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UNITED STATES NUCLEAR REGULATORY COMMISSION

BRIEFING ON BROWNS FERRY UNIT 1 RESTART

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WEDNESDAY

JANUARY 10, 2007

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The Commission convened at 9:30 a.m., Dale E. Klein, Chairman presiding.

NUCLEAR REGULATORY COMMISSION

DALE E. KLEIN, CHAIRMAN

EDWARD McGAFFIGAN, JR., COMMISSIONER

JEFFREY S. MERRIFIELD, COMMISSIONER

GREGORY B. JACZKO, COMMISSIONER

PETER B. LYONS, COMMISSIONER

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PANEL 1: TENNESSEE VALLEY AUTHORITY (TVA):

KARL SINGER, CHIEF NUCLEAR OFFICER, TVA

ASHOK BHATNAGAR, SENIOR VICE PRESIDENT OF NUCLEAR
OPERATIONS, TVA

MASOUD BAJESTANI, VICE PRESIDENT IN CHARGE OF
RECOVERY, TVA

BRIAN O'GRADY, SITE VICE PRESIDENT, TVA

PANEL 2: NRC STAFF

LUIS REYES, EXECUTIVE DIRECTOR FOR OPERATIONS

BILL TRAVERS, REGIONAL ADMINISTRATOR, R II

JIM DYER, DIRECTOR, NRR

JOE SHEA, DIRECTOR OF REACTOR SAFETY, R II

TIM MCGINTY, DEPUTY DIRECTOR, DIVISION OF OPERATING
REACTOR LICENSING, NRR

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

CHAIRMAN KLEIN: Good morning. It's my pleasure to welcome you to the proceedings this morning, which we'll hear from both the NRC staff and representatives of the Tennessee Valley Authority to brief the Commission on the status of Browns Ferry Unit 1.

I toured the Browns Ferry Unit 1 last October and as I told the TVA officials at that time that I was very impressed both with the level of activity in their organization of rebuilding and refurbishment of the plant.

However, I hasten to add that a brief tour is no substitute for the thorough and rigorous examination necessary to ensure the safe operation of the plant; and safety is the NRC's paramount concern.

So as impressed as I was the day of the tour, I will defer to the opinion of our NRC staff as to the readiness of Browns Ferry Unit 1 restart.

But restarting the plant after being shut down for more than 20 years is a very ambitious undertaking, and I commend TVA both for its vision and for the manner in which it's carrying that vision to reality.

I'll regard this as another milestone in a journey of nuclear power toward securing its place as an energy source for the future of America.

Following on the re-licensing of a number of plants and proceeding with what we anticipate is the first of many new reactor license applications later this year.

1 The NRC is committed to ensuring the safety of the new facilities while
2 maintaining our high level of oversight of existing plants and we welcome and are
3 prepared for the upcoming challenges. Do my fellow Commissioners have any
4 statements?

5 COMMISSIONER McGAFFIGAN: Mr. Chairman, I would join you in
6 commending TVA for the effort that they've undertaken. We'll hear from the staff
7 later as to their judgment the preparation to start it up.

8 I know that's been probably delayed by an outage of one of the other units.
9 You'll be telling us that shortly.

10 I think it is a momentous event to get the 104th reactor on line when it's
11 ready. We clearly have done a very thorough job, both in licensing and inspection.
12 I believe 30,000 hours of licensing and 30,000 of direct and indirect hours of
13 inspection have been devoted to this effort over the past few years. So we are
14 carrying out our safety function, I believe, very vigorously.

15 I'll look forward to the staff panel discussion on where we are.

16 COMMISSIONER MERRIFIELD: Mr. Chairman, I'll join in the
17 comments -- remembering back as you mentioned having toured the units, I have
18 had actually two opportunities to go down to Browns Ferry. The first was prior to
19 the time that TVA had made a decision to restart.

20 And I remember at the time thinking that Browns Ferry Unit 1 was a good
21 museum piece, because at the time it really represented what nuclear power
22 plants used to look like in the United States and what they look like in more

1 modern times.

2 When Browns Ferry Unit 1 was shut down the material condition was far
3 different than the operating units we have in the U.S. today and it really showed,
4 despite the fact that the three units were divided merely by a line in the cement.

5 You could walk right from Unit 2 to Unit 1. There was quite a stark
6 difference between the way Unit 2 looked at that time and the way that Unit 1
7 looked at that time.

8 Part of the presentation today and part of what I saw when I visited Browns
9 Ferry as you saw during the restart operations, is a far different cry.

10 And I think the pictures will certainly demonstrate the amount of work that
11 has gone into making Browns Ferry Unit 1 a unit that is more appropriate for the
12 kind of standards for our nuclear fleet that we have become accustomed to in the
13 U.S.

14 So, I think in that respect this meeting today is a good affirmation of that.

15 When we engendered in an effort with TVA to prepare ourselves for this
16 restart operation, our staff, and they will talk to this in the next panel, was really
17 using this as a parallel to the work that we would need to conduct relative to new
18 plant operations.

19 The work packages, the inspection packages that were put together for our
20 staff were used as a preparation, and continue to be used as a preparation, for
21 that kind of inspection activities that we would need to undertake for new units.

22 The discipline that we have put in as a regulatory body to meet guidelines, I

1 think, is indicative of what I believe is a new NRC.

2 We're different than we were when we inspected the previous plants in the
3 previous generation. I think it presages very well the approach that we will be
4 taking in inspecting and preparing ourselves if the industry chooses to move
5 forward with ordering new plants.

6 So as not to be completely effusive this morning, I do note one significant
7 concern. I understand circumstances are what they are and things evolve.

8 We were notified, the Commission itself, the Commissioners were notified
9 yesterday, that there would be a 75 day -- there would be a delay in the
10 expectation of when the plant would restart as a result of emergent activities
11 associated with the refueling outage at Unit 2. And I presume Karl will go into
12 more detail on that.

13 One of the things that we as an agency have attempted to demonstrate
14 over the last few years is that we are efficient, effective and timely.

15 Our licensees demand and expect that this agency will act in a way which is
16 disciplined and timely and efficient.

17 If we fail to do so, the Commission has and will be called to task by our
18 overseers on Capitol Hill for a failure to do so.

19 I think Ed can probably talk to a number of those discussions that he has
20 had and I can certainly talk to a number of discussions that I have had over the
21 years in that regard.

22 So I cannot let this opportunity pass without at least wagging my finger a

1 little bit at the disappointment I have over the fact that we've got this delay.

2 TVA had an original expectation of when they would be able to restart this
3 plant and we engendered to have inspection efforts aligned in such a way so that
4 we were not an impediment to meeting that time line.

5 TVA then came to us and asked us to change that schedule because they
6 were ahead of time and, to their credit, they had worked in an efficient and
7 effective way to get their operations in hand.

8 We engendered an effort on the part of our staff to meet that revised
9 schedule and we were prepared to meet that.

10 This decision on the part of TVA to go into a refueling outage, take folks off
11 of Unit 1 and modify the original schedule, modify the revised scheduled to go
12 back more along the lines of the original schedule, throws our staff into a bit of a
13 difficulty.

14 Our utilities expect us to plan and have the resources necessary to deal
15 with license applications going forward in combined operating license applications.
16 We have an expectation of the utilities to do the same.

17 So I cannot let this opportunity pass without at least having some words
18 regarding my disappointment that having gone through the hoops to try to
19 accommodate TVA and now we have to go through hoops to accommodate it
20 again.

21 We cannot run an agency like this. It is what it is. TVA has made the
22 decision it has.

1 I want to use this as much a lesson down the road for utilities which are
2 planning on having combined operating licenses, that if you're going to have an
3 expectation for timeliness on the part of the NRC, you damn well better have the
4 same expectations for yourselves because this agency is going to have to do that.

5 If we're going to meet everyone's expectation, we cannot allow ourselves
6 to be subjected to the whims of a single utility.

7 Now, we'll deal with it. And I don't want to be too harsh on you all, but it
8 makes it very difficult for us. And I want to get that on record. Thank you, Mr.
9 Chairman.

10 COMMISSIONER JACZKO: I would just briefly say, I had the
11 opportunity I think, after I'd been on the Commission for maybe a month or two,
12 not the first plant, but the second plant that I went to was Browns Ferry and at the
13 time everybody told me I had to go because I could crawl around in the dry well,
14 and I in fact was able to do a little bit of that.

15 And so, as the Chairman indicated, my crawling around in the dry well is no
16 substitute for the thorough review that the staff has undertaken to review this
17 restart and the work that's been done on the part of TVA.

18 So I look forward to hearing from you and from the staff as well. I think the
19 area, just going through the material, that I'll be most interested in having fleshed
20 out a little bit, is the status of some of the open items that are left. I think resolving
21 some on the issues on the generic requirements, generic communications and
22 those things.

1 That I think for me will be the most important issue as we move forward in
2 looking at moving towards a restart. Thank you.

3 CHAIRMAN KLEIN: Pete?

4 COMMISSIONER LYONS: Not to add to the long statements you've
5 already heard, but I was accompanying Commissioner Jaczko on that visit, now a
6 little over two years ago, or about two years ago I guess, and for me also it was
7 the second plant I had visited as a Commissioner.

8 It was a fascinating visit then and I'm looking forward to the discussions
9 today on your progress since then.

10 CHAIRMAN KLEIN: Thanks Pete. Mr. Singer, would you like to
11 proceed?

12 MR. SINGER: I would. Thank you very much, Mr. Chairman. Let me
13 start by thanking you and your fellow Commissioners for the opportunity to be here
14 today and discuss with you the conclusion of the recovery of Browns Ferry Unit 1.

15 I think you all know me. I'm Karl Singer. I'm TVA's Chief Nuclear Officer.
16 With me here today are some key players in the recovery effort. Ashok Bhatnagar,
17 the Senior Vice President of Nuclear Operations. His role in the last several
18 months has been focused solely on the recovery of Unit 1 and integration of Unit 1
19 into the operating fleet for TVA.

20 Masoud Bajestani was our Vice President in charge of Recovery in the most
21 recent year-and-a-half or so. He was responsible for all the engineering
22 modifications work to return the unit to service.

1 And Brian O'Grady, the Site Vice President of Browns Ferry.

2 Today comes at the conclusion of a very long shutdown and I'm very pleased
3 to be here today and report our readiness to restart Unit 1.

4 As you probably know, Browns Ferry 2 and 3 were recovered in 1991 and
5 1995.

6 The recovery of Unit 1 concludes the last of TVA's nuclear units, which were
7 shut down in 1985 when all the units at Browns Ferry and Sequoyah, all five, were
8 shut down.

9 Let me say very early in our remarks that we are ready to operate Browns
10 Ferry Unit 1.

11 You'll hear in the next few minutes why we can confidently conclude that
12 when a small amount of work is done and the testing is complete, Unit 1 will
13 operate safely.

14 The agenda you see here in front of you is designed to cover the key
15 aspects of our programs and the results to ensure our readiness.

16 We enjoy the full support of our TVA board, our CEO Tom Kilgore, our
17 interim CEO Skip Orser, who is here with us today. They've all been keenly
18 interested and involved in the restart of Browns Ferry Unit 1.

19 They've also provided ample resources and time for us to get it done right
20 the first time. Of course, you know that your staff has been a rigorous and
21 intrusive regulator looking over our shoulder every step of the way.

22 I'm aware, so far, of approximately 25,000 man hours in inspections and

1 regulatory oversight alone. Next page, please.

2 So why are we so confident that we're ready to safely operate Browns Ferry
3 Unit 1? First, we've replicated the successful restart processes from the recovery
4 of Units 2 and 3, including the incorporation of many lessons learned from those
5 efforts.

6 From day one, we made conservative decisions. In fact, our original
7 philosophy avoided the tempting shortcut of parallel design and modification
8 efforts. Instead we focused our first two years on design and then began the bulk
9 of the recovery modifications.

10 Today, the dry well and reactor building are nearly complete and is entirely
11 under control of the operating staff.

12 Our most recent transition leaves some bulk work activities on balance of
13 plant systems.

14 Of course, the tech spec systems are entirely under the control of licensed
15 operators.

16 I brought some pictures for those of you who visited so you can see the
17 progress we've made and I'll come to those in a few minutes.

18 You'll also see the bulk areas, large areas have been turned over to the
19 operating staff for their control.

20 Brian O'Grady will cover the details of the testing assessments and
21 oversights. I won't steal his thunder, but I will say that they have been very
22 extensive and effective in ensuring our readiness.

1 It's worth noting that we will return Unit 1 to service with more margin to
2 reactor trips and down powers than when it was shut down. Masoud will go into
3 more details on that.

4 Part of the reason for improved margins was that TVA manned the project
5 with senior managers from operations, engineering and maintenance.

6 In fact, our first recovery Vice President was selected when he was at that
7 time, the TVA Chief Design Engineer for Nuclear.

8 When he retired, we were fortunate to get Masoud, who in his background
9 was a Sequoyah Site Vice President.

10 Masoud knows what it takes to operate a plant safely and reliably and he's
11 concluding the construction effort.

12 A pure construction oriented organization would have struggled with the
13 significance of reactor fuel load, and I'm pleased to report that my observation of
14 Masoud's team and the Browns Ferry team in general, is they clearly understood
15 the significance of loading nuclear fuel. They took the time and they did it right.

16 Last, but not least, this is not been a rush project. The projects had ample
17 resources to get it done right.

18 And as you'll hear from Brian, our testing confirms we've done it right the
19 first time.

20 I talked to you about some pictures. We'll go to the next slide.

21 This is our Control Rod Drive Accumulators. We have three pictures here;
22 certainly more available should you want them. Each is oriented with the before

1 and after, left and right.

2 It's interesting to note the left-hand picture was in November 2006 and the
3 bottom right hand picture was in December of 2006. That was the time we were
4 preparing for a fuel load. You can see the difference that short amount of time
5 makes.

6 Control Rod Drives, as many of you know there's 185 of those and those
7 cylinders provide the driving force to insert control rods.

8 Our next slide shows Reactor Water Cleanup Pump. You can see the
9 before and after difference of not just the pump, but the general area. I will note,
10 and this is a good example of where we chose to just replace the pump rather than
11 engineer it or refurbish it.

12 The next slide is Standby Liquid Control. This is a good example of large
13 areas that have been turned over to the operating staff. You can see the before
14 and after there.

15 Standby Liquid Control is an emergency shutdown system that provides
16 defense in depth. Again, that's a good example of an area turned over to the
17 operating plant. Now I'll turn it over to Ashok to continue.

18 MR. BHATNAGAR: Thanks, Karl. I'm going to spend a little bit of
19 time on some of the historical perspective on Unit 1 recovery. To ensure a
20 successful restart process, we began with a regulatory framework that TVA
21 developed in December 2002.

22 This framework provided a common list of issues and of plans for resolution

1 with each one of those issues. The NRC reviewed and endorsed the TVA
2 framework in August of 2003.

3 And the framework included the completion of work for outstanding NRC
4 correspondence, such as generic letters, bulletins, etc. They also established a
5 very clear set of expectations and a means for ensuring that all the required work
6 would be accomplished.

7 At the time of restart of Unit 1 we'll have essentially the same licensing
8 basis as Units 2 and 3.

9 Additionally, the recovery of Unit 1 was developed through a very detailed
10 scoping, estimating, planning and recovery process; DSEP. You may have heard
11 that terminology, which included a review of the special programs from the Nuclear
12 Performance Plan for applicability to Unit 1.

13 And from this DSEP process the scope emerged for the project. The
14 project included the restart programs from Unit 2 and 3 that were applicable to Unit
15 1.

16 We also are installing upgrades to Units 2 and 3 since their restart are now
17 on Unit 1, which includes the 5% uprate.

18 We also included plant capital project improvements that were in the books
19 at that time for Unit 2 and 3 that would go out in five more years.

20 Such that at time of restart, Unit 1 is operationally similar to Units 2 and 3.

21 We again, as Karl mentioned, the same recovery process was used for Unit
22 2 and 3 and yielded ten years of safe and reliable operation of those units with a

1 gross capacity factor of 91.5 % over that time period.

2 And this gross capacity factor includes all planned/unplanned outages and
3 also derates.

4 As Karl mentioned earlier, my role is to successfully integrate Unit 1 into the
5 rest of the TVA fleet.

6 Unit 1 is being safely added to the fleet and will be an important asset for
7 many years to come.

8 As an example of this integration, we have made extensive modifications to
9 our switch yard and those modifications are now complete, which insure we have
10 adequate capacity and grid stability for Browns Ferry recovery.

11 An issue that you brought up has to deal with recent integration of the Unit 2
12 refueling outage and the restart of Unit 1. Having the dry wall and the rack for
13 building modification work testing essentially complete, allows us to schedule the
14 Unit 2 outage much earlier than we had originally planned.

15 And in parallel, continue to complete the Unit 1 work associated with
16 balance of plant. But separating these two activities as far as physically starting
17 the plant ensures that both can be managed safely and have our full attention.

18 Let me now turn it over to Masoud to talk about the current status of the
19 Unit 1 work.

20 MR. BAJESTANI: Thanks. My name is Masoud Bajestani. As Karl
21 mentioned, I'm responsible for the quality of modifications and testing for Browns
22 Ferry Unit 1 restart project. Browns Ferry Unit 1 restart project is over 98%

1 complete.

2 The philosophy of the recovery effort was to replace equipment rather than
3 justifying continued use through engineering evaluation.

4 We also added margin in several critical systems as it was allowed.

5 Example, we changed out the condensate and feedwater system which supply
6 water to the reactor. We actually changed out the pumps. We sized them. We
7 can actually treat one pump and not impact power operations.

8 Bulk of the modification is completed. Dry well work is complete with
9 exception of the metal insulation. We have replaced most of the piping in the dry
10 well with corrosion resistant piping.

11 We have replaced all the dry well cable. That's complete. In the reactor
12 building, modification is essentially complete.

13 What's left in the reactor building, in the safety-related system, is a
14 high-pressure, HPCI and RCIC, high pressure cooling injection and reactor core
15 isolation cooling system; modification of those systems. Both of these systems are
16 complete. We are actually in the testing mode on both of those systems.

17 Our remaining work is in the balance of plant, essentially in the Turbine
18 building; turbine generator system, condensate system, feedwater system, and
19 electro hydraulic control system.

20 NRC inspection of the 26 of the 30 special programs is complete. And we
21 have one more that's scheduled actually this week.

22 Chairman Klein, as you remember when you visited us last October, we

1 were getting ready to do our integrated safeguard test.

2 This is a test that basically during the accident signal, it verifies all the
3 emergency core cooling system sequence into the diesel and also non-safety
4 related loads they share. We performed that test and the test was successful.

5 All the components performed as they were designed. This test was
6 completed on schedule and no deficiencies.

7 This demonstrates the quality of the work that we did, part of the Unit 1
8 restart efforts. Like I said, it was essentially complete with no deficiency.

9 We used a two phase approach to return the system to operable status and
10 return it to the operating staff. It's the same process that we used for Units 2 and

11 3. First phase of this effort is to complete the construction and component
12 testing and then the second phase is the surveillance and integrated testing. It's
13 the same process that we successfully completed on Units 2 and 3.

14 We have completed modification and testing of 38 of the 55 systems and
15 these all have been turned over to the operating staff. And also we have
16 agreement with your staff on the remaining work for the restart.

17 If there is no questions, I'll turn it back over to Brian.

18 MR. O'GRADY: Next slide please. Good morning. I'm Brian
19 O'Grady. I'm the Site Vice President for Browns Ferry Nuclear Station.

20 I just want to start by saying that I'm the one that personally
21 responsible and accountable for safe, uneventful operations of all three reactors at
22 Browns Ferry. Just get into the restart test program a little bit.

1 The purpose of the program is to ensure that the equipment and the
2 plant staff can mitigate the consequences of a transient, or in the worst case, an
3 accident.

4 Masoud mentioned a two-step process. Post-modification and post-
5 maintenance testing on a component level is the first step.

6 What we do is test individual components such as pumps, valves, limit
7 switches, transmitters to verify they function individually.

8 Second step of this process is a system level testing where we energize
9 entire systems and verify that the system performs as it's designed.

10 And then the third step in the testing process is an integrated systems test
11 where we verify how the systems interact with each other and that they perform as
12 they're designed, with the ultimate test being the test Masoud talked about, the
13 Diesel Load Acceptance testing where we initiate an accident signal and verify that
14 all the equipment works the way it's designed and the results of that test were very
15 positive.

16 We have no issues with any of the equipment. All of these tests that we do
17 are controlled by detailed test procedures with specific acceptance criteria and are
18 executed by trained and qualified engineers, maintenance people, operators and
19 technicians.

20 Now this restart test program, all of the results from the testing that we do is
21 reviewed in detail by a joint test group. It's very similar in nature to a pre-
22 operational test group.

1 Now getting into system turnover, all of the testing that I just talked about is
2 part of system turnover. The organizations involved in the turnover are the
3 engineers on the Unit 1 project, as well as the operations staff on the operations
4 unit, maintenance people and the technicians. It's a joint effort for this testing.

5 The key elements to the testing that starts with physical plant walk-downs.
6 We'll go verify the material condition of the equipment. We'll check the lighting.
7 We'll check the labeling. All elements of making sure we have good equipment.

8 Then the testing program factors in here. We do detailed design reviews to
9 verify that the design documents are correct.

10 We do exhaustive searches in databases to verify that all the things
11 necessary to run the equipment have been completed and dispositioned
12 appropriately.

13 It's a rigorous and disciplined approach to getting systems to be declared
14 operable and it's also well documented.

15 To date, Masoud mentioned we turned over 38 of the 55 systems and the
16 systems that are turned over now are in the operating staff work management
17 system. There are scheduled PM's and surveillances and we maintain the
18 equipment just like we do on the operating units. Moving on to the next slide.

19 We completed fuel load on December 22nd of 2006. I want to point out that
20 before we started loading fuel when we were ready, we took a pause for a couple
21 of days just to make sure we went back and double and triple checked and verified
22 that we were ready to load fuel. We were not rushing into this.

1 It's an important milestone for Browns Ferry in that all of the systems
2 necessary to be operable were operable prior to loading fuel and the plant is now
3 controlled by the technical specifications.

4 One point I would like to make, Commissioner McGaffigan you talked about
5 104 reactors in the United States. Recent press clippings from some of the major
6 newspapers still talk about 103 reactors in the United States.

7 I would like to point out with the loading of fuel of Browns Ferry Unit 1, we
8 have 104 operational reactors in the United States.

9 After the plant is restarted, we have a power ascension test program where
10 we'll increase power in a systematic controlled manner. We'll stop at specific
11 predetermined plateaus.

12 We'll verify the plant parameters are where we expect them to be. They are
13 within the design.

14 At each plateaus will do detail searches of how all the equipment is
15 operating. Masoud also mentioned that we install larger pumps as part of the
16 power ascension testing program.

17 We'll be testing these pumps, tripping them individually to verify that reactor
18 power can be maintained at 100% with the loss of one of these pumps. So we'll
19 be doing that testing.

20 In order to demonstrate the integrated response to plant transience, we'll be
21 conducting two large transient tests.

22 First test will be a load reject test. We'll verify tripping the turbine that the

1 reactor responds appropriately to that.

2 Second test will be an MSIV closure test. We'll close all MSIV's
3 simultaneously and verify a very large transient that the reactor systems respond
4 appropriately. Next slide.

5 I like to start with talking about staffing and stating that we currently have
6 the staff we need to operate three units. We're expecting to increase the staff just
7 to make sure we have enough people in the operations pipeline for the long-term
8 health of the plant as well as anticipated attrition.

9 So we have the staff, but we are going to go a little higher than where we
10 are today.

11 We successfully transitioned to an operating organizational structure. We
12 have one Operations Department; likewise the Radiation Protection Program is
13 one program.

14 The Security Department and the security plan is implemented for three
15 units and its one plan. We have an emergency plan that's one plan, pending
16 finishing this cycle's re-qual of Operator Training and issuing the procedures which
17 are drafted and ready to go.

18 That will complete on February 12. So we'll have our single Emergency
19 Plan ready to go in February.

20 I'll talk about the programs. We have a single program for maintenance
21 rule. It's implemented on all three units and the corrective action program at
22 Brown Ferry is a single program.

1 Getting into the operations organization, we have a very experienced
2 operations department. We're fortunate to have some people that were at Browns
3 Ferry when we operated three units previously, so we have a vast experience in
4 that department.

5 We have a single license for the licensed operators for all three units. Just
6 to give you a perspective on where we're at with the licensed operators; we
7 currently have 87 senior reactor operators and reactor operators, with a tech spec
8 minimum number of 50. So we're in excess of what we need for a minimum.

9 We've trained new personnel, trained and qualified new personnel. Brought
10 them in not just in the operations department but in maintenance and engineering
11 and support organizations.

12 We hired additional training staff and improved our training programs in
13 anticipation of running three units.

14 We've created a dynamic learning center, where in a simulated environment
15 workers can practice their skills, post-training, prior to having them come into the
16 plant and actually work on the plant.

17 We also added a second simulator for operator training. This gives us
18 increased flexibility for operator training programs, as well as it affords letting
19 groups like engineering also benefit from simulator training.

20 Now the operations department is clearly in control of Unit 1. We have the
21 control room staffed by licensed operators 24 hours a day. We are doing rounds
22 in the reactor building and the turbine building.

1 We've restricted access to the reactor building on Unit 1 to only the people
2 that need to be in there. We have one clearance program that we're working
3 under for the entire site.

4 And the operators are out reinforcing housekeeping standards as they
5 would on Units 2 and 3. We are doing that on Unit 1. Moving on to the next slide.

6 I'll talk a little bit about comprehensive oversight. We've taken a critical look
7 at ourselves, as well as we've had others come in and look at us and we've
8 determined we're ready to run this unit.

9 We have a tiered approach to oversight. Fundamentally we can find and fix
10 our own problems. I'd like to start by talking about self assessments.

11 Over the last year, each department has done a detailed self assessment.
12 We look at seven critical areas, just to give you an example of each department
13 looking at areas. We looked at training. We looked at procedures. We looked at
14 programs. We looked at staffing. We looked at facilities.

15 Out of these self assessments, we identified issues. We entered them into
16 the corrective action program and we've corrected them.

17 Some of the key departments, such as operations, maintenance,
18 engineering, radiation protection, chemistry, have done second follow up
19 assessments.

20 Now each of these self assessments is presented to a challenge board.
21 The board is made up of myself, the plant manager and all the department
22 managers. So we have an integrated critical look on how each department is

1 looking at itself.

2 Moving on to operational readiness, this is our second tier. To establish a
3 high degree of confidence that we have found all the issues, we employed the use
4 of our Nuclear Safety Review Board.

5 It's made up of members of TVA executives, as well as external members,
6 example is former NRC administrator Bill Russell, Ed Hux, former INPO Vice
7 President. That's what that board has been made up of.

8 They took a look at all the self assessments as well as went out and did
9 their own assessments on how ready we are.

10 Additionally we ask the Institute of Nuclear Power Operators to come in and
11 give us a special restart readiness look. This is in addition to their normal
12 evaluation and assessment process.

13 Through all this, again we've entered this into the corrective action process.
14 We addressed everything we needed to address for fuel load. We loaded fuel and
15 now we're moving toward restart of Browns Ferry.

16 Next tier, independent. We have our nuclear assurance group which is an
17 independent organization. We've completed formal audits of operations,
18 maintenance and engineering.

19 We've conducted extensive reviews of the turnover process. We've
20 evaluated the organizations through unit readiness and their self assessments.
21 We have a detailed oversight plan for the restart and power ascension of Browns
22 Ferry.

1 We'll have assessors in the control room and out looking at plant activities
2 as we go through restart.

3 Final tier, NRC inspections. We've had in excess of 50 NRC inspections in
4 the last 24 months. I would like to point out that they've done extensive reviews of
5 the systems, the system turnover process, but it is our expectation at Browns Ferry
6 that we're capable of finding our own problems and fixing them before the NRC
7 does. With that, I'll turn it back over to Karl.

8 MR. SINGER: Thank you, Brian. For a conclusion, let me
9 underscore the key points we made today that demonstrate our readiness to safely
10 operate Browns Ferry Unit 1.

11 First, the project is nearly done. As you've heard from Masoud, we're 98%
12 complete.

13 As you saw in the pictures, large areas have already been turned over to
14 the operating staff. I'm confident in our proven recovery processes. We've use
15 these processes in previous recoveries and they worked.

16 I've personally observed the turnover processes and the results of turnover
17 testing. The results have been positive.

18 Masoud mentioned major tests and Brian alluded to one, the Diesel
19 Generator Load Acceptance Test, which occurred shortly after your visit,
20 Mr. Chairman, and how well that test went.

21 So the systems when recovered are operating correctly and the operators
22 are performing to our standards in operating them.

1 You also heard about the internal and external readiness reviews that
2 provided valuable and constructive feedback along the way. Any issues that were
3 found during those reviews are all tracked in our corrective action process, of
4 course, and nearly all are complete.

5 Any that are not complete are tied to specific restart milestones. Of course,
6 your staff has had complete access to our corrective action documents and
7 reviewed them rigorously along the way.

8 The site has taken effective control of the work. They are imposing
9 appropriate standards of nuclear safety as the project completes.

10 We are all mindful of the need to safely operate the operating units at
11 Browns Ferry. We will take whatever measures are necessary to avoid
12 overloading ourselves.

13 As Ashok mentioned, we have conservatively decided to perform the Unit 2
14 outage earlier. We will take the time to do both the Unit 2 outage and the Unit 1
15 restart right.

16 Before I conclude, I like to acknowledge the dedication of the NRC in this
17 effort. We haven't always agreed, but I would be remiss if I didn't acknowledge the
18 professionalism of groups like the Restart Oversight Panel, Region II including the
19 Browns Ferry Resident Inspectors, NRR and the NRR Project Management Team.

20 It's been evident to me that all have striven to be effective and efficient
21 regulators. That concludes our prepared remarks. We'd be happy to answer any
22 questions and I would expect there may be one or two.

1 CHAIRMAN KLEIN: Thanks, Karl. I'd like to thank you and your
2 team for a very informative presentation. As you noted, we expect our staff to
3 provide the detailed assessments, but the Commissioners typically do have a few
4 questions. And so we'll begin today with Commissioner Lyons.

5 COMMISSIONER LYONS: Thank you, Mr. Chairman. Let me start
6 by thanking you, Karl, and all the members of your staff for a truly excellent
7 presentation.

8 By way of starting comments, I'm sure it's no surprise, probably an
9 understatement, to note that you've had many, many people watching your
10 progress.

11 You've certainly had Congress and I know there's been at least one, maybe
12 more than one, hearing devoted to the restart of Unit 1.

13 You've certainly had the American people, you've certainly had industry, I
14 hope, following with great interest. I think you've had the international community
15 also following this. And that's of course, in addition to the Commission and staff.

16 What you're doing here is really very, very visible. I would compliment you
17 on the progress you've made to date. I do think that this highly visible example is
18 important certainly to the industry, the American people, to all the stakeholders I've
19 mentioned.

20 And important to show that both industry and the regulator can work
21 together to accomplish a very, very major construction project, which as the
22 Chairman and several of my colleagues indicated, is going to be very important as

1 we look towards possible renaissance activity in nuclear power in this country.

2 I, too, wanted to very briefly mention the issue that Commissioner Merrifield
3 mentioned. I understand and I truly appreciate the rationale that you described for
4 a delay in the restart of Unit 1.

5 I understand as Masoud emphasized, that it is safety driven and that it does
6 provide an opportunity for greater management scrutiny as you conduct both the
7 refueling operation and the very complex operations associated with restart.

8 So I want to be very careful that I don't overdo any negative comments. But
9 having said that, I think you could have anticipated the same issues that are
10 driving you to rearrange the schedule considerably earlier.

11 And I think it would have been quite a benefit to our staff and to their ability
12 to plan the availability of key people, had they known sooner.

13 Again, I recognize you're doing it for safety reasons. I just wish we'd known
14 about it sooner. So, with that, I don't want to belabor that point.

15 Perhaps by way of starting with a question, I'm sure industry as I noted, has
16 been closely following and watching your progress.

17 I was curious if any of you could speculate on the lessons learned from your
18 work on Unit 1 that could serve to inform industry as they look towards possible
19 future massive construction projects in the nuclear power area?

20 I just wondered if you could speculate on what some of those benefits may
21 be to industry?

22 MR. SINGER: First of all, let me say the responsibility you alluded to

1 the visibility of this project very seriously and have since day one. We recognize
2 the world is watching our performance and that in part drives us to be
3 exceptionally conservative in all our decisions, including the one that I hope
4 somebody is going to ask me directly about and why did we do it.

5 I think there is a lot we have to deal with here in terms of rumors. We have,
6 yesterday, heard some rumors that may have gotten to you, apparently it did, that
7 are not true. I think we're evaluating, we're not evaluating, we're performing our
8 communications plan today to get out there.

9 This is not a major slip in the project. There's no 75-day slip. You're right.
10 It does meet the original schedule.

11 In fact, the work that supports any remaining NRC inspections or the ORAT
12 for example will be complete.

13 We haven't completed an entire evaluation of the overall impact, but it still
14 supports the May startup and all the work for the safety related aspects and the
15 NRC inspections will be done on time.

16 So, if anything, we may have not done a good job communicating, but these
17 have been internal matters that we wanted to settle before we came today, rather
18 than you hear about it next week and you wonder why we came to the
19 Commission and didn't mention that we were doing that.

20 So, we have some communications challenges that we need to deal with.
21 The work on the critical path will continue.

22 One rumor that we had heard was that we were just going to shut down Unit

1 1 work. That's not true. We're going to continue to do the critical path work.

2 Just yesterday, we met with our CEO and went through the remaining
3 schedule and described the process and we have solutions to some of the issues
4 that are popping up.

5 We'll continue the endeavor to communicate more clearly, but I think there's
6 some aspects of this that we have gotten the cart in front of the horse.

7 COMMISSIONER LYONS: It does change the ORAT schedule,
8 doesn't it?

9 MR. SINGER: The ORAT schedule is an internal matter that the
10 NRC decides what to staff. I don't want to interfere in that. What I'm here to tell
11 you is we'll be as prepared with this schedule as we were with the previous
12 schedule for the ORAT.

13 When you consider the bulk of the safety-related work done, the
14 control room is manned and running and all those things that the ORAT would
15 come in and look at. We'll be fully ready to support.

16 COMMISSIONER MERRIFIELD: Just a clarification. My
17 understanding is that you have to give our staff the signal that you're ready for the
18 ORAT

19 MR. SINGER: We do. In the HPCI and RCIC, my staff will help me
20 if I'm wrong here, but the HPCI and RCIC are the last two things, and those are the
21 things that Masoud said are in final testing, which supports the date that you have
22 now for your ORAT. Is that correct?

1 MR. BAJESTANI: Yes, we're still looking at the remaining two
2 systems called HPCI and RCIC. We're looking at finishing that. We are in testing,
3 but we're looking at probably the first or second week of February to complete that.

4 MR. O'GRADY: Sir, we have a letter with specific criteria that NRC is
5 looking for to be done before the ORAT comes in, and we still expect to be pretty
6 close to the schedule that we're on now, although the work on Unit 1 will continue,
7 physical work.

8 I think what's getting out there is to do a refueling outage and a Unit 1 start
9 up, post-recovery at the same time, we'll be ready with the plant but we'll wind up
10 waiting until we get done with the Unit 2 refueling outage.

11 I think Karl's right. We've got to get a little better communication as far as
12 exactly what we have planned and we're still working on...

13 COMMISSIONER LYONS: We should probably explore this with our
14 staff, too. I had some misperception. I thought the ORAT was going to be
15 delayed.

16 MR. O'GRADY: The date we were talking about was early February
17 and I've been working with Joe Shea the Chairman of the ORAT, that we'll move
18 that out, but not 75 days.

19 MR. SINGER: We're not requesting the overnight move out. Our
20 perspective is the ORAT date decision is an NRC decision. You have
21 communicated with us what you need. We fully intend to meet your needs for that
22 date.

1 COMMISSIONER MERRIFIELD: Okay. Just so you know, and not
2 to go out of order -- because we're on the topic, I agree with Pete. My comments
3 were fully consistent with the notion that you've got to do the right thing relative to
4 safety.

5 I don't want to leave the wrong impression there. The information we
6 received from our staff was that TVA executive management had decided that the
7 work, and this is the words from our EDO, that the work on Browns Ferry would be
8 delayed to support Unit 2 refueling outage, Unit 1 restart will be delayed about 75
9 days which will also impact schedule inspections including the Operational
10 Readiness Assessment Team inspection.

11 That is direct language that came from our Executive Director's office. And
12 that is what left the impression on my part, and with Pete, and presumably other
13 members of the Commission about where you were.

14 Now, that may be a communication effort on your part, it may be a problem
15 in our staff. Obviously there's a delta between your perception about where you
16 are and our perception.

17 I apologize if I made a misstatement, but that's the information upon which I
18 had to base it. I stand by my statement as it relates to that.

19 MR. SINGER: I think we are, again, in an effort to put in front of the
20 Commission a late breaking issue, rather than a week from now, you wonder why
21 we didn't bring it up. We forced ourselves to make a decision. We made that
22 decision.

1 It was based on not so much work activity as operator activity trying to do a
2 recovery startup and a unit start up at the same time doesn't make sense.

3 So we forced the decision that we would have only anticipated had we really
4 believed that we were going to be that far ahead of schedule a year ago.

5 The question I wrestle with is when should we have had anticipated it and,
6 frankly, we keep waiting for bumps in the road that aren't occurring.

7 And so, we are ready from a reactor safety and from the reactor building
8 and drywell perspective, the safety related systems. We're ready. What we're
9 doing is we're going to spare the operators from trying to do two reactor start-ups,
10 one of which is a recovery. And we're committing to that schedule which gives us
11 clarity.

12 Now again, this is something that's days old, not weeks old and I certainly
13 apologize that we haven't done an adequate job of communicating what that
14 impact is, but again, as of just yesterday, we concluded that we could do all the
15 work in the turbine building in parallel and our biggest challenge is going to be
16 making sure we don't over challenge our operators.

17 So in terms of readiness for ORAT, our analysis thus far tells us we will be
18 ready for the things as they are scheduled.

19 I certainly apologize for the late breaking and communications challenge
20 nature of this. But our intent was to the right thing and to not leave the
21 Commission with anything but the most recent knowledge of where we were on
22 the project.

1 COMMISSIONER LYONS: I appreciate those comments, Karl. And
2 that did clarify. I'm not sure and I don't know whether the Chairman wants to take
3 time, I'm not sure you ever answered the real question. I appreciate what you
4 said, but I'm not sure you answered my question which was to the extent that
5 industry has been observing your progress. I'm guessing there are less...

6 MR. SINGER: You're right. That was the question. I apologize. I
7 mentioned the one on purpose, and that was doing the design before you get into
8 a construction or heavy modification mode.

9 That's been a lessons learned from our first recovery, Unit 2's recovery. We
10 had a mixture of both. Unit 3 was much more engineering up front.

11 I will tell you that my knowledge of the oversight panel for new construction
12 of which I'm a member, is that philosophy is very consistent.

13 The other thing is the standardization issue, which I know the Commission
14 is well aware of, that the new construction folks have embraced. That will certainly
15 aid in the construction.

16 So those would be the two I'd offer up and the one I specifically mentioned,
17 because we have experienced where you design in parallel with construction and
18 there's a lot of rework associated with that and that creates instability in your
19 processes.

20 Then your turnover process gets challenged when you have to rework
21 issues that have been turned over to the operators. We've avoided that pitfall.
22 Thank you for reminding me of the question.

1 MR. BAJESTANI: You want me to add a little bit on lessons learned
2 from construction side? Looking at some of the lessons learned, essentially we've
3 got three things that we've learned.

4 One is the ability of the craft; specific skills that we need to do a certain job.
5 We've really struggled to get the right craft.

6 Two, train them, actually, to do the requirements that they're not used to.
7 So there's a lot of training that we have to do.

8 Three, it was the material. Before, if you go back to early '80s or '90s, we
9 were able to get the material pretty quick. We had the material.

10 What we ran into, for this project was the delivery for some of these
11 materials was much longer because we didn't have the capability to manufacture
12 in this country, so we ended up actually getting a lot of this material from outside
13 the country. So the lead time for this material was significant. Those are the three
14 main lessons learned when we went through this project.

15 CHAIRMAN KLEIN: I was just going to follow up on Commissioner
16 Lyons' observation. I thought Karl was prepared to run for elective office. He
17 wanted to answer his question rather than the one that was really asked.

18 MR. SINGER: I felt the question was out there.

19 CHAIRMAN KLEIN: One of the issues, follow-on to Commissioner
20 Lyons' questions for lesson learned that I was surprised when I was there, was the
21 skilled craft in terms of the challenge you all had in getting the skilled workers.
22 Just to do the work that you needed plus the outage.

1 As I recall you were a few welders short, for example, in your skilled craft.
2 Has the industry looked at implications of skilled workers as they start looking at
3 building these new plants?

4 MR. SINGER: That's probably better for others to answer for the
5 industry, but I'm aware of the concern about skilled labor. I know that skilled labor,
6 represented labor, at least, is aware of spikes in the future needs and I'm also
7 aware of some regional analysis that talk about in the southeast, specifically, the
8 region I'm in, that talk about future craft needs and the impact of new nuclear and
9 fossil work and the other things that tend to tax the craft.

10 I certainly wouldn't say it's matured to the point where we can be confident
11 that all the craft is there. But I am encouraged by the fact that the right
12 conversations are occurring and from our perspective for represented labor, which
13 is what we had at TVA, I'm personally aware that there is some effort to anticipate
14 the spike and prepare for it, including starting apprentice programs and soliciting
15 companies like TVA to engage more apprentices, which may not always be the
16 most cost-effective in the short term, but does develop our future workers.

17 CHAIRMAN KLEIN: Thanks. In terms of your scheduling issue, I
18 think it makes logical sense to make sure Unit 2 is ready to run when you need the
19 power since it's there.

20 It certainly makes logical sense, so you don't get distracted and get spread
21 too thin that you sequence those activities.

22 Do you use some of the same people on your refueling for unit, when you

1 refueled Unit 1, do some of those same people end up with your outage for Unit 2?

2 MR. SINGER: Yes. In the past we have moved Unit 1 folks in large
3 quantities from Unit 1 to the outage unit.

4 CHAIRMAN KLEIN: And I assume that your training programs that
5 you have in place, you indicated that you had hired more people than you
6 expected for Unit 1 so that you could handle any possible attrition.

7 So I assume you went through a rigorous training program for all those
8 individuals to meet their skill sets?

9 MR. O'GRADY: It's the same training program for anybody that
10 comes in. We have accredited programs. In fact, we just got our operator
11 program's accreditation renewed last November.

12 CHAIRMAN KLEIN: Great.

13 MR. BHATNAGAR: We've gone back and actually reinvigorated all
14 our apprentice training programs in all aspect of maintenance, operation,
15 chemistry, rad cons, so we saw this coming, just normal attrition on the operating
16 side of the house and one of the first steps was to get the programs that maybe
17 hadn't been used for a long period of time to get them up-to-date and get them in
18 place.

19 All those programs have actually been implemented at least once on the
20 operating side, so they've got some operating time on them also.

21 CHAIRMAN KLEIN: Great. Thank you. Commissioner McGaffigan?

22 COMMISSIONER MCGAFFIGAN: Thank you, Mr. Chairman. I do just

1 want to follow up on the Chairman's last comment, I think that you have done
2 exactly the right thing throughout this process focusing on people who run the
3 plants and people who do the upgrades. And so focusing on getting the right
4 people internally in the past was the right thing. Somebody is going to remind me
5 to turn on my microphone. You guys heard that, maybe the audience didn't.

6 With regard to this issue, I fully concur with the fact that you're making a
7 conservative decision here, but when you talk to the timing of the decision, and I
8 appreciate your telling us today about the potential of delay and the actual
9 reconnecting to the grid of this unit, you said you're thinking about when we should
10 have anticipated this and you kept looking for bumps in the road which didn't arise.
11 Former Chairman Diaz, and I think current Chairman Klein, talk about
12 communicating, communicating, communicating.

13 I think you could have been a little franker with Bill Travers and company
14 perhaps about, my gosh, we might have to make this conservative decision. We're
15 pressing you for things. We probably can delay a few weeks and it won't be the
16 end of the world, and this meeting itself might have been delayed, although I'm
17 happy it was here today because I'm here, and I intend to be here for a while, but
18 you never know.

19 I think you just have to think about that as a future lesson learned. We're
20 not trying to mess up your communication plan.

21 It sounds like you're executing today and we've probably already messed
22 up. I think you made a very sound decision. On the record, I think every

1 Commissioner will say you made a very sound decision.

2 It's just that decision might have been anticipated not in the last few days,
3 but a few months ago.

4 MR. SINGER: We accept that feedback.

5 COMMISSIONER McGAFFIGAN: That's all I want to say. That's very
6 gentle.

7 Could you tell us in power uprate space, your intent is to start up this unit at
8 105% of its original power. I'm not quite sure where the licensing action is, but
9 that's a relatively modest thing that is clearly, I suspect, supported if it hasn't
10 already been approved.

11 The larger power uprate will be that the three units will be considered as a
12 group later this year and that licensing action is separate. Is that correct?

13 MR. O'GRADY: That's correct.

14 COMMISSIONER McGAFFIGAN: The ACRS had raised some questions
15 about that. I just wanted to get that on the record. One of the things that you can
16 do to help maintain a work force and I'd just be interested in the answer if you can
17 give it without getting in trouble with your board and your chairman.

18 Can you tell us anything about Watts Bar 2? You're intents, I know you're
19 studying it and that's in the public domain. Where do you stand?

20 MR. SINGER: Right now our internal milestone is to, by July, provide
21 a recommendation through our Board's subcommittee to whether or not it makes
22 sense to do Watts Bar 2.

1 We'll do that through the study process, the detailed scoping estimating
2 process that we have begun, as you said, is in the public domain. We have that
3 funded and underway and staffing is in progress.

4 We're probably about a third of the way staffed from the TVA perspective on
5 that. The contractor has been selected and we're setting our expectations for the
6 contractor now.

7 We anticipate by July to have a rough estimate order of magnitude
8 cost-benefit analysis that will allow the Board to make a final decision.

9 COMMISSIONER McGAFFIGAN: But that at the moment, is the
10 nation's most likely 105th unit if they make that decision because you'll be well
11 ahead of the game.

12 MR. SINGER: That's my understanding, as well sir.

13 COMMISSIONER McGAFFIGAN: The final area I just want to touch
14 on, EP, you mentioned you will have your final plan sometime in February.
15 There's a member of the public down there who has been raising some issues that
16 are generic to the whole site, not to this particular unit.

17 It strikes a little bit of a responsive chord with me that there are things that
18 we can do in EP space always to improve things.

19 I know at TVA you have a centralized EOF and it's practiced all the time.
20 What notions do you have, and this is not part of the licensing action, as to
21 possible improvements down the road in your EP plans or EP program?

22 MR. O'GRADY: We're certainly keeping an eye on the issue as an

1 industry issue. It's basically back up power.

2 COMMISSIONER McGAFFIGAN: We issued an SRM yesterday, by
3 the way, for those who pay attention in response to a staff EP paper that's on our
4 web page today that gives staff direction going forward that is generic...

5 MR. O'GRADY: We're certainly sensitive to Spencer's comments and
6 mission on EP facilities. We're looking at what backup power would look like for
7 facilities and sirens, so it is something that we'll take a look at.

8 It is near and dear to me because I want to know that I don't just work at
9 Browns Ferry, I live there too.

10 COMMISSIONER McGAFFIGAN: I understand. That's a point that
11 many members of the public opposed to nuclear power don't always grant; that
12 somehow the people at the plant whose families live there would somehow be less
13 motivated to have the best.

14 MR. O'GRADY: TVA is very supportive of emergency management
15 with the state of Alabama and the local counties.

16 We'll continue to do that as far as a decision on what Spencer want
17 specifically is coming down the road. We're certainly willing to take a look at
18 things, but we've made no commitments.

19 COMMISSIONER McGAFFIGAN: He has an idea. There are other
20 ideas in the domain. We had an EP meeting last year. There's a lot of other
21 possible improvements that can be made. We're updating our ERDS system,
22 which we have allowed to get obsolete and we're looking to the licensees

1 constructively to work with us; get broadband, get new software and hardware into
2 ERDS so that we have better data streams into our Ops Center.

3 Those are things that probably would take precedence in my mind over
4 some of the other suggestions, but I just wanted to make sure you had EP on your
5 horizon. Thank you.

6 CHAIRMAN KLEIN: Commissioner Merrifield?

7 COMMISSIONER MERRIFIELD: We've probably plowed the timing
8 issues enough, but I'll make one last comment. I think my comments were based
9 on the information we got from our staff and we may have made a mistake on our
10 end. I expect our EDO will talk about that when he gets to the panel or we may
11 just had some miscommunication.

12 But my comments were based on what I had in front of me and that's
13 reflective of it. I do, I agree, you made the right decision from a conservative
14 standpoint. I wouldn't want to let the record be unclear about my views in that
15 regard.

16 I think my sentiment, though, is still underscored. We have really tried the
17 best we can as an agency to meet time lines and I think going forward, those
18 points still apply.

19 That I think setting aside you all, the other members of the nuclear energy
20 industry need to be mindful of making sure there's an obligation on both sides to
21 make time. It's a miscommunication here perhaps, but--

22 MR. SINGER: Let me accept the responsibilities for the

1 miscommunications. It's our job to keep the NRC informed, especially on a
2 decision that we're making in TVA.

3 So, I accept full responsibility for miscommunication and as I said, we'll get
4 ahead of it and we'll straighten it out.

5 COMMISSIONER MERRIFIELD: Going more to some of the other
6 issues, is part of the effort for- maybe I'll put it in an open-ended way.

7 How can you describe the process for fuel loading and did that go
8 completely as you expected or were there some issues you encountered?

9 MR. O'GRADY: There were some issues, specifically we had some
10 equipment issues with refuel bridge where we stopped, did the right thing, fixed the
11 crane, and we had one human performance issue which we take very seriously.

12 The fuel handlers picked up the wrong fuel assembly and inserted it into the
13 core. It was detected immediately, put back in the spent fuel pool, stood down and
14 we took very aggressive corrective actions including accountability measures with
15 the individuals involved and brought them out of the evolution and did a human
16 performance review on that event, communicated it, stood everybody down before
17 we went back to work.

18 Safety significance of that was very low, but we did take it very seriously.

19 MR. SINGER: We were disappointed. Our goal was flawless. We
20 wanted to come here today anticipating that question and tell you it was flawless.
21 That human performance error prevents us from saying that.

22 COMMISSIONER MERRIFIELD: Are there any, maybe you can talk

1 about it, are there any unique licensing conditions that you're going to encounter at
2 restart? And if so, what might they be?

3 MR. BHATNAGAR: I would say probably the most unique thing that
4 we're going to do is come up with large transient testing requirements.

5 That's going to be new and unique to this start up that we have to fully plan
6 for looking out at the future. Obviously coming up and monitoring the steam dryer
7 through that process will be unique and those will be specified in our license
8 conditions.

9 I expect on the restart, if you're talking after restart, I would say those two
10 activities are probably going to be the most unique activities that we will have to be
11 prepared for.

12 COMMISSIONER MERRIFIELD: Are there any- I know fire
13 protection has always been a sensitive issue. Are there any remaining fire
14 protection issues that remain with our staff? And do you know what the schedule
15 for resolution of that might be?

16 MR. BHATNAGAR: I believe we have one license amendment that's
17 still outstanding with the staff. I believe the schedule for that...

18 MR. O'GRADY: The schedule for the amendment is near term, but
19 there's one more inspection that's going to occur with Appendix R and that's not
20 this coming week, it's the week after.

21 COMMISSIONER MERRIFIELD: Assuming we find that to be
22 acceptable, that will wrap up the rest of the fire protection?

1 MR. O'GRADY: Yes. That's correct.

2 COMMISSIONER MERRIFIELD: Well, we talked around this issue
3 and I don't know if anybody's got an answer to this right now. But the key issue
4 right now is the time line for when we received notice from you all that you're ready
5 for us to initiate the Operational Readiness Assessment Team inspection.

6 Is there a target date that you have right now and are you still in accordance
7 with that date as most recently provided to us?

8 MR. O'GRADY: Let me just say two key systems that were in the
9 testing process now are the high-pressure injection and reactor core isolation.
10 Those are two key systems, so once they're done, assuming no problems, it
11 should be this month. If there are problems, it would be a little later.

12 COMMISSIONER MERRIFIELD: Those won't be affected by the Unit
13 2 refueling outage or they will be?

14 MR. O'GRADY: They will not.

15 COMMISSIONER MERRIFIELD: They will not be.

16 MR. BHATNAGAR: The plan is to get those done prior to the
17 refueling outage start.

18 COMMISSIONER MERRIFIELD: Okay. And that's triggering the...

19 MR. SINGER: Again, our commitment to the data is good,
20 Commissioner. We will not move the resources over to the outage unit. We'll
21 complete that work if we did run into problems.

22 COMMISSIONER MERRIFIELD: Okay. I think that clears that up.

1 Thank you, Mr. Chairman.

2 CHAIRMAN KLEIN: Commissioners Jaczko?

3 COMMISSIONER JACZKO: As I said, I won't comment much-not as
4 I said- I won't comment much on the scheduling. I think that issue has been
5 beaten to death.

6 I will only say I think, perhaps there's a lesson learned for this Commission
7 in that, and I think sometimes we may be too responsive in attempting to modify
8 our schedules to accommodate other peoples' schedules.

9 I think it's important that we do keep in mind that we need to make our
10 decisions as I think everyone here indicated based on what the right safety issue
11 is, but not what the issue to satisfy a schedule.

12 As I said I think in the opening, the thing that's the most interest to me is the
13 status of the variety of open items. I have in front of me I think the enclosure that
14 was attached to a TVA letter from December 12.

15 I believe it goes through, or this may have been a staff product, I apologize
16 if it is.

17 Perhaps you could just walk me through some of these issues and just
18 update me. I think Commissioner Merrifield raised the fire protection issue as one
19 that is listed as an open item.

20 An additional one, containment coatings. You know the status of that? Or
21 inspection schedule, do you know- as of December 12 that was listed as an open
22 item.

1 MR. BAJESTANI: NRC actually completed the containment coating
2 and that inspection is complete with no findings.

3 COMMISSIONER JACZKO: So that's now closed? Okay. The fire
4 protection I think Commissioner Merrifield touched on a little bit and my
5 understanding is after the inspection next week that will then be a closed item. Is
6 that, assuming no new findings?

7 On that issue in particular, one of the questions that I have, the Commission
8 recently asked the staff to go back and reexamine a generic letter they had done
9 on multiple actuations.

10 I'm wondering if you can touch a little bit on how you see resolving that
11 issue right now in light of any further Commission guidance right now to the staff
12 on how to move forward?

13 MR. BHATNAGAR: We're following the same process we have on Unit 2
14 and 3, so Unit 1 will be consistent in its design basis and how it dealt with shorts
15 and we're waiting for industry guidance essentially on how we're going to modify
16 that process for all three units.

17 COMMISSIONER JACZKO: What is a current basis that you do for
18 Units 2 and 3?

19 MR. BHATNAGAR: It's 8610.

20 COMMISSIONER JACZKO: I'm sorry, Karl, did you want to add
21 something?

22 MR. SINGER: No, that's okay.

1 COMMISSIONER JACZKO: This is certainly, I think, an important
2 issue and I think one that we do need to eventually make some resolution to.

3 Just going through the list, there were some other issues. The station
4 blackout, this is listed as an open item. Maybe you can comment a little bit on if
5 you know what the open issues are with station blackout?

6 MR. BAJESTANI: Yes, I can address that. We did have inspection
7 on station blackout. We did have some issues that we are resolving.

8 COMMISSIONER JACZKO: What were those issues?

9 MR. BAJESTANI: Specifically, was the number of diesel generators
10 that we can actually take credit. Given the Unit 2 start up, we submitted a letter to
11 NRC which basically says okay, here it is, this is how many diesel generators we
12 can actually take credit on station blackout and we can actually take credit for
13 more diesels. So we're going back and looking at that information.

14 As a result of NRC's inspection that we had, we are doing that right now. I
15 want to get back with staff and bring them up to speed on where we are. But the
16 issue should be resolved.

17 COMMISSIONER JACZKO: So that's the open issue that was on
18 number of diesels?

19 MR. O'GRADY: Just to give you a little more detail on it, we have
20 eight diesel generators at Browns Ferry supporting the three units. Our station
21 blackout licensing basis has failures on each unit and a common diesel
22 assumption that fails.

1 So of the eight diesels, we only assume that we have three. What we had a
2 problem with was cooling water to the diesels and those operator actions being
3 specific enough to verify that we could run those three diesels. That issue has
4 been addressed through corrective action.

5 We are doing our final analysis and we'll be submitting what our position is
6 for the current very conservative licensing basis and then looking at a more down
7 the road approach for what a more reasonable licensing basis would be.

8 COMMISSIONER JACZKO: So the intent would be to modify the
9 licensing basis for all units?

10 MR. O'GRADY: That's correct. That's down the road, though. That's
11 not related to restart nor near term.

12 COMMISSIONER JACZKO: Another one that I saw here and I'm
13 trying to find it, it's listed as an open item generic letter 8820 which is the individual
14 plant examinations and external events.

15 I'm assuming that is essentially severe accident analysis. Are you familiar
16 with that one?

17 Are there any particular issues or that again is consistent with the
18 schedule for closing out that issue?

19 AUDIENCE SPEAKER: All issues have been resolved.

20 COMMISSIONER JACZKO: Thank you.

21 CHAIRMAN KLEIN: Well, Karl, I'd like to thank you and your team for
22 the presentations that you made today and also I'd like to compliment TVA on the

1 progress that you've made.

2 As Commissioner McGaffigan had indicated, it oftentimes gets down to
3 people that make things happen and during my visit I was impressed with the
4 people that I talked with at all hands meeting.

5 Clearly, you've got a dedicated group of people who are wanting to do the
6 right thing. I think management has the right oversight and so we will now hear
7 from the NRC on their activities, but we wish you well for your next step of the
8 activities.

9 MR. SINGER: Thank you Mr. Chairman.

10 CHAIRMAN KLEIN: I think we are ready now to hear from our
11 well-known EDO, Luis.

12 MR. REYES: Good morning, Chairman and Commissioners. The
13 staff is ready to brief the Commission on our activities on the restart and recovery
14 of Browns Ferry Unit 1.

15 Before I turn it over to the staff, they're going to try and summarize in a few
16 minutes the intensive efforts the agency has conducted for the last five years. So,
17 it's going to be a challenge from that point of view.

18 But before I turn it over to the staff, let me highlight a few things that are
19 underpinnings of the efforts of the staff.

20 First of all, five years ago when Browns Ferry was intended to restart, we
21 took a look at our organization to overlook the recovery efforts and we used
22 lessons learned from the NRC construction activities and we put an organization in

1 place that is similar to what we will use for new construction.

2 It's basically a design, where we will have early on technical staff on site to
3 observe all the activities. And we did that at Browns Ferry. So that's a key thing
4 that we implemented in this activity.

5 The second one is that we put a lot of experience in those individuals.
6 Those individuals have a lot of experience, specifically in the recovery of Unit 2
7 and Unit 3.

8 We had not only a knowledgeable staff on site, an organization that was
9 designed similar to what we will have for new construction, but they were very
10 knowledgeable on the issues at the facility.

11 We understood that some of the activities in the recovery will be unique and
12 similar to some of the new construction activities. So we took the advantage of
13 doing knowledge transfer.

14 A lot of the inspections that we conducted with our more senior staff, you'll
15 see they were accompanied by some of our entry level engineers, you know them
16 as Nuclear Safety Professional Development Program, and we had a lot of
17 members of that program observe activity through the five-year experience.

18 We still did a consultation with DHS. I think in the background of your book
19 there's a letter, although it was in emergency preparedness, it was a kind of
20 consultation that we will do with DHS on a new facility when it gets constructed,
21 although the scope will be a little bit larger including security.

22 We will be reviewing the additional simulator. The utility installed a second

1 simulator and a review of the new simulator will be something similar to what we
2 do on a new nuclear plant application.

3 We have taken the opportunity in this effort to make sure we practice as
4 many things as we could in preparing us for the future.

5 Before I turn it over and introduce the staff, I just want to mention that the
6 utility made the comment that the schedule was accelerated because they didn't
7 find any bumps in the road. I think they were referring to their execution.

8 I just want to make sure you understand the NRC was also not bump in the
9 road and we supported the schedule as the schedule came forward. We
10 anticipated changes.

11 We're flexible enough and there was very good communication in the
12 project for us to be able to react to that.

13 COMMISSIONER McGAFFIGAN: I think that was clear from his
14 comment they you were not a bump in the road. You might have been one of the
15 bumps they expected, but you were not an unexpected bump.

16 MR. REYES: I would like to introduce now the staff. Bill Travers is
17 the Regional Administrator from Region II is to my right. Jim Dyer, the Director of
18 NRR is to my left. Joe Shea is to my extreme right. Joe is not only the Division
19 Director of Reactor Safety in Region II, but he's the chair of the Browns Ferry
20 Restart Oversight Panel.

21 And then Tim McGinty to my extreme left is the Deputy Director of
22 Operating Reactor Licensing in NRR. Now, I'll turn the meeting to Bill

1 MR. TRAVERS: Thanks, Luis. Commission, as you know, because
2 we have been keeping you informed along the way and as a result of your visits to
3 Browns Ferry, we have been implementing a rigorous, intrusive and I'll say,
4 deliberate program both from the licensing and the inspection perspective.

5 Commissioner McGaffigan noted about 60,000 or so of hours related to
6 both licensing and inspection effort.

7 I'd like to introduce just three people who are in the audience who have
8 been working out at the site and out of Region II who are here today.

9 Senior Resident Inspectors from Browns Ferry, Bill Bearden and Thierry
10 Ross are here and Malcolm Widmann who is the Branch Chief of the Reactor
11 Project Section in Atlanta, Georgia for the TVA section.

12 Our effort began about five years ago when in 2002 TVA sent us a letter
13 indicating that they wanted to begin efforts to bring Browns Ferry Unit 1 back to
14 operational status.

15 We interacted with them to develop or approve ultimately their proposed
16 regulatory framework, which addressed issues such as regulatory requirements
17 that they would have to meet, corrective actions that they would have to
18 implement, any special programs related to the sort of special programs that were
19 at issue for the restart of the two previous units.

20 And tech specs and other identified deficiencies that they have identified in
21 the course of work they've been doing.

22 So we really, when I say "deliberate" in terms of development of our

1 program, we really were basing what we were doing as they, I believe, were doing
2 and the experience that they had and we had in implementing the programs in the
3 past.

4 It really was a benefit and I think in large measure it proved to be very
5 successful in our scrutiny both from the licensing and inspection standpoint.

6 We wrote a plan, a Manual Chapter 2509 that covered it. Joe Shea's going
7 to talk a little bit more about that in just a moment.

8 A key component of that plan was the establishment of the Regulatory
9 Oversight Panel that was mentioned here all ready today. Joe is the chair of that.
10 It's been operating since about 2005, to really hone in on the issues that we
11 believe are at issue.

12 As I said, we have been and are implementing our program. It's not done;
13 it's largely done and we're here to tell you today that we believe that Browns Ferry
14 Unit 1 is very close to being ready to restart that unit.

15 Let me turn it over to Jim Dyer who is going to talk about licensing aspects
16 of the reviews that we've been doing.

17 MR. DYER: Thank you, Bill. Slide three, please. I think the licensing
18 effort under way and still in progress with Brown's Ferry Unit 1 was a very
19 challenging effort.

20 We put together a special team to deal with that effort and to date, we have
21 expended over roughly 30,000 hours of licensing review effort to accomplish four
22 major licensing activities with the goal as you heard earlier to make all three

1 Browns Ferry units operationally similar.

2 Those four areas are first, to renew the Browns Ferry Unit 1 license in
3 conjunction with Units 2 and 3 renewed licenses which we issued.

4 To update the Browns Ferry Unit 1 licensing basis for the modified systems
5 as well as 21 years of what I will call technical specification evolution and
6 improvements that have occurred since 1985.

7 And also to address the changes that needed to be made to the Browns
8 Ferry Unit 2 and 3 technical specifications as a result of three unit operation at the
9 site.

10 And also to close out the special programs initiated by regulatory changes
11 we've implemented since 1985 and to also address a request from TVA at first to
12 get an extended power uprate in conjunction with the restart on Unit 1 as well as
13 the other two units.

14 These actions, these activities, really created a challenge for the staff
15 because of their interrelationship as well as specific technical issues within the
16 individual requests as Tim will go into in more detail.

17 We also talked about in the late summer, TVA made a decision not to
18 pursue the extended power uprate and in conjunction with that they requested we
19 accelerate our schedule for completing our licensing actions without the extended
20 power uprate to support a restart and really get all of licensing actions done by
21 February of 2007.

22 As a result of that, we re-prioritized a lot of work within NRR and worked

1 what Research Region II and the Advisory Committee on Reactor Safeguards to
2 put together a schedule to complete the necessary licensing actions in February to
3 support the Browns Ferry Unit 1 Restart schedule at that time.

4 I think we were successful in doing that. Along the way, I think we were a
5 bump on several of the technical reviews that went on with the extended power
6 uprate, the steam dryer analysis, as well as some of the issues with large transient
7 testing and those were issues where we did not initially agree with the licensee's
8 proposal for how to handle those and we're still working out the integrated
9 schedule on what needs to be done.

10 That's why I say the licensing activities are still ongoing, but our goal right
11 now on our schedule right now is to complete those actions in February, to support
12 whatever schedule TVA needs and that would include, obviously, I feel more
13 comfortable from a safety perspective if we complete the licensing actions and
14 TVA has time to digest and train on all those changes before they actually start
15 restarting the plant.

16 So with that, let me turn it over to Tim McGinty to discuss the licensing
17 activities in more detail.

18 MR. MCGINTY: Thanks, Jim. Next slide, please. The license
19 renewal applications for all three units were received in January of 2004.

20 We spent over 9,000 staff hours for the review of the Unit 1 application and
21 over 25,000 hours for all three units.

22 The Advisory Committee on Reactor Safeguards recommended approval of

1 license renewal for all three units in March of 2006.

2 The staff concluded during renewal that TVA had demonstrated the
3 capability to manage the effects of plant aging and as such, license renewal
4 addressed all of the impacts of the Unit 1 extended layout.

5 In May of 2006, the licenses for all three units were renewed for an
6 additional 20 years. Next slide please.

7 This slide illustrates from a licensing perspective what it took to bring Unit 1
8 up to current standards and support a restart after being shut down for 20 years.

9 Of the 21 license amendments have been reviewed by the staff since
10 April 2004, 17 have been completed and the remainder are on schedule.

11 The four remaining are the revision to the tech spec numeric values for the
12 safety limit minimum critical power ratio; an amendment to delete a surveillance
13 requirement on a LPCI, low pressure coolant injection loop cross-tie valve that has
14 been replaced with a blind flange; an amendment to the fire protection license
15 condition to reflex three unit operation; and, of course, the 105% interim power
16 uprate that I'll discuss in a few moments.

17 Additionally, 12 relief requests and three exemptions were reviewed and
18 completed. As has been mentioned by several folks, there have been challenges
19 along the way, but the staff has been able to work through them. Next slide
20 please.

21 A significant part of the staff's effort was to review all NRC generic letters
22 and bulletins that had not been closed for Unit 1.

1 Since the extent of these reviews went all the way back to 1985, it was a
2 large scope. Additionally, the staff reviewed compliance of Three Mile Island
3 action items that had not been closed for Unit 1.

4 And of course, we've insisted that Unit 1 be brought up to current fire
5 protection standards. TVA has now upgraded Unit 1 to be comparable with the fire
6 protection features of Units 2 and 3. Next slide, please.

7 With respect to the Unit 1 power uprate, TVA submitted an application for all
8 three units in June of 2004 for 20% power uprate over the original license thermal
9 power limit for Unit 1. It was actually a 15% power uprate for Units 2 and 3.

10 So, Units 2 and 3 were already authorized to operate at 105% of the original
11 licensed thermal power.

12 As has been mentioned several times, in September '06, TVA made the
13 decision to request an amendment to restart Unit 1 with a 5% power uprate. The
14 decision to pursue the 5% power uprate for Unit 1 Restart was primarily due to
15 issues with the steam dryer integrity analysis for the 20% power uprate application
16 for Unit 1.

17 The Advisory Committee on Reactor Safeguards decided to review the draft
18 safety evaluation report for the 5% uprate on Unit 1, because TVA is using
19 bounding arguments to demonstrate that safety analysis performed for 20% power
20 uprate are valid to support operation at a 5% power uprate.

21 We worked with the Advisory Committee to develop a schedule to meet
22 TVA's accelerated recovery schedule, completed the draft 5% uprate safety

1 evaluation report in early December, and submitted it to the ACRS.

2 The ACRS Subcommittee will meet on January 16th and the full committee
3 meets on February 1st to discuss the 5% power uprate for Unit 1. Next slide,
4 please.

5 With respect to extended power uprate issues for all three units, on a
6 parallel path with the Unit 1 Restart activities at a 5% power uprate, the staff is
7 reviewing a TVA submittal for the upgrade of all three units to 120% of the original
8 licensed thermal power level.

9 As discussed earlier, the review schedule for the 20% power uprate is
10 dependent on TVA's submittal of information on the steam dryer analysis.

11 Other significant considerations in the 20% power uprate review include
12 large transient testing, containment accident overpressure credit, and fuel analysis
13 methodologies which are key review topics for the ACRS meeting.

14 Next, Joe Shea will discuss regulatory oversight. Joe?

15 MR. SHEA: Thank you, Tim. Slide nine, please. In conjunction with
16 the establishment of the regulatory framework back in the 2002/2003 time frame
17 for the restart of Unit 1, the staff recognized that it would need a detailed plan for
18 the inspection and assessment and oversight of that effort.

19 The staff recognized that Inspection Manual Chapter 0350, which was
20 designed for plants in extended shutdowns, had elements that were applicable.

21 Also recognized that there were unique aspects to Unit 1 recovery that in
22 the end warranted the development of a tailored Manual chapter to govern the

1 five-year inspection effort.

2 The staff in 2003 then issued Manual Chapter 2509 which provides a Unit 1
3 specific approach for oversight. Manual Chapter 2509 does parallel Manual
4 Chapter 0350 in many ways.

5 It does provide for policies and requirement for the restart inspection
6 program including the requirement to inspect the special programs and to inspect
7 the renovation work, the recovery and the restoration work inside the plant.

8 It does also provide for management oversight and communication, and it
9 does provide for the creation of the Restart Oversight Panel which as was
10 previously mentioned was stood up in late 2005.

11 And finally it does provide for the transition of Unit 1 into the reactor
12 oversight program at an appropriate period of time when each of the cornerstones
13 is determined to be monitorable under that program.

14 In demonstrating the flexible application of that approach in 2509, the staff
15 in 2004, late 2004, did inform TVA that it was going to transition four of the seven
16 cornerstones for Unit 1 to the reactor oversight program and those were
17 occupational radiation safety, public radiation safety, emergency preparedness
18 and physical protection. Next slide, please.

19 In terms of the inspection staff resources that we've applied to the Unit 1
20 recovery effort, I'll note that we have assigned on a permanent basis, three very
21 experienced resident inspectors on-site for Unit 1.

22 In addition to the two resident inspectors who are on-site for Units 2 and 3

1 and you saw Terry Ross and Bill Bearden here today representing the site.

2 We have dedicated in Region II project management resources, as well as
3 specialist inspectors over the course of the four year recovery to get out there and
4 inspect the special programs and the detailed work to support some of the
5 modifications.

6 I will mention that we've gotten strong support from the other Regions to
7 support our inspection efforts and it's been a very effective collaboration with the
8 other Regions.

9 Just to touch on briefly, the scope or the areas that we've inspected in the
10 course of the program, we do look at the licensee's implementation of their actions
11 for the special programs, generic communications and TMI action items that Tim
12 previously mentioned.

13 We do look at the modifications as they install them at the plant from the
14 engineering and design phase, all the way through field installation and testing.

15 We do look at compliance with technical specifications and that's become
16 particularly prominent now that they've loaded fuel when there are now applicable
17 tech specs.

18 We do look at as they complete system restoration, once the licensee has
19 completed restoring a system and turned it over to the operating staff, that's at the
20 time that Region II sends in a team for about a week of one or two experts to look
21 at, from front to back, how they've brought that system back to an operable status.

22 We do review the licensees operational readiness reviews, the

1 departmental assessments, and the internal and external assessment activities
2 that they outlined in their presentation. We review those as well as part of our
3 inspection program.

4 In terms of what's remaining, as we've heard today, the licensee has some
5 number of systems in various stages of completion and turning over to operational
6 control and we have identified in a risk-informed way certain of those that we plan
7 to inspect on a sampling basis and we need to complete those.

8 Once that's done, based on our information that we receive from our
9 inspectors as well as the licensees response to our Operational Readiness Team
10 Inspection prerequisite letter, we will assign the Operational Readiness Team to go
11 in and look at, not from a system by system approach, but the site's overall
12 readiness to operate Unit 1 in a three unit environment.

13 The team members have been identified. The scope and charter of that
14 has been establish. It draws from three of the four Regions. It's an independent
15 and very focused team.

16 During restart, once they actually are prepared to bring the unit up, we have
17 identified the scope of our extended control room coverage during startup and
18 identified the resources to support that. Next slide, please.

19 In parallel to the Reactor Oversight Program, Manual Chapter 2509 does
20 provide for a performance assessment aspect to our oversight and we did do that
21 in August of 2006.

22 We provided a performance assessment. We noted that TVA had

1 performed the work during the period in a safe manner that promoted maintaining
2 a protecting public health and safety as it pertained to Unit 1 activities.

3 And I'll note that Units 2 and 3 during that same period had been in the
4 licensee response column for the last 10 quarters.

5 Beyond that recent performance assessment, I'll note that the enforcement
6 history over the recovery period, we've used the traditional enforcement approach
7 as was identified in the SECY Paper that was sent up in 2003.

8 Over the course of that period, we've identified 13 non-cited violations and
9 there was one escalated enforcement, one severity three violation that had to do
10 with -- it was very early in the period, it was in the 2003/2004 time frame when the
11 issues were occurring -- and had to do with welding issues inside the torus in
12 support of the licensee's response to the long term torus improvement program.

13 In terms of allegations, we've had 55 since January of 2001 for Unit 1;
14 seven of those remain open. The technical concerns, generally speaking, have
15 addressed things like painter qualifications, welding quality assurance, anchor
16 bolts, and engineering review of field changes.

17 I'll note that five of those did touch on safety conscious work environment
18 issues and they have been reviewed and dispositioned by the staff as minor. Next
19 slide, please.

20 This slide represents graphically where we are on completion of one aspect
21 of our inspection program. This reflects our completion status for our inspection of
22 the issues that were identified in the original regulatory framework; the special

1 programs, generic communications and the TMI action items.

2 In the grey and white areas on the slide reflects some of the special
3 programs that were touched on in earlier questioning where, in many of those
4 cases, we've done the inspection and completed the field inspection.

5 We may or may not have actually included it in the current inspection report.
6 We are set to put a report out in the near term which will probably pick up a large
7 number of things that we've completed inspection on over the last quarter. Next
8 slide, please.

9 As we complete the field inspection, the oversight panel will execute the
10 decision or facilitate the execution of the agency's decision process to authorize
11 restart.

12 The flow path shown there on slide 13 reflects the staff's proposed flow path
13 for that decision process.

14 Following the Operational Readiness Assessment Team inspection, the
15 panel will be briefed and will make a conclusion and a recommendation to senior
16 management, the Regional Administrator from Region II and the Director of NRR
17 will make a recommendation relative to the restart of the unit.

18 The Regional Administrator and Director of NRR will consult and the
19 Regional Administrator would authorize restart when the necessary conditions are
20 met.

21 Once that occurs, the Region will then implement the startup monitoring
22 program that I alluded to earlier and of course, throughout this process the staff

1 would keep the Commission informed of significant emerging issues. With that, I'll
2 turn it back to Luis.

3 MR. REYES: I'd just like to summarize. The staff will continue the
4 oversight of the Browns Ferry recovery to confirm that it's being performed in a
5 safe manner. There are several activities that remain to be completed.

6 It is our intention to keep the Commission informed of the result of the
7 remaining inspections, the findings by the Operational Readiness Assessment
8 Team, the results of the ACRS meetings in January and February, at which time
9 we'll ask the Commission to delegate the authority to the staff for the Manual
10 Chapter to observe and give TVA the instructions that is acceptable for them to
11 restart the facility.

12 With that, that concludes the prepared remarks and we're available for
13 questions.

14 CHAIRMAN KLEIN: Thanks, Luis. It's clear that the NRC staff has
15 spent many hours, both here and at Browns Ferry, so I think you've certainly
16 demonstrated attention to the restart. We'll start with Commissioner Lyons.

17 COMMISSIONER LYONS: I'd like to start by commending the staff,
18 Luis, Bill, Jim, Joe, Tim, all of you. That was an excellent presentation.

19 And although it's already been mentioned several times, I, too, would like to
20 mention and highlight and I certainly hope news comments on this meeting also
21 highlight, the number of hours that the staff has invested in the Browns Ferry
22 Restart of Unit 1.

1 The 30,000 hours of licensing review to me is just a very, very impressive
2 number. And one that I think all of you and all of the staff should be very, very
3 proud of.

4 And then if I'm doing the arithmetic right, something of the order of another
5 30,000 maybe 29,000 of inspection and oversight efforts that have also gone in for
6 a total of roughly 60,000.

7 It's just a very, very impressive effort and very, very important effort to
8 assure the American people that the Commission is thoroughly on top of and
9 closely following and regulating this restart in an appropriately safe way. So, my
10 compliments.

11 I was going to ask questions on the extent to which our new construction
12 program and construction inspection program has been informed by the overall
13 effort that's gone on here, but Luis, you did a very good job of covering that and I
14 appreciated the comments you made to highlight a number of ways in which,
15 through the leadership of all of you, the construction inspection program has been
16 informed and has benefitted from the activities in the Browns Ferry Restart.

17 One comment that you made, Luis, that I was particularly interested in, you
18 mentioned the preparing of more junior staff and more senior staff in many aspects
19 of the inspection. I think that's a very solid idea, a very good idea, and certainly an
20 important part of knowledge transfer.

21 So, I just want to emphasize that I was very appreciative of the effort that all
22 of you have put in to try to make sure that the agency as a whole benefits from the

1 construction experience at Browns Ferry.

2 By way of a question, I guess I remain puzzled, and there was the
3 confusion in the earlier discussion, certainly in my mind, on whether the ORAT will
4 be rescheduled, whether that has to be rescheduled. I would appreciate
5 clarification on that.

6 And I would appreciate, maybe it's Joe, I'm not sure who could speak a little
7 bit more about what the ORAT will consist of. What elements will you be looking
8 at during the course of that inspection? So, two questions.

9 MR. REYES: I'll let Joe answer the details, but you need to
10 understand any answer we give you today could change tomorrow and that's the
11 nature of the beast.

12 But we won't go to do the inspection until it's ready. We, like a referee said,
13 is nothing until we call it. We gave the utility a letter that says this is the criteria we
14 expect.

15 They will tell us that they have met it. Of course, we're there every day so
16 we know and then we will decide whether they've met it or not and then go to the
17 schedule. Let me let Joe...

18 MR TRAVERS: I'll just add before you mention elements of the ORAT
19 is that we have been communicating with the licensee on those systems that we
20 would like to see them have completed turnover on and testing on, and we'll
21 certainly be willing to get more detail from them on where they stand today on that
22 schedule.

1 But it was our understanding that some of the system readiness that would
2 be affected by the most recent schedule changes would likely cause some delay in
3 the initiation of the ORAT.

4 That's not to say we can't do that. We certainly can do it. We've been
5 adaptable throughout this process. It's not easy always. We have to coordinate
6 with Regional folks who are coming and assisting us from other Regions.

7 But we're certainly most interested in going at the right time so that we get
8 to see the right things.

9 MR. SHEA: I think the key word in there from a management
10 standpoint is managing the right time for the team to come on site. When is the
11 licensee likely to be ready?

12 So as we've prepared inspection team and a backup team and a backup,
13 backup team because we're drawing from a variety of resources who are
14 previously scheduled, we have been understanding the status of the licensee's
15 progress at the site on a day in and day out basis.

16 Understanding their schedules as they move, understandably, and then
17 trying to project which resources we can bring to bear at right time.

18 So, as we receive that information and process that information we are
19 constantly communicating internally about when we anticipate the team coming on
20 site. But it is in fact true that licensee was requested in a letter to go on record as
21 saying they're ready as a prerequisite for us making the decision when we would
22 precisely schedule the inspection.

1 Some of that information is playing out late last week as we hear, in detail,
2 the licensee making decisions about their schedules and us responding with
3 shifting and looking at our resources and which ones are the right ones to bring out
4 at the right time.

5 In terms of the scope of the Charter, what the team will look at, they will
6 look at the effectiveness of management oversight, is the licensee now looking at
7 Unit 1 in the same way it looks at Unit 2 in the variety of management forms; the
8 daily meetings, the management review panels for emerging issues.

9 Does it look at Unit 1 in the same way it looks at Unit 2 and Unit 3. Are they
10 ready to do that?

11 We'll look at safety significant activities and again, the licensee's readiness
12 to treat Unit 1 as they do Unit 2 and 3.

13 For example, are they controlling the alignment and status of systems, not
14 necessarily under a construction view, but under the same operational approach
15 that they do for Units 2 and 3?

16 There are several other examples. One more would be the maintenance
17 program. What does the maintenance backlog look like as they prepare to bring
18 Unit 1 up?

19 Have they let the maintenance backlog grow or have they kept as they've
20 turned those systems over, kept the maintenance of them current, so that it's on
21 par with Units 2 and 3.

22 We'll just understand those things with the scope of what the team will look

1 at and roll those things up and make its report to the panel.

2 COMMISSIONER LYONS: Thank you. I appreciate the clarification
3 on both those issues.

4 CHAIRMAN KLEIN: Thanks, Commissioner Lyons. Luis, I'd also like
5 to compliment you and your staff on the training aspects as Commissioner Lyons
6 indicated.

7 I think we've all seen the age profile of the agency and we all know where
8 that peak is, which means a lot of new hires and younger people coming in.

9 So I think you've done a great job of taking advantage of the training
10 opportunity for both new construction and the qualification of the simulator. So
11 that certainly is encouraging to see with this new hiring that's going to continue.

12 In terms of the inspections that are yet remaining, and the finances
13 associated with that do you have both the people and the budget in place for the
14 remaining activities?

15 MR. REYES: The short answer is yes. Looking to my right and
16 looking to my left, yes. I want to make sure they agree with me, but yes.

17 CHAIRMAN KLEIN: In terms of the extended uprate to the 20%, it's
18 my understanding that instrumentation has been installed for both Unit 1 and in
19 Unit 2, I think, to get data on some vibration issues. Could you comment a little bit
20 about that?

21 MR. DYER: Yes, sir, Chairman. The issue has to do with the steam
22 dryer integrity and measuring the stresses and acoustics in the steam flow lines to

1 refine the models of stresses that the dryers would see at 120% and the need to
2 get that information.

3 TVA at one point, and at the same time they chose to separate the restart of
4 Unit 1 from the extended power uprate, also made a decision to take a shutdown
5 on Unit 2 to instrument Unit 2; took a week/10 day outage to instrument that this
6 fall and had gotten the information, the actual data from Unit 2.

7 Then they were analyzing that and it has shown that they need to do more
8 analysis before they make their decisions on what the final design of their steam
9 dryer is going to be for the extended power uprate.

10 That's the delay in the program right now. I believe Unit 1, I'm not sure if
11 they were going to, you'd have to ask TVA, I can't remember if they were going to
12 actually instrument Unit 1 coming up to get more data. But they are, yes.

13 CHAIRMAN KLEIN: I assume you're obviously following that data,
14 acquisition, so that will give additional informational as the requests come in?

15 MR. DYER: Yes, sir.

16 CHAIRMAN KLEIN: Great. Commissioner McGaffigan?

17 COMMISSIONER McGAFFIGAN: I'll turn it on this time. Thank you,
18 Mr. Chairman.

19 I'm the one who brought up the training issue earlier. I really think
20 that the licensee hit a home run in terms of its approach to training and I'm glad to
21 hear the staff took full advantage of training opportunities.

22 The ugly statistics the chairman is referring to, I think I have my head, in the

1 last four years we've gone from 65% of our staff with 11 or more years of
2 experience to 50% of our staff with 11 or more years of experience.

3 And we've gone up from 26% with less than five years to 39% with less than
4 five years. So, we are clearly in the midst of a sea change in terms of our staffing
5 and we have to take every advantage.

6 So I commend you and I commend the licensee and I also should have
7 mentioned earlier, I think the licensee did exactly the right thing getting the second
8 simulator as part of the training.

9 Now we've got these folks who are knowledgeable, Bill, are they going to be
10 useful at LES in New Mexico, or USEC Portsmouth? It's different skills in some
11 sense but it's the same skills in another. Are some of those folks going to be used
12 in those ways?

13 MR. TRAVERS: I think the answer to that is yes. The way we've
14 configured our new construction inspection organization is to have that
15 organization focus not only on new projects for reactors, but for the fuel cycle
16 facilities as well.

17 So, the opportunities for cross-fertilizing the knowledge that we've gained
18 from an opportunity like this are prevalent and we're trying to make the best use of
19 those opportunities.

20 COMMISSIONER McGAFFIGAN. My quick calculation of the
21 number of dollars that equates to about 60,000 hours is \$12 to 15 million.

22 MR. REYES: You have to ask the people that pay the bill.

1 COMMISSIONER MERRIFIELD: It's a lot of money.

2 COMMISSIONER McGAFFIGAN: What's our current hourly rate? Is
3 it about \$200/\$250 per hour? Is that what we charge?

4 We don't have the CFO here. He's the one who remembers fees and the
5 people who pay probably remember fees, but the rest of us forget. Shows you
6 how little that influences things.

7 But it's a very small fraction, whether it's \$12 or \$15 million, it's a very small
8 fraction of the recovery effort. We did our job. We've been talking about bumps in
9 the road all day.

10 We're a tiny, tiny imperceptible bump in the road in terms of that cost, I
11 think. There's probably ways to improve it and we'll look at that if there's a large
12 number of plants built in the future.

13 The final thing, Luis, I'm looking at the last slide and I'm just lost trying to
14 clarify in my mind. Are you asking us today to allow you to go ahead with restart in
15 accordance with IMC, Inspection Manual Chapter 2509, which would basically
16 have the Commission delegate to Bill Travers in consultation with Jim Dyer, the
17 remaining road.

18 You mentioned in passing that you would keep us informed of the ACRS
19 deliberations and would keep us informed of the results of the ORAT, by I frankly,
20 as one Commissioner speaking, am prepared at this point to make that.

21 It wasn't clear that you were asking for that. Are you setting yourself up for
22 another paper down the road? Do want us in this SRM for this meeting –

1 MR. REYES: We want to make sure the Commission is comfortable
2 with what the staff has done. There are some activities that remain to be done.

3 COMMISSIONER McGAFFIGAN: There's always going to be.

4 MR. REYES: We are committed to keeping you informed and at one
5 point in time in that line -

6 COMMISSIONER McGAFFIGAN: The chart says request authority.

7 MR. REYES: It doesn't say when, though. It doesn't say when.

8 COMMISSIONER McGAFFIGAN: When we're in the environment of
9 potentially being under a full year CR for you guys to send us another paper, it
10 strikes me as not the most efficient.

11 At this point, I have the folks on the other side of the table, Joe and Bill, Jim
12 and Tim and all the folks who work for them, I have great confidence in.

13 My value added at the tail end of the process is not likely to be
14 extraordinary unless you guys run into a huge problem in which case you would
15 come back to us.

16 I think you should be, speaking as one Commissioner, requesting in the
17 SRM of this meeting that we give you that authority subject to the always
18 prevailing position that if extraordinary new information arises you'll come back to
19 us. Is that your request?

20 MR. REYES: We will welcome that.

21 COMMISSIONER McGAFFIGAN: Well, thank you. You have one
22 vote.

1 COMMISSIONER LYONS: Make it two.

2 CHAIRMAN KLEIN: Commissioner Merrifield?

3 COMMISSIONER MERRIFIELD: I just want to underscore the
4 statements made previously reflecting the work that the staff has accomplished.

5 I think part of my initial comments when I began my statement this morning,
6 were reflective of the pride that I have in the degree to which the staff has been
7 able to be flexible in meeting the expectations of the licensee, but doing so in a
8 way that is fully consistent with our mission of protecting public health and safety.

9 At the end of the day, the success of the possibility of this reactor restarting
10 is consistent with our mission in ensuring that these materials and these facilities
11 can be used for the benefit of the American people in a safe way.

12 And the tens of thousands of hours of dedicated staff time to overseeing
13 that goal, I think is critically important. Others have mentioned that that needs to
14 be put in there, and I must agree wholeheartedly.

15 I think it's demonstrative of what is a new agency, far different than the one
16 that certainly Ed and I came to when we came here in the mid to late 1990's.

17 That having been said, I would say to his credit, Karl Singer was willing to
18 take complete credit for the issue of the readiness for the Operational Readiness
19 Assessment Team inspection.

20 I suspect as many cases in life, communications does involve at least two
21 parties and while you don't need to go into great detail, you can certainly comment
22 if you want. I would be most interested in your review of our processes.

1 The basis for my comments this morning was on the information I received
2 in the EDO daily report yesterday which came through your office.

3 Certainly, when we get information, wherever we get it, it needs to be clear
4 and needs to be validated. I didn't know if you wanted to comment on that.

5 MR. REYES: Well, we gave you the best information we had. It
6 changes day-by-day because things do happen at the site. We give you the best
7 we have. If it changes, we will be glad to change it. I haven't gone back and
8 asked who talked to whom, when and why.

9 COMMISSIONER MERRIFIELD: I don't expect at the table you'll be
10 able to explain who shot John. I expect later on you'll provide a more direct
11 answer to that.

12 MR. REYES: OK. We'll do that.

13 COMMISSIONER MERRIFIELD: And some general issues, I did
14 want to comment on one of the issues Joe raised in his presentation. You talked
15 about the many areas that we have undertaken to review.

16 One of them is allegations, other issues that have arisen. You pointed out
17 one that we identified as an escalated issue associated with welds in the torus. I
18 think in full scope, and again to the credit of TVA, while that issue was raised the
19 utility did make a commitment to go back and really pour a lot of resources into
20 making sure those welds were redone in the right way.

21 I think that's consistent with the approach clearly we've heard today, the
22 utility has tried to be the conservative, has tried to really do the right thing for

1 safety.

2 And I just wanted to make sure for the record it was clear, although we did
3 identify that as an issue early on, I think the utility did aggressively attack that
4 issue and really resolved to put it to bed.

5 I didn't know if you wanted to underscore that because I think it's a real
6 successful approach.

7 MR. REYES: That was early on and I was in a different position. I
8 had the opportunity to deal with that issue as an NRC manager.

9 It has to be clearer that it was not the technical competence or any of those
10 issues with the welding. It was the simple issue of what I call the road map.

11 It was a very confusing area to go to weld and inspect the welds in the torus
12 supports and people were not getting the right drawings to go to the right place.

13 So, when our staff went and did the inspections and I think this is just an
14 example of how thorough the NRC has been in this project, where we went out
15 there and actually went to each of these wells and the details of the welds and
16 found out there were some discrepancies, and to make a long story short, the
17 licensee took aggressive corrective action, identified them, corrected them. But it
18 was not a technical competence or technical issue. People were going to the
19 wrong location, to the wrong weld. They were facing north and facing south, etc,
20 etc.

21 Back to communications, they aggressively did that and actually did a very
22 thorough re-review of all the work that was performed. Then we came back and

1 confirmed we were satisfied.

2 COMMISSIONER MERRIFIELD: Good. Thank you, Mr. Chairman.

3 CHAIRMAN KLEIN: Commissioner Jaczko.

4 COMMISSIONER JACZKO: I have a couple of quick questions.

5 Getting back to the questions I asked earlier on the open items of the special
6 project generic communications, all of those items that have been committed to be
7 completed.

8 I would just ask generally are there any elements that the staff sees as
9 potential problems going forward in getting resolved? And if you want to get back
10 later, but anything whoever wants to answer that.

11 MR. DYER: Commissioner, I think the one issue, you asked the
12 question about fire protection, we do have the fire protection amendment and
13 we're still waiting for a response to some questions.

14 When they respond to those questions, if it's acceptable, then we think
15 we're going to meet our schedule as Tim said and close out the remaining items.

16 COMMISSIONER JACZKO: What was the nature of the letter or the
17 responses that were requested?

18 MR. MCGINTY: I don't have the specific REI questions that were
19 asked with me, I'd have to follow-up with you on that.

20 COMMISSIONER JACZKO: If you could do that I would appreciate
21 that. I guess that fire protection's a particularly sensitive issue at Browns Ferry
22 Unit 1. So certainly I think that's an issue we need to work with the licensee to

1 make sure that they are providing response in getting the right program in place.

2 Any other issues on that list? I just picked down a couple as I went through.

3 I think they mentioned the diesel generator analysis on the station blackout. Is that
4 an issue?

5 MR. SHEA: Commissioner, in general, the areas that you touched on
6 in your previous line of questioning, I recognize and the staff recognizes that some
7 of those we have inspected quite recently and have not yet documented. And
8 there are no issues.

9 Some of them, like station blackout, we inspected recently and there was an
10 issue that we communicated to the licensee. They responded, and I think we're
11 close to ready to put that one to bed.

12 So we're in that mode on a number of those special programs. In general,
13 I'm not sure -- I don't anticipate any particular one of those being a problem at this
14 point.

15 MR. REYES: In an executive summary, since it's been done for Unit
16 2 and it's been done for Unit 3, it's the third time at the well, we don't see any
17 significant issues that will change our recommendations at this point,
18 understanding that there's equipment challenges and all that.

19 But those are daily occurrences, not only at Browns Ferry but at any
20 operating plant. We don't see anything unique left in the work in front of us that
21 could not be properly addressed.

22 COMMISSIONER JACZKO: Just maybe going back and I appreciate

1 those thoughts Luis, to another specific one here that I had here, seismic analysis
2 for as-built safety related piping systems. Do you know offhanded if that one is
3 complete at this point or is that one still open?

4 MR. BEARDEN: No sir, that one is not complete.

5 COMMISSIONER JACZKO: I appreciate that. I guess part of my
6 concern is that a lot of these things I would assume should be the same as what
7 we did for 2 and 3.

8 MR. REYES: Right. It's the same plan. It's a mirror image so we will
9 we don't expect, but we have to confirm it. I think Bill Bearden, the Resident
10 Inspector, is going to speak to that effect

11 MR. BEARDEN: Specifically, that item is scheduled for inspection
12 review the 29th of January and an overwhelming majority of the review has already
13 been done; just a small amount of details that need to be finalized.

14 COMMISSIONER JACZKO: Right now, you don't expect –

15 MR. BEARDEN: We don't expect that to be a - the most significant
16 two issues that remain are the SBO issue and the fire protection issue. We don't
17 expect either one of those to be a significant problem.

18 COMMISSIONER JACZKO: Thank you.

19 MR. BEARDEN: The actual number of open items that remain is
20 much smaller than the slide because my inspection period - I'm in the final few
21 weeks of the quarter, so there's quite the few of those items that have already
22 been closed that haven't been reported in a document yet.

1 COMMISSIONER JACZKO: That's fine. I appreciate that.

2 MR. REYES: I need to emphasize that. We don't call it closed, until it
3 is in a public document inspection report. The field work is done and a lot of that,
4 it's just we won't call it closed until the public is accessible to our decision on the
5 item.

6 COMMISSIONER JACZKO: Good. I appreciate that. The last
7 question I would ask. This gets more to the long-term issues.

8 One of the crucial elements from a regulatory perspective will be how we
9 make the transition to the ROP.

10 I'm just wondering from the staff's perspective how long they think generally
11 that transition will take. I assume there's some performance indicators that will
12 need some data before we can begin using them and things like that.

13 MR. SHEA: The Manual Chapter speaks in detail to transition. The
14 panel has spent some time thinking and discussing it several months back and has
15 laid out some of the transition plans and transition matrixes for each of the
16 cornerstones.

17 We have not made a decision on which way we're going to make a
18 recommendation about transition. Theoretically, we could transition at startup.

19 But more likely it will be some months afterwards where we would make a
20 recommendation and in the meantime, the licensee would accumulate
21 performance indicator data and we would have enhanced inspections to
22 compensate for the lack of performance indicator data on the cornerstone.

1 COMMISSIONER JACZKO: There is a possibility to transition without
2 full performance indicators data?

3 MR. MCGINTY: The Manual Chapter provides for that. I don't believe
4 we're going to go in that direction.

5 MR. REYES: This is the third time we've done this. We did it at DC
6 Cook and Davis Besse. Our record shows we're a bunch of conservative people
7 and what will happen most likely is that we'll expect some of the performance
8 indicators to be populated.

9 So this is not the first time we've done that. We'll use the intelligence of the
10 previous two occasions with the flexibility and see what is the best one for Browns
11 Ferry, Unit 1.

12 COMMISSIONER JACZKO: Is there one or two performance
13 indicators that need a year's worth of data, or six months of data?

14 MR. REYES: The availability and unavailability calculation requires
15 you to have a significant amount of data. So when you go to the mitigating
16 systems, you need to have enough data points for the formula to give you a
17 reasonable answer.

18 That's the thing. You don't want to put information out that is not accurate.
19 So you want to wait until it's meaningful and we need to accumulate some data.

20 COMMISSIONER JACZKO: Right now I think, Joe, what I'm hearing
21 you saying is that there's at least in the Manual Chapter there's a way perhaps to
22 compensate for that performance indicator with an additional set of inspections, if

1 the decision were made to do that?

2 MR. DYER: Yes. Across the board, Commissioner, for the ROP
3 we have, if a performance indicator is not reported, the staff, the Region can
4 choose to do enhanced inspection to cover that area. That's what the Restart
5 Panel will be doing.

6 If there is not sufficient information to generate a performance indicator,
7 then in addition to the operational baseline inspection they will do supplemental
8 inspections to compensate for that.

9 COMMISSIONER JACZKO: Thank you.

10 CHAIRMAN KLEIN. Thank you, Luis, and members of your team.

11 I'd like to congratulate both panels for giving us good information and it's clear that
12 both TVA and the NRC have devoted a lot of hours and effort to moving this unit
13 forward.

14 I would encourage for the SRM that comes out, that you articulate what you
15 would like the Commission to do for the next steps. So with that, any final
16 comments from the Commissioners?

17 COMMISSIONER JACZKO: If I could just briefly add. I did not say
18 that I do appreciate the work that the staff did on this. I think, certainly, echoing
19 the comments of my fellow Commissioners, a lot of good work has gone into this
20 on the part of the staff and I look forward to any future updates as we move
21 forward.

22 CHAIRMAN KLEIN: Thank you. The meeting is adjourned.