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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

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BRIEFING ON WATTS BAR UNIT 2 LICENSE APPLICATION
REVIEW

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THURSDAY

OCTOBER 30, 2014

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ROCKVILLE, MARYLAND

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The Commission met at the Nuclear Regulatory Commission, One White Flint North, Commission Hearing Room, 11555 Rockville Pike, at 9:00 a.m., Allison M. Macfarlane, Chairman, presiding.

COMMISSION MEMBERS:

ALLISON M. MACFARLANE, Chairman

KRISTINE L. SVINICKI, Commissioner

WILLIAM C. OSTENDORFF, Commissioner

JEFF BARAN, Commissioner

1 EXTERNAL PANEL:

2 GORDON P. ARENT, Director Licensing, Watts Bar
3 Nuclear Plant

4 JOSEPH P. GRIMES, Executive Vice President and
5 Chief Nuclear Officer, TVA

6 DON SAFER, Board Member, Tennessee
7 Environmental Council

8 JOSEPH W. SHEA, Vice President, Nuclear
9 Licensing, TVA

10 MICHAEL D. SKAGGS, Senior Vice President,
11 Watts Bar Nuclear Operations and
12 Construction

13 KEVIN T. WALSH, Site Vice President Watts Bar
14 Nuclear Plant

15

16 NRC STAFF PANEL

17 MARK SATORIUS, Executive Director for
18 Operations

19 WILLIAM (BILL) M. DEAN, Director, Office of
20 Nuclear Reactor Regulation (NRR)

21 MICHELE EVANS, Director, Division of Operating
22 Reactor Licensing, NRR

23 VICTOR McCREE, Regional Administrator, Region

24 II

25 TOMY NAZARIO, Senior Construction Resident
26 Inspector, Region II

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JUSTIN POOLE, Project Manager, Division of
Operating Reactor Licensing, NRR

P R O C E E D I N G S

9:03 a.m.

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3 CHAIRMAN MACFARLANE: Good morning. I'd like
4 to welcome the staff, our staff, the industry, the public to today's
5 meeting on the status of Watts Bar Unit 2 Operating License Review
6 and Path Forward. So today we're going to have an opportunity to
7 hear a historical overview of the Watts Bar Unit 2 project, the status of
8 construction completion, licensee plans for transition to operations and
9 the general state of the site operational readiness.

10 We'll also get a public interest group perspective on
11 Watts Bar Unit 2 as well, and we're going to look at the time line and
12 actions of the Tennessee Valley Authority and the NRC staff to
13 complete the remaining licensing actions to support a licensing decision
14 on Watts Bar Unit 2, as well as we'll get a detailed discussion on the
15 status of construction inspection and any open items.

16 So given the long history of Watts Bar 2, I think it's
17 important that we fully understand the previous construction
18 challenges, how the potential aging of components has been managed
19 by TVA, and the licensee's state of preparedness for dual unit operation
20 before a decision is made on operating license.

21 It's also important to ensure that Watts Bar Unit 2 meet
22 the NRC recent requirements, including the Fukushima orders and
23 cybersecurity regulations. I'd like to give a shout out to the NRC staff,
24 who have provided continuous oversight of the construction of Watts
25 Bar 2. I commend them for their robust construction oversight
26 activities, while at the same time keeping a strong focus on the safety of

1 the operating unit, Unit 1 at Watts Bar. So we'll hear more from the
2 staff in the second panel.

3 So the first panel, our external panel, we'll hear from a
4 number of folks from Tennessee Valley Authority. We'll hear from Mr.
5 Joseph Grimes, right here in the middle, executive vice president and
6 chief nuclear officer.

7 We'll hear from Mr. Michael Skaggs, senior vice
8 president, Watts Bar Nuclear Operations and Construction; Mr. Kevin
9 Walsh, site vice president of the Watts Bar nuclear power plant; Mr.
10 Joseph Shea, over here, vice president of Corporate Nuclear Licensing;
11 and Mr. Gordon Arent, director of Licensing, Watts Bar nuclear plant.

12 We're also going to hear from Mr. Don Safer, who's a
13 board member of the Tennessee Environmental Council, all right, and
14 then we're going to hear from the staff. So I look forward to your
15 presentations. Let me first see if any of my fellow Commissioners
16 want to make any opening comments. Go ahead.

17 COMMISSIONER BARAN: Thank you, Madam
18 Chair. I just want to say it's good to be here for my first public
19 Commission meeting, and as I've told you before, it's an honor to join
20 you and my colleagues on the Commission, and I look forward to
21 working with the NRC staff and the stakeholders. Thanks.

22 CHAIRMAN MACFARLANE: Great, great. Thanks.
23 Yes. Thanks for welcoming every -- we welcome you, Jeff, to the
24 Commission and to our meetings. We actually had a few meetings
25 yesterday where Jeff was at, so he's becoming an old hand at these
26 already. Then without further ado, I will turn it over to Mr. Joseph

1 Grimes.

2 MR. GRIMES: Chairman and Commissioners, good
3 morning. TVA appreciates the opportunity to present our progress and
4 our path forward in achieving the operating license for Watts Bar Unit 2.
5 We're very energized about bringing Watts Bar Unit 2 online as the
6 nation's first new nuclear generation of the 21st century in the right way,
7 with safety and with quality.

8 Today's presentation will be provided by the following
9 members of the Watts Bar station team. That would be Mike Skaggs,
10 who's senior vice president of Operations and Construction at the site;
11 Kevin Walsh, site vice president; and Gordon Arent, the director of
12 Watts Bar Licensing.

13 Next slide, please. During today's presentation, we'll
14 discuss a number of aspects related to the completion and operation of
15 Watts Bar Unit 2, including the current status of the unit; TVA Nuclear's
16 corporate role in the completion of Watts Bar Unit 2; the implementation
17 of current regulatory requirements; key initiatives we've undertaken
18 during the completion of Watts Bar Unit 2; and most importantly from
19 my perspective, that our readiness is on track at this point to manage
20 the two units at Watts Bar in a safe and reliable manner.

21 Next slide. TVA is confident that our licensing
22 strategy for Watts Bar Unit 2 is sound. Watts Bar Unit 2 is being
23 completed in a quality manner and in compliance with design
24 specifications and regulations. Following licensing, Watts Bar Unit 2
25 will be fully integrated into our nuclear fleet operations at TVA. I'll now
26 turn the presentation over to Mike Skaggs.

1 MR. SKAGGS: Thank you, Joe. I'll be starting on
2 Slide 4 here. Safety and quality is the foundation for what we do at
3 Watts Bar. We've gone over 29 million man hours without a lost time
4 accident. We've continued to reinforce a strong nuclear safety culture
5 and with respect to the quality of work, our performance is greater than
6 97 percent for the first time verification of our work.

7 We have built the plant to design, and we have
8 performed periodic audits and surveillances. We use external
9 assessments to help us understand and continually improve our
10 performance, and the NRC is validating our results through their
11 inspections.

12 With respect to Watts Bar and the design basis fidelity,
13 our approach at Watts Bar is to make sure that the two units align with
14 respect to design basis. The benefits of having two units similar in
15 design basis is single licenses for our plant operators.

16 It helps improve the safety performance of the plant,
17 and it helps improve our human performance with respect to the way
18 we operate.

19 Slide 5. Our guiding principle in the completion of
20 Watts Bar Unit 2 is that the plant would be built and tested to assure the
21 plant is safe and reliable to operate and maintain. To that end, we
22 have made Watts Bar Unit 2 like new.

23 We did develop a refurbishment program that was
24 reviewed and approved by the Nuclear Regulatory Commission and the
25 staff; we examined concrete; we examined embedded steel; and we
26 verified systems and components, both active and passive, meet

1 design specifications or replace with new components or new
2 equipment.

3 Examples of this include replacing safety-related motor
4 operator actuators; having the original equipment manufacturer take
5 their piece of equipment that was provided to us and rebuild it, including
6 safety-related pumps; installing miles of new cable; and examining
7 piping and replacing the piping where it showed degradation.

8 We are now performing the testing to verify that the
9 components meet their function, and that the systems meet their
10 function properly.

11 On page six, bulk construction work is largely
12 completed, and we're in the phase of testing safety-related systems
13 currently. Open vessel testing is complete. With open vessel testing,
14 we verified that the systems that are tied to the reactor vessel properly
15 pump forward water into the system as designed.

16 Cold hydrostatic testing is complete, and with the cold
17 hydrostatic test, we verified that the reactor vessel and the piping that's
18 attached to it withstand 125 percent of the design pressure for those
19 systems in the vessel. What that did was it ensured that we had the
20 integrity of the vessel and the piping.

21 Next, the World Association of Nuclear Operators
22 conducted a pre-start up review of Watts Bar. That assessment was to
23 look at our ability to -- our ability to run two units. That assessment
24 concluded that Watts Bar's preparation is on target and satisfactory to
25 operate two units.

26 On page seven, hot functional testing is our next major

1 testing milestone prior to fuel load. This test operates the plant without
2 fuel at operational temperatures and pressures, to confirm that the
3 integrated systems perform as expected.

4 Some sub-milestones between hot functional and fuel
5 load include the containment integrated leak rate test, which confirms
6 that the containment and the penetrations associated with containment
7 show their integrity for the pressure, and that they're leak-tight.

8 Area turnovers is another milestone between the two,
9 hot functional and fuel load, and with the area turnovers, we'll verify that
10 the physical structures are complete and they support plant operation,
11 and that the construction equipment has been removed from the areas,
12 and that the areas are restored to operational standards before
13 turnover to the plant for operation.

14 The fuel to be used at Watts Bar Unit 2 is on site, and
15 we'll verify that the activities necessary to support fuel load milestone
16 are complete. We are not without challenges at Watts Bar 2. As we
17 move toward the completion, we expect to have difficulties with
18 component testing, and to address that, we've looked at our staff, we've
19 looked at our organization, and we've enhanced our process to be
20 ready to perform those tests.

21 Secondly, we've added additional resources as we
22 expect they're going to be needed, such as instrument and controls
23 personnel. Additionally, not unexpectedly, we expect to have
24 equipment failures as we're performing testing, as we move down the
25 path toward hot functional testing.

26 In anticipation of that possibility, we've added

1 additional spare parts to our inventory, to be able to deal with the issue
2 of infantile failure.

3 As we have moved from bulk construction to system
4 completion, the progress has become more challenging due to the
5 precision of the work that's required to make completion.

6 On page -- on the next page, on page eight, Watts Bar
7 is among the first sites to implement the Fukushima orders, and will be
8 the pilot plant for the Fukushima inspection conducted by the NRC in
9 January of 2015.

10 As directed in the Fukushima orders, we will achieve
11 full compliance for mitigating strategies, the spent fuel pool
12 instrumentation at fuel load. Implementation of the Fukushima project
13 at Watts Bar 2 is nearing completion, and includes a new flex
14 equipment storage building, diesel generators inside the flex equipment
15 storage building, and on top of the battery board rooms on the auxiliary
16 building, pumps connections, procedures and training.

17 Watts Bar is planning to implement a substantial
18 amount of the cybersecurity rule. An initial assessment has been
19 completed for Watts Bar on cybersecurity, and we are working to
20 assure that Watts Bar Unit 2 is appropriately protected from cyber
21 challenges prior to operation of the unit.

22 TVA has implemented new methodologies and
23 analyses to more accurately evaluate the Tennessee River and the
24 impacts at Watts Bar during a probable maximum flood event.
25 Additionally, the transition to these new tools provides a consistent
26 basis for our hydrology hazard reanalysis in support of the Fukushima

1 recommendation on flooding.

2 Watts Bar Unit 2 meets the current seismic design and
3 licensing basis of the plant, and additional analyses have been
4 performed to enhance our margin to seismic analysis. Watts Bar has
5 completed the seismology screening in support of the Fukushima
6 seismic recommendation.

7 On page nine, consistent with the Nuclear Regulatory
8 Commission's direction for completion of Watts Bar Unit 2, we have
9 taken the opportunity to implement operational and construction
10 improvements at the site. We have used our own experiences, both
11 from the Watts Bar Unit 1 construction and operation and the Brown's
12 Ferry Unit 1 restart, as well as experience from the construction and the
13 nuclear operating experience, to prepare for the completion of Watts
14 Bar Unit 2, and to transition to an operating unit.

15 TVA's taken aggressive action to assure that systems,
16 structures and components in Watts Bar Unit 2 have been purchased
17 and installed, replaced and/or refurbished to meet requirements.
18 Watts Bar has also established closure documentation that provides a
19 basis for implementing the corrective actions to address historic issues.

20 Since the onset of the project, we have used a variety
21 of tools and settings to continually assess the safety culture of the
22 project, and to approve the safety culture of the Watts Bar Unit 2
23 construction organization. These tools include providing employee
24 concerns staff for both the TVA staff and the contractor staff that are
25 associated with the project.

26 Additionally, department level pulsing surveys have

1 been completed for the site, and periodic meetings with project
2 personnel to make sure they understand the progress of the project, the
3 progress of activities and to be able to listen to their issues and
4 concerns.

5 Using this multiple tool concept has allowed TVA to
6 more closely monitor the safety culture performance at Watts Bar Unit
7 2, where the population is more transient than in an operational
8 environment. A pre-operational assessment of safety culture for the
9 plant staff will be performed prior to fuel load at the Watts Bar site.

10 On the next page, on page ten, as Watts Bar Unit 2
11 comes to completion, the project workforce will be released. To
12 facilitate this transition, we have conducted meetings with the effective
13 workforce to inform them of the process of the project, and also to let
14 them know the time frames for likely release from the project.

15 We have established out-placement tools to assist and
16 support our workers, as they try to navigate from this project to future
17 employment, and we've also met with the union councils to receive their
18 insights and support for this process as we work with the union
19 employees.

20 We've established a community action panel made up
21 of 23 people from the Tennessee Valley. Members of the panel
22 include area business leaders, local officials or elected officials
23 including mayors, county commissioners or others that are associated
24 with counties or cities; University of Tennessee graduate students; and
25 individuals who represent the perspective of the local advocacy groups
26 such as the Tennessee Environmental Council, the Union of

1 Concerned Scientists, Blue Ridge Environmental Defense League and
2 the Bellefonte Efficiency and Sustainability Team, the Southern
3 Alliance for Clean Energy and Sierra Club.

4 We have held three meetings and will continue to hold
5 these meetings each six to eight weeks. Panel members bring their
6 perspectives to these meetings. We talk about those perspectives,
7 and it helps us to increase our understanding of issues and concerns
8 associated with the advocacy groups or the city and county executives.

9 We have discussed with the panel the differences
10 between the design of Unit 1 and Unit 2, and the activities that we have
11 taken to keep the two units aligned and why that is important. We've
12 also talked about the significant differences between the two units.

13 Additionally, we've discussed the process of storing
14 used fuel on site and our plans to utilize the dry cast storage facility in
15 the future at Watts Bar. With that, in the next slide Kevin Walsh, the
16 site vice president, will cover his areas.

17 MR. WALSH: Thanks, Mike. I'm in Slide 11. In
18 preparation for operating a second unit at Watts Bar, we have
19 performed a broad array of activities to ensure our readiness. We've
20 prepared organizational transition plans; we've performed operational
21 readiness and self-assessments; and we've ensured processes,
22 programs and procedures were evaluated and a schedule for
23 development and revision was established to support start up of Watts
24 Bar 2.

25 In addition, we've utilized multiple independent
26 assessment teams to assure the adequacy of our approach, our

1 progress and the quality of the work we're doing. Those included
2 McKenzie and Associates, the Nuclear Construction Review Board and
3 the Nuclear Safety Review Board.

4 We've conducted a Watts Bar capability and capacity
5 study. This study led to site and departmental realignment, specifically
6 our transition team members are now embedded in the operating
7 organization, responsible for implementing a transition to two unit
8 operations.

9 Next slide, please. As a part of driving the transition,
10 the operating organization has taken responsibility to ensure that at the
11 time of fuel load, we'll be ready to operate two units at Watts Bar.
12 We've developed and are executing transition plans for each
13 department, covering worker qualifications, procedures, surveillances,
14 training and monitoring.

15 To name a specific, currently the Maintenance
16 Department has completed approximately 90 percent of the required
17 qualifications, and is assessing and monitoring progress towards
18 completion each week. The site has established the necessary
19 organization and processes to ensure safe and reliable plant operation
20 through structured oversight and leadership engagement.

21 Finally, Unit 1 managers are taking shared ownership
22 of Unit 2 key milestones. This approach is designed to ensure proper
23 coordination and communication as we progress through dual unit
24 operation. An example of that would be the cold hydrostatic test that
25 Mr. Skaggs discussed earlier, and that the Unit 1 operational senior
26 license holder was the overall coordination and oversight for that test.

1 Next slide, please. We've ensured the staffing's at the
2 appropriate level to support two unit operation. Today, we are above
3 the staffing level for TVA's model standard organization for a two unit
4 facility. We will implement a rapid response team to support fuel load
5 in initial operations, and we plan to remain above the standard
6 organizational staffing levels through commercial operation of Watts
7 Bar Unit 2.

8 Training's been provided to site personnel in
9 preparation for dual unit operation. License operator training has been
10 completed, license exams taken, and dual unit licenses have been
11 formally requested. TVA's corporate organization is providing
12 governance and oversight of the Watts Bar transition to dual operating
13 site.

14 This oversight is exhibited in the form of Watts Bar Unit
15 2 critical milestone status reviews at the plan of the day meetings,
16 structured oversight plans for each functional area, and periodic
17 executive management meetings, and these meetings with -- also with
18 independent organizations, which were referred to earlier, and these
19 include the Nuclear Safety Review Board and the TVA Board of
20 Directors Nuclear Oversight Committee.

21 In summary, the site is very willing and able to operate
22 two units safely and reliably, with a bias for improving performance
23 every day. I'll turn it over to Joe Grimes.

24 MR. GRIMES: Thank you, Kevin, and I'll close our
25 remarks using Slide 14. TVA appreciates the opportunity to present
26 our progress and our path forward for achieving an operating license for

1 Watts Bar Unit 2. In summary, Watts Bar Unit 2 is being completed
2 safely, with quality and to ensure excellence in operations following the
3 completion of the licensing activities.

4 The process being utilized to license Unit 2 at Watts
5 Bar is based on successful licensing basis implemented on Watts Bar
6 Unit 1, as well as many other plants in the U.S. nuclear industry. The
7 combination of construction, refurbishment, improvements, our use of
8 lessons learned and the ongoing pre-op start up testing will
9 demonstrate that Watts Bar Unit 2 systems, structures and components
10 are like new.

11 TVA has the experience and the organizational
12 capacity to operate multiple unit sites as part of our current operating
13 fleet. We are ready to safely and to reliably operate and maintain two
14 units at Watts Bar. Chairman Macfarlane and Commissioners, thank
15 you for your time and attention. This concludes the TVA presentation.

16 CHAIRMAN MACFARLANE: Great, thank you. All
17 right. Now we'll turn to Mr. Safer, and I believe that you have ten
18 minutes.

19 MR. SAFER: Thank you Chairman and
20 Commissioners. Thank you for asking to hear my views representing
21 the Tennessee Environmental Council. I recognize the profound
22 challenges of your jobs. I share your core goal of protecting people
23 and the environment. My comments are presented with the intention
24 of improving the protection of the people and the environment of
25 Tennessee.

26 The Tennessee Environmental Council's vision is

1 building a sustainable Tennessee that embraces natural resources as
2 the backbone of our communities, economy and quality of life for
3 present and future generations.

4 Watts Bar Unit 2 is not the first new reactor of the 21st
5 century. It is last old reactor of the 20th century. It is being licensed
6 under the old 10 C.F.R. Part 50 rules. The troublesome ice condenser
7 design dates from the 1960's.

8 Construction started in 1973. The original design has
9 been modified with numerous cobbled together retrofits, including
10 hydrogen igniters in containment, the supplemental condenser cooling
11 water system and the unforeseen need to replace the steam
12 generators, which requires breaking the containment open or cutting
13 the containment open.

14 For these reasons, let's be clear. Watts Bar Unit 2 is
15 not the first new reactor of the 21st century. It is the last old reactor of
16 the 20th century. Ice condenser containment is a problematic design.
17 It is far more likely to fail than large dry containments.

18 As early as the 1970's, the Atomic Energy Commission
19 staff recommended the design be banned. Unfortunately, political and
20 economic matters overwhelmed safety concerns. The book *Tritium on*
21 *Ice*, which I have a copy here of by Kenneth Bergeron, an engineer at
22 Sandia National Lab, which was commissioned by the NRC, or not the
23 book but the -- the book is based on information that came out of a
24 study, NUREG-1150 and other information.

25 But NUREG-1150, severe accident risk assessment in
26 1990 concluded that this design, along with the GE Mark I, were notable

1 for their poor performance in severe accidents. Today, we have seen
2 the devastation caused by beyond design basis accidents at
3 Fukushima GE Mark I reactors.

4 The ice condenser's smaller, weaker, thinner
5 containment will fail catastrophically if subjected to a loss of coolant
6 accident. The realities of surrounding a nuclear reactor with two to
7 three million pounds of ice have proven to have significant
8 unanticipated maintenance and operational challenges.

9 The many well-documented serious problems,
10 questions and deficiencies with TVA's nuclear fleet resulted in the
11 shutdown of all TVA's reactors in 1985. It was so dire it took the
12 completed Watts Bar Unit 1 11 years of costly remediation to earn an
13 operating license.

14 Questions surrounding early construction problems
15 and the issues raised by whistleblowers compound the risk and
16 uncertainty created by the old ice condenser design. TVA's
17 whistleblower issues are hardly a resolved problem of the past.

18 In 2012, Watts Bar was near the top of all NRC
19 regulated facilities, with 21 whistleblower complaints. Sequoia was
20 not far behind with 19, and Brown's Ferry had 16. The red safety
21 finding at Brown's Ferry from 2011 to 2014 was caused by a stubbornly
22 deficient safety culture.

23 I'm sure the Commissioners are acutely aware of the
24 catastrophic and tragic human, economic and environmental costs of a
25 serious accident. Recent reports indicate that almost 25,000 people
26 from around Fukushima will never be able to live again in their homes.

1 None of us want to see a similar situation in the Tennessee Valley.

2 The public deserves unbiased scientific studies on the
3 consequences of major radiation releases. The National Academy of
4 Science study on the lessons learned from Fukushima called for
5 increased consideration of the risk from beyond design basis accidents,
6 and better estimating the offsite consequences.

7 The study emphasizes the inadequacy of the design
8 basis accident as a paradigm for preventing core melt accidents, and
9 mitigating their consequences. Yet Watts Bar Unit 2 licensing relies
10 heavily on the design basis accident paradigm.

11 Watts Bar 2's final environmental impact statement
12 says the probability weighted environmental effects of a severe
13 accident are small. It makes no sense to come to that conclusion on
14 the basis of a theoretical assessment of the low risk of a severe
15 accident.

16 Within the last 30 years, the world has now seen four
17 reactors experience severe accidents, with subsequent massive
18 releases of radiation, causing huge human and environmental impacts.
19 Dam safety from heavy rain events and earthquakes is critical, and has
20 not been adequately addressed over the years.

21 The NRC has taken steps to address that, but the NRC
22 should take adequate time to review TVA's recently completed updated
23 hydrology study, and to allow time for public review as well. There are
24 literally scores of upstream dams, not just TVA dams, above Watts Bar,
25 and 1,000 year floods have been occurring with alarming frequency.

26 I lived through one in Nashville and it was unbelievable

1 the amount of water that came out of the sky. Another Fukushima
2 lesson ignored is using outdated, understated earthquake data in the
3 hydrology study. Why is the NRC allowing that?

4 Watts Bar Unit 2 was originally licensed with the
5 promise that the highly radioactive fuel waste would not remain on site
6 beyond a relatively short time. Now, with the NRC's legally challenged
7 continued storage decision, this deadly waste could be stored on site
8 for hundreds of years or more.

9 That ruling is in conflict with federal regulations that
10 prohibit new licenses from being issued without plans for a geologic
11 repository in place. The operating license should not be issued until
12 there is a credible plan which ensures absolute isolation from the
13 biosphere.

14 Long term onsite storage is made more dangerous by
15 the issues and unanswered questions around high burnup fuel and its
16 storage canisters. Please complete the long term storage studies on
17 high burnup fuel before allowing it to continue production.

18 TVA had a total of \$1.18 billion in its reactor
19 decommissioning fund for its six units at the end of 2012. That's an
20 average of 200 million per reactor. The most recently shutdown
21 reactors in the U.S. are at San Onofre, California. The official estimate
22 is for \$4.4 billion for decommissioning costs. That's 2.2 billion per unit.

23 TVA's latest cost estimate is 600 million per reactor.
24 The difference is 1.6 billion per reactor. That shortfall could be as
25 great as \$9.6 billion. TVA reported to the NRC in 2009 that the market
26 downturn resulted in its decommissioning fund falling below NRC

1 minimum required amounts.

2 Incredibly, TVA was not required to put any new money
3 into the fund in 2010, '11 or '12, due to utilizing an external synching
4 fund approach for funding assurance. The NRC should require an
5 increase in the actual decommissioning fund balance, before allowing
6 Watts Bar 2 to come on line.

7 The Price-Anderson Act only provides \$12 billion of
8 insurance coverage. Total economic cost for the Fukushima
9 meltdowns is estimated to be 300 to 500 billion. The citizens of the
10 Tennessee Valley deserve adequate insurance coverage for the risk.
11 The ultimate lesson learned from the Fukushima meltdowns is to stop
12 fissioning nuclei to generate electricity.

13 It is simply not necessary. Solar and wind power,
14 along with energy efficiency, are the best energy sources for the 21st
15 century. Recent rapid advances are evidence of their huge untapped
16 potential. The Tennessee River system, river-reservoir system
17 receives the effluent from all of TVA's reactors, Oak Ridge, Irwin,
18 numerous coal plants, as well as Knoxville, Chattanooga and many
19 smaller communities.

20 The environmental impact of operating Watts Bar Unit
21 2 should comprehensively consider the cumulative impacts on the river
22 system.

23 Radiation monitoring systems in the United States are
24 inadequate and inaccessible to the public. Building an online real-time
25 radiation monitoring system should be a requirement at every reactor,
26 but especially new reactors.

1 The \$4 billion of new money being poured into finishing
2 Watts Bar Unit 2 could have been put to far better use. We wish TVA
3 and the NRC had listened to opponents of finishing Watts Bar 2 a long
4 time ago, and abandoned this project. Moving forward, the NRC
5 should cancel the construction license for Bellefonte Units 1 and 2.

6 We remain concerned about the threat of a major
7 accident at an ice condenser reactor such as Watts Bar, or in fact any
8 other U.S. reactor. On that basis, we ask that you deny the operating
9 license for Watts Bar Unit 2. Thank you for this opportunity to raise
10 these issues and for your consideration, and I want to thank you
11 Chairman Macfarlane for your leadership, and good luck in your future
12 endeavors.

13 CHAIRMAN MACFARLANE: Thank you. All right.
14 Now we'll turn to questions from the Commissioners. We're going to
15 start off with our new Commissioner Baran.

16 COMMISSIONER BARAN: Thank you, Madam
17 Chairman. I want to start off by thanking Mr. Safer for making the trip,
18 and the TVA folks for being here today. We appreciate it. As we all
19 know, Watts Bar Unit 2 has a unique history. A construction permit
20 was issued in 1973, but construction was halted around 1985 after
21 significant quality assurance program deficiencies were identified.

22 I'd like to ask the TVA folks to take a minute or two to
23 walk us through how your construction process has ensured that all the
24 prior construction issues at Unit 2 have been addressed.

25 MR. ARENT: Do you want me to take that?

26 MR. SCAGGS: So we learned from the licensing

1 framework that we used on Watts Bar 1, and those were in the structure
2 of a nuclear performance plan. There was corrective action programs
3 and special projects that captured the issues that were identified as part
4 of the Unit 1 construction and completion of testing.

5 Those were used, they are being used to drive our
6 actions and the approach that we've taken with respect to construction
7 and testing. So we're following the same guidelines that we utilized to
8 finish the construction and licensing of Unit 1 on Unit 2.

9 COMMISSIONER BARAN: You've publicly
10 announced a goal of fuel loading next June, June 2015. What steps
11 has TVA taken to make sure that as that date approaches and schedule
12 pressures increase, your employees continue to feel free to raise safety
13 issues and concerns that they may have?

14 MR. SKAGGS: So we've -- at Watts Bar 2, we've
15 used a multi-tiered approach to sustaining and improving safety culture.
16 We've used two different approaches. We've used a series of internal
17 assessments that help us understand our performance.

18 So that would include annual surveys by our major
19 contractors that we utilize on site, and these surveys go out and touch
20 all of the contract employees, to understand their perspectives
21 associated with safety culture, work environment, unit performance and
22 the use of the corrective action program to identify issues of quality or
23 safety.

24 The next thing that we do on an annual basis is we
25 perform organizational health surveys. We use the results of the
26 organizational health surveys to understand what issues that we might

1 have on the site. We derive the results of the survey into a series of
2 actions that we take to resolve those top issues associated with that
3 survey response.

4 Then we use on a weekly/monthly basis a tool called a
5 pulse survey, and that's where we go out and touch a smaller
6 percentage of our employees, to see what their perspectives are with
7 respect to the safety culture, work environment, human performance
8 and the use of the corrective action program.

9 And then each employee that is leaving the site after
10 their task is performed on the site, they get an exit survey, to look at
11 those three areas again, safety culture, work environment, human
12 performance and the use of the corrective action program, to make sure
13 that we understand their perspective as associated with those
14 programs, and their comfort, and the ease of which they're in use of
15 those programs.

16 The next thing is that we have a series of external
17 assessments that are on top of the independent assessments that we
18 use. We derived three years ago a Nuclear Construction Review
19 Board that's very similar to what the operating units use with respect to
20 the Nuclear Safety Review Board.

21 One of the functions of the Nuclear Construction
22 Review Board was to look at our safety culture work environment, look
23 at -- to talk to the employees on the project and get their perspectives
24 and confirm what we were seeing as a result of the internal
25 assessments.

26 That Nuclear Construction Review Board is made up of

1 independent people from Watts Bar. They're typically industry experts
2 in either construction, engineering or regulation. The next area -- we
3 brought in a contractor, and that contractor is brought in two to three
4 times per year that reports to the TVA Board of Directors.

5 One of their tasks is also to look at the safety culture
6 work environment, human performance and use of corrective action
7 program, and they, from an external perspective, look at the same
8 areas as what I've talked about earlier.

9 Then the last thing is we've used for the last four years
10 an independent firm to conduct an external assessment of safety
11 culture work environment, so we can compare the results of it to the
12 other two assessments that we've performed in an internal area.

13 So that there was a lot of discussion and a lot of talk,
14 but it's all focused around making sure we understand how our
15 employees, what their perspectives are, what kind of behaviors we're
16 developing, how is the supervision and management treating the
17 employees with respect to the project, and do we need to take changes,
18 make changes to improve our performance or sustain our performance.

19 I would tell you that the latest results say that 98
20 percent of our employees are comfortable in bringing up issues,
21 bringing up issues to their manager or supervisor or using the corrective
22 action programs to document their concerns, either with safety or
23 quality issues.

24 Our goal is to reduce that last two percent and continue
25 to collapse it. We will continue to use the same type of program that I
26 described until we finish up the project.

1 COMMISSIONER BARAN: Thank you. In recent
2 years, some plants have had cooling water intake temperatures
3 approach the technical specification limits, which required a change in
4 those limits. I know that Watts Bar using draft cooling towers in its
5 design.

6 But how has TVA ensured that with the operation of the
7 second unit, the cooling water temperature limit will not become a
8 concern for the Watts Bar units?

9 MR. SKAGGS: So we've looked at the history
10 associated with the performance of or operating of Unit 1 with respect to
11 river performance. We've also analyzed the performance of our
12 cooling towers and the systems associated with our secondary
13 systems. We did identify the need to add raw cooling water booster
14 pumps to Unit 2, to improve the capacity and capability of the raw
15 cooling water system.

16 We've also taken other design changes or
17 modifications to improve our performance in that area. But right now,
18 we feel very comfortable in our ability to meet our technical
19 specifications associated with the ultimate heat sink with both units and
20 the Tennessee River.

21 COMMISSIONER BARAN: In Mr. Safer's
22 presentation, and really more in the briefing letter he provided to the
23 Commission, he referenced some safety issues related to the ice
24 condensers at the D.C. Cook plant. How has TVA incorporated the ice
25 condenser operating experience into your construction of Watts Bar 2?

26 MR. SKAGGS: So the nuclear industry does a very

1 good job, in my opinion, of sharing operating experience from company
2 to company, plant to plant, and as well as the other plants that use ice
3 condensers. They've had some issues with operating or maintenance
4 of the ice condenser, so has Watts Bar.

5 I believe we've learned from those issues, both onsite
6 and off site. We have, with respect to Watts Bar 2, looked at our glycol
7 system. We've improved the glycol system, the glycol chillers, the air
8 handling units, and the actual condition of the ice condenser.

9 So I believe that we've taken both site action and
10 action associated with the industry, with respect to the operation and
11 maintenance of the ice condenser. We've folded that into the Watts
12 Bar 2 project, and we've also folded those same type of actions into our
13 operating unit on Unit 1. I believe that we are prepared to have good
14 performance of our ice condenser.

15 COMMISSIONER BARAN: Mr. Safer, I wanted to
16 give you a couple of minutes, the couple of minutes I have left, give you
17 a chance to respond to what you've heard this morning. Do you have
18 any additional thoughts you want to share with us?

19 MR. SAFER: I appreciate that the folks at TVA are
20 doing as much as they can, but the reality, it's almost -- in my view,
21 you're starting with a discredited design, with a lot of -- and with -- I
22 mean who would think of putting three million pounds of ice around a
23 nuclear reactor so you could make the containment thinner to save
24 money?

25 We in the Tennessee Valley don't want nuclear power
26 on the cheap. A lot of us don't even want nuclear power. But I think,

1 you know, the concerns are that the Brown's Ferry reactors are GE
2 Mark I's, and we all know their history. While the ice condensers have
3 performed in the real world, I mean at least there have been no major
4 accidents, but the studies that have been done within the NRC just
5 create a huge amount of concern that we're --

6 I mean gosh, I was in college when this thing was being
7 designed, and at Vanderbilt, the only computer on campus, it was the
8 size of this room. You know, the world has really changed, and I think
9 that using such an old design really fundamentally undercuts a lot of the
10 good work.

11 The bottom line for me is if the complexity, you know.
12 They gave me a tour and I really appreciate that, and the complexity of
13 the technology, all to boil water, is a great concern, and the ultimate
14 effect, you know, goal is to have electrons streamed through a wire.

15 Now we can put solar panels. In 1973, that was a
16 dream. Wind power to the extent we have it today, that was a dream.
17 The world has changed and utilities around the world are getting a
18 significant, much more significant amount of their electricity from clean,
19 renewable sources, and that's the concern.

20 I'm a generalist and I've studied this, and I'm sure of my
21 facts. But I look at the big picture, and to me, I wish TVA would take
22 advantage of the opportunity of its structure and its original creation
23 back in the 30's, as a visionary organization, to help the Tennessee
24 Valley and really, were supposed to be a model for the whole United
25 States, to provide a better level of environmental management and help
26 the people in the Valley.

1 There are no stockholders that the agency is beholden
2 to. It's all of us ratepayers and all the people in the Valley. So I just
3 see a huge potential at TVA being squandered by the spending all of
4 this money on this technology, which we've learned a lot about since
5 1973, since the 60's, and I think there's a better way.

6 COMMISSIONER BARAN: Thank you.

7 CHAIRMAN MACFARLANE: Okay, great. All right.
8 My turn. So thank you all for coming, and thanks for traveling up here
9 as well. Let's talk about the flooding and seismic assessments, and
10 you guys talked about it sort of briefly. But I would appreciate just a
11 little more detail on the results of your seismic hazard assessments,
12 reassessments and the flooding and hydrology challenges that you
13 have at TVA, and what you're doing, and this is all wrapped up in the
14 Fukushima responses as well. So just some more detail would be
15 helpful.

16 MR. SKAGGS: So Joe, why don't you start off with
17 the hydrology.

18 MR. SHEA: Yeah. Let me talk about the flooding.
19 The approach that we've taken on flooding fundamentally has three
20 elements to it. The most important one is that we're structurally
21 improving a number of the upstream dams that were referred to in the
22 briefing, to make them more robust. In doing that, that supports us
23 reanalyzing our current licensing basis.

24 CHAIRMAN MACFARLANE: So what's your time line
25 on that?

26 MR. SHEA: It's looking at the spring of next year for

1 the completion of a significant number of those modifications.

2 MR. SKAGGS: Right now we expect to have the work
3 done by April of 2015.

4 CHAIRMAN MACFARLANE: Okay, sorry.

5 MR. SHEA: And so that then is folded into our
6 reanalysis of flooding as it relates to the licensing of Unit 2, and the
7 updating of the licensing for Unit 1. It also supports the reanalysis for
8 the Fukushima 2.1 flood hazard reanalysis. All of that will be folded in.

9 The results of the licensing basis analysis are under
10 review by the staff, and that demonstrated that with the modification
11 that we're discussing, that we will have no increase in the flooding
12 onsite.

13 CHAIRMAN MACFARLANE: Okay, and what about
14 seismic hazard reassessment.

15 MR. ARENT: So with respect to seismic, we have
16 performed analyses, as we've prepared for the Fukushima response,
17 with using the central and eastern U.S. seismicity. We've also
18 performed studies using the ground motion response vector from 2004
19 to 2006, which in our case is more conservative.

20 We plan to be submitting the short-term analysis in
21 December. We've already had meetings with the staff in the July time
22 frame. What we're showing right now is for the -- preliminarily for the
23 dams that we're crediting upstream, that we are in good shape.

24 CHAIRMAN MACFARLANE: Okay. When you did --
25 you submitted a seismic hazard reassessment last April-March, right?

26 MR. ARENT: That's correct.

1 CHAIRMAN MACFARLANE: And where did you fall
2 in that?

3 MR. ARENT: So from that perspective, we had -- we
4 were slightly below the curves that the NRC had developed, but we still
5 were -- had margin between where we were with respect to structures,
6 and then also we had margin with respect to certain areas with respect
7 to --

8 CHAIRMAN MACFARLANE: So you're above your
9 design basis?

10 MR. ARENT: We were above our design basis.
11 That's correct.

12 CHAIRMAN MACFARLANE: Right. In low
13 frequency or the high frequency or both?

14 MR. ARENT: In the high frequency area.

15 CHAIRMAN MACFARLANE: In the high frequency
16 area.

17 MR. ARENT: That's correct.

18 CHAIRMAN MACFARLANE: And the high frequency
19 is more relevant to --

20 MR. ARENT: Relays and equipment of that nature.

21 CHAIRMAN MACFARLANE: Electrical systems.

22 MR. ARENT: That's correct.

23 MR. SKAGGS: So we also took the high frequency
24 data and looked at our components that might be effective at the plant.
25 We did find, for example, some bolting on a 480 volt transformer, if I'm
26 recalling correctly, and that bolting has been replaced as a result of that

1 analysis.

2 CHAIRMAN MACFARLANE: Can you say a little bit
3 more? You know, I had the opportunity to visit Watts Bar this summer.
4 Can you say a little bit more about the equipment, you know? As Mr.
5 Safer pointed out, this has a long -- this project has a very long history,
6 and a lot of the construction was done by 1985 and then it was halted.

7 So say a little bit about what you've done since then. I
8 mean are you using all that equipment that's been sitting there for 30
9 years or what's --

10 MR. GRIMES: Mike, just walk through some of the
11 focus on the, you know, the different components that have been
12 refurbished, changed out, as well as what you've done with some of the
13 passive structures.

14 MR. SKAGGS: So some of the improvements that
15 we've made, the essential raw cooling water pumps have all been
16 replaced and upgraded with a new set of pumps. So that new set of
17 pumps allows us to have additional margin for two unit operation.

18 The eight pumps were in service for Unit 1, so it was
19 not needed then. So the eight new pumps have margin from that
20 perspective. We replaced the spare vital inverter, or we installed a
21 spare vital inverter, and that gave us more margin with respect to single
22 point failure.

23 We made upgrades in the switch yard. So we took the
24 switch yard and learned from the lessons from one of our other plants
25 that had to do a unit shutdown, and we redesigned the switch yard to
26 add new equipment and to add new lines. We also upgraded our

1 Alpha and Bravo common stations service transformer with automatic
2 load tap changers. So we've an additional qualified offsite power
3 supply to the plant.

4 Like I said, we did install new raw cooling water booster
5 pumps. We added diver barriers at our intake pumping station, that
6 separated our intake pumping station so we can do maintenance
7 online, which allows us to have a higher levels of margin of
8 performance there.

9 We've upgraded the plant for a digital control system,
10 where much of our systems are operated through a digital control
11 process versus some of the older technology.

12 We've upgraded our in-core probes with stationery
13 probes versus movable probes, with a new system that's provided by a
14 contractor. We've changed out the reactor vessel level
15 instrumentation system on Unit 2 with an upgraded model.

16 So those are some of the improvements that we've
17 made. We've also gone through the equipment. For example, we've
18 taken our large pumps and the reactor coolant pumps are new. We've
19 taken pumps on the secondary side and sent those back to the vendor
20 for refurbishments so they meet original specification.

21 We took all of our motors off of safety-related motors or
22 large motors on pumps and sent those off for refurbishment, so their
23 performance was meeting original specification. We've analyzed our
24 passive and active features.

25 For example, we've taken our concrete, taken a hard
26 look at our concrete, taken samples of concrete, performed tests of the

1 concrete to make sure it meets original specifications for strength and
2 quality, and we've done inspections of the buildings and structures, to
3 make sure we understand the aspects associated with the concrete
4 features.

5 We've looked at the embedded steel. We've looked at
6 -- the safety-related cabling has had testing to ensure the cable is able
7 to perform. We've pulled miles, hundreds of miles of new cable within
8 the plant. So those are just some of the examples.

9 CHAIRMAN MACFARLANE: Okay, thanks. That's
10 helpful. So I want to spend a little time talking about the public
11 outreach that you're doing, the Community Advisory Panel or whatever
12 you call it. Everybody has some version of that.

13 MR. SKAGGS: It's Community Action Panel.

14 CHAIRMAN MACFARLANE: Community Action
15 Panel.

16 MR. SKAGGS: Yes ma'am.

17 CHAIRMAN MACFARLANE: So you say you've had
18 three meetings. But it existed before, you altered it a little bit. Just
19 say a little bit more about what you're getting out of it, and then I'd like --
20 are you on it?

21 MR. SAFER: Yes.

22 CHAIRMAN MACFARLANE: Okay. I'd love you to
23 comment on it as well.

24 MR. SKAGGS: So it was not -- it was not established
25 before, and we saw a need for a Community Action Panel, as a result of
26 the work that we're doing on Watts Bar 2. We thought it would be

1 valuable to include stakeholders associated with the Tennessee area,
2 as well as the community, city and county executives, to get their
3 perspectives.

4 So the -- you know, the objective of it was to take the
5 time to talk about what we were doing at Watts Bar 2, associated with
6 the quality and safety, and what actions that we were implementing to
7 assure that we were maintaining the safety of our employees and the
8 surrounding communities associated with Watts Bar.

9 Secondly, one of the objectives was is to understand
10 issues and concerns of those stakeholders, advocacy groups
11 associated in the area with Watts Bar. So what we did is we went out
12 and invited 23 people that represent the stakeholder population. So
13 there are 16 people that are with the county and cities, and there's six
14 associated with advocacy groups.

15 The purpose is initially we took all 23 people, except
16 one person that was unable to make the tour. But toured them on the
17 plant, did a deep tour of the plant, so it took several hours, and took the
18 time on the tour to explain the equipment, the components, the way --
19 as much as we can, the way the systems work, and then the actions
20 that we're actually taking as we're walking on the tour, because being
21 able to show what you're doing versus talk about it seemed to be
22 valuable.

23 Then we've had these meetings to just talk about how
24 Unit 1 is performing, what kind of concerns or performance issues might
25 we have on Unit 1, and how we're striving for excellence. So Kevin
26 talks about that with the panel, and then I'll talk about where we are with

1 respect to the project and completion of Unit 2 and the testing.

2 Then we open it up to talk about issues or concerns or
3 topics that they would like to discuss, and so it's been very fruitful.
4 We've had talks on -- discussions, for example, hydrology, the topic we
5 just had; the testing of the plant, how we performed testing of the plant;
6 how we assure, based on the testing program, how we assure the
7 safety and the performance or the functionality of the systems and their
8 components.

9 We've also -- and so some of the feedback that I've
10 gotten from the 23 people is good discussions, good transparency. I
11 appreciate the effort. We all are learning things. What I've learned is
12 some of the county and city people that are part of the panel, they had
13 questions that we hadn't fulfilled some of their questions or their
14 answers to their questions.

15 Then we haven't taken the time to explain what we're
16 trying to do, because at the end of the day, our goal is to have a very
17 safe power plant with a high level of quality and reliability, and that's
18 what we're all driving for.

19 CHAIRMAN MACFARLANE: If you could be really,
20 really brief, because I'm asking the indulgence of my colleagues here.

21 MR. SAFER: Sure. I appreciate the participation.
22 It's been wonderful, cordial atmosphere, and they've been encouraging.
23 Mike has encouraged as many questions as I can come up with, and I
24 can come up with a lot, and they've made every effort to answer them.
25 So it's -- and the opportunity to tour the plant was much appreciated.

26 So as far as -- you know, and the people they put on

1 are Dave Lochbaum from Union of Concerned Scientists and others
2 that have followed the process closely. I appreciate that -- the spirit of
3 that whole part of it, and it is much appreciated.

4 CHAIRMAN MACFARLANE: Good, great. Thank
5 you. Okay. We'll turn to Commissioner Svinicki.

6 COMMISSIONER SVINICKI: Well, I need to begin by
7 redeeming myself with my colleague to my right here. I am sorry that I
8 did not offer a public welcome to you. I was certainly raised better than
9 that.

10 I'll offer in my defense the same thing that Chairman
11 Macfarlane stated, is that you were sworn in a few weeks ago, and you
12 have stepped, I think, so seamlessly into the tempo and process of
13 what we're doing here. It's very impressive.

14 So to us, it's like you've been around for awhile, so I
15 didn't think to do that. But certainly welcome to this, your first public
16 Commission meeting. It's great to have you on the Commission. I
17 thank also all of our external panel of participants. I have had the
18 opportunity to observe a Watts Bar Unit 2 project for some years now.

19 I have the benefit of having had that time on the
20 Commission, and I will say that spreading out in my observation of it
21 over the course of so many years, when you visit five years apart.

22 I think that if you had just blindfolded me and flown me
23 somewhere and kept me to the interior spaces, you might have been
24 able to convince me recently that it wasn't even the place that I visited
25 many years ago.

26 So I think that we hear, and I know we'll hear from the

1 staff as well these bland terms like replace and refurbish. To me,
2 given my many years of observing this process, it understates hugely
3 the undertaking that went on here. So I appreciate it, as you try in a
4 very technical way to discuss all that went on.

5 I think unfortunately it isn't the kind of language that
6 really gives people a sense of the significant change over time that
7 occurred there. So I don't know what we do about that. That's the
8 traditional communications challenge of trying to convey to those who
9 stand further outside the process exactly what went on.

10 So I don't have as many questions. I probably have
11 more questions for the staff panel, since I've been following this work
12 over time. But maybe I'll ask. One of the uniquenesses here will be
13 having operated Watts Bar as a single unit site for so long. I'm looking
14 at you, Mr. Walsh.

15 This will be kind of a unique experience for the U.S.
16 nuclear power program, to have so many years later a unit added in this
17 way, and now of course Vogtle and Summer will likely be dealing with
18 this in the coming years.

19 But where do you look in terms of setting up the very
20 structured processes for turning systems over to operations, and
21 migrating and evolving the station personnel for dual unit operation.
22 How have you approached that and where have you looked for
23 benchmarks?

24 MR. WALSH: We've approached that through a
25 thoughtful way, in that we did capacity analysis. We did a study of how
26 the site would need to manage the activities that would be required to

1 run -- transition from a single unit site to a two unit site.

2 I refer to a number of those assessments that we've
3 done. We've taken advantage of our peers in the industry, many with
4 two unit operating experience, and taken those insights and built those
5 into the transition plans that I mentioned earlier.

6 Then we have a very active leadership team that's
7 communicating daily and influencing folks, and focusing on really a
8 different, a different way to operate the site in the near future. We're
9 taking advantage of the activities that we have going on now, to practice
10 those.

11 So a combination of analysis, doing very good
12 assessments, developing plans and monitoring and utilizing outside
13 folks to evaluate how we're doing. Then Mike had discussed a number
14 of those external, you know, external peers in the industry that have
15 come in and given us a look, given us advice and given us some
16 feedback on how to better our plants.

17 COMMISSIONER SVINICKI: It has been mentioned
18 some of those structured processes for sharing operational experience,
19 in terms of the ice condenser questions that Commissioner Baran
20 asked as well. So it sounds like that process has been involved here,
21 as you look towards moving towards operation.

22 I think also when we talk about refurbishment, can you
23 describe -- you mentioned, Mr. Skaggs, that refurbishment, you know,
24 like motors and things were sent offsite.

25 Can you give some sense of the extensiveness of
26 that? Is that like a complete tearing down of a piece of equipment and

1 building back up, and then in the case of replacement, what is the
2 decision framework for refurbishment versus replacement?

3 MR. SKAGGS: So it is mainly toward the end of the
4 spectrum, a complete tear down. So to do an adequate refurbishment,
5 you have to go into the component and replace the consumable
6 products. So for example, rubber, greases, oils, those all have to be
7 replaced. So to get to those, the component in most cases has to be
8 completely torn down. So not only does that help us in making these
9 components like new, but it gives us the increased margin to reliability,
10 because we want these components to run right, and we don't want to
11 energize a component that's been sitting there for a while without the
12 refurbishment. So it's extensive.

13 The other part of your question is safety-related,
14 quality-related and the importance of safety components. Very close
15 to all of those components were refurbished or replaced.

16 COMMISSIONER SVINICKI: Okay, thank you. I
17 had an opportunity to introduce myself to Mr. Safer before the meeting,
18 and Commissioner Baran made reference as well to the more extensive
19 written statement, and I do thank you for that. I know that the structure
20 of these meetings is such that presenters are not given as much time to
21 cover all of the topics they would like to cover.

22 So I want to confirm to you that that will be part of this
23 meeting record, and that was very valuable. I appreciate it. You did a
24 very eloquent job of summarizing, I think, the main points from that.

25 I wanted, though, to -- it was very thought-provoking
26 when I was reading it yesterday, and then thinking about it last evening.

1 There are some issues there that while I appreciate the perspectives of
2 the citizens of the Tennessee Valley on basically what I would consider
3 kind of their energy future and what they desire and what they prioritize,
4 at the same time NRC jurisdictionally isn't in these projects making a
5 determination on the need for power, the energy mix.

6 I know you're well aware, Mr. Safer, that some of those
7 things fall outside of what NRC is going to be considering. But I still
8 think it's very useful to have that in the record, to have that broader
9 perspective.

10 But I would ask anyone from TVA, and maybe Mr.
11 Skaggs, since you have a number of years on this project, why is it that
12 this project -- you know, TVA obviously felt differently, that completing
13 Watts Bar 2 was the right choice. I think you do integrated resource
14 planning and you have to look at the broader energy mix, and how it is
15 that you will meet your legal obligation to serve the Tennessee Valley,
16 and it is a very integrated system, as Mr. Safer has talked about.

17 Can you react in terms of the contrast, of why, in light of
18 a number of the things that Mr. Safer covered, this was the choice that
19 TVA made, that they thought made sense?

20 MR. GRIMES: Yeah. I'll start, and then I'll let Mike
21 give his perspective on his time on Unit 2. You know, TVA comes from
22 a perspective, as you said Commissioner, of ensuring that we have,
23 you know, cost effective energy sources for the people at Tennessee
24 Valley.

25 It's a key part of the Tennessee Valley mission, and
26 right now we're looking very broadly at diversified energy sources and

1 balancing our generation portfolio. As you look at that mix, it becomes
2 very clear that a cleaner energy future is the best thing for all of us.

3 The Watts Bar 2 decision, very much a part of that
4 broader, diversified portfolio, recognizing the carbon-free benefits of
5 nuclear power, as well as giving us the opportunity to manage our
6 broader load demand, and enable us to continue to focus on, you know,
7 the closing of some of our coal plants, so that we can focus on more
8 balanced and diversified portfolio, as well as a cleaner portfolio moving
9 forward.

10 So that was all in consideration, as well as the cost
11 impacts of that carbon-free energy to the people of the Tennessee
12 Valley. Mike, anything to add to that?

13 MR. SKAGGS: So when we looked at completion of
14 the unit, we looked at a range for the cost and schedule, and the reason
15 -- part of the reason for the driver of that is lack of definitiveness on
16 exactly how it was going to be finished. But also that gave us a range
17 to make sure that the cost-benefit of the plant still served TVA and the
18 TVA ratepayers, those that are buying our electricity.

19 So that was the basis behind our decision-making of
20 why Watts Bar 2 is still a good product in the future for the TVA Valley.
21 It does dispatch at extremely low rates for the customers.

22 COMMISSIONER SVINICKI: Well, and like I said, it's
23 really maybe not fair of me to bring it up. It's outside the NRC's
24 bailiwick. But my colleagues went one minute over, so I'm just going to
25 tell a super quick story and close with this. I'll generalize it so I don't
26 get myself into any trouble.

1 But we have -- we have some, I think, irresponsible
2 folks who want to create an idea that there's no security at nuclear
3 plants. There's, as we all know, a lot of security at nuclear plants. So
4 one of the things is you can't get too close to one and start taking
5 pictures without people being told.

6 So I won't say where this happened, but recently there
7 was such an event, and the individual taking pictures was questioned.
8 We as Commissioners receive these reports, at least I do. So this
9 isn't, you know, unusual. People are curious about it. Often the
10 plants can be seen from far away.

11 But what made it linger in my mind is it was an elderly
12 gentleman, and he was questioned as to what he was doing, and he
13 said he had worked on construction of this particular unit, and he
14 desperately wanted to talk to his and to have pictures to show his
15 granddaughter, that he had worked on this unit.

16 So on the one hand, I understand and I appreciate that
17 there was the appropriate security response as a Commissioner, of
18 course. But when I read that story, I thought, you know, there are a lot
19 of people on the back end of these things, and it is significant to
20 dedicate many years of your life to do something.

21 So I thought that that gentleman likely, if that was a true
22 story, I hope it was, that he had a legitimate pride in something he had
23 given years of his life to. So maybe that's why I asked just kind of why
24 we can have this divergent view about what's the right thing for the
25 citizens of the Tennessee Valley. There's different views on that that
26 are very, very sincerely held. So I appreciate that. Thank you,

1 Chairman.

2 CHAIRMAN MACFARLANE: Okay. Commissioner
3 Ostendorff.

4 COMMISSIONER OSTENDORFF: Thank you,
5 Chairman. Let me start off by joining Chairman Macfarlane and
6 Commissioner Svinicki in welcoming Commissioner Baran. We've
7 had a number of chances to be together since you've been here. I
8 completely agree with others who have commented on your stepping
9 up to the plate right away. I've been very impressed, and Jeff, we're
10 very happy to have you here.

11 Thank you all for being here today. I think this is an
12 important topic. I had a chance to visit Watts Bar three times as a
13 Commissioner in 2010. It was the first nuclear plant I visited as a new
14 Commissioner. 2011, after Fukushima with Senator Alexander.
15 Then most recently in January of this year, to look at specifically
16 construction.

17 I look at Mr. Safer, because I had the same concerns
18 and questions that you raised about, you know, is this an antiquated set
19 of pieces of equipment that's been sitting there in moth balls for 30
20 years, that somebody's dusting off with some chem wipes, that kind of
21 thing.

22 So I look at Mr. Skaggs now, because I specifically
23 asked him in January of this year to take me and show me everything in
24 the containment building that was replaced or refurbished. As a
25 former submarine officer involved with repairs and depot modernization
26 periods, SRAs, -- overhauls.

1 I had some familiarity with how Naval nuclear
2 propulsion program approaches equipment repair and replacement
3 based on aging, and those other concerns. So I -- we walked up and
4 down a bunch of ladders there in January inside the containment for
5 over an hour and a half, just looking at what -- pointing out, saying Mike,
6 tell me what's new? Show me that.

7 It was a very helpful lesson learned from me. I hope
8 that your tour had some of that, Mr. Safer did it, because I think like we
9 said earlier, your seeing it on paper doesn't really make an impression,
10 but seeing it in person does.

11 I appreciate that Mr. Skaggs talked, went down a list of
12 things that were replaced when the Chairman asked a question about
13 that, and I appreciated that more explicit listing.

14 I wanted to maybe ask a related question. Just at a
15 high level, what kind of standard did you use -- was it industry
16 standards, ASME, EPRI? I'm trying to look at what were the standards
17 applied by TVA in deciding what components to replace or not? Can
18 you talk about that for a minute?

19 MR. SKAGGS: Yes sir. So the standards for Watts
20 Bar 2 are very well developed, and we have internal standards that
21 have been developed over time. They're design specifications per se
22 that describe the functionality and the capability that our equipment and
23 component systems need to perform to. Those are based on
24 regulations, EPRI standards, operating experience.

25 Secondly, the refurbishment program also relied a lot
26 on the generic aging/lessons learned report that was issued by EPRI,

1 that provides insights on the types and different types of perspectives
2 on aging and the degradation associated with aging. So we use that to
3 apply to the component systems and equipment for pre-service
4 degradation. So we used that.

5 COMMISSIONER OSTENDORFF: Okay. That's
6 helpful, and I encourage you, as I'm sure you have done in your
7 outreach to the local community, to ensure that that's articulated,
8 because I think it's not sufficient to say well, we just decided to do this or
9 that without any reference to external standards. I think that external
10 standard review by EPRI and the GALL type generic aging lessons
11 learned is really important.

12 MR. SKAGGS: Yes sir.

13 COMMISSIONER OSTENDORFF: I appreciate
14 Commissioner Svinicki's closing with the story that I had also read. So
15 now I'm looking at a former shipmate of mine, Joe Kelly back there.
16 Joe and I have been on a submarine together 26 years ago. Is that
17 right? He was involved directly in nuclear testing. I was the executive
18 officer on a pre-commissioned unit in Newport News, the SSN-750.

19 So I have a lot of memories working with Joe many
20 years ago, in bringing that newly-constructed ship to service and
21 operation and taking it on sea trials. So I want to use that frame of
22 reference to ask, Mr. Skaggs, you talked about the open vessel test and
23 the cold hydrostatic test that was recently done.

24 Can you talk briefly about any problems you saw
25 during those tests, and what your experiences were with those
26 evolutions?

1 MR. SKAGGS: So yes sir. When we performed
2 open vessel testing, we had a spiral wound gasket that was installed on
3 a flange face that extruded slightly, and we found that after the
4 performance of the open vessel testing. So that had to be replaced,
5 and we found that that had been installed incorrectly.

6 So they've been reinstalled correctly now, and we had
7 to go back and verify some flow values. That's been completed. That
8 was the issue we had with open vessel testing.

9 Then on the cold hydrostatic test, we did have a test
10 header valve that leaked through, and that was the extent of the
11 significance of the issues that we had. That was identified as we were
12 pressurizing up and we saw water coming out of a test header line.

13 COMMISSIONER OSTENDORFF: I appreciate that.
14 I've done at least two cold hydros in my own experience. I think I had
15 more problems than you experienced.

16 MR. SKAGGS: This will be my third, and this one was
17 by far the best performance that I have been associated with.

18 COMMISSIONER OSTENDORFF: Let me turn, and
19 you lead us to TVA. There's a question -- one question for TVA and
20 one question for Mr. Safer. Again, older design acknowledged;
21 refurbished a lot of components. Can you talk about any challenge
22 you had in parts availability? Anybody, whoever wants to address that
23 from TVA?

24 MR. SKAGGS: I'll talk about it. We are challenged
25 with -- so the design changes that we've made with respect to
26 obsolescence of components, equipment, we're not challenged with

1 that, because we make the decision change knowing that we can get
2 the parts.

3 We are challenged somewhat in some of the
4 safety-related pumps, and we're challenged in the refurbishment of
5 some of the larger valves and equipment. In fact that the challenge is
6 that type of work is not in large demand, and so we were challenged
7 from that perspective to return the equipment back to original
8 specification.

9 The machining of the equipment, etcetera, was the
10 challenge, and being able to have the manufacturers to meet our
11 demands and our schedule time frames that we were looking for.

12 So we've been able to work through it, and as a result,
13 we did learn some lessons a couple of years ago, and we spent several,
14 tens of millions of dollars in buying additional critical spare parts for the
15 plant, and the fact that we expected that we'd have some equipment
16 that would fail on initial performance runs, for example.

17 So we're at the final stages of getting all that critical
18 spare parts on site.

19 COMMISSIONER OSTENDORFF: Okay. Thank
20 you.

21 MR. SKAGGS: Yes sir.

22 COMMISSIONER OSTENDORFF: Mr. Safer, I
23 appreciated your October 23rd letter to the Commission in advance of
24 this meeting. That was very helpful for us to, in advance of your
25 presentation, have a more fulsome understanding of your concerns and
26 questions. So thank you for sending that.

1 I wanted to ask you from where you sit on the
2 Tennessee Environmental Council and part of the outreach. I can't
3 remember -- what was the name of the group?

4 MR. SKAGGS: Community Action Panel.

5 COMMISSIONER OSTENDORFF: Action Panel.
6 Do you feel like you've had reasonable or appropriate accessibility of
7 information from TVA?

8 MR. SAFER: Yes. It's been -- it was surprising
9 honestly, but Mike -- and we're on first name basis after two meetings --
10 has been quite gracious and after the first meeting, and I had numerous
11 questions then. He came up and said thank you for the questions, and
12 really encouraged.

13 I was asking, you know, questions about the tritium
14 production at Unit 1 and for weapons production, and questions about
15 the hydrology, and as -- and about the ice condenser, and anything that
16 -- and high burnup fuel. Anything that couldn't be answered on the
17 spot, the next meeting, there were the people that could answer it in the
18 room at the table.

19 We didn't quite have time to get through all of it, but I
20 would say yes, absolutely.

21 COMMISSIONER OSTENDORFF: Okay, thank you.
22 Thank you all. Thank you, Chairman.

23 CHAIRMAN MACFARLANE: Okay. Any additional
24 questions?

25 (No response.)

26 CHAIRMAN MACFARLANE: No? All right. We're

1 going to take a five minute break while we switch panels, and then we'll
2 reconvene.

3 (Whereupon, the above-entitled matter went off the
4 record at 10:21 a.m. and resumed at 10:30 a.m.)

5 CHAIRMAN MACFARLANE: All right, I think we're
6 ready to begin the second half with our NRC staff panel.

7 I will turn things over to Mark Satorius, our Executive
8 Director of Operations and he can introduce the panel and get us going.
9 So, go ahead, Mark.

10 MS. SATORIUS: Thank you, Chairman and good
11 morning to you and to the Commissioners.

12 At the risk of sounding like a broken record,
13 Commissioner Baran, on behalf of the staff, I would like to congratulate
14 you on your first public Commission meeting and we're looking forward
15 to seeing you at many more.

16 Today the staff will provide you a status on the briefing
17 of the efforts the NRC has undertaken to license the Watts Bar Unit 3 --
18 I'm sorry, Unit 2, including licensing and inspection -- I wonder what
19 kind of slip you'd call that?

20 CHAIRMAN MACFARLANE: Off to an excellent start,
21 Mark.

22 MR. SATORIUS: I don't think that's Freudian, but I
23 think that's a slip.

24 The Watts Bar Unit 2 including licensing and inspection
25 activities from NRC's staff's perspective.

26 On September the 29th, 2014, the staff provided the

1 Commission an information paper on the status of Watts Bar Unit 2 and
2 that was made publically available on the 15th of October.

3 I would like to first acknowledge the significant
4 contributions from the many offices in the agency that participated in
5 the numerous activities related to this endeavor.

6 Besides the Office of Nuclear Reactor Regulation and
7 Region II who are with me today at the table, I'd like to acknowledge the
8 Office of Nuclear Security and Incident Response for their security and
9 emergency preparedness reviews, the Office of Research for their
10 contributions in the individual plant examination and individual plant
11 examination for external events reviews, Region I for their review of the
12 Part 30 and Part 40 licenses, the Office of Nuclear Material Safety and
13 Safeguards for their review of the Part 70 license and the Office of New
14 Reactors for their oversight and management of the budgets.

15 The NRC has completed significant parts of its review
16 on the Watts Bar license application. This has been in the midst of an
17 ever changing and dynamic environment the last couple of decades
18 since the last nuclear power plant was licensed in 1996.

19 The comprehensive construction inspection combined
20 with the licensing review and staff findings have played a very important
21 and positive role to ensure that Watts Bar Unit 2 is built as designed for
22 safe operation.

23 So, now, I'd like have Bill Dean describe what you'll be
24 hearing more in detail from the staff.

25 MR. DEAN: Thank you, Mark.

26 I, too, share a first today with Commissioner Baran.

1 This is my first Commission meeting as the Director of NRR, so
2 Commissioner Svinicki, I hope you take it easy on me with all the
3 questions you have poised for the staff.

4 COMMISSIONER SVINICKI: I'm getting soft in my
5 old age.

6 MR. DEAN: Okay, good, thank you.

7 So, Mark did a great job in reflecting on all the offices
8 and other regions that have contributed to supporting this project over
9 the last several decades.

10 I do want to be a little bit parochial, right now and reflect
11 on the contributions of the wide swath of individuals, staff and
12 managers within NRR who have contributed to this project over the last
13 several decades, many of them represented in this room by various
14 staff and managers, the Division of Engineering, Division of Safety
15 Systems, Division of Risk Assessment, Division of License Renewal,
16 Division of Inspection and Regional Support, the Japanese Lessons
17 Learned Division and then last, but not least, Division of Operating
18 Reactor Licensing represented here by Justin and Michele. It really
19 has been a true team effort involving many parts of this agency.

20 Next slide, please?

21 So, in light of the fact that the World Series concluded
22 last night, those of you who didn't stay up late, San Francisco beat
23 Kansas City 3-2 in a good game, I'd like to introduce the members here
24 at the table as sort of a batting order.

25 Our number three hitter is Vic McCree, my esteemed
26 colleague from Region II, the Regional Administrator there. Vic will be

1 talking to you in a few minutes about the inspection program that was
2 put together to oversee the refurbishment and construction activities at
3 Watts Bar Unit 2 to make sure that the licensee was implementing and
4 planning their activities properly and safely.

5 To my right, Michele Evans, she's the Director of the
6 Division of Operating Reactor Licensing, so she's our number two hitter.
7 She's going to talk to you about the Part 50 licensing process.

8 The Commission, obviously, over the past several
9 years has been involved in the Part 52 licensing process for new
10 reactors, so she'll give you a bit of a refresher course on Part 50 and
11 then talk about the history of Watts Bar and how Watts Bar fits within
12 that context of the Part 50 licensing process.

13 To her right is Justin Poole. Justin is the Senior
14 Project Manager for Watts Bar 2. He's going to provide you a more
15 specific insight regarding the unique regulatory and licensing
16 framework that has been put in place to support our technical and
17 licensing reviews of Watts Bar Unit 2 through its refurbishment and
18 construction activities, give you a sense of some of the key milestones
19 that remain before we are in a position to be able to consider licensing
20 of Watts Bar Unit 2 as well as some of the outstanding licensing issues
21 that are still at play and I think you probably are interested in that.

22 And then last, but not least, our clean up hitter, Tomy
23 Nazario. Tomy is the Senior Resident Inspector at Watts Bar
24 responsible for really being the agency's eyes and ears and boots on
25 the ground with all the various inspectors from Region II that have been
26 on site that provide, you know, the perspective that is needed relative to

1 what's going on on a day to day basis at the site. So, he'll talk to you
2 about the inspection program as it's been implemented and some of his
3 insights about how that's gone.

4 Next slide, please?

5 As indicated in the dialogue before, this has been a
6 very substantial project with the expenditure of many, many resources.
7 And so, in order to help, the agency focuses attention on how to
8 manage this project. We formed a group called Watts Bar
9 Reactivation Assessment Group or WRAG, of which Michele and Bill
10 Jones, who's the Division Director in Region II for construction projects
11 chair.

12 The WRAG is a very vital organization to facilitate the
13 communication and collaboration that's needed on this project between
14 the staff and managers in Region II and all the headquarters offices that
15 are involved in the project.

16 They also will serve a very valuable and important role
17 to be able to provide a recommendation to me when the inspection and
18 the licensing activities are complete and construction activities are
19 complete at Watts Bar 2 so that we can then begin the process of
20 making a determination as to whether to license the plant for operation.

21 I will say that I'm very pleased that the fact that all the
22 Commissioners have been to the site fairly recently. I know
23 Commissioner Baran, you're going in a couple of weeks.

24 I had the privilege and pleasure of being able to go to
25 Watts Bar several weeks ago with Vic and members of his team. And
26 again, like you indicated, Commissioner Ostendorff, very impressive in

1 terms of being able to get into those spaces that, at a typical operating
2 plant, you can't get to.

3 And just as a side note, the first inspection that I ever
4 did as an NRC inspector was in 1985 at Watts Bar and I do want to clear
5 up any potential rumors that might exist that it was my inspection
6 findings that resulted in the long delay of us being able to consider
7 Watts Bar Unit 2.

8 So, with that, let me turn it over to Michele.

9 MS. EVANS: Okay, thank you, Bill.

10 Good morning, Chairman, Commissioners.

11 Next slide?

12 All right. Unlike the recent licenses issued by the
13 Commission, the V.C. Summer and Vogtle, which were done under
14 Part 52, the licensing of Watts Bar Unit 2 is being done under Part 50.

15 All operating nuclear power plants in the United States
16 were licensed under this two step process described in Part 50.

17 First, as an application is submitted for a construction
18 permit that would authorize construction -- excuse me, first, an
19 application is submitted for construction permit that would authorize
20 construction of the proposed facility.

21 The focus of this stage of the staff's review is on the
22 preliminary design in the facility and on the suitability of the proposed
23 site. During this stage, a mandatory hearing is required.

24 The second stage of the review involves the evaluation
25 of an operating license application in which the staff reviews the final
26 design of the plant, verifies its construction and inspects the testing,

1 operations and emergency preparedness aspects of the review. For
2 this second stage, an opportunity for hearing is offered but not required.

3 The initial construction permit for Watts Bar Unit 2 was
4 granted in 1973. When TVA informed the NRC of its plan to complete
5 Watts Bar Unit 2, they chose to proceed under the Part 50 licensing
6 process.

7 So, once the staff believes that the second stage of the
8 review is substantially complete in accordance with Commission
9 regulations and policies, the staff plans to request the authority for the
10 NRR office director to issue the operating license for Watts Bar Unit 2.

11 The staff would request this authority through the
12 submittal of a Commission notation vote paper and the staff expects
13 that this vote paper would be submitted within 30 to 60 days before the
14 final decision on the issuance of the Watts Bar Unit 2 license could be
15 made.

16 Next slide?

17 So, Watts Bar Unit 2 has a unique licensing history
18 which defined the project once TVA announced that it had plans to
19 finish construction. The next presenter will go into detail on how the
20 following events shaped the staff's review.

21 In 1971, TVA submitted a request for construction
22 permits for Units 1 and 2 which the staff reviewed and issued in 1973.
23 Referring back to my previous slide, this was the completion of the first
24 stage of Part 50.

25 In 1976, TVA submitted the operating license
26 application for Watts Bar Units 1 and 2 and the staff began reviewing

1 and documenting findings in safety evaluation reports starting in 1982.

2 Regarding hearing opportunities, the mandatory
3 hearing during the construction permit phase occurred in 1972.

4 After the operating license application was submitted
5 an opportunity for hearing was provided but there were no admitted
6 contentions.

7 Construction at the site stopped around 1985 when a
8 large number of deficiencies were identified. So, when TVA resumed
9 construction around 1990, the focus was put on completing Unit 1.

10 In late 1995, the staff issued a low power license for
11 Unit 1 and a few months later, in February of 1996, the full power
12 license was issued.

13 During this time, Unit 2 was being maintained in a
14 deferred status. Then in 2007, TVA notified the NRC that it intended to
15 resume construction on Unit 2.

16 I'll now turn the presentation over to Justin Poole to
17 discuss the licensing framework and the status of our licensing review.

18 Thank you.

19 MR. POOLE: Thank you, Michele.

20 Good morning, Chairman, Commissioners.

21 Next slide, please?

22 After formal notification of the intent to restart
23 construction at Watts Bar Unit 2, the staff provided the Commission a
24 paper regarding policy issues on the handling of the review for Watts
25 Bar Unit 2 given its licensing history.

26 The Commission responded with a staff requirements

1 memorandum 07-0096 providing guidance to the staff on these issues.

2 In general, the guidance from the Commission was
3 agreement on the use of the Unit 1 licensing basis as the licensing
4 basis for Unit 2. The staff was also directed to encourage TVA to
5 adopt updated standards for Unit 2 where it would not significantly
6 detract from the design and operational consistency between the two
7 units.

8 In the staff requirements memorandum, the
9 Commission also directed the staff to renote the hearing opportunity
10 on the operating license review given the long delay.

11 The staff renoted the application in 2009. Two
12 contentions had been admitted related to the environmental review but
13 had since been resolved or withdrawn.

14 NRR office instruction LIC-110 was created to
15 implement the direction given to the staff by the Commission through
16 the staff requirements memorandum. The office instruction
17 establishes the organizational review team, the roles and
18 responsibilities of the team members, the process workflow,
19 management controls and process for coordinating the review between
20 other offices.

21 The office instruction also lays out the different actions
22 to be completed as part of the operating license review from putting
23 together the safety evaluation reports to the final environmental
24 statement to the final steps for issuing the operating license.

25 The office instruction was intended to guide the staff
26 through the application to ensure a complete and high quality review.

1 In an effort to identify the licensing basis review that
2 had been done and approved concurrent with the operating license for
3 Unit 1, TVA submitted its framework for completion of construction and
4 licensing activities for Unit 2.

5 The staff reviewed the proposal and documented its
6 assessment of the regulatory framework for Unit 2 in October of 2008.

7 The staff then published in supplemental safety
8 evaluation report 22 a table listing all the safety evaluation report topic
9 items and their status as to whether the staff considered these items to
10 be either open or resolved.

11 The table provided the basis for TVA to submit the
12 necessary information for the staff to complete its safety review of the
13 Unit 2 operating license application.

14 Next slide, please?

15 Once the framework had been established, the staff
16 began its review of the updated operating license application.
17 Following the publication of the supplemental safety evaluation report
18 21, five additional supplemental safety evaluation reports were issued
19 by the staff documenting safety conclusions.

20 At this time, the majority of the staff's safety review has
21 been completed. Some open items remain and I will go into some
22 detail as to the major topics remaining.

23 In 1978, the NRC issued a final environmental
24 statement related to the operating license for Watts Bar Unit 1 and 2.
25 Because TVA did not complete Unit 2 as scheduled, the NRC
26 regulations in 10 CFR 51.92 required the staff to prepare a supplement

1 to the 1978 final environmental statement.

2 In preparing this supplement, the staff held two
3 scoping meetings near the site to obtain comments from the public as
4 well as reached out to federal, state, Tribal, regional and local agencies.

5 In October 2011, the staff published its draft
6 supplement to the final environmental statement. Again, the staff
7 reached out via public meetings and through the local agencies in order
8 to gain public comment.

9 Following the comment period, the staff considered
10 and addressed all comments received on the draft in order to publish
11 the final version of the supplement. This was published in May of
12 2013.

13 Next slide, please?

14 One of the major items remaining in the staff's safety
15 review is hydrology, specifically, the design basis flooding event. As
16 hydrology affects both the operating unit and Unit 2 and to keep with the
17 Commission's direction found in the staff requirements memorandum,
18 the staff is currently reviewing a license amendment for Unit 1 to update
19 its probable maximum flood level seen at the site during a design basis
20 event.

21 Once completed, this will form the basis for Unit 2 and
22 the two units would have the same design basis.

23 TVA submitted new information regarding this review
24 at the end of September and is still currently under staff review.

25 The other major item remaining on the staff safety
26 review is the review of the as-built fire protection report. The staff

1 previously reviewed and approved the as-designed fire protection
2 report in 2013 but as construction continued, fire areas and operator
3 manual actions have changed.

4 The staff needs to review these changes and evaluate
5 their impacts to the safety evaluation previously published. TVA
6 submitted this information in September and is still currently under staff
7 review.

8 In November of 2013, the staff met with the full ACRS
9 committee. Following that meeting, the committee issued an interim
10 status letter. The letter identified to the staff those items which the
11 committee requested the staff to present upon closure.

12 Two of the items I just mentioned, hydrology and fire
13 protection were both identified in that letter. There were five other
14 items that were identified by the committee in this letter as well.

15 The staff is finalizing its review of these items and will
16 document these reviews in supplemental safety evaluation reports.
17 Currently, we expect to issue the next report in December of 2014.

18 As I mentioned earlier, the staff had published its
19 environmental review in a supplement to the final environmental
20 statement in 2013. Since that time, the agency, in response to a Court
21 ruling, revised the previous waste confidence rule by issuing the
22 continued storage spent fuel rule.

23 With this new rule in effect, the staff is evaluating the
24 implementation of this rule to ensure the necessary NEPA
25 requirements have been met.

26 On March 12, 2012 the NRC issued orders to operating

1 license and construction permit holders requiring them to take actions
2 that the NRC determined would provide substantial increase to the
3 protection of public health and safety based on the events that occurred
4 at Fukushima Daiichi power plant in Japan.

5 Of these three orders, two are applicable to the design
6 of Watts Bar Unit 2, as you heard earlier from TVA, the spent fuel pool
7 instrumentation mitigating strategies order.

8 These orders state that the holder of a construction
9 permit must complete full implementation prior to issuance of an
10 operating license and that the holder shall report to the Commission
11 when full compliance is achieved.

12 This month, TVA submitted a compliance letter with
13 open items for the two orders and the staff expects to receive from TVA
14 the full compliance letter in December of 2014.

15 The NRC staff intends to issue its safety evaluation
16 and perform inspections to document the NRC staff's review of the
17 actions taken for Unit 2 prior to the issuance of the operating license.

18 I would like to note that the information requested in the
19 March 12, 2012 50.54(f) letters for the near term task force
20 recommendation 2.1 regarding the re-evaluation of seismic and
21 flooding hazard is not needed prior to the Watts Bar Unit 2 licensing
22 decision.

23 This approach is consistent with other reactors in that it
24 recognizes the re-evaluations require licensees to analyze conditions
25 beyond their current licensing basis and are complex and may take
26 several years to complete.

1 In addition, because Watts Bar Unit 2 is required to
2 comply with the mitigating strategies order prior to receipt of the unit
3 operating license, verification that Watts Bar complies with the
4 mitigating strategies order will provide additional insurance that TVA
5 has credible strategies in place to protect against beyond design basis
6 events.

7 Next slide, please?

8 The major milestones remaining for the staff to
9 accomplish are shown in this slide. Starting on the left, the first
10 milestone is ACRS with a subcommittee currently scheduled for
11 January of 2015 and a full committee currently scheduled in February of
12 2015.

13 Assuming the staff is able to satisfactorily address the
14 committee's concerns and a letter of recommendation is issued, the
15 next milestone is the Commission Notation Vote Paper which Michele
16 described earlier.

17 Should the Commission grant the authority, the next
18 milestone shows that the office director of NRR would receive a report
19 from the Region II administrator on the status of construction inspection
20 activities.

21 This report will provide significant insights, inspection
22 items that remain open and the Region II administrator's
23 recommendation regarding issuance of an operating license. The
24 office director of NRR will take this information as well as other
25 information into account before making a finding as to whether or not
26 the requirements of 10 CFR 50.57 have been met and, therefore, issue

1 the operating license.

2 That has completed my portion of the presentation, I
3 will now turn it over to Victor McCree to provide an overview of the
4 construction inspection program.

5 MR. MCCREE: Thank you, Justin.

6 Good morning, Chairman, Commissioners.

7 Bill mentioned in his opening remarks an appreciation
8 for the many folks supporting this important project. In addition to
9 Tomy, I'd like to identify three key contributors to the Watts Bar
10 inspection program who are seated behind me today.

11 First, Bob Haag, the Region II Branch Chief who's
12 been the heart and soul of our efforts focused on Watts Bar 2; Chris
13 Even, a Senior Construction Project Inspector who's made significant
14 contributions to our management of the close out of open items at
15 Watts Bar; and James Baptist who has done a fantastic job in leading
16 the planning and implementation of inspections for pre-operational
17 tests.

18 Also, Fred Brown, the Deputy Regional Administrator
19 for Construction in Region II is here today and he's brought exceptional
20 leadership to the new construction efforts in Region II.

21 There are a number of others, as Bill alluded to, who
22 are not here today, but I would characterize them as the regulatory
23 tissue that connects and enables and informs safety and licensing
24 decision at Watts Bar.

25 Next slide, please?

26 As Michele discussed, Watts Bar Unit 2 has a unique

1 history on the decision to license the plant that's spent an extended
2 period of time in construction including deferred construction is not one
3 that we take lightly.

4 Fortunately, Region II has had some experience in this
5 area having overseen the completion of construction and operational
6 readiness at Watts Bar 1 in the mid-1990s and the restart following an
7 extended shutdown of Browns Ferry Unit 1 in the 2007 time frame.

8 Working closely with the Office of Nuclear Reactor
9 Regulation, Bob and his staff developed a customized inspection
10 program that was completed in 2008 and is formalized in Inspection
11 Manual Chapter 2517.

12 In developing the customized inspection program, we
13 wanted to provide a strong basis for assurance of the following: one,
14 that the construction work that was done on Watts Bar Unit 2 in the '70s
15 and '80s was or would be adequately inspected with the results
16 documented in publically available documents.

17 Secondly, that the quality assurance problems that
18 contributed to the suspension of construction in 1985 and deferral of
19 construction in 1992 would be adequately addressed by the applicant
20 and also that the period of extended deferral would not reduce
21 confidence that the installed safety systems will function as intended.

22 And thirdly, that appropriate inspections would be
23 performed to ensure the remaining construction activities,
24 pre-operational testing, operational readiness programs and new
25 regulatory requirements are fully met.

26 Tomy will provide the status of the implementation of

1 our inspection program, but I do want to briefly touch on three specific
2 points.

3 The first is the thoroughness with which we looked at
4 the inspections that have been previously completed. As required by
5 Inspection Manual Chapter 2517, we essentially performed a
6 comprehensive reconstitution of the inspection records similar to what
7 was done for Watts Bar Unit 1 to ensure that all critical inspection
8 attributes were documented as having been successfully completed.

9 Where gaps existed between inspection requirements
10 and the documented inspection record, we identified and are tracking
11 specific inspections that need to be performed.

12 An example of a gap was Inspection Procedure 51063
13 which deals with the electrical cable installation and has a requirement
14 to inspect cable terminations. Because of the documented inspection
15 record did not meet minimum sample size, we have inspected
16 additional cable terminations.

17 The second point involves historical quality assurance
18 problems that caused suspension of construction in the mid-1980s.
19 To address these quality assurance problems, TVA developed the
20 Nuclear Performance Improvement Plan which Mr. Skaggs mentioned
21 earlier that includes 29 corrective action programs and special
22 programs and covers areas such as welding, electrical issues and
23 concrete.

24 This plan which NRC staff reviewed and found
25 acceptable in 1989 was implemented successfully in the completion of
26 construction of Watts Bar Unit 1.

1 This experience suggests that if TVA implements the
2 plan similarly, the historical quality assurance problems can be properly
3 resolved for Unit 2 as well.

4 In addition, because of the lengthy period of deferral of
5 construction of Unit -- deferred construction of Unit 2, TVA developed a
6 refurbishment program which was mentioned earlier to ensure that the
7 design and licensing basis, including original equipment design
8 specifications would be met.

9 To confirm the acceptable implementation of each of
10 these programs, we created a detailed inspections plan and a new
11 inspection procedure which specifically covers refurbishment activities.

12 Finally, in addition to the work completed in 2008 to
13 determine what needed to be inspected to support a licensing decision,
14 the Watts Bar Reactivation Assessment Group, or WRAG, serves as a
15 joint forum for identifying new or emerging issues that the region should
16 inspect under Manual Chapter 2517.

17 The cybersecurity requirements which were published
18 in 2009 and the orders issued after the 2011 Fukushima Daiichi
19 accident are examples of new regulatory requirements that have been
20 captured in this living process.

21 To summarize, I feel confident that the customized
22 inspection program for Watts Bar Unit 2 is comprehensive and robust.
23 It is also a practical approach that, after successful implementation of
24 our inspections, will allow us to discern with reasonable assurance
25 whether the facility has been constructed in accordance with the
26 licensing basis and can be operated safely.

1 Next slide, please?

2 So, what are we doing and what am I doing to ensure
3 that we successfully implement our inspection program?

4 Well first, we've ensured that the people assigned to
5 oversee the construction of Watts Bar Unit 2, including Bob, Tomy,
6 Chris and James are top notch people and high performers. They've
7 received training to prepare them for the unique construction
8 environment and program guidance to focus their efforts.

9 Results also provided clear expectations and strong
10 management support. For the last year, either I or Fred or Len Wert,
11 the Deputy Regional Administrator for Operations in Region II have
12 visited the site on a monthly basis. We visit to check on the status of
13 inspection activities and open item closure and ensure that the resident
14 inspectors have the support that they need.

15 The graph on this slide demonstrates the significant
16 amount of inspection resources Region II has applied to Watts Bar Unit
17 2. The hours are reported by calendar year consistent with the
18 practice under the reactor oversight process for operating reactors.

19 As you can see, the inspection related hours have
20 varied since resumption of construction in 2008. We've adjusted the
21 level of effort to match the construction activities and effectively use our
22 construction inspection resources.

23 For example, in 2012 when TVA reduced the amount
24 of construction activities while they re-evaluated the status of the
25 project, we temporarily decreased the number of resident inspectors
26 from four to three. And the dramatic increase in the applicant's

1 activities after that time to complete systems and our associated
2 inspection efforts is clear in that calendar year. We expect that next
3 year's effort -- level of effort will be comparable.

4 I would note that one of the challenges at both Watts
5 Bar and the AP1000 construction sites has been schedule volatility.
6 To partially mitigate the schedule volatility, we've identified four
7 construction residents at the site and we are regularly supplementing
8 them with additional region-based inspectors on one or more week
9 assignments.

10 Both our region-based inspectors and the resident
11 inspectors have been very adaptive and agile in planning and moving
12 their inspections to match ongoing inspection activities.

13 In summary, we believe that we've developed a
14 comprehensive construction inspection program. Additionally, based
15 on the results of our inspections and my own interactions and
16 involvement, I'm confident that our inspectors have effectively
17 implemented the program to date.

18 As I indicated, we are well prepared to inspect the
19 remaining inspection planning and scheduling items. We know what
20 pre-operational testing and operational readiness inspections need to
21 be performed and we have plans in place to complete those
22 inspections.

23 I'm also confident that we have the tools, the plans and
24 the resources to continue to handle the volatility of construction
25 schedules even as the pace of construction accelerates at Watts Bar
26 Unit 2 and the AP1000 sites.

1 By the time TVA is ready to load fuel, I'll be in a position
2 to make a sound and well-informed report to Bill regarding whether
3 Watts Bar 2 is substantially completed, constructed in accordance with
4 its licensing basis and can be operated safely once an operating license
5 is issued.

6 At this point, I'll turn it over to Tomy Nazario to discuss
7 the status of inspection activities.

8 MR. NAZARIO: Thank you, Vic.

9 Good morning, Chairman, Commissioners.

10 First, I'd like to highlight what Vic just mentioned and
11 reference briefly Bill Dean's baseball analogy. This truly has been a
12 collective team effort. We've devoted a significant effort for Watts Bar
13 Unit 2 inspections.

14 On a weekly basis, I see this inspection effort, it's not
15 unusual to have all our spaces in our construction trailer filled with
16 resident and regional inspectors.

17 Most of the activities involving classic construction
18 activities are now complete. There's still electrical construction work
19 that is ongoing and a couple of major systems that still have assembly
20 work remaining as part of construction.

21 To facilitate the implementation of the Watts Bar Unit 2
22 inspection program, we developed what we call the inspection planning
23 and scheduling database, also known as IPNS.

24 This tool is a dynamic tool used to track and plan our
25 inspection of approximately 550 inspection items. This database also
26 serves as a collection of historical and current construction inspection

1 items which includes inspection procedures, corrective action
2 programs, special programs, generic issues, historic violations
3 allegations and unresolved items.

4 As Vic mentioned earlier, we thoroughly screened and
5 reviewed these historical items to ensure that we developed a
6 comprehensive basis for the items in IPNS. We have completed
7 inspections for 429 of the 550 items in the inspection planning
8 scheduling database.

9 The remaining 121 open items, some amount of
10 inspection has been performed and, in most cases, we are waiting on
11 TVA to either complete some construction or testing activity or to
12 perform some corrective action before the inspectors can complete
13 their inspection and close out the item.

14 Considerable work has gone into planning the
15 remaining inspections to ensure we have inspectors ready when
16 different aspects of the IPNS items become available.

17 While a lot of inspections have been completed, there
18 are still many significant inspection activities remaining specifically in
19 the area of testing.

20 In the area of pre-operational testing, the hot functional
21 test is currently scheduled for early next year. For this test, the reactor
22 cooling system reaches normal operating pressure and temperature
23 without nuclear steam generation to demonstrate plant safety and
24 operation.

25 There is a significant effort where we mobilize a large
26 inspection team that must be prepared to cover around the clock

1 activities over several weeks.

2 An example of large operational program inspection is
3 in the area of fire protection. This inspection will evaluate a number of
4 open IPNS items as well as looking at the acceptability of Fukushima
5 mitigating strategies orders -- I'm sorry -- and we'll also be taking a look
6 at the as-built condition of the plant.

7 The inspection of the Fukushima mitigating strategies
8 orders is scheduled for completion in the January time frame. This will
9 be the first performance of this inspection.

10 Next slide, please?

11 The inspectors at Watts Bar Unit 2 continue to focus on
12 construction testing, specifically those remaining activities that need to
13 be verified to allow completion of the IPNS items.

14 This year, we inspected and closed 82 items and
15 reviewed for closure different aspects of many others.

16 Over the last several months, we inspected several
17 significant milestone activities. One example was open vessel testing
18 which confirmed the availability of the emergency core cooling system
19 pumps to function as designed.

20 A recent activity was the cold hydrostatic testing of the
21 reactor cooling system and reactor pressure vessel assembly.

22 This test involved pressurizing the reactor cooling
23 system to approximately 3,120 pounds of pressure which translates
24 into 125 percent of the design pressure. This test provided assurance
25 of the pressure retention integrity of individual components as well as
26 the welded and mechanical joints that join them together.

1 Our team of inspectors provided independent
2 confirmation that there was not any through-wall leakage at this very
3 high pressure.

4 The picture on the left shows one of our inspectors
5 witnessing the reactor pressure vessel assembly. This evolution
6 involved lifting and moving several key components in preparation for
7 the reactor cooling system hydrostatic testing. We verified proper
8 sequencing, spacing and foreign material exclusion during this
9 evolution.

10 The picture on the right shows one of our inspectors
11 verifying proper installation of the full flow filters that were installed
12 within the reactor vessel lower internals and core barrel.

13 The filters replicate fuel bundles that are necessary to
14 ensure hot functional testing properly models plant conditions.

15 Next slide, please?

16 The refurbishment program is unique to Watts Bar Unit
17 2. It consists of cleaning, rebuilding or replacing components that
18 have been in place for an extended period of time. These activities
19 provide assurance that the components will perform their intended
20 functions with the same reliability that they would have if the plant had
21 not experienced the extended construction delay.

22 The specific provisions of the refurbishment program
23 was reviewed and accepted by the staff as part of the resumption of
24 construction activities. Over the course of the project, we have
25 inspected many of the passive systems and components such as piping
26 and concrete to verify first hand the condition of the plant.

1 The picture on the left shows one of our inspectors
2 entering the reactor cooling system through the reactor coolant pump
3 bowl. In this example, we crawled through the piping to verify the
4 material condition before and after it was cleaned and to look for any
5 departures from quality and design requirements.

6 We also inspected corrective actions to verify that
7 applicable requirements were met and we challenged TVA to ensure
8 that the appropriate scope for systems, structures and components
9 were considered throughout the project.

10 In regards to active components such as pumps,
11 valves and motors, we inspected a broad range of refurbishment
12 activities including the disassembly and reassembly of safety related
13 pumps and the replacement of safety related motor operated valve
14 actuators.

15 The picture on the right shows one of our inspectors
16 performing a receipt/storage inspection of a new vital inverter for Unit 2.

17 Next slide, please?

18 As I mentioned earlier, Watts Bar Unit 2 will be the first
19 plant at which we will begin to inspect the implementation of Fukushima
20 mitigating strategies orders. It will also be the first plant where we start
21 to inspect the full implementation of the cybersecurity plan as required
22 by 10 CFR Part 73.54.

23 When we preform the inspection for the Fukushima
24 mitigating strategies, it will not be the first time we have looked at some
25 of the new facilities. The photos on this slide show our inspectors
26 monitoring the construction of the basement of the half a million gallon

1 auxiliary feed water storage tank and some of the piping between the
2 tank and the Turbine Building.

3 We monitored the construction of the seismic storage
4 facility that will house on-site mobile mitigation equipment and
5 additional diesel generators.

6 We also monitored and observed the work to install
7 mechanical and electrical connections for use in connecting mitigating
8 strategy equipment to plant systems. We did not identify any issues of
9 significance during these construction activities.

10 Next slide, please?

11 Since 2008, I've had the opportunity to manage the on
12 site inspection program and personally witnessed the program
13 progress at the site. Overall construction activities have met
14 regulatory requirements and we have reasonable assurance that the
15 plant is being built in accordance with the design.

16 We have verified this through inspection of in-process
17 work, inspection of as-built systems and inspections of pre-operational
18 tests. These inspections are reflected in our detailed inspection
19 reports.

20 We have been very thorough and comprehensive in
21 our inspection activities as demonstrated by the large number of
22 resources expended as Vic mentioned earlier.

23 Where we have had inspection findings such as in the
24 area of commercial-grade dedication and the seismic qualification of
25 circuit breaker configurations, TVA has resolved those issues and we
26 have thoroughly reviewed corrective actions to confirm that TVA has

1 achieved compliance. Currently, there are no potentially significant
2 open issues or findings.

3 I'm confident that our inspectors have added value as
4 evidenced by corrective actions and improvements made at the site.
5 Our resident inspectors are out in the plant daily, during weekends and
6 on back shift to ensure that we are providing the right level of regulatory
7 oversight consistent with our inspection program.

8 Moving forward, I anticipate that the project will
9 become more dynamic as construction completion nears. Testing
10 continues, systems turn over and transitions to operations occur.
11 Therefore, we will continue to be agile and flexible to respond to this
12 changing and dynamic environment over the next several months.

13 This completes my presentation. At this point, I'll turn
14 it back to Mark for closing remarks.

15 MR. SATORIUS: Just very quickly and we'll go to the
16 last slide.

17 I'm confident that the agency has performed the
18 necessary actions required to perform its regulatory function given the
19 unique history of Watts Bar Unit 2.

20 We thank you for your time and looking forward to your
21 questions Chairman and Commissioners.

22 COMMISSIONER MACFARLANE: Great, thanks.

23 All right, over to Commissioner Baran.

24 COMMISSIONER BARAN: Thanks, Chairman.

25 Vic, there's been quite a bit of discussion of the history
26 of Watts Bar and NRC's inspection program. Can you talk a little bit

1 about the results of the inspections and reviews that NRC has
2 performed of the refurbishment program and legacy programmatic
3 issues? Are you confident that these issues are adequately
4 addressed by the licensee?

5 MR. MCCREE: Thank you, Commissioner, for your
6 question.

7 And I'll ask Tomy to help me with any details, but just
8 as an overall assessment, we have, again, implemented the inspection
9 procedure for inspection refurbishment programs, inspection procedure
10 32-700, and we've made publically available the results of those
11 inspections as well as all the inspections we've done.

12 And we've not identified any major issues associated
13 with TVA's implementation of their refurbishment program which will be
14 a factor in our overall assessment of their substantial completeness and
15 readiness to start up readiness for issuance of an operating license.

16 MR. NAZARIO: I would agree with Vic. I was
17 formally involved with license renewal and as TVA mentioned in one of
18 their slides, some of the considerations in coming up with a
19 refurbishment program were aging lessons learned and also, you know,
20 specifically in the areas of passive components.

21 So, in those areas, we looked at those very closely.
22 It's something that I've been personally involved with since 2008 in the
23 beginning of the project and we haven't identified any significant or
24 issues that are currently open at least on our end.

25 COMMISSIONER BARAN: Well, Tomy, you're the
26 Senior Resident Inspector there are we're all relying on you and your

1 fellow resident and regional inspectors to oversee the construction work
2 being done there and we appreciate having you here to get the benefit
3 of your first hand insights and perspectives.

4 This is maybe just a slightly different way of asking a
5 question I just asked, but based on your inspections, are there any
6 issues that you feel, looking at the next few months, could represent
7 significant licensee challenges proceeding loading of the core?

8 MR. NAZARIO: There are challenges and one of
9 them are maintaining ourselves flexible, given just the dynamic
10 environment. Some of us were previously involved with the restart of
11 Browns Ferry Unit 1 and in that same light, I would anticipate on
12 experiencing some of those challenges.

13 The other challenge would be in the area of discovery
14 as TVA discussed during their presentation. Once they become --
15 once they start testing a lot of these systems and continue testing which
16 they have over the last year, they may run into component issues and
17 then those will have to be addressed on a case by case basis.

18 So, again, we have to remain from an inspector
19 standpoint, we have to remain agile, flexible, ready to respond, ready to
20 thoroughly look into the issues and the corrective actions that TVA
21 takes.

22 So, that's a challenge, however, I believe we're in a
23 place where we're ready and capable of managing and anticipating
24 those as they come.

25 COMMISSIONER BARAN: Thanks.

26 On the first panel, TVA mentioned -- there was a little

1 bit of discussion about implementation of the cybersecurity regulations.
2 I understand that there are constraints on how much detail we can get
3 into on that in a public meeting, but could you give us -- and I'm not sure
4 who best to answer this question -- but can you give us a general
5 update on the review of the eight milestones for cybersecurity
6 implementation at Unit 2? I want to understand if cybersecurity
7 implementation is likely to present a challenge to the issuance of an
8 operating license.

9 MR. DEAN: Yes, so, thank you, Commissioner.

10 So, a lot of the inspection activities related to
11 cybersecurity are a conjoined effort between regional staff and then our
12 Office of Nuclear Security Incident Response. And I know Brian
13 McDermott, I think is up in the back. So, I don't know, Brian, do you
14 want to take a shot at that or Barry Westreich? Hey Barry.

15 MR. WESTREICH: Hi, I'm Barry Westreich, Director
16 of Cybersecurity Directorate.

17 Currently, they're scheduled to be in full compliance by
18 start up with two exceptions related to EP and security systems. So, I
19 think the current status is they are working through their -- they don't
20 have any milestones, they're just in full implementation except for those
21 two areas that are related to Unit 1.

22 So they're working through their schedules. We're
23 really waiting to see when they have their implementation schedules
24 ready so we can go do inspections.

25 COMMISSIONER BARAN: And so it sounds like you
26 don't have significant concerns at this stage where things are?

1 MR. WESTREICH: Well, no, we've been out to the
2 site and we've looked over all of their progress, but I think we need to do
3 more to really understand where they're going to be.

4 So, they've committed to us to have all those activities
5 completed and then we're scheduling inspection activities, I think,
6 December, February, every couple months to go out and verify that
7 they're where they think they're going to be.

8 So, we'll be looking pretty closely to make sure that
9 they're where they think they're going to be.

10 COMMISSIONER BARAN: Okay, thank you.

11 On the first panel, Mr. Safer raised concerns about
12 decommissioning funding. What's the staff's assessment of TVA's
13 ability to meet the decommissioning funding requirements for Watts Bar
14 2?

15 MR. DEAN: I'll take a first crack at that,
16 Commissioner, and then we have one of our financial senior analysts in
17 the audience, Mike Dusaniwskyj, who can probably provide a little bit
18 more detail.

19 But TVA has, with respect to Watts Bar, is in
20 compliance with the regulations. Obviously, in consideration of Watts
21 Bar Unit 2, in terms of what they would have in a decommissioning fund
22 at this point in time would probably be relatively minimal because you're
23 looking at the whole life of the plant to accumulate that.

24 But our process does require biannual reviews of
25 decommissioning funding plans for all utilities, all licensees and then as
26 a plant get closer into a time frame where they would be beginning to

1 pursue decommissioning, we take a much more scrutinized look at their
2 decommissioning funding.

3 And I don't know if Mike --

4 MR. DUSANIWSKYJ: You hit it.

5 MR. DEAN: He says I hit a home run. Thanks,
6 Michael.

7 MR. DUSANIWSKYJ: I taught you well.

8 CHAIRMAN MACFARLANE: We're being clobbered
9 by baseball.

10 COMMISSIONER BARAN: I think this would be a
11 question for Michele. What do you think the biggest challenge is
12 facing the NRC licensing staff in the coming months are going to be for
13 Unit 2?

14 MS. EVANS: So, currently, and as Justin had
15 mentioned, the most focus right now is in the areas of hydrology, some
16 electrical issues that we're trying to resolve, fire protection.

17 So those challenges, I think they are where we need to
18 focus our resources and we've done that. We're attempting to -- well,
19 we've got like weekly meetings that we have that are standing public
20 meetings to have technical dialogue on the issues in front of us.

21 We've also arranged to go to the site, have audits on
22 site as needed and, for example, next week, we've got two teams of
23 people headed to Chattanooga and Knoxville looking at hydrology and
24 electrical.

25 So, I mean I wouldn't necessarily, you know, they're
26 challenges that we're on top of and feel that we can address.

1 COMMISSIONER BARAN: Great. And I have a
2 couple of minutes left which I don't need to use, but I want to give you all
3 just an opportunity to comment on anything that you heard from the first
4 panel. Is there anything we should know about the comments made
5 by either TVA or Mr. Safer, thoughts you have about those?

6 MR. DEAN: I would offer, Commissioner, that one of
7 the ones I was going to respond to if you didn't ask the question was on
8 the decommissioning funding issue, that was certainly one.

9 Perhaps another one might be there were certainly
10 some issues raised by Mr. Safer. And I do have to say I wish he was
11 an NRC inspector with a name like that.

12 But, he raised certainly some technical issues
13 associated with ice condensers and we do have a member or our
14 branch chief of our containment branch, Bob Denning, is in the
15 audience and he might be able to address, perhaps more specifically.

16 But, one thing I do want to mention to the Commission
17 is that, you know, in the aftermath of Fukushima, obviously, there was a
18 lot of focus on the Mark I and Mark II containments. And, obviously,
19 we've put in place orders associated with venting and to try and
20 reconcile what were perceived to be vulnerabilities with that design.

21 But in our dialogue, the steering committee and then
22 the staff, certainly the issue of ice condensers certainly has been raised
23 relative to is that a condenser, I mean a containment design that we
24 ought to look, too? And that's going to be captured in one of our tier
25 three post-Fukushima activities.

26 So, I mean certainly there is a recognition within the

1 agency and within the industry that the ice condenser containment is
2 different and probably needs to be addressed. I don't know, Mark?

3 MR. SATORIUS: I just was going to give a historical
4 perspective. D.C. Cook is also what we call an ice plant and they went
5 through a significant time that they were offline like many years
6 because of ice issues that kind of went out into the industry and we've
7 looked at those. It doesn't mean we've solved everything, but they do
8 add -- these ice plants do add a level of complexity that the larger
9 containments don't necessarily have.

10 So, I think that that's something I know that when I was
11 in Region III that that was a focus area that we always had was this ice
12 plant. Most of the ice plants, they --

13 MR. MCCREE: In fact, as a result of those issues and
14 lessons learned, we actually developed a specific inspection procedure
15 for inspecting ice condensers and it's in Appendix Charlie of the
16 Inspection Management Chapter 2515, so that helps guide how we look
17 -- what we look at and when we look at issues associated with the ice
18 condenser.

19 With regard to the question you asked Tomy about
20 issues, and while there are not any specific technical issues that are of
21 concern, the volume of work which we've alluded to and TVA alluded to,
22 is significant that's necessary to be completed between now and then,
23 and certainly the amount of pre-operational testing is significant.

24 So, we're wary of, I mean the Unit 1 is operating and
25 there are a number of common and shared systems. So, TVA needs
26 to take care and certainly we're aware of opportunities where you could

1 have interface with operating systems and it could represent an
2 industrial safety hazard, it could represent a hazard for the other unit.

3 So, it's something we've engaged TVA on, they're
4 aware of it, have been since the beginning of the project but it's an
5 ongoing concern, one that is even more important as the unit gets
6 closer to a licensing decision.

7 MR. DEAN: So, I don't know if you need anymore, I
8 have Bob Denning who's the principle on the containment ice
9 condensers?

10 COMMISSIONER BARAN: I should stop there and
11 give my colleagues an opportunity.

12 CHAIRMAN MACFARLANE: Don't go anywhere.
13 Okay, so let's just continue the discussion just a little bit.

14 How many ice condenser plants are there in the U.S.?

15 MR. MCCREE: There are five sites.

16 CHAIRMAN MACFARLANE: Five sites with how
17 many reactors?

18 MR. MCCREE: A total of two, four, with Unit 2 it'll be
19 six, seven units.

20 CHAIRMAN MACFARLANE: Eight?

21 MR. DENNING: Eight.

22 CHAIRMAN MACFARLANE: Okay.

23 MR. MCCREE: Oh, I forgot, Sequoyah, yes.

24 CHAIRMAN MACFARLANE: Right. Okay, great.
25 Yes, so they're all dual unit plants? Okay.

26 Do other countries have ice condenser plants?

1 MR. DENNING: No.

2 CHAIRMAN MACFARLANE: We're the only ones?

3 MR. DENNING: We're the only ones that use that
4 design.

5 MR. MCCREE: Watts Bar Unit 2.

6 CHAIRMAN MACFARLANE: So, all the operating
7 experience is here?

8 MR. DENNING: I believe so.

9 MR. MCCREE: Watts Bar Unit 2 would make ten.

10 CHAIRMAN MACFARLANE: Okay, okay. Anything
11 else you want to add on the ice condensers?

12 MR. DENNING: I had a chance to look over the
13 discussion from the earlier presentation. I would just note that the one
14 with regard to Fukushima, the ice condensers are part of a near term
15 task force 5.2 which is tier three --

16 CHAIRMAN MACFARLANE: Right.

17 MR. DENNING: -- which is intended to look at venting
18 specifically, as whether that's needed or not.

19 However, the agency's containment performance
20 improvement program that looked at the risk assessment of all the
21 containment types and finished up in the early '90s did not flag venting
22 for the ice condensers as a need but the hydrogen control was the need
23 and that's why they had the igniters and that's why their in the tech
24 specs and there are two trains of them.

25 CHAIRMAN MACFARLANE: And that's another
26 issue that will be looked at as part of tier three, right?

1 MR. DENNING: Right, that's in TTS 6.

2 CHAIRMAN MACFARLANE: Okay. Great, thanks.

3 So, let me, instead of going into my more detailed
4 questions, let me just ask a more philosophical and so I'm thinking into
5 the future, all right, of making an assumption of about Watts Bar 2 going
6 forward and it's the same situation to some degree with Watts Bar 1.

7 These plants were originally licensed a long time ago
8 and constructed largely a long time ago. But they didn't start operating
9 until much more recently.

10 So, what does that do in terms of license renewal?
11 Where does the clock start? Have you thought about that?

12 MR. DEAN: Well, I'm thinking about it now. But, no, I
13 actually have thought about that. We have talked about that and
14 certainly we have a regulatory regime that exists through inspection,
15 oversight, licensing activities and so on that is intended to sustain the
16 viability of a plant through its originally licensed 40 year life and then we
17 also have a license renewal rule that provides here's what needs to be
18 done relative to a facility if a facility wants to pursue life beyond its
19 original licensed time frame. So, I think we have a pretty robust
20 infrastructure.

21 CHAIRMAN MACFARLANE: We do, but, you know,
22 where is time zero? Because do we have other examples like this to
23 draw from? You know, I'm always looking for precedent or I don't like
24 reinventing the wheel.

25 MR. SATORIUS: So, you're talking about if there
26 were other extended construction periods --

1 CHAIRMAN MACFARLANE: Yes.

2 MR. SATORIUS: -- that went beyond.

3 CHAIRMAN MACFARLANE: This is a -- it seems,
4 maybe it's a unique situation, I don't know.

5 MR. SATORIUS: I think the answer is in the room.
6 I'm not for sure. I think it's from the time that the plant was licensed.

7 MS. DOANE: The plant, when it's licensed to operate
8 which it's not been -- that's the construction.

9 CHAIRMAN MACFARLANE: That's legally.

10 MS. DOANE: Yes.

11 CHAIRMAN MACFARLANE: Yes, but I'm asking
12 technically.

13 MS. DOANE: Technically, I'll leave it to them. How's
14 that?

15 MR. DEAN: We have the current Deputy Office
16 Director at NRR who was the previous Director for the Division of
17 License Renewal, Brian Holian.

18 MR. HOLIAN: Brian Holian.

19 Four years in license renewal and it is a good question.
20 We look at, I know, the Commission's looking at life beyond 60 which is,
21 you know, a separate item.

22 The overriding arch principle is that you'll be able to
23 pick up the aging issues from operating experience and go from there.

24 So, part of the look that license renewal did early on
25 when Vic McCree was setting up his inspection plan was to use the
26 generic aging lessons learned program that we've instituted in the

1 license renewal.

2 So, we're looking at the passive systems for current
3 plants and the data and the operating experience that we get from
4 plants right now that are in the extended period is an item that we can
5 still apply to Watts Bar as they get there.

6 So, it's a fair question to look at that obviously they'll
7 have much longer time in their passive systems that have been sitting
8 there, but through the inspection and through the operating experience,
9 we believe that we will be able to account for that through additional
10 license conditions, should that be necessary, additional inspections in
11 the process as it comes.

12 I just respond that it is a living project that is based on
13 operating experience and it's flexible enough to be able to look at the --
14 assuming they come in for license renewal, look at the types of aging
15 management programs we would need to put.

16 I remind folks at license renewal, the backfit
17 considerations, it looks at the licensing process there and they're able
18 to apply new license conditions based on an aging management
19 review, if that helps.

20 CHAIRMAN MACFARLANE: Okay.

21 MR. HOLIAN: But, it's a great question and it is one
22 and you asked for precedence, really right now, the precedence is the
23 plants that are in the extended period now, we'll be able to apply those
24 lessons learned when Watts Bar comes along.

25 CHAIRMAN MACFARLANE: Okay, thanks.

26 Thanks, Brian.

1 Okay, so, in terms of the remaining licensing actions
2 that are needed, especially with regards to the Fukushima lessons
3 learned, are they on track or is the current time line realistic do you
4 think?

5 MS. EVANS: Yes, I'd say the current time line to
6 continue through the review that the headquarters staff is working
7 through for those issues and then, you know, for hydrology, for fire
8 protection, those are on track.

9 CHAIRMAN MACFARLANE: When's the hydrology
10 review going to be done, do we know?

11 MS. EVANS: We are currently targeting completing it
12 by the end of this calendar year.

13 CHAIRMAN MACFARLANE: Okay.

14 MS. EVANS: We will need to talk about the hydrology
15 review with ACRS which currently is scheduled into the
16 January/February time frame. So, that's the plan on that.

17 The Fukushima items, the orders, we do have right
18 now, we need to implement some inspections to do the review. We're
19 waiting for the licensee to indicate their completion and I think right now,
20 our early 2015 would be the time frame for doing the inspections and
21 the on site work to complete that part.

22 CHAIRMAN MACFARLANE: So we have a lot -- you
23 said we have a lot of work to do. Do we have the resources to do it?
24 Are we set that way?

25 MR. MCCREE: Yes, ma'am, we do. When we
26 received TVA's indication that they wanted to complete Watts Bar Unit

1 2, we partnered with NRR and with the Office of New Reactors which
2 had been established at that time and decided that the funding, if you
3 would, for oversight for Watts Bar 2 would be under the new
4 construction business line, the new reactor business line. So, we have
5 that capacity, if you would, to pull from for new reactors.

6 And, that's, of course, mainly in Region II, but we also
7 have budgeted resources in the other regions as well as headquarters
8 that we can pull from. And in fact, we've already reached out to the
9 other regions, the technical training center for operator licensing,
10 there's trained folks there that we'll be able to call upon if we need to in
11 the spring and Bob is -- we've given -- Fred and I have given Bob very
12 close marching orders to build those relationships and actually identify
13 the people who would be able and willing to support our efforts in the
14 spring, if need be, to complete our inspections at Watts Bar.

15 CHAIRMAN MACFARLANE: Great, okay, good.

16 Tomy and maybe Justin wants to weigh in on this, too.

17 So, there were 550 items that required inspection or
18 closure, 429 are complete. Are we on track to do the rest? Are there
19 any challenges that you see?

20 MR. NAZARIO: The numbers don't tell the full story,
21 obviously, so we have 121 items. The short answer is we are on track
22 to complete and inspect the remainder of the items. We've touched
23 every single item as far as some level of review or inspection.

24 So, as far as how it looks between now and let's say
25 next year, I believe we have the capability and the resources to move
26 forward with the inspection of the remaining items.

1 CHAIRMAN MACFARLANE: Okay, did you want to
2 weigh in, Justin?

3 MR. POOLE: Not really. I mean I think as far as
4 licensing goes, Michele already covered. We've, you know, we've
5 identified which items are, you know, are the most resource intensive
6 for us at this point and we've got a plan to finish all those in the time
7 frame that would support the overall schedule.

8 CHAIRMAN MACFARLANE: Okay.

9 MR. SATORIUS: Chairman, it's probably good to
10 recognize the fact that being able to finish the inspection presumes the
11 TVA will be ready to support them.

12 CHAIRMAN MACFARLANE: Of course, of course,
13 right. Thanks for that clarification.

14 All right, I'm going to turn things over to Commissioner
15 Svinicki.

16 COMMISSIONER SVINICKI: Well, I want to thank the
17 staff and I want to welcome Mr. Dean to his first Commission meeting.
18 It's good to see you here. It's nice to have your first meeting be where
19 you can just kind of sit and coast on the hard work of everyone who is in
20 NRR and your predecessor and others.

21 MR. MCCREE: Commissioner, I actually gave a
22 football analogy, his predecessor moved it into the red zone and he's
23 just coming in as the --

24 MR. DEAN: Yes, we're in the red zone but --

25 COMMISSIONER SVINICKI: I will say for an
26 organization of your size, you've demonstrated at least impressive

1 knowledge of who to call on from the audience, who should come up to
2 the microphone and answer the questions for you, so that's a solid start.

3 I mentioned to the previous panel that I've been
4 following this work as it moved along and so, there wasn't too much
5 terribly new to me. The staff, for those who don't know, provides an
6 impressive array of written materials that we can review in advance of
7 the meeting.

8 But, that isn't to say that I wasn't struck by something
9 looking overall at, you know, that the evolution of the process here and
10 in a day and age when there's a lot of criticism, I'm sure some of it's
11 valid. NRC has always is always the first to acknowledge that, you
12 know, we can do certain things better.

13 But, there is this criticism that, you know, regulatory
14 agencies have a mindless adherence to whatever's written in the CFR
15 and we don't have any ability to have a tailored application of what it is
16 that we're requiring.

17 And so, I was stuck by the tremendous knowledge and
18 innovation, to a certain extent, maybe that's too dramatic of a word, that
19 NRC experts brought to saying, you know, here is the safety question
20 we are presented with.

21 In taking this decades of knowledge of a regulatory
22 framework that is highly regarded around the world, what is the efficient
23 and effective way of applying that? And I found that in everything from,
24 you know, the Inspection Manual Chapters, things that I flipped through
25 in the binder that, as a Commissioner, really don't come to my level, but
26 it's interesting to flip through and see the kind of expertise that's

1 reflected in when NRC experts sit down and decide to apply our
2 regulatory framework and their knowledge to the question at hand.

3 And so, I thought it was impressive, you know, as a
4 body of people saying, let's look at what needs to be done and I'm
5 confident, at this point in my tenure at NRC, that there is no body of
6 experts around the world that sets a higher standard of skepticism and
7 show me than the NRC staff.

8 There may be other regulatory agencies that have
9 maybe an equivalent level of competency, I'm not sure of that, but I
10 know for sure that there's nobody that sets a higher bar for saying, you
11 know, this will be this safe and you will prove it to me that it is.

12 So, Victor, when you talked about an entire
13 reconstitution of the inspection records, things like that and having
14 looked at some of the staff's instructions and manual chapters and
15 things that guided them in doing that. It's very difficult for me to leave
16 without being convinced that this was very thorough on our part.

17 So, I want to just begin with that observation that I
18 make about it and some compliments and it's not, obviously, just you
19 sitting at the table. Maybe some of you had very minimal in all the
20 things that I just credited. But it is, I think, very impressive.

21 And I don't know that having demonstrated this
22 impressive thing there's any future use for it, maybe Tomy, it was so
23 interesting last chat we had when he talked about license renewal that's
24 come up today, aging lessons learned. That is, so maybe there will be
25 opportunities for us to take these experiences and fold them back into
26 other part of our regulatory framework.

1 Mark, I don't know if you wanted to make any reaction
2 to that?

3 MR. SATORIUS: Well, my first reaction is, thank you
4 very much for the compliment. I'm also very complimentary of the
5 staff, especially in the effort that's gone through the licensing of this
6 facility. I think we've taken pragmatic approaches to produce solid
7 results and we have really, really good people that are able to think
8 clearly and put this all together and make it work in the manner that
9 you've seen it. So, thank you for your compliment.

10 MR. MCCREE: And the only thing I'd add to that, I
11 think many times we don't recognize our inherent innovation and
12 creativity that exists all over the agency and the Watts Bar effort, both
13 from a licensing as well as from an inspection program development
14 perspective is evidence of that.

15 I look forward to seeing it evidenced in the results of
16 our federal employee viewpoint survey in the area of innovation and
17 creativity because this certainly highlights that it happens routinely.

18 COMMISSIONER SVINICKI: Well, and I appreciate
19 that. You know, I hesitated to use that word and you're giving me
20 some validation in using it because a lot of people would feel like maybe
21 that doesn't have a place in our work. But maybe this is what
22 innovation looks like for regulators is doing that efficient and effective
23 application of a framework.

24 And the most interesting thing, again, any day I engage
25 with the NRC staff, I always have some thought provoking things that
26 come up. And Tomy had mentioned to me, too, when I -- last time I

1 visited and sat with him and the rest of the inspectors at Watts Bar 2, I
2 was drawing these contrasts and kind of apologizing a little bit that, you
3 know, recently I've maybe spent more time at Vogtle and Summer
4 construction.

5 And so I was saying I realize that's fundamentally
6 different and it was a great point that I've thought about every since that
7 Tomy challenged me and he said, but at bottom, it really isn't different.
8 And what he's getting to is this show me, this demonstration, it's the
9 showing that needs to be made.

10 And it isn't as if in the adoption and implementation of
11 52 there was any see change or fundamental overhaul of what it meant
12 to convince the NRC that something was appropriate to operate or
13 move forward. So, I appreciate that.

14 Tomy, do you want to add a little bit about what we
15 talked about? Even when I was drawing a contrast with the inspection
16 program and with ITAAC and the documentation, you were laying out
17 for me that, at the end of the day, what's been done here is not some
18 inferior cousin to Part 52 and I don't know if you'd like to talk a little bit
19 more about the point you made with me.

20 MR. NAZARIO: The only thing I would add is, again,
21 fundamentally, as far as the inspection program's concerned, you
22 know, what we do for Watts Bar Unit 2 and the Inspection Manual
23 chapter that drives us and Part 52, it is fundamentally the same.

24 I mean we have inspection procedures that drive us to
25 go out and take a look at a lot of different aspects of the plant. We
26 validate acceptance criteria, for example, when they're performing

1 testing, significant testing.

2 So, when we -- and we validate that because we
3 interact frequently with a lot of the regional inspectors that work and go
4 out to both Summer and Vogtle. We also have periodic conference
5 calls with some of the senior residents, Justin and formerly Rasheen
6 who was out at Summer and Vogtle.

7 You know, and we share that operating experience or
8 construction experience in this case to confirm that what we're doing is
9 pretty much the same as you alluded to.

10 MR. MCCREE: The only other thing I'd add to that is
11 when it comes to pre-operational testing procedures and start up
12 testing procedures, we're essentially going to be using some of the
13 same approaches, the same procedures for both Watts Bar and at the
14 AP1000. So, we're going to learn from that experience and the
15 synergy that we're gaining from having some of the same people
16 conducting inspections at AP1000 and Watts Bar is going to be very,
17 very, very helpful, same qualifications and same trained people, so
18 that's good news.

19 COMMISSIONER SVINICKI: So, that was the nice
20 part.

21 The one thing that struck me in looking at this, because
22 you do always key into the parts of the process that would involve you
23 personally.

24 So, we have the time frame in there on, you know, how
25 Region II will make a recommendation to the director of NRR and all of
26 these steps and that all makes a lot of sense to me. I even went back

1 and studied my 50.57 issuance of the operating license, again, written
2 as almost all of our regulations are written at a very high level.

3 The Commission, you know, must pursuant, we must
4 make findings that, you know, the construction of the facility is in
5 accordance with, the facility will operate in conformity with, you know,
6 I'm not -- I won't read all -- there's reasonable assurance that activities
7 authorized can be conducted, you know, supportive of the public health
8 and safety, things like that.

9 So, when I see that we've had this multi-year
10 tremendous process where all of NRC's experts have all of this time to
11 satisfy themselves that all of those findings can be supported. And
12 then I see that the Commission will perhaps have its time frame be as
13 little as 30 days where we would be asked to approve a
14 recommendation that the director of NRR issue the operating license.

15 Now, I've pulled the thread on this and I understand
16 that the ACRS meetings got pushed back to January/February and I
17 know that the staff has to consider what is the proper time? What
18 activities are fulfilled at the time that you come to the Commission?

19 But, I will say that, you know, this isn't so different than
20 something the Commission dealt with earlier this summer which was
21 there are certain activities where we've reserved to ourselves that if
22 something's going to occur, although the director of NRR has many
23 standing delegated authorities, there are instances where we've said in
24 this for this specific action, we do request that you come back again.
25 We don't issue the license, but we want to be asked specifically, you will
26 ask if you can issue the license and we will delegate it for that narrow

1 application.

2 But, we looked at things, like we've been looking at a
3 lot of EP requirements at decommissioning reactors, and all those
4 papers ever say to the Commission, the Notation Vote Papers, is the
5 staff will verify that the following showings, in a legal sense, or
6 demonstrations are made, we will do the confirmation for you,
7 Commission, and upon that showing, does the Commission agree that
8 the director of NRR can do X?

9 So, we don't actually do any of the validation of the
10 showing. We agree -- when I vote on something like that, my view is
11 what I'm saying is, yes, that's the requisite showing. I agree that that is
12 completely sufficient and complete in terms of supporting the findings
13 that need to be made.

14 So, with findings this high level and expansive, it does
15 seem a rather compressed time frame for the Commission to act on the
16 notation vote paper. And all I ask is that you consider when you're
17 trying to find that sweet spot to engage the Commission that you look at
18 having enough of the activities completed on the showing. But you're
19 never going to have all of them done because that's not the nature.
20 You don't wait until they're ready to go to power ascension, you back
21 this system up.

22 So, it just seems that the Commission is being
23 squeezed. I won't suggest that we lost all -- the ACRS took two more
24 months and we lost our months, but I can't, you know, say anything one
25 way or another other than to say, in a multi-year process for the
26 Commission to have 30 days, you know, seems short. So just take

1 that back with you and do with it what you will.

2 CHAIRMAN MACFARLANE: Okay.

3 COMMISSIONER SVINICKI: Thanks.

4 CHAIRMAN MACFARLANE: All right.

5 Commissioner Ostendorff?

6 COMMISSIONER OSTENDORFF: Thank you,
7 Chairman. I'd be remiss if I didn't also welcome Bill Dean. I'm going
8 to throw mine out a little differently.

9 I encourage those, and especially NRC staff, not
10 today, but to ask Bill Dean the one liner he heard from Admiral Rickover
11 in his nuclear propulsion interview. It's the best I've heard from any
12 NRC staffer, it's on my top five list of all the Rickover interview stories.
13 I'm not going to share with you what it is.

14 I appreciate that Michele and Justin laid out the Part 50
15 process and the history here and I think that was very helpful for us to
16 understand where things were.

17 And I want to start out with maybe a question to Justin
18 on the kind of replacement refurbishment piece and maybe Tomy has a
19 piece here.

20 But, I noted that I had a question in the first panel of
21 Mike Skaggs on what kind of standards were used to determine what
22 should be refurbished or replaced and there was reference made to
23 EPRI standards and Generic Aging Lessons Learned and so forth.

24 And I noted that Tomy made a comment that in his
25 slides that the specific provisions of the refurbishment program by the
26 licensee were reviewed and accepted by the staff.

1 At a high level, were there any deltas between you and
2 your project team and the licensee on agreement or disagreement on
3 what should be replaced or refurbished?

4 MR. POOLE: Yes, I think for the most part I'm going
5 to defer to Tomy for most of this answer. But, you know, TVA
6 presented the headquarters staff with a plan. You know, there was
7 some back and forth in what the plan was, but then the staff eventually
8 approved that plan and I think your question more is for Tomy.

9 Have they found anything where they may have
10 questioned TVA and why didn't you actually go and implement this plan
11 for this specific component?

12 COMMISSIONER OSTENDORFF: Yes, and again,
13 recognizing this is somewhat, as others have noted, a very unique
14 project in its history of it. I'm curious as to if there's any big deltas
15 between the NRC as a safety regulator and the licensee on what did or
16 did not need to be replaced?

17 MR. NAZARIO: I think it's important to highlight the
18 fact that the refurbishment program was submitted to the NRC, as
19 Justin mentioned. We reviewed it, the NRR staff reviewed it and we
20 actually, from the region also had the opportunity to review it.

21 And then as a product of that, we developed a specific
22 inspection procedure, refurbishment inspection procedure to basically
23 carry out and perform our inspections.

24 So, there was some level of alignment early on as part
25 of the process and, for example, you know, some of the inspections that
26 we performed, TVA would go out and open up systems, going through

1 piping, document visual evidence of what the piping looked at before
2 and after. And we would, as best we could, and again, on a sampling
3 basis, we would follow suit.

4 So, from that standpoint, I don't see any deltas as far
5 as what was submitted and what we did regarding the refurbishment
6 piece.

7 COMMISSIONER OSTENDORFF: Okay. Did you
8 want to say anything? Okay, okay, thank you. Thanks, Justin, Tomy.

9 I want to take this opportunity, I think it's important for
10 us to highlight it, that the, you know, to talk about the pride we have in
11 the construction and inspection program, whether it be under Part 52 or
12 Part 50, and I appreciate, Victor, that you brought up some of your key
13 people here.

14 And I kind of chuckled when you used the phrase
15 regulatory tissue in your comments and I wanted to tell Bob and James
16 and Chris and Fred and Tomy, I think that was a compliment. I took it
17 that way.

18 But I know that we're all very proud of what you all have
19 accomplished between working with NRO, with the folks in Atlanta,
20 Region II, and the sites and I think this is a real strength for this agency.

21 I was overseas last week and not surprisingly, as other
22 Commissioners hear from international colleagues, there were
23 requests being made by another country I'm not going to name to have
24 some of their people from the regulatory body come over and see how
25 you're doing business. And so, there's no greater compliment that
26 somebody trying to imitate what you're doing and so I just pass that on

1 in this forum because I think it's just such a strength and we've all at the
2 Commission level been very impressed with what you're doing and very
3 grateful for that.

4 Tomy, let me go back to you with a question. You've
5 been there for some time, I think all three visits I've made to Watts Bar
6 you've been there and we've crawled around together.

7 Can you, at a high level, can you comment on the
8 ability of the licensee, TVA, to identify problems? I know that there is
9 an inspection role, an oversight role, so you're going to naturally find
10 challenges and problems. Can you comment how you see the
11 licensee and their ability to self-identify problems with construction?

12 MR. NAZARIO: As far as the identification of
13 problems, one thing that's important to note is during the original
14 construction of Watts Bar Unit 1 and the site, they really did not -- there
15 was not the existence of a corrective action program and that's actually
16 what contributed to a lot of the equality issues that Vic spoke about and
17 TVA spoke about and Mr. Safer spoke about.

18 So, from that standpoint, one of the things that was
19 done early on in the project was essentially assimilated the corrective
20 action program that was already in existence for Unit 1 which, to date,
21 has proved to be effective and we haven't found any significant issues
22 with.

23 So, essentially, what TVA did was just that, they took
24 the existing corrective action program, implemented that. We've
25 actually had the opportunity to review, inspect that program closely.
26 We continue to monitor that program.

1 We sit in on what they call their management review
2 committee meetings which occur once a week. And we also sit in on
3 their daily meetings where they review problem evaluation reports.

4 And then when, I guess as the last barrier, we actually
5 go through in detail and review every corrective action, or I'm sorry,
6 every problem evaluation report that gets issued for Unit 2 and then our
7 counterparts on the Unit 1 do the same.

8 So, from that standpoint, again, we haven't identified
9 any issues of significance. We believe they're complying with
10 Appendix B and criterion 16 which discusses corrective action program
11 and the licensee's ability, the applicant's ability of having one.

12 So, as far as my overall take since 2008, it has evolved
13 and I think there have been some improvements made in the corrective
14 action program. But again, no issues, at least from my standpoint.

15 COMMISSIONER OSTENDORFF: Thank you all.
16 Thank you, Chairman.

17 CHAIRMAN MACFARLANE: Okay. Any further
18 questions? No? All right, well then we will call this to a halt.

19 Thank, again, the staff panel with our new director of
20 Nuclear Reactor Regulation. I thank the external panel for their
21 contributions as well and we will be adjourned.

22 (Whereupon, the above-entitled matter went off the
23 record at 11:50 a.m.

24