
13 want to identify the policy issues and get them up, get Commission  
14 direction associated with them. We recognize that some of these  
15 applications are going to come in. They're going to need certainty as  
16 they do their design in advance of the time that it would take us to do  
17 a rulemaking. And so we'll want the -- we'll want the -- to identify the  
18 answer, we'll want to identify the appropriate guidance associated with  
19 that. And then we'll need to come back and -- and do the rulemaking,  
20 I think, is how we've been approaching some of these issues for  
21 near-term applicants.

22 COMMISSIONER BARAN: See that rulemaking as  
23 the -- if it were rulemaking as the vehicle necessarily to provide the  
24 answer -- the early answer to folks --

25 (Simultaneous speaking)

26 MR. JOHNSON: I would say ultimately it will be. It  
27 is. But more importantly we need to get alignment from the

1 Commission with respect to where we are -- the Commission's desires  
2 with respect to the outcome of the policy issue. And then that  
3 enables us to begin moving even as we're doing the rulemaking.

4 MR. AKSTULEWICZ: So I am going to add one  
5 more thought to that. I know we have been talking about the  
6 advanced reactor arena as formative for some of this discussion. We  
7 -- we can't lose perspective that the NuScale design is in a way the  
8 path-building for some of this discussion. I mean, we have before us  
9 proposed exemptions for emergency planning for an SMR PPE for  
10 Clinch River. And so we'll be dealing with those types of questions --  
11 what is the right structure for us to do those assessments? And what  
12 does it mean? And then NuScale is also interested in looking at  
13 performance-based security for the certification in terms of building in  
14 the security design details -- so, going forward. So yes, it's important  
15 for the advanced reactor arena, but some of that background is going  
16 to be formative in the -- or, from the discussions on NuScale and  
17 others.

18 COMMISSIONER BARAN: Thanks for that context.  
19 Thank you.

20 CHAIRMAN SVINICKI: All right, there will be no third  
21 round. The staff is going to be able to get to lunch. Well thank you  
22 all again. I think it was great discussion and thank you all for the hard  
23 work you are doing. And we are adjourned.

24 (Whereupon, the above-entitled matter went off the  
25 record at 11:53 a.m.)