

UNITED STATES  
NUCLEAR REGULATORY COMMISSION

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BRIEFING ON STRATEGIC PROGRAMMATIC OVERVIEW  
OF THE NEW REACTORS BUSINESS LINE

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THURSDAY,  
OCTOBER 20, 2016

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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 9:30 a.m., Stephen G. Burns, Chairman, presiding.

COMMISSION MEMBERS:

STEPHEN G. BURNS, Chairman

KRISTINE L. SVINICKI, Commissioner

JEFF BARAN, Commissioner

ALSO PRESENT:

ANNETTE VIETTI-COOK, Secretary of the Commission

MARGARET M. DOANE, General Counsel

NRC STAFF:

VICTOR McCREE, Executive Director for Operations

VONNA ORDAZ, Deputy Director, Office of New Reactors

ANNA BRADFORD, Deputy Director, Division of New  
Reactor Licensing

MICHAEL CHEOK, Director, Division of Construction  
Inspection & Operational Programs

LAURA DUDES, Deputy Regional Administrator for  
Construction, Region II

JOHN MONNINGER, Director, Division of Safety Systems and Risk Assessment

MICHAEL MAYFIELD, Director, Division of Engineering,  
Infrastructure, and Advanced Reactors

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

9:30 a.m.

CHAIRMAN BURNS: Thanks. We'll transition then to the main meeting. It's somewhat appropriate; it's in the New Reactors Business Line, since we just voted on the issuance of a combined license.

And I'd like to welcome members of the staff and who are with us this morning in the room and in the well here, as well as members of the public and others who may be here or listening in on today's proceedings.

The purpose of today's briefing is to provide the Commission with a discussion of strategic considerations associated with the NRC's New Reactors Business Line, and we'll hear from a staff panel consisting of the Executive Director for Operations and representatives from the Office of New Reactors, as well as our Region II Office in Atlanta.

The panel will cover issues related to licensing oversight and preparations for future work in this business line. I look forward to today's discussions.

And before I begin, do my colleagues have any comments?

(No audible response.)

CHAIRMAN BURNS: Great. If not then, Vic, could you start the staff's presentation?

MR. McCREE: Yes, sir. Good morning, Mr. Chairman, Commissioner Svinicki and Commissioner Baran.

The New Reactor Program has achieved many accomplishments this past year as it worked to complete the current set of license applications under review. In doing so, the New Reactor staff have emphasized making these reviews more efficient and safety-focused.

1 They worked aggressively to prepare for reviewing the first small modular reactor design  
2 application expected later this calendar year and to ready the agency for future non-light water  
3 reactor designs. All this was accomplished while we maintained our focus on ensuring safe  
4 construction of the four reactors at Vogtle and VC Summer. You'll hear about these successes  
5 and the plans going forward in just a moment.

6 At the outset I'd like to highlight the agility and resourcefulness of the Office of  
7 New Reactor staff, as well as others in the partner offices; and again, I believe you'll hear about  
8 that this morning, in meeting their ambitious program goals with a strong safety focus and a clear  
9 vision and plans for the future.

10 I'll now turn the briefing over to Vonna Ordaz, the Deputy Director of the Office  
11 of New Reactors. Vonna?

12 MS. ORDAZ: Thank you, Vic.

13 Good morning, Chairman and Commissioners. We're happy to be here today  
14 and we appreciate the opportunity to brief you on the New Reactors Business Line.

15 I'd like to open by acknowledging the many important contributions over the last  
16 year by our business line partners in Region II, the Advisory Committee for Reactor Safeguards  
17 and the Offices of the General Counsel, Nuclear Reactor Regulation, Nuclear Regulatory  
18 Research, Nuclear Security and Incident Response, Nuclear Material Safety and Safeguards,  
19 Investigations and Enforcement, as well as our corporate partners.

20 In addition, I would like to recognize the New Reactors Business Line staff,  
21 supervisors and executives supporting the program's mission, as well as our inspectors in the  
22 field.

23 Slide 3, please. Our briefing will provide an overview of the New Reactor

1 Program accomplishments, ongoing activities, challenges, and efforts to improve.

2 Anna Bradford, the Deputy Director of the Division of New Reactor Licensing, is  
3 kindly stepping in today for Mr. Frank Akstulewicz, who is home ill, and Anna will discuss large  
4 light water reactor and small modular reactor licensing activities.

5 John Monninger, the Director of the Division of Safety Systems and Risk  
6 Assessment, will discuss how we're increasing the effectiveness and efficiency of our technical  
7 reviews.

8 Laura Dudes, the Deputy Regional Administrator for Construction in Region II,  
9 will summarize construction oversight and inspection activities.

10 And Mike Cheok, the Director of the Division of Construction, Inspection and  
11 Operational Programs, will highlight our activities in the areas of inspections, tests, analysis and  
12 acceptance criteria, known as ITAAC, vendor inspections and transition to operations.

13 And I will close with a discussion on advanced reactors.

14 Slide 4, please. The New Reactors Business Line has been very busy since  
15 our briefing to you last September. Over the last year we completed several licensing reviews.  
16 We continue to make progress with the ongoing large light water reactor design reviews and  
17 prepare to embark on new work with small modular reactors. We work to enhance our regulatory  
18 framework to support future reviews of non-light water reactor designs, and we accomplish this  
19 work with an emphasis on more effective, efficient and safety-focused reviews that effectively  
20 manage our resources.

21 Working collaboratively with Region II we ensure that the four AP1000 units at  
22 the Vogtle and VC Summer sites, which continue to be our highest priority, are constructed in  
23 accordance with the licenses and the NRC regulations. The staff maintains its effective

1 oversight activities including executing high-quality construction and vendor program inspections,  
2 verifying ITAAC closure and overseeing the development of initial test programs.

3 We continue to emphasize the value of periodically reviewing the effectiveness  
4 of our processes and incorporating improvements into our reviews. As an example, this past  
5 spring we completed a lessons learned on the Part 52 design certification review process and we  
6 have implemented some of those recommendations into the ongoing KHNP APR-1400 design  
7 certification review resulting in a more effective review.

8 We have also looked at some of our internal review processes for requests for  
9 additional information, confirmatory analysis and audits. As a result, we have revised existing  
10 guidance and developed some new guidance that clarifies expectations to the staff. We  
11 communicated these expectations to both staff and managers. And in addition, NRO  
12 management continues to emphasize quality and accountability at all levels when conducting our  
13 regulatory reviews.

14 Slide 5, please. As we look forward we are actively preparing for any future  
15 new reactor applications that include small modular reactor designs or SMRs. We have  
16 positioned ourselves to conduct those reviews efficiently while meeting our mission of ensuring  
17 safety, security, and environmental responsibility.

18 In May of this year the staff received an early site permit application from the  
19 Tennessee Valley Authority to site SMRs. We expect to receive our first SMR design  
20 certification application from NuScale in a few months. The staff has been working aggressively  
21 to resolve key technical and policy issues related to licensing SMR designs and has made  
22 significant progress to ensure it's ready to review the NuScale design. In the same way the staff  
23 has been proactively working to prepare to conduct effective, efficient and predictable licensing

1 reviews for advanced reactors.

2 I've already mentioned that we're continuously looking at ways to improve the  
3 efficiency of our reviews through innovative approaches. As one example we will be  
4 implementing an enhanced safety-focused review of the upcoming NuScale application, which  
5 John Monninger will discuss during his presentation.

6 The New Reactors Business Line continues to be agile in the use of resources,  
7 and we're confident that we have the appropriate resources in place to accomplish the agency's  
8 new reactor workload. We are carefully managing our FTE and contract funds to align with  
9 projected work, changes in industry plans and other external factors.

10 I will now turn over the presentation to Anna Bradford to discuss large light  
11 water and small modular reactor licensing.

12 MS. BRADFORD: Thank you, Vonna.

13 Slide 6, please. Good morning, Mr. Chairman and Commissioners. I'm  
14 happy to discuss with you how the New Reactors Business Line has been effective and efficient  
15 over the past fiscal year at meeting its safety and licensing mission.

16 Slide 7, please. So let's start with the AP1000 Design Center. In fiscal year  
17 2016 the New Reactors Business Line has maintained its focus on safety at the Vogtle and VC  
18 Summer sites while dealing with an increasing pace of license amendment submittals. During  
19 this past year NRO issued a combined 32 license amendments for the Vogtle and Summer  
20 licensees on time. These amendments maintain the continued safety of the plants while having  
21 no impact on the licensees' construction schedules.

22 We also have 50 license amendment requests under active review. This  
23 number of active reviews nearly double the number of active reviews at this time just a year ago.

1                   We supported the LEVY COL mandatory hearing this past July. We also  
2 completed the safety review for the Williams States Lee combined license application and  
3 completed the mandatory hearing on October 5th of this year.

4                   The Turkey Point COL application is nearing completion. The environmental  
5 and safety reviews will be completed in November and the staff will be requesting a mandatory  
6 hearing for the Turkey Point COL shortly thereafter.

7                   Slide 8, please. However, the AP1000 Design Center was not the only area  
8 where the New Reactors Business Line demonstrated success at delivering on its mission. In  
9 the early site permit arena we completed the mandatory hearing for the PSEG early site permit  
10 and issued the early site permit in May of this year.

11                  In the ABWR Design Center we completed the mandatory hearing and then  
12 issued the combined licenses for the South Texas Project Units 3 and 4 in February 2016.

13                  We continue to make progress on the design certification renewal applications  
14 submitted by General Electric Hitachi and issued a milestone schedule letter that would project  
15 the completion of the safety review in March of 2018.

16                  Slide 9, please. In the ESBWR Design Center the New Reactors Business  
17 Line was able to accelerate the completion of the safety review for the North Anna Unit 3  
18 combined license application and improved on the public milestone schedule by about three  
19 months. A revised schedule letter was sent to Dominion in August that documented the  
20 improved schedule.

21                  For the Korea Hydro and Nuclear Power's APR-1400 the New Reactors  
22 Business Line continues to complete the design certification review in a manner that assures  
23 safety. As stated in a recent letter to KHNP, the staff has had to extend the review milestone to



1 issue safety evaluations with open items for all chapters to March 2017. This was necessary  
2 because the pace of receiving information from the applicant that is needed to resolve the  
3 outstanding review questions does not support the issuance of all the safety evaluations with  
4 open items by November 2016 as originally planned.

5 To mitigate this condition the staff has implemented a staggered completion  
6 schedule so that the next milestone, which is presenting all chapters to the ACRS, remains  
7 unaffected. Further, the staff and KHNP will hold a public meeting to discuss additional  
8 strategies that can be implemented to continue to support the 42-month overall review schedule.

9 Slide 10, please. So what have we been doing in the small modular reactor  
10 arena? NRO and its business line partners have been implementing its licensing lessons  
11 learned in an effort to be more efficient and predictable with its review schedules. In an effort to  
12 resolve potential policy issues before submitting a design certification application NuScale  
13 submitted a gap analysis summary report in July 2014 to facilitate discussion on specific  
14 questions about the applicability irrelevancy of certain regulations to the NuScale design.

15 In response the staff issued seven regulatory gap response letters providing the  
16 staff's technical and regulatory perspective on significant aspects of the NuScale design. These  
17 gap letters covered a range of topics including control room staffing, on-site and off-site power,  
18 containment design, reactor systems and auxiliary feedwater systems.

19 Consistent with its best practices guidance the staff recently completed a  
20 readiness assessment of the NuScale draft design certification application and communicated its  
21 findings to NuScale in a letter. In addition to the readiness assessment the staff has had multiple  
22 interactions with NuScale during the pre-application phase in which we communicated  
23 expectations and provided feedback. Examples of extensive interactions include the

1 discussions on human factors interface in the first of a kind positions related to control room  
2 staffing.

3 The staff is anticipating NuScale's response to the staff's letter and  
4 conformation that NuScale will be submitting its design certification application in December  
5 2016.

6 Also, Tennessee Valley Authority, or TVA, submitted an application for an early  
7 site permit for two or more small modular reactors at the Clinch River site. Based on feedback  
8 received during the staff's acceptance review, TVA sent a letter proposing to provide  
9 supplemental information to the staff by the end of this calendar year in support of its application.

10 The staff has accepted TVA's proposal and in the interim the application  
11 remains in a tendered but not docketed status until the supplemental information is received and  
12 the application is accepted by the staff for the review.

13 Slide 11, please. The business line continues to meet the challenge of  
14 managing resources effectively in response to the volatility of its workload. Balancing resources  
15 to complete multiple mandatory hearings in fiscal year 2017 while continuing to support the  
16 technical reviews of active design certification and early site permit applications will present  
17 challenges for our limited resources in certain skill set areas.

18 To illustrate this challenge the New Reactors Business Line's fiscal year 2017  
19 budget contains approximately 143 FTE allocated for licensing activities supporting both large  
20 light water and small modular reactor applications.

21 This graphic shows that the licensing hearing activities represent a 25 percent  
22 impact above the projected baseline activities in the first quarter of 2017, and that impact is  
23 projected to be about 20 percent above the second quarter baseline.

1           The business line has effectively established workload priorities and is using  
2           rotations, details and resource sharing with NRR and other NRC offices to obtain necessary  
3           resources to support review milestones, mandatory hearings and license amendment reviews.

4           Slide 12, please. The New Reactors Business Line continues to look ahead to  
5           develop a vision of the future licensing work for the office so that we can be ready to meet our  
6           licensing mission. Several months ago the Vogtle and VC Summer licensees informed NRO that  
7           we should expect an increase in the number of license amendment requests to support  
8           construction activities at those two sites. We have seen that increase occur as the rate of  
9           incoming license amendments has doubled in the last several months.

10           In addition, Duke Energy and Florida Power & Light have indicated in response  
11           to Regulatory Issue Summary 2016-08 that following receipt of their respective combined licenses  
12           they will begin to request license amendments similar to those already submitted and approved  
13           for the Vogtle and Summer licensees.

14           If the number of anticipated license amendment requests from licensees in the  
15           AP1000 Design Center are submitted as projected, the staff could expect to see 138 total  
16           requests, which is more than the 100 requests budgeted for in fiscal year 2017. To manage the  
17           potential increased licensing action workload NRO will continue to share resources with NRR in  
18           order to obtain the additional project managers necessary to help with the workload surge.

19           In addition, we expect to have a steady flow of work from the ongoing reviews of  
20           the KHNP APR-1400 design certification application, the NuScale design certification application,  
21           if accepted, the GEH ABWR renewal application, and the TVA Clinch River ESP application, if  
22           accepted.

23           NRO has also begun pre-application interactions with Westinghouse for its

1 planned AP1000 design certification renewal application with the Utah Associated Municipal  
2 Power Systems, or UAMPS, for a COL application for a proposed small modular reactor plant in  
3 the Western United States and with Southern Nuclear Company for a potential COL application  
4 for a large light water reactor in Stewart County, Georgia.

5 Finally, NRO has been very active in the Multinational Design Evaluation  
6 Program Working Groups by participating in technical exchanges on licensing topics and by  
7 supporting the issuance of common positions on such topics as Fukushima lessons learned.  
8 We will continue to support the Multinational Design Evaluation Program activities for the  
9 AP1000, ABWR and APR-1400 during fiscal year 2017.

10 This concludes my portion of the presentation. John Monninger will now  
11 discuss in more detail some technical review initiatives the staff has completed in the past year or  
12 have underway for the next year.

13 MR. MONNINGER: Thanks, Anna.

14 Slide 13, please. Good morning, Chairman and Commissioners. I'm pleased  
15 to be here to highlight a few of NRO's improvement initiatives. These initiatives are focused on  
16 increasing the effectiveness and the efficiency of our licensing reviews.

17 Slide 14, please. As a learning organization NRO continues to enhance its  
18 processes in support of executing our important safety mission. Given the dynamic environment  
19 and budget realities, these efforts are as important today as ever.

20 The NRC's principles of good regulation establishes expectations for us for  
21 efficiency including the need to upgrade our regulatory processes and to carry out our activities  
22 consistent with the degree of risk reduction they achieve. This has been further emphasized by  
23 the Commission in the decisions on Project Aim relating to enhanced efficiency, applying a

1 balanced perspective, considering the significance of activities and using risk insights more  
2 broadly.

3 Consistent with these expectations NRO conducts lessons learned reviews to  
4 adapt to the changing environment and to improve our processes. The Commission recognized  
5 this practice during the business line briefing in September 2014 and the challenged us to identify  
6 and capture greater efficiencies.

7 This past March we completed our most recent lessons learned review and  
8 provided it to the Commission. This review highlighted potential improvements in the manner in  
9 which we conduct our licensing review with a focus on design certification applications. Some of  
10 these improvements have been implemented.

11 For example, for the review of the KHNP APR-1400 design we implemented  
12 improvements to facilitate raising issues early for resolution and documenting the staff's review as  
13 we progress so that we identify only those requests for information that are needed to reach a  
14 safety finding. These improvements contributed to meeting the Phase 1 milestones and  
15 significant progress in meeting the Phase 2 milestone.

16 Recently we undertook further efforts to standardize our licensing tools such as  
17 audits, confirmatory analysis, and requests for additional information. We are focusing on how  
18 these tools contribute to our licensing decisions. We are also benefitting from risk-informed  
19 approaches which leverage their tremendous insights from probabilistic risk-assessments and the  
20 NRC's established approach to risk-informed decision making.

21 Slide 15, please. The NRC uses various tools in the review of license  
22 applications. Examples include audits, confirmatory analysis and requests for additional  
23 information. When used in an efficient manner that directly supports reaching a regulatory

1 decision, these tools are valuable. However, we need to ensure that that value is being added.

2 This past year we implemented a quality initiative to improve our practices in  
3 using these tools. Our goal was to standardize how we apply these tools to ensure that we are  
4 being as effective as possible. This resulted in the issuance of new and revised jobs earlier this  
5 month. The job aids clarify the purpose of the tools and provide updated guidance.

6 The job aids identify best practices to follow for the staff such as when and how to  
7 conduct confirmatory analysis and how to focus audits to ensure that they achieve the desired  
8 outcomes. They also identify what to avoid such as performing confirmatory analysis for  
9 parameters that the NRC has previously approved for similar designs.

10 Slide 16, please. In 2014 the NRC issued a supplement to NUREG-0800,  
11 commonly referred as the Standard Review Plan. This supplement discusses the NRC's  
12 risk-informed integrated review framework for small modular reactor designs. The framework  
13 enhances the safety focus of NRC's review of license amendment through the use of risk insights  
14 and improved cross-disciplinary staff reviews.

15 The framework incorporates a risk-informed review approach by considering  
16 both the safety classification of system structures and components and the risk significance of  
17 them. The output of this is a graded approach to determine the appropriate level of review. The  
18 framework also incorporate an integrative review approach which allows consideration of meeting  
19 certain requirements sufficient to provide reasonable assurance that other aspects are met.

20 The staff is using the risk-informed integrated review framework to implement  
21 and develop the NuScale safety-focused review approach. The NuScale design incorporates  
22 significant simplification compared to typical nuclear power plants. It also is unique in the way  
23 that critical safety functions such as core cooling and decay heat removal are accomplished. In

1 addition, the design is modular with up to 12 units making up one facility.

2 One key element of the NuScale safety-focused review approach is the  
3 development of what we call the SSC review tool. This tool will aid in determining what review  
4 areas warrant the most regulatory attention and the scope and level of detail for the staff to  
5 undertake that review. The principal architects of that tool: Mark Caruso, Lynn Mrowca, and  
6 Tony Nakanishi are here today, along with representatives from the working group.

7 The tool identifies 11 key review considerations such as safety significance,  
8 defense-in-depth, risk insights, and safety margin. Using this approach the staff will focus the  
9 review on new or novel SSCs with high safety significance and high impact on risk.

10 In a similar manner for those SSCs that are commonplace in nuclear power  
11 plants and are not risk-significant or safety-significant the staff would decrease the review effort.  
12 The tool provides guidance to the staff in tailoring the review to the design, however, it does not  
13 relieve the applicant of the responsibility to develop and submit an essentially complete design as  
14 part of their application.

15 Our success in applying the NuScale safety-focused review approach will be a  
16 large contributor to effectively efficiently completing our review on schedule.

17 And this concludes my remarks. I'll turn the presentation over to Laura for an  
18 update on construction oversight.

19 MS. DUDES: Thank you, John.

20 Good morning, Commissioners, Chairman.

21 On behalf of the staff, before I start, I just wanted to express our appreciation for  
22 your visits to the construction sites. We really enjoy that time and we appreciate your support of  
23 the program.

1           So today I plan to cover our recent construction organizational changes,  
2 inspection highlights from 2016 and how we are incorporating international experience and  
3 lessons learned into our Construction Oversight Program.

4           On October 2nd of this year our reorganization combined two divisions with  
5 seven branches into a single division with four branches with all staff in that organization primarily  
6 focused on the inspection of AP1000. We are proud of this effort and we view it as Construction  
7 Version 2.0 with people, priorities, and processes aligned for the effective oversight of the nation's  
8 first AP1000 plants.

9           I do want to take a moment to recognize two of our senior regional inspectors  
10 who are here with us today in the well. Steve Smith and Alain Artayet together have over 50  
11 years of construction and welding experience. They have been instrumental in many of the  
12 things that I'm going to talk about today, but I can't over emphasize our appreciation to their  
13 on-the-job training and mentoring of our staff and bringing their enormous set of experience to our  
14 efforts.

15           So welcome and thank you, Steve, Alain.

16           Slide 18, please. Okay. The photo on the left is the placement of the Summer  
17 Unit 2 in-containment refueling water storage module. The placement of this module marks the  
18 completion of the sixth largest modules for both leading units at each site. These six module  
19 make up the reactor cavity vessel, the steam generator and pressurizer vessel, the  
20 in-containment refueling water storage tank cavity and a significant portion of the auxiliary  
21 building, which includes the spent fuel pool.

22           The reactor vessel for VC Summer Unit 2 was set in September of this year,  
23 and Vogtle Unit 3 plans to do so shortly.



1                   The placement of the auxiliary building module at Vogtle Unit 4, which is seen in  
2                   the photo on the right, is the first large placement in Vogtle's second AP1000 unit. Of note is the  
3                   increased quality, assembly speed, and installation speed of subsequent structural modules for  
4                   the second unit at each site due to incorporation of lessons learned from the lead units.  
5                   Similarly, the NRC is gaining efficiencies in our inspection approaches from lessons learned early  
6                   in the program.

7                   Currently our Construction Inspection Program for both sites is approximately  
8                   23 percent complete paralleling the associated targeted ITAAC that have been ready for  
9                   inspection at the sites. Inspections conducted this past year include civil and structural modules,  
10                  large component receipt inspections, and digital instrumentation and control inspections, to name  
11                  a few.

12                  As with any complex project, the NRC's staff continues to adapt to the dynamic  
13                  construction environment and is on track with planned ITAAC and programmatic inspections.

14                  Slide 19, please. We continue to support inspector exchange rotations to the  
15                  Sanmen AP1000 construction site in China to leverage their construction experience and improve  
16                  and validate our own inspection procedures.

17                  The photo on the right is Coleman Abbott and Tim Chandler next to the  
18                  chemical volume and control system makeup pump in Sanmen.

19                  Through these rotations our inspection staff gain firsthand experience with the  
20                  as-built configuration of the AP1000, observe critical tests and interact with our counterparts in  
21                  China. During this rotation our inspectors validated a number of pre-operational test procedures  
22                  observing tests associated with a passive core cooling system and the protection and safety  
23                  monitoring systems.

1           Also pictured is Terrence Brimfield, our most recent addition to the Vogtle  
2           resident staff, performing a recent inspection of the as-built pressure boundary welds on the  
3           normal residual heat removal mechanical module. In addition to Terrence's on-site inspection  
4           Alain Artayet accompanied the vendor inspection team to observe the in-process fabrication and  
5           he was able to see and inspect portions of that mechanical module that would otherwise be  
6           inaccessible once delivered to the site.

7           Working with our regulatory counterparts in China and our partners in the  
8           vendor inspector organization are two examples of how we improve our inspection effectiveness  
9           while continuing to conduct high-quality, value-added inspections at the right time and the right  
10          place.

11          Next slide, please. This slide depicts a projection of construction inspection  
12          activities, which is the blue line, and the licensee's projection of ITAAC closure notification  
13          submittals, the red line, which is overlaid on the projected staff skill sets over the course of the  
14          project. Based on our latest assessment we fully expect the vast majority of construction  
15          inspection activities will be completed ahead of the remaining ITAAC closure notification  
16          submittals as is shown here.

17          Construction projects are inherently dynamic, and we have developed several  
18          strategies to effectively manage the future construction workload, including resources that are  
19          trained and highly -- easily deployable. In addition to our resident inspection team we have a  
20          highly skilled regional team. The regional team is familiar with the licensee organizations, the  
21          licensing requirements and the resident staff and can provide immediate support with little to no  
22          burden on licensee or residents.

23          Through rotational assignments from headquarters and other regional offices

1 we also developed resources outside the region to provide on-site technical expertise, if needed.  
2 Implementing lessons learned from the leading units in real time to adjust our program has  
3 already resulted in a reduction of man hours on the remaining units.

4 This year, in addition to our reorganization, we completed our efforts on  
5 implementing a more efficient inspection planning and scheduling process and enhanced our  
6 ITAAC inspection strategies to include team inspections which can cover a larger number of  
7 targeted ITAAC. And, when appropriate, we are able to credit multiple units through a single  
8 inspection, which we commonly refer to as a one-by-four inspection.

9 The leadership team is committed to the success of our oversight program and  
10 is continuously engaged in assessing the impact of the dynamic construction schedules on our  
11 resource needs and making real time enhancements to effectively manage our workload.

12 Slide 21, please. Last year we had raised operator licensing as a challenge  
13 that the Office of New Reactors in Region II was addressing. We are pleased to report this year  
14 that the initial operator licensing activities for the AP1000 operators was completed. Both sites  
15 completed their written and operating exams. And while the region was administering this; this is  
16 an example of a staffing strategy I discussed where during the peak exam activity staff from other  
17 regions and headquarters supplemented the Region II staff to manage the number of applicants  
18 in an efficient and effective manner.

19 Finally, as part of the transition from construction to operations staff agility  
20 remains critical. As we move closer to pre-operational and start-up testing, the makeup and skill  
21 set of staff will change. Operational training for our regional and resident staff is underway, as  
22 well as developing inspectors outside of the construction organization to become familiar with the  
23 AP1000 technology and design.

1           Having the right individuals with the right skills for the Watts Bar 2 start-up was  
2           essential. The lessons learned from the Watts Bar 2 transition to operations are being captured  
3           and incorporated into our on-site transition plan. In early 2017 the staff will conduct an internal  
4           tabletop exercise on the roles and responsibilities of the on-site staff through the transition to  
5           operations and then follow that exercise up with a public meeting to try and do something similar  
6           with our licensees later in that year.

7           So that concludes my prepared remarks. I'll turn it over to Mike.

8           MR. CHEOK: Thank you, Laura.

9           Good morning, Chairman, Commissioners. Today I plan to discuss three  
10          topics. First I'll provide an update on how the staff is implementing efficient solutions for the  
11          upcoming surge of inspections, tests, analysis, and acceptance criteria, commonly known as  
12          ITAAC. Second, I will discuss the safety benefits being added by the agencies in their inspection  
13          program. And finally, I will piggyback on Laura's points on the transition to operations. I will  
14          describe what we have done at headquarters to have the agency ready for oversight as the plants  
15          under construction become operating plants.

16          Slide 23, please. In our last update to the Commission I mentioned that we  
17          had expected to receive an increasing number of ITAAC closure notifications, or ICNs. To date  
18          we have received 141 ICNs at all four units at the two sites. We have completed the verification  
19          of 111 of these ICNs with the remaining 30 currently under review. We plan to complete ICN  
20          notifications within 60 days of receipt.

21          Construction at Vogtle and Summer is advancing beyond the structural design  
22          aspects and into system and component installation. The picture on this slide is the installation  
23          of the reactor vessel which was set in VC Summer over a month ago. As the licensee installs

1 more components the corresponding number of ICNs will increase.

2 Because of the nature of construction activities the staff has always expected  
3 the trend of ICN submittals to increase as construction continues. As such, we have planned  
4 and we are ready for the ICN submittal surge. We have adequate resources and processes in  
5 place to support timely staff decisions on whether or not to authorize fuel load.

6 The staff notes that ICNs received to date are of high quality. We have hosted  
7 a series of public meetings to ensure a shared understanding of our expectations for ICN  
8 submittals. I'll touch on some of our other initiatives in the next few slides.

9 Next slide, please. Here is a graphical representation of the projected ITAAC  
10 surge. There will be a total of almost 3,500 ICNs from the four plants that the staff will need to  
11 verify by the year 2020. To effectively and efficiently address the address 3,400 ICNs that we  
12 expect over the next four years, the staff has improved the internal processes. A first  
13 step was the issuance of Reg Guide 1.215 to facilitate quality and consistent ICN submittals by  
14 the licensees. As evidenced by the ICNs received to date the guidance is working well. The  
15 NRC staff has also put together a web-based training on the ICN verification process. This  
16 course is useful to train new reviewers and to maintain consistency in staff ITAAC ICN verification.

17 For complex ITAAC the NRC staff is remaining agile and is effectively  
18 leveraging resources and expertise from our technical divisions at headquarters as well as from  
19 the regional office.

20 Slide 25, please. This past year the staff completed a pilot program on  
21 uncompleted ITAAC notifications to evaluate the pros and cons of reviewing early UIN submittals.  
22 The pilot was successful and the NRC staff found that the UIN review process would provide  
23 earlier communication to public stakeholders and would allow earlier identification of issues

1 related to ITAAC completion. As a result of our pilot program the staff has enhanced our  
2 infrastructure to process the document and to make available the results of UIN reviews. We  
3 began implementing this program last month.

4 Finally, we have achieved greater efficiencies by using periodic multiple ICN  
5 *Federal Register* notices. This greatly reduces the administrative tasks without sacrificing  
6 transparency. ITAAC closure and verification will require continued and effective interface  
7 between the staff and the licensees. Based on the proactive work we have done so far I'm  
8 confident that we are up to the task.

9 Slide 26, please. The Vendor Inspection Program continues to meet our  
10 safety and program objectives. We continue to verify the effective implementation of Vendor  
11 Quality Assurance Programs and to verify that design requirements contained in the licensing  
12 documents are correctly implemented into engineering, procurement, fabrication, and testing  
13 activities. We are verifying that licensees are providing effective oversight of the supply chain  
14 and that the quality of materials, equipment and services supplied by vendors is consistent with  
15 regulation.

16 Staff completed 33 inspections this year targeting vendors supplying the most  
17 safety-significant AP1000 components. Many of our inspections also focus on vendor activities  
18 that are performed as part of ITAAC closure. Our inspection teams consisted of qualified vendor  
19 inspectors supplemented by subject matter experts and Region II staff, as mentioned by Laura  
20 earlier.

21 The photo on this slide is from our inspection at General Atomics. At this  
22 vendor site we reviewed the fabrication and testing of radiation monitors which were used in the  
23 operating reactor fleet as well as in the AP1000 design.

Slide 27, please. We are maintaining a technical focus during our inspections. For example, over the past year the staff conducted multiple inspections focusing on the review of the engineering design and verification process, the validation of digital instrumentation and control, and the validation of the control room simulator. Our inspectors are identifying emerging technical issues which are requiring vendor and licensee corrective actions and their focus on these issues.

An example is oversight of squib valves. The AP1000 probabilistic risk assessment shows that these are the most important components in the plant. Three different kind of designs were developed for safety-related functions including the automatic depressurization of the reactor coolant system, the injection of water from the in-containment refueling water storage tank, and the recirculation of water from the sump.

If squib valves were to be unavailable for the same reason, referred to as common cause failure, the calculated core damage frequency would increase significantly. Because of the safety significance of these valves, NRC was focused additional attention them to ensure that they will function properly if called upon. This will ensure that the core damage frequency remains very low.

Our inspectors identified issues requiring design changes and additional testing of the AP1000 squib valves. This past year we completed our final inspection related to these valves, closing out six open findings and completing over seven years of oversight that has led to safety improvements.

We have also been tracking challenges with the design and manufacture of reactor coolant pumps for AP1000. For example, issues were identified during loss of cooling water tests, during operational testing, as well as following endurance testing. The vendor has

1 since corrected these issues.

2 This past year we have continued to maintain our vigilance on AP1000 module  
3 fabrication. We conducted inspections at Specialty Maintenance & Construction, Incorporated,  
4 SMCI, where we inspected imbedded plates for the AP1000 modules.

5 We also inspected AECON Industrial, which is fabricating mechanical modules  
6 for the AP1000. At AECON our inspection team identified several examples of welding issues,  
7 and we are actively following up on these issues.

8 Slide 28, please. Our inspectors continue to identify issues at vendor's  
9 implementation of commercial grade dedication. Dedication is used by licensees in an  
10 increasing number of applications that support operations and maintenance. The NRC staff has  
11 issued two guidance documents on our expectations for commercial grade dedication. We have  
12 worked with our stakeholders, including the Electric Power Research Institute, for needed and  
13 important guidance that will clarify the dedication process.

14 Over the next year we will increase our inspections at vendors that manufacture  
15 mechanical and electrical components. Again, we will continue to be risk-informed in our  
16 selection of facilities as well as in our inspection scope. Of note is a planned inspection to follow  
17 up on reactor coolant pump issues as these pumps are being fabricated for Vogtle and Summer.  
18 We will also continue our inspections of the testing and validation of digital I&C components.

19 To enhance communication, we will continue our outreach activities to external  
20 stakeholders. In July we conducted the fifth workshop on vendor oversight. This public  
21 workshop brought together approximately 400 attendees including licensees, applicants,  
22 suppliers of basic components, industry organizations, and other stakeholders. Since our direct  
23 inspection activities will only involve 30 or so vendors per year, this workshop provides an



1 important venue for communicating with all our stakeholders.

2 We will also continue to participate in international inspections through bilateral  
3 agreements and the Multinational Design Evaluation Program. In November we plan to  
4 participate in a joint inspection of AREVA's Creusot Forge facility in France. This activity will be  
5 led by ASN, the French regulator. Our inspection team will also follow up on issues identified at  
6 the Mangiarotti facility in Italy. Mangiarotti is a manufacturer of AP1000 components such as  
7 core makeup tanks, accumulator tanks and pressurizers. We will be looking at the vendor's  
8 corrective actions related to supply oversight and we hope to be able to close out on the issues  
9 later this year.

10 Slide 29, please. For my last slide I would like to bring the focus back to the  
11 completion of construction and where the agency stands on being ready to transition to  
12 operations.

13 In 2014 the staff published a report to identify and to assess all regulatory  
14 functions necessary to support the transition of new reactors from construction to operations.  
15 The report documented 21 issues. We're actively tracking the status of each issue and several  
16 of the issues have already been addressed. We are also developing an implementation plan to  
17 integrate all of the issues and to describe the various points in time for transition of the licensing  
18 and oversight functions from NRO to NRR. The implementation plan is based on the Watts Bar 2  
19 Transition Plan. We will soon be providing a draft of this plan to external stakeholders for their  
20 input.

21 After addressing comments we will issue the plan in the next few months. We  
22 are also closely following efforts such as Project Aim and the NRO/NRR merger. The transition  
23 issues will be accomplished consistent with the re-baselining efforts as well as with the timing of

1 the merger.

2 One focus area is to develop the reactor oversight process for the AP1000  
3 reactors. The Commission has directed that the overall structure of the existing ROP be  
4 preserved in its application to new reactors. The staff has been working on this effort and is  
5 engaging all our stakeholders as we develop the performance indicators, the significance  
6 determination process and the inspection procedures, all of which will take into account the  
7 passive safety systems in the AP1000s. We will submit a detailed plan to the Commission in the  
8 fourth quarter of 2017.

9 Vonna Ordaz will now discuss activities in the area of advanced reactor  
10 regulation.

11 MS. ORDAZ: Thank you, Mike.

12 Next slide, please. In June of this year we briefed you on our efforts to develop  
13 a regulatory framework to assure NRC readiness for advanced reactor reviews. By advanced  
14 reactors we mean non-light water reactor technologies. Today I will update you on the status of  
15 those preparations.

16 We continue to see a significant increase in industry interest in the development  
17 and licensing of advanced reactors. Over 50 companies are developing advanced reactor  
18 designs. We have seen vision and strategy documents put forward by industry groups and by  
19 DoE. There have been summits hosted by the administration and several conferences and  
20 seminars addressing advanced reactors.

21 We've also seen significant congressional interest in advanced reactors and in  
22 what the NRC is doing to be ready to license these technologies. Legislation has been put  
23 forward in both the House of Representatives and the Senate. There are currently six separate

1 legislative proposals being considered. While none of these bills have passed on both houses,  
2 the interest in NRC's ability to efficiently review non-light water reactors remains high.

3 The staff is receptive to this input from both our internal and external  
4 stakeholders and continues to work aggressively towards being ready to conduct effective,  
5 efficient and predictable licensing reviews.

6 Next slide, please. The staff has identified three primary challenges to  
7 reviewing advanced non-light water reactor designs that we're working to address. Two  
8 challenges are the current level of maturity in designs and associated lack of technical detail, as  
9 well as uncertainty as to when the designs will be submitted to the NRC for review. The vendors  
10 will of course be able to provide more technical specifics and a more firm timeline for submittal as  
11 the designs mature, however, we need to make progress on enhancing our infrastructure today.

12 Fortunately the majority of vendors' designs can be categorized into three main  
13 design types: high-temperature gas reactors, sodium-cooled fast reactors, and molten salt  
14 reactors. And these design types have issues in common. As a result, we're working on issues  
15 that are common to all design types and also on issues that are specific to each design type. In  
16 this way the NRC is focusing on issues that will have the most impact on the largest population of  
17 reactor designs.

18 Our timeline is linked to timelines suggested by the Department of Energy, but  
19 we will remain aware of specific vendor timelines and adjust our planning as necessary. One  
20 hallmark of our previous advanced reactor work and efforts on SMRs is the staff's agility in  
21 responding to changes in industry plans. Through effective communication we will be aware of  
22 these changes and will be agile in accommodating them. We will align our resources and focus  
23 as appropriate to be responsive to vendors' timelines.

1           Finally, the current regulatory infrastructure developed to address light water  
2   reactors may not be the most efficient way of licensing these new technologies. The industry has  
3   expressed its desire for a regulatory structure that provides more certainty and considers the  
4   needs of applicants. The challenge is that there's currently a lack of alignment among the  
5   industry on the structure that will provide the most flexibility while staying within the bounds of the  
6   existing regulations. The staff is working with the industry and the public to create a shared  
7   understanding of vendors' interests and the process that will accommodate the most potential  
8   applicants having a range of financial, technical, and regulatory maturity.

9           Slide 33, please. Earlier this summer the staff published and solicited  
10  comments on the NRC Vision and Strategy: Safely Achieving Effective and Efficient Non-Light  
11  Water Reactor Mission Readiness document. We proposed a three-pronged approach  
12  addressing technical readiness, regulatory readiness, and optimizing communications.

13           The strategies were structured to address near-term activities, meaning over  
14  the next 5 years; mid-term activities, meaning over the next 5 to 10 years; and long-term actions  
15  beyond 10 years. Implementation action plans are being developed to support these strategies,  
16  and I'll come back to these plans in just a moment.

17           We have received comments from several organizations and they are  
18  supportive of our vision and strategy. We're considering the comments and will update the  
19  document as appropriate by the end of the calendar year.

20           Next slide, please. We have made significant progress on review readiness  
21  this year. We've recently completed draft implementation action plans for the near-term  
22  strategies. This is has been an appreciable effort involving a number of offices across the  
23  agency including NMSS, NSIR, OCHCO, and Research. We will complete the mid and

1 long-term plans in February 2017. We will then combine all the plans, making them publicly  
2 available and present them to the ACRS early next year. Our emphasis is to finalize the plans  
3 and associated resource needs to inform the budget formulation process for fiscal year 2019.

4 We have been collaborating with DoE in developing advanced reactor design  
5 criteria which are similar in concept to the General Design Criteria in Appendix A to 10 CFR Part  
6 50. DoE first prepared a report proposing design criteria and a multi-office staff team reviewed  
7 the DoE report and developed the staff's proposed advanced reactor design criteria.

8 The staff's document was published on the NRC web site for informal public comment in  
9 April of this year. We're currently reviewing the comments and preparing a Draft Regulatory  
10 Guide that will be published for formal comment this coming spring.

11 We've also held the first in what were expected to be a series of public meetings  
12 to develop a staged review process. We have existing regulatory processes such as the  
13 standard design approval process in Part 52, but there are a number of questions on how to  
14 implement these processes in a way to address the industry's needs.

15 We have appreciated the efforts by the Nuclear Energy Institute and the  
16 companies and organizations that participate in the Advanced Reactor Working Group to provide  
17 clear explanations of what the vendor community and industry would like in terms of licensing  
18 processes appropriate for advanced reactors. The staff is also developing a conceptual design  
19 assessment process which could provide early feedback to vendors as to the suitability of their  
20 preliminary design.

21 Slide 35, please. Owing to the very broad range of stakeholders and  
22 interested parties, both nationally and internationally, we believe that for our advanced reactor  
23 activities communications and collaboration are vital to our success. It's imperative that we

1 convey information clearly to stakeholders such as members of Congress, the public,  
2 non-governmental organizations, industry groups and our international partners involved in  
3 advanced reactor activities.

4 In our efforts to ensure that members of Congress are informed and aware of  
5 activities in this area the NRC has provided several briefings to congressional staff over the last  
6 year. We continue to have excellent collaboration with DoE and have previously mentioned  
7 some examples.

8 We have also co-sponsored two advanced non-light water reactor workshops  
9 with DoE. Each of these were attended by over 300 people representing the vendors, industry  
10 organizations and other government organizations and academia.

11 We have a third plan for April of next year. We are cooperating in DoE's  
12 Gateway for Accelerated Innovation in Nuclear, or GAIN initiative, by providing DoE with accurate  
13 current information on the NRC's regulations and licensing processes. DoE then works through  
14 GAIN with perspective applicants for advanced nuclear technology to clarify and navigate the  
15 regulatory process for licensing new reactor technology.

16 Finally, NRC staff is interfacing with our counterpart regulators in other  
17 countries in which advanced reactors are being operated or under construction. The staff  
18 co-chairs the NEA group on the safety of advanced reactors which is jointly sponsored by NEA's  
19 Committee on Safety of Nuclear Installations, known as CSNI, and the NEA's Committee on  
20 Nuclear Regulatory Activities, CNRA. Through this group we're gaining insights from both the  
21 participating regulatory bodies and their research organizations.

22 We also interact with the Generation IV International Forum and with the IAEA's  
23 INPRO, which is the International Project on Innovative Nuclear Reactor and Fuel Cycles.

1       These efforts are modest in terms of resource commitments, yet they provide invaluable  
2       information and insights from the international community.

3               In summary, we're working very hard to be ready to conduct effective, efficient  
4       and predictable reviews of advanced reactor technologies.

5               I'll now turn the presentation to Vic to close.

6               MR. McCREE: Thanks, Vonna.

7               Slide 36, please. So to summarize, I'd just like to note that I'm very proud of  
8       the work of the people in the New Reactor Program. As you've heard, they have many  
9       accomplishments over the past year and I believe the program is positioned for continued  
10      success. The efforts of this business line has had a positive impact on the safe construction at  
11      Vogtle and VC Summer through effective oversight and timely license amendments.

12              As you've heard, through the implementation of innovative approaches to  
13      licensing, by demonstrating agility and leveraging support from other offices and business line to  
14      mitigate workload projections that are above budgeted resources, by reorganizing and merging  
15      work units to better align and focus work and by implementing a more efficient inspection planning  
16      and scheduling process we're completing the current licensing and oversight workload safely and  
17      efficiently, and we're enhancing the regulatory infrastructure, as Vonna just mentioned, to be  
18      ready to review new technologies.

19              This concludes our presentation and we look forward to your questions. Thank  
20      you.

21              CHAIRMAN BURNS: Okay. Thank you. Thank you for the presentations  
22      this morning.

23              I'll start off with questions this morning. I'd like to try to cover a couple areas.

1 Let me first talk about the inspection and oversight of ongoing construction at Summer and  
2 Vogtle.

3 One of the comments, either Laura or one of the others made is -- and I think  
4 observations I've heard from the utilities or potential operators of plants is that if we look at the  
5 original schedules for these plants, they were like more like this and they started to -- I realize  
6 that's hard to capture on the transcript --

7 (Laughter.)

8 CHAIRMAN BURNS: -- but they were more what I would call apace and  
9 separated. And now because of efficiencies, because of improved quality in vendor supply, this  
10 supply train, learnings that the licensee has made over it, that the construction or the unit, the  
11 following units are catching up to the initial units.

12 So what impact is that having on our construction activities and how are we  
13 planning for that? Because again what I see, Laura, in one of your slides is a steep curve of  
14 demand for inspection resources, because we're going to have to deal with ITAAC and we're  
15 going to have to deal with these later places of construction. And I know it's the same kind of  
16 issue 35, 40 years ago with the -- when the first fleet was being constructed. So how are we  
17 dealing with that or how is that affecting our resource projections and resource management?

18 MS. DUDES: Okay. Thank you. Yes, so that's a great question. And so as  
19 we're -- I think I mentioned to some extent that we are able to learn lessons in terms of what  
20 samples we do for the second unit, and it's a lot easier for us to execute those inspection  
21 procedures.

22 Another example; and I know we actually spoke about this when Commissioner  
23 Baran was at VC Summer last week, is something -- it's the one-by-four that I mentioned whereas



1 -- so one of those ITAAC and that ITAAC closure could be -- is in the Environmental Qualification  
2 Program. And so by going and doing one inspection and then applying it to all four units, I think  
3 we had talked that we were able to close out about 96 samples with one inspection.

4 And so it's the strategy as those schedules do compress somewhat. And we  
5 see that. Again the -- we're ready for whatever schedules they have. We're planning. We  
6 have the dynamic Primavera construction schedules for both units, so as we see shifts in the  
7 construction schedules we can reallocate our resources.

8 But right now as we -- we do a quarterly assessment of where we are with our  
9 targeted ITAAC for both Unit 3 and 4. What we're seeing is -- and we had a targeted approach to  
10 the number of hours and what we would look at it -- is that on the first unit we may be spending a  
11 little bit more, but we're getting the efficiencies. And sometimes we'll do a one-by-four. In some  
12 cases we do a one-by-two, which is maybe you can -- you're inspecting and crediting certain  
13 activities at the first site for the second site.

14 And then the last, or one of the other strategies is also to make sure that we're  
15 choosing samples and expanding and/or reducing the number of samples in a particular area  
16 that's reflective of the licensee's performance. And I know chatting with Alain over dinner last  
17 night talking about the number of welds he's looked at. At every stage of the containment vessel  
18 at some point you may want to instead of what you originally planned, which you see is on the line,  
19 you say, okay, well, maybe I've seen 35 of these welds and I think that the programs, procedures  
20 and processes are good, so I'm only going to go back and I'm going to do periodic checks and not  
21 necessarily target specific activity. So that's another strategy that helps us address the second  
22 unit.

23 CHAIRMAN BURNS: Okay. In terms of the balance and support of on-site

1 resources versus additional resources, recognizing you've got an on-site -- the on-site staff is not  
2 going to be able to cover every discipline at all, but are we attentive to the right balance in terms of  
3 supporting the on-site source residents in terms of what the demands on them are, which are  
4 quite frankly beyond just conduct the inspection. They've got to deal with hosting us when we go  
5 to the sites or other types of things, or MDEP visitations and other activities.

6 So give me some comfort that we're -- that there are some -- they're being  
7 well-supported or that resources are there to again assure the support them, but also to carry out  
8 the program.

9 MS. DUDES: Yes, absolutely. The team that we have in the region is  
10 routinely backfilling and helping the residents on various occasions. We also have staff in the  
11 region who help support the development and all the planning and scheduling for your visits.

12 But, yes, I think we're very confident that we have the right skill set and the right  
13 people, both in the region -- we have five residents out there, and that does account for the  
14 program that we're executing.

15 The idea and one of the challenges that we'll have going forward is making sure  
16 that people are staying within the program that we've designed. I mean, there's lots of things that  
17 you can do on the site, but we have a Commission-Approved Targeted ITAAC Operational  
18 Program and we do -- as things get busier, we want to just make sure people are focused on that.

19 But we have -- and we talk to the residents. I think they have the support that  
20 they need. And they know when they ask for it and it's something that's necessary and timely for  
21 -- to execute and complete the program, they will get the resources that they need at any time.

22 CHAIRMAN BURNS: Okay. Let me move to another thing. I was curious.  
23 I think, Mike, you mentioned Le Creusot. I was -- what is the relationship to new construction,

1 because I -- it may just be that I missed the information. My understanding was Le Creusot's  
2 problems were focused on existing facilities. Are they a supplier to --

3 MR. CHEOK: They are -- Le Creusot is a supplier to existing facilities, but at  
4 one point, they also had components to the other new reactor designs, which --

5 CHAIRMAN BURNS: Like the APR?

6 MR. CHEOK: That's correct.

7 CHAIRMAN BURNS: Okay. All right. So, it's not -- this is not an issue for  
8 AP1000 or --

9 MR. CHEOK: This is not an issue for AP1000 --

10 CHAIRMAN BURNS: Okay.

11 MR. CHEOK: -- Le Creusot Forge.

12 CHAIRMAN BURNS: Good. Okay. Good, I'm glad to understand that.  
13 When I -- I'm going to talk a little bit about advanced reactors. So of these multiple potential  
14 interested persons in advance reactor designs, how many of them have contacted us?

15 MS. ORDAZ: Well, many have contacted us, but we do know that about two or  
16 three vendors may submit design certification applications in the next two to five years. That's  
17 about the best estimate that we currently have.

18 CHAIRMAN BURNS: You talk, Vonna, a bit on the reactions to the strategy  
19 document, which you said, I think, followed in part DOE's lead in terms of its time frame, but what  
20 are you hearing on the time frame? Because I'll tell you quite frankly that the conference I think  
21 Jennifer and I were at Aspen Institute, I mean, you get sort of on the margins that what we have is  
22 a gentle stroll through the woods, not, in effect, a pace at which you may expect to see  
23 applications come in. So, I'm interested in terms of the commentary and, Anna, you may have a

1 better idea on this, so either one of you can answer, what are you hearing in terms of the reactions  
2 to this strategy document with respect to the timing of carrying out those initiatives?

3 MS. ORDAZ: We're still assessing the comments on the strategy document, but  
4 from what I've understood, it's been favorable. And we're still looking -- basically, the  
5 technologies have to mature to a certain extent. I think there perhaps are some unknowns from  
6 the vendors and in the industry side to have a full understanding of how that time frame would  
7 manage with them. Either way, we're going to be prepared. We're prepared now to do reviews  
8 from a licensing standpoint and we'll be prepared even further in the future after we execute the  
9 implementation action plans in the vision and strategy document.

10 CHAIRMAN BURNS: Okay. And when you talked about in your remarks here  
11 this morning that, again, I'll quote, the current regulatory infrastructure developed to address light  
12 water reactors may not be the most efficient way of licensing these new technologies. Give me  
13 the two or three things that would support that statement. Is it licensing framework? Is it  
14 approach? This is, again, one could say 25 plus years later Lessons Learned from Part 52,  
15 arguably one can argue certain rigidity. Is this related to just in terms of what you're looking at  
16 from a technical aspect? Tell me a little bit more about what's behind that statement.

17 MS. ORDAZ: Sure. Once we have a better idea of what the technology is  
18 that's coming forward, we can have a better way of completing our regulatory guidance. So,  
19 some of it is the regulatory guidance that we're looking to have in place to have the most efficient  
20 reviews. As well as maturity of the codes and standards. And testing and validation of system  
21 structures and components, we need to -- the more information that can be provided that we'll  
22 know which technology, whether one's coming forward first or others, then we'll be able to put all  
23 of the right guidance and processes in place to help facilitate the most effective review.

1 CHAIRMAN BURNS: Okay.

2 MS. BRADFORD: Can I add one thing?

3 MR. CHEOK: Certainly.

4 CHAIRMAN BURNS: Sure.

5 MS. BRADFORD: Your question about the schedule, I think what you're  
6 probably hearing is that, like Vonna said, we're trying to align our timing with what DOE is  
7 expecting. So, if they wanted to have a new advanced reactor up and running in 2030, we  
8 started with 2030 and backed up how much time we would have to do various steps. Basically,  
9 we filled up that time as opposed to starting at the beginning and going as fast as we can to reach  
10 some time quicker than that, because we thought that DOE would probably have the best  
11 estimate. So, I think when people say, you're taking a long time, it's because that's the amount of  
12 time that we believe we have, as opposed to, this is the fastest that we can do it.

13 CHAIRMAN BURNS: Okay. Mike, do you want to add something?

14 MR. MAYFIELD: Yes, Chairman. We're hearing the same thing about time  
15 lines. And it's because some of the vendors have gotten ahead of where DOE thought they  
16 were. So, we are working with them. We're not going to be as far along as we'd like to be when  
17 they come in for pre-application based on what they've told us in the last four or five months. We  
18 are accelerating things to the degree we can.

19 We are now, and will continue to be for a while, resource limited, so there's a  
20 limit to how far we can accelerate things. So, there's a balance there. You'd also asked about  
21 some specific examples where we're hung up or where the existing processes won't be as  
22 efficient or effective as we might like. The existing regulations are LWBR-centric, water is the  
23 focus. So, when you think about high temperature gas, regulations that focus on water

1 considerations simply aren't applicable.

2 CHAIRMAN BURNS: Yes.

3 MR. MAYFIELD: So we get caught up in, all right, we would have to grant  
4 exemptions to those portions of the regulation. We would have to then try and impose license  
5 conditions or some other mechanism to impose appropriate regulatory requirements that would  
6 be pertinent to high temperature gas, sodium, the other technologies. So, it's that detail that  
7 hangs us up and where we won't be as efficient as we might like to be.

8 CHAIRMAN BURNS: Yes. Okay. Thanks for that, Mike. And just, could you  
9 identify for the reporter, just identify yourself?

10 MR. MAYFIELD: Oh, I'm sorry. I'm Mike Mayfield. I'm the Director for the  
11 Division of Engineering, Infrastructure, and Advanced Reactors.

12 CHAIRMAN BURNS: Okay. Thanks very much. Commissioner Svinicki?

13 COMMISSIONER SVINICKI: Good morning, everyone. We've covered a lot.  
14 Before I turn to some specific issues, I want to share some general observations. John kind of  
15 triggered this, he talked about a September 2014 meeting and the Commission issuing a bit of a  
16 challenge for the new reactor business line broadly, but NRO pretty specifically, to look and  
17 assess and continue to assess where it is that they could grow efficiency, effectiveness, and, to a  
18 certain degree, agility. I think we're talking more about that today given where we are in Project  
19 AIM, but it was still on the radar screen back then.

20 And so, that causes me also to notice that there's a lot of different faces at the  
21 table right now. We have new leadership for the office under Jennifer, Vonna's joined more  
22 recently as the Deputy Office Director there, and we have John and Anna and others who are  
23 continuing to have more and more responsibility in these areas. Something that happens when

1 we have leadership changes, when leaders go to take new challenges and new leaders come in,  
2 you kind of hope this will happen, but an opportunity of new leadership is to look at where an  
3 organization is right now and not have the predisposition about what the organization is or isn't  
4 capable of, but to come in and say, what is kind of the evolution of this new reactors organization?  
5 And you kind of rewrite expectations.

6 And so, I just want to reflect in this moment that I see that NRO has been on that  
7 journey and really in this moment in time is achieving levels of performance that I think are very,  
8 very impressive and, not that they were poorly performing in the past, but I think it's always  
9 commendable when you have a good level of performance, but you're not satisfied with that and  
10 you continue to move forward. John, you touched on the areas of continuing to look at what the  
11 PRAs offer us, how can we take those risk insights and really have safety-focused reviews?

12 Anna, you've talked about the, principally the agility measures, but how are we  
13 agile to respond to an increase in license amendment requests that doubles in a short period of  
14 time and how can we manage that? And the further corollary and benefit of this is, as the  
15 Chairman asks about advanced reactor readiness and preparedness, this type of organizational  
16 performance and capability to me is what gives confidence in an assessment of, will the  
17 performance levels be there?

18 I know we're publishing strategies and we're putting those out, I, in all truth,  
19 don't turn to that principally, I look at the organization, how is it addressing the challenges it has  
20 right now? And I think between getting through the Vogtle and Summer uptick in licensing  
21 activity and then having the KHNP review in-house right now and saying, how could we further  
22 have risk insights and a safety-focused review there?

23 That's what, when folks outside of NRC are asking me about, Svinicki, what's

1 your assessment of kind of the ability of NRC to rise to the occasion on advanced reactions, that's  
2 where I look and I say, well, let's look at what's happening right now, because it's the strongest  
3 demonstration of what we are rising to now and have -- it's always probabilities, because nothing's  
4 a guarantee, even if I say, I think we can do it, I don't know whether we will because that's going  
5 to -- the proof is in the doing. But I think that that's praiseworthy and so I wanted to pause on that  
6 for a moment.

7 Mike, the issues that you've covered, we have come a long way in those areas  
8 and yet, as we have more ITAAC activity, we're continuing to refine, you're looking forward to the  
9 transition to Ops, I would note, and I try to go to the construction sites every few months, I don't  
10 always make my metric there, but I do try, but it gives you a trending sense, and something that  
11 I've heard at both Summer and Vogtle is that they have had a realization within the last 12 months,  
12 they need to take that transition to Ops preparedness and they're moving that much closer in time.  
13 And I was pleased to hear you talk today about our contemplation of, what does that mean for us?

14 So, I'm going to turn to the area now of, because Laura's sitting here and I'm not  
15 talking a whole lot about the construction inspection program, I spend at my visits at the site, I try  
16 to sit and devote a good chunk of my time onsite to sit with our onsite teams. So, we have, we  
17 call them resident inspectors. Whenever we make a change in resident inspector at an operating  
18 reactor, we issue a press release, and we call those inspectors our boots on the ground or our  
19 eyes and ears. So, I consider those teams at Summer and Vogtle to be basically our early  
20 warning system of, how are things going, what are we doing well?

21 And it's my assessment that we are handling the work well now, but as the  
22 Chairman noted, we have these projections of a level of inspection activity that I think if we get into  
23 that strong surge and we've not given ourselves the best opportunity for success, then it's going to



1 be hard to cure that in the moment. There are times where the level of challenge to the  
2 organization is so high that if you're trying to perform and put corrective actions in place, it's very,  
3 very difficult to do.

4 I have not been able to make myself as confident about the fact that we are  
5 equipping those teams onsite 100 percent to do the kind of -- to meet the challenges that they're  
6 going to have to rise to. I think that it is very good that as recently as September of this year we  
7 did an assessment on the construction inspections, it was called an assessment on the quality of  
8 construction inspections, it looked more a bit at what's going well, what suggestions would the  
9 onsite teams make for the future?

10 And there are a set of corrective actions, this report came to you, Laura, and  
11 you all have endorsed a set of corrective actions. But if you read the actual interviews that were  
12 done, some were the onsite team, some were regional inspectors that we're dispatching to Vogtle  
13 and Summer a lot, it was my assessment that there were a few more, I think, modest corrective  
14 measures that would equip those teams and give them what they're indicating would give them a  
15 higher probability of success for the future that are not, they didn't bubble up into the  
16 recommended actions that we're going to take.

17 So, when I sit and read the 15 different interview transcripts, I see that  
18 thematically there's near universal support for some items. So, I was curious about that and I  
19 thought, well, what's common to these items? And I interpreted that they had to do with  
20 resourcing issues. And so, I want to state very clearly that, as I have engaged in resourcing  
21 deliberations with my colleagues here, I think that there is universal receptivity on this  
22 Commission for putting resources where they need to be.

23 I know we are in a Project Aim environment, I do not want that to be

1 misinterpreted as saying that if we've got on the ground early warning systems at both of these  
2 sites and they want something like, we're spending too much time doing data entry, if we had a  
3 scheduler/project person here who could be assigning smart plans and implementing things back  
4 into the IT systems, in the 15 interviews, that is near universally suggested.

5 My colleagues and I, at least in my experience, are completely receptive if  
6 adjustments need to be made in the current fiscal, in near term fiscal years, that are going to give  
7 these teams the highest probability of success and getting the job done. I hope that somewhere  
8 between their needs that they're asking for and the Commission's final budget deliberations, we're  
9 not just kind of filtering these things out. I've made a commitment to the teams there, and it's the  
10 same as what Laura stated in her presentation, which is, leadership is fully committed to the  
11 successful implementation of the construction inspection program at these sites.

12 And so, I just want anyone, and anyone who's tuning in in the Region  
13 or -- there's a lot of receptivity to the suggestions coming forward. So, I can't direct you, but I  
14 might really request that you relook at the interview transcripts themselves. Ask yourselves if  
15 anything is missing there from something that those inspectors have consistently asked for.

16 And the other thing that I know I differ with Region II on, I've talked to Cathy  
17 (phonetic), I've talked to Laura about it, I do not support the rigid compulsory implementation of  
18 the seven year rotation policy for resident inspectors at Summer and Vogtle. Summer and  
19 Vogtle construction are project-based activities. I don't think that there is a good translation  
20 between our seven year rotation policy at operating reaction, which have a 40 year plus, in most  
21 cases, 20 year extension, yes, you're worried about somebody there perhaps being there so long  
22 that there's an objectivity problem.

23 The defenses that I've heard, that we need different people, we've got the

1 transition to Ops, the civil works construction goes on and given the lagging unit, which as the  
2 Chairman noted isn't lagging a whole lot based on what we started with, I'm just going to ask,  
3 because I think the most important thing for employee engagement, so I'll come all the way back  
4 around to the Federal Employee Viewpoint Survey and NRC's desire to have engaged  
5 employees, I did note that one interviewee, and these were anonymous, stated, you know, if  
6 you're going to keep asking me as an inspector the set of changes that I think you need to make  
7 here and you're never going to make them, please just accept your flawed program and stop  
8 asking me this question.

9 So, if you want these teams to keep bringing the best of their suggestions  
10 forward, it is important that we at least acknowledge that we're not implementing this for the  
11 following reasons. So, I'm not confident that we're hearing them. I spend a lot of time with them,  
12 and I agree with you, Laura, they don't have the broader perspective and not every one of their  
13 suggestions is something that it is appropriate to implement, but when they're saying, this is my  
14 day-to-day life, if you just had, or in the cases -- I'm glad I think at Vogtle we've gone to a full-time  
15 administrative support. I don't know if we have that at Summer, but we just used to have  
16 half-time.

17 So, I think, I'm asking you to stay light on your feet, I'm saying my experience  
18 with the Commission is, this is one area where as we learn, as we go, the Commission wants to be  
19 agile with you and help you make those resource and staffing adjustments. So, please don't feel  
20 that it is your job in a Project Aim environment simply to defend what we decided five years ago  
21 was the right model for this. There's no way that any of us are smart enough to have thought of  
22 everything.

23 I just don't want the teams to get frustrated. These interviews express a lot of

1 frustration and I think we need to hear that, we need to honor and respect that feedback enough to  
2 say, here are the things we're not doing and why. Maybe you don't want to put it in the report, but  
3 we need to sit down with them and be able to say that. So, I feel really strongly about this just  
4 because we have such excellent teams at both sites. And I've offered them that, I said, you're  
5 not going to fail because of the fact that other organizations failed you. If you fail, you have to  
6 do -- the performance is on you, you're accountable for that, but we're going to give you the  
7 probability of success and then we're going to put it on you. So, Laura, I've commented a lot, I'll  
8 let you react to that.

9 MS. DUDES: There's a lot to react to there. But actually, I think I'll go a little bit  
10 higher, I think we're all in the same place that you are in terms of the leadership is committed to  
11 the importance and the success of this project. And I have that on my desk and I have the  
12 interviews and I actually know that it's not just the teams onsite, but it's the 30 plus people with the  
13 specialties in other things that have been reorganized in Region II to support it.

14 So, I mean, it's a lot, but I smile because I have the same, Vic has the same  
15 level of support and interest for these teams. We listen to the people, we don't -- and we listen to  
16 all of the people in the organization and the program that we developed five years ago agreed.  
17 But that's why we reorganized, that's why we listen to every single person in the organization, and  
18 had multiple -- this reorganization, although kind of small in a way, was huge in the fact that  
19 everyone had a voice, their experience was accounted for, not everyone got the organization that  
20 they actually crafted, but components are incorporated and communication and process changes  
21 have been --

22 COMMISSIONER SVINICKI: Well, and I should have mentioned about the  
23 reorganization, I appreciate that you and Cathy dispatched for my last site visits the new Branch

1 Chiefs --

2 MS. DUDES: Yes.

3 COMMISSIONER SVINICKI: -- for both Branches. So that was really great.  
4 And so, the discussions we had onsite, I thought were all the better for having those new Branch  
5 Chiefs there for Vogtle and Summer. I think it's a great reorganization. I've got to compliment  
6 you guys on that.

7 MS. DUDES: Yes, and I know that we heard that from the licensees at our  
8 quarterly last week in terms of communication and coordination, they appreciate having more  
9 single points of contact. Also, as we move forward, they know that, as you talked about, the  
10 Operations transition and my last slide talked about making sure that we start to get our senior  
11 test engineers engaged with the licensee and that they understand who their points of contact,  
12 because they do actually have two organizations onsite. And so, we don't want to impact our  
13 construction inspectors or the operational testing of the lead unit, so we are working all that with  
14 the licensee to do the tabletops.

15 I've read those interviews, I think there's various views in there. I think the  
16 resident inspectors are well supported on the sites to do the program that they need to do. And  
17 there are -- and there was another point you made about the seven year, I think that no one feels  
18 compelled, but it is a policy that is in place for the inspectors and so, we kind of adhere to it, but I  
19 will tell you, and Vic knows this and he hired me to go down to Region II, that if Cathy or I ever felt  
20 that we needed to request from the EDO's office or the Commission a change or additional  
21 considerations for this program, we absolutely would.

22 COMMISSIONER SVINICKI: Well, I mean, I don't agree that it is an existing  
23 policy to rotate construction resident inspectors at construction of this duration when there's been

1 a 30 year dormancy in the U.S. So, certainly, if there was a historic policy, I don't know that  
2 there's a contemporary policy on that.

3 And I did want to note too, the Chairman's point about supporting our visits in  
4 the interviews, it says that resident inspectors, they are consumed by responsibilities such as  
5 preparing material for Commissioners, escorting visitors, doing plant tours, and it said, a single  
6 visit from even a Division Director can consume 40 hours of the resident inspector's time, plus  
7 eight hours -- 40 hours of the senior resident plus eight hours per resident. So that makes me  
8 maybe not as eager to visit, but there was one interviewee gave a long, long discussion about  
9 how burdensome that was. So, I appreciate that the Chairman raised that we all need to be  
10 sensitive. There's more than just the inspection --

11 CHAIRMAN BURNS: I'm going to just --

12 COMMISSIONER SVINICKI: -- that they're doing there.

13 CHAIRMAN BURNS: -- show up unannounced from now on.

14 (Laughter.)

15 CHAIRMAN BURNS: Commissioner Baran?

16 COMMISSIONER BARAN: Well, thanks for the stats on what it took to do a visit  
17 last week. I feel a little bad now about going down there, I thought it was a really good visit.  
18 Well, thanks for all the work that went into that and thanks for your presentations and all the other  
19 work you do. And I do want to get back to construction inspection, but I wanted to start by asking  
20 a couple questions on the pre-application readiness assessment for the NuScale design  
21 certification. Anna, as you said, the staff concluded that, at least at this point, the draft  
22 application is incomplete and it lacks information that would be necessary for the staff to conduct  
23 a detailed technical review. Was the staff surprised by any of the gaps that you found during this

1 assessment?

2 MS. BRADFORD: Well, I would say that, when you go in for a readiness  
3 assessment, you know the application isn't necessarily completely done. If it was completely  
4 done, they would submit it. So we know they're still working on it. I think we expected some  
5 level of incompleteness. I think that the extent of it surprised some of our staff when they went to  
6 flip through the sections to see exactly what was ready at this point and what was not.

7 Now, that information may be available elsewhere, it might be in a different  
8 document or NuScale just wasn't prepared at the time, didn't know we were going to be asking for  
9 it at the readiness assessment, I don't know. So, that doesn't mean the information doesn't exist,  
10 but we didn't necessarily see it during the readiness assessment.

11 COMMISSIONER BARAN: Okay.

12 MS. BRADFORD: But there were other areas where they did have a good  
13 chunk of the information that we were looking for, so I don't want to imply that it was completely  
14 lacking what we would want to see when they submit it.

15 COMMISSIONER BARAN: And I know it's your job to be concerned about any  
16 of the gaps that are there, but are there any areas where the staff is particularly concerned at this  
17 stage?

18 MS. BRADFORD: Technical areas or --

19 COMMISSIONER BARAN: Well, just areas where you thought there was a  
20 surprising gap in what was -- during the readiness assessment and --

21 MS. BRADFORD: So, I think --

22 COMMISSIONER BARAN: -- more concerned about that than other areas.

23 MS. BRADFORD: Sure. I think if -- I don't know if you've had the chance to

1 look at the letter that we sent to NuScale after the readiness assessment. So, we talked about  
2 two overarching concerns. One was missing information, like we just discussed. But there was  
3 also another area where there were statements or perhaps assertions that weren't then  
4 adequately supported in the text that we were seeing. So that was another concern, because if  
5 it's something that's going to take a while to work through, if, like I said, they don't have it  
6 somewhere else, that could cause a concern.

7 COMMISSIONER BARAN: Okay. And then, just kind of a bigger picture  
8 question in this area, the staff's goal is to do a thorough review of the application within 39 months  
9 of submission, what do you see as the biggest challenges with meeting that goal?

10 MS. BRADFORD: I think that we have done a great job, along with NuScale,  
11 working out some of the technical issues before they submit their application. When we did a  
12 Lessons Learned a few years ago, working out technical issues beforehand was one of the big  
13 Lessons Learned, and it's one of the assumptions in the 39 month review. So, as you heard,  
14 over the last year or so, we've closed a lot of those gaps or at least developed a path forward.

15 I think that some of the issues that come up right now that's consuming a lot of  
16 our time is a few of those policy issues, or technical issues that might lead to policy issues, that  
17 are a little bit harder. So, for example, GDC 27 about re-criticality and what that might mean.  
18 And we're waiting for some input from NuScale on that. So, there's some things that are kind of  
19 raising their head, but I think we've made a lot of progress in the last year or two.

20 COMMISSIONER BARAN: Okay. When I was down at Summer last week,  
21 there was some discussion with the licensee and the staff about Tier 2\* items. And the  
22 impression I was left with is that everyone probably agreed that there are more Tier 2\* items in the  
23 AP1000 design certification than probably make sense, but I think there was also agreement that



1 some items do belong in this Tier 2\* category. And I guess this is a question for anyone who  
2 wants to chime in, Laura, you and I talked a little bit about this when we were down there, but what  
3 do you think about this? What's your sense about the number of items in Tier 2\* that really  
4 should have been Tier 2 items?

5 MS. BRADFORD: Generally, we would agree in hindsight looking back at the  
6 AP1000 that there's probably some items in Tier 2\* that could have been Tier 2. And I think that  
7 that's something that we're considering as we move forward. I know we're developing a SECY  
8 paper that will be coming out to the Commission talking about what we think our path forward  
9 should be.

10 COMMISSIONER BARAN: Okay. And that was going to be my question, is --

11 MS. BRADFORD: Yes.

12 COMMISSIONER BARAN: -- is there a practical way to address this issue?  
13 You all are looking at that question now, I guess.

14 MS. BRADFORD: Yes. And for the licensees that are constructing, for  
15 Summer and Vogtle, they could submit LARs if there's something that they need expediently  
16 revised. To do it more generically for the AP1000 would require rulemaking, because it is -- the  
17 certified design is in the rule.

18 COMMISSIONER BARAN: Right.

19 MS. BRADFORD: So, there are paths to get that resolved.

20 COMMISSIONER BARAN: Another issue that we discussed at Summer was a  
21 recent NRC public meeting on digital instrumentation and control inspections for new reactors.  
22 And the licensee thought that our inspection process isn't necessarily set up to deal with final  
23 acceptance testing done at both a vendor facility and onsite for digital components. Maybe this

1 is a question for John, what's the staff's view of that issue?

2 MR. CHEOK: I think I'll take that question. So, we did meet with the licensees  
3 in the public forum to understand what the issue is better. What the licensees are telling us is  
4 that there's a lot of digital I&C systems that are being built, fabricated, and tested at the vendor  
5 facility and they would like to take credit for a lot of those testings, the preoperational testings, et  
6 al, so that when the components get shipped to the site, that they do not have to repeat a lot of the  
7 tests.

8 The tests that they would do there would be to do the interface testing, the  
9 performance testing, and the testing for functionality. So, on the surface, we agree with the  
10 licensees. We told them that this is what we really intend to do, we do not expect them to repeat  
11 a lot of the tests that are performed at the factory. So, I think we have agreed that that's  
12 fundamentally what we would do.

13 We will do an inspection at the site and we are working with Laura's staff in a  
14 January-February time frame as to licensees implementing the ITP, initial test program, on some  
15 digital systems to see how they are carrying out the -- how they are integrating both sets of exams  
16 and test. And we -- following that, our next steps would be to modify or to enhance our inspection  
17 procedures for the ITP, the initial test program for digital systems, so that we can indeed take  
18 credit for some of the factory acceptance testing.

19 COMMISSIONER BARAN: Okay. So, it sounds like there's general  
20 agreement on this issue, but there's probably some guidance that has to be updated to account  
21 for inspections that are occurring at vendors --

22 MR. CHEOK: That is correct.

23 COMMISSIONER BARAN: -- rather than onsite.

1 MR. CHEOK: I mean, if you follow the exact guidance we have now, we may not  
2 be able to take credit for the factory acceptance testing. But we agree that a lot of the testing  
3 that's being done at the vendor's site is applicable, we just like to see the integrated test that tests  
4 the functionality that has to get onsite, to be performed when they are onsite.

5 COMMISSIONER BARAN: Okay. Let me ask you about something that we  
6 discussed a little bit last year, was one of the SONGS Lesson Learned initiatives, and it was a pilot  
7 design inspection program at vendor facilities for the fabrication of components used in major  
8 plant modifications. Can you give us an update on that initiative? I think the plan was to perform  
9 those inspections in 2017, are we still on track to do that?

10 MR. CHEOK: So, the plan was to complete a pilot process by September of  
11 2017 and as part of the pilot, we have been working with NRR and with the Regions to identify  
12 what we would call major plant modifications. So, things like replacement steam generators,  
13 replacement reactor vessel heads, or maybe components that could be used or will be used in  
14 power uprates, for example. So, we have identified that list, we are continuing to look at the list.  
15 We then run it through our screening process, i.e., things like is this a first of a kind application, is  
16 this vendor a new vendor, are we using new technology for this replacement part, et cetera?

17 And so this past April, we did go to Ensa in Spain to look at the replacement  
18 steam generator fabrication and engineering and design that was being done for Beaver Valley.  
19 We also had performed another inspection at B&W for the steam generator for Davis-Besse. We  
20 are still working with our Regions and the NRR on selecting maybe two more vendor sites to go to  
21 between now and September so that we have enough of a data and we plan to finish our  
22 evaluation of how useful these vendor inspections could be by the end of the year.

23 COMMISSIONER BARAN: You talked today about the steps the staff has taken

1 to get ready for the ITAAC submissions from Summer and Vogtle. Let me just ask, on the IT  
2 side, what steps have we taken there to make sure that we have IT systems that can process and  
3 publicly post those many submittals in a timely manner?

4 MR. CHEOK: And so, we do have IT systems in place.

5 COMMISSIONER BARAN: Okay.

6 MR. CHEOK: We do have a workflow technology type system called VOICES, I  
7 have to read, Verification of ITAAC Closure Evaluation and Status. So, this is the software we  
8 have that would track all incoming ITAAC submittals, ICN submittals with the ADAMS number. It  
9 basically then follows through as we assign the different review stages, it does the notification  
10 stuff to hand-off stages. It basically then produces a report, the ITAAC Closure Verification  
11 Evaluation Form, that shows what we have done. It also ties into a software system that Laura's  
12 staff uses, CIPIMS, that's the Construction Inspection Program --

13 MS. DUDES: Information Management System.

14 MR. CHEOK: -- thank you -- Information Management System. So, they will  
15 document all the completion of all the ITAAC inspections and VOICES will tell us what is  
16 completed down in the Region by the inspections. It'll tell us if it's a targeted ITAAC or what the  
17 family of ITAAC is. And so, all that will be automated. And so, we will actually then have a  
18 report that's generated that we will then put it on our public website to document the completion of  
19 each ITAAC that we have verified complete.

20 COMMISSIONER BARAN: Okay. So that's linked up with public ADAMS, so  
21 as a high volume of these notices are coming in, they're getting up on the website in a timely way  
22 and people can see those, and when we're closing them, that's going to go up in a timely way and  
23 people can see it? Just because the time frames for, who knows what's going to happen down

1 the road on this, but the time frames for the potential ITAAC hearing on this are very tight, so  
2 things will have to actually get out into the public quite quickly. You're looking at all that and that's  
3 going to happen in a fluid way, we're not going to have a system that's overwhelmed by large  
4 numbers of ITAAC?

5 MR. CHEOK: So, one of the good things about having a set number of  
6 licensees and we know that we have 4,500 ICNs to expect, we have already tested our system to  
7 be able to handle 4,500 ICNs. And we also now actually in the next couple of weeks, we will be  
8 doing what the IT folks call stress testing. So, what happens if more than several reviewers  
9 would be using the system? What happens if -- there are many different steps by different  
10 reviewers, so we will stress test the system too in the next few weeks.

11 COMMISSIONER BARAN: Great. Thank you.

12 CHAIRMAN BURNS: Okay. Anything else? Well, thanks to the staff for the  
13 presentations this morning. We've covered a variety areas from licensing of new reactors to the  
14 oversight of their construction to anticipation of potential future and different types of designs to  
15 Generation 4 efforts in terms of advanced reactors, as well as the small modular reactor  
16 application we expect from NuScale later this year. Appreciate the opportunity to hear from the  
17 staff this morning and thank you for the presentations, again. We stand adjourned.

18 (Whereupon, the above-entitled matter went off the record at 11:08 a.m.)  
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