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U.S. NUCLEAR REGULATORY COMMISSION

BRIEFING ON BROWNS FERRY UNIT 1

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TRANSCRIPT OF PROCEEDINGS
Public Meeting

Before the U.S. Nuclear Regulatory Commission:

Gregory B. Jaczko, Chairman
Kristine L. Svinicki, Commissioner
George Apostolakis, Commissioner
William D. Magwood, IV, Commissioner
William C. Ostendorff, Commissioner
APPEARANCES

Tennessee Valley Authority (TVA):

Preston D. Swafford
Chief Nuclear Officer and Executive Vice President,
Nuclear Power Group

William R. (Bill) McCollum, Jr.
Chief Operating Officer

Don E. Jernigan
Senior Vice President, Nuclear Operations

Robert J. Whalen
Vice President, Nuclear Engineering

Keith J. Polson
Site Vice President, Browns Ferry Nuclear Plant,
Units 1, 2, and 3

NRC Staff:

Bill Borchardt
Executive Director for Operations

Victor McCree
Regional Administrator, Region II

Rick Croteau
Director, Division of Reactor Projects, Region II
CHAIRMAN JACZKO: Good morning, everyone. The Commission
meets today to discuss the safety challenges experienced by the Browns Ferry
Nuclear Power Plant and the steps being taken to strengthen safety at the plant.
In particular, in May 2004, Brown's Ferry Unit 1 was placed in Column IV of the
Reactor Oversight Process Action Matrix after it received a "Red" finding when a
reactor core cooling valve failed. Under the ROP, the NRC will place a plant in
Column IV only after identifying findings with high safety significance. That
designation triggers heightened NRC inspections to ensure that the needed
remedial measures are taken.

This is not the only significant issue the Browns Ferry plant has
experienced in recent years. In 2003, all units at Browns Ferry were placed in
Column III after receiving a "Yellow" finding for fire protection issues. Given this
recent history of issues, I'm sure that we can all agree that we want to see the
plant perform more safely. To achieve that, there needs to be a strong
commitment from the licensee’s entire organization, from its senior leadership to
its frontline engineers to do what needs to be done for safety.

Less than two weeks ago, I visited the Browns Ferry site with
Senator Alexander to assess the plant's progress in addressing its equipment
reliability issues and other challenges. As I was doing that visit, it was clear that
steps have been taken, and it was clear that there was still an amount of work
that needs to be done for the licensee to ultimately, I think, perform as we and as
they, I believe, want the plant to. And I had a chance when I was there to talk to
employees, and what I got a sense from many of them was a recognition that
there were things they wanted to do better and were interested in doing that; and,
in my mind, that's always a positive sign is that recognition that there are challenges and the need to address them.

So, in the presentations from the staff and the licensees, we'll hear in greater detail about exactly what steps they intend to take. But, it's always important that we stay on top of this issue in order to ensure that this matter's not indicative of broader issues at the plant. So, before we begin, would any of my colleagues like to make any comments? Okay. I'll start with the staff presentation. Bill, if you want to begin.

BILL BORCHARDT: Good morning. A plant that enters into Column IV or the multiple, repetitive, degraded corner stone column of the Reactor Oversight Program Action Matrix is of significant regulatory concern to the NRC. The NRC management directive that provides guidance on the reactor oversight program was revised in 2009 to ensure that, within six months of entering Column IV, that the operating company briefs the Commission on their plans to improve safe operation of the facility.

Browns Ferry Unit 1 entered Column IV of the Action Matrix in the fourth quarter of 2010. The purpose of today's briefing is to brief the Commission on the performance of Browns Ferry Nuclear Facility in accordance with NRC management directive. Vic McCree will discuss the recent performance at Browns Ferry, the staff's review and assessment of that performance, and then Rick Croteau will discuss Region II's completed, on-going, and planned inspection activities.

Slide three is the agenda for the staff's presentation. And, if you could go to slide four, I'll turn the presentation over to Vic.

VICTOR MCCREE: Good morning, Mr. Chairman, Commissioners.
I plan to provide a brief overview of the performance of the Browns Ferry Nuclear Plant and the results of our performance assessment, and Rick Croteau, as Bill indicated, will then discuss the agency’s actions.

As you know, Browns Ferry, which is operated by the Tennessee Valley Authority, has three General Electric boiling water reactor units, and is located near Decatur, Alabama, about 30 miles west of Huntsville, Alabama. As Bill indicated, the performance of the plant is being discussed today because the performance of Unit 1 was assessed as being in the multiple repetitive degraded cornerstone, or Column IV, of the Reactor Oversight Process Action Matrix. Unit 1 was placed in this cornerstone column due to a "Red" finding in the mitigating systems cornerstone. Next slide, slide five, please.

On October 23rd, 2010, operators of Browns Ferry Unit 1 attempted to place Loop II of the residual heat removal low pressure coolant injection, or, RHR LPCI system in service to support refueling activities. Although control room indications show that the RHR LPCI outboard injection valve was open, no flow was measured in Loop II. Shortly after recognizing this condition, operators successfully placed the other loop, Loop I, of RHR LPCI in service to support shut-down cooling.

Subsequent visual inspections of Loop II of RHR LPCI, the outboard injection valve, showed that the valve had failed. The valve disc was separated from the disc skirt stem assembly and lodged in the seat. The inspection results also indicated that the disc was likely separated, and the valve was inoperable for an extended period of time.

Plant staff repaired and modified the Loop II valve before Unit 1 was restarted. TVA also inspected and modified the Loop I valve in Unit 1 and all
four similar valves in Units 2 and 3. Based on the staff’s assessment of the RHR LPCI Loop II valve failure, and after holding a public meeting, regulatory conference, with the Tennessee Valley Authority, I sent a letter to TVA in early May of this year, identifying a violation of the Unit 1 technical specifications and a "Red" finding due to the inoperable RHR subsystem.

Based on our assessment, TVA’s performance was deficient in that it failed to implement an in-service testing, or IST program, in accordance with the American Society of Mechanical Engineers, which precluded the timely identification of the failed valve and the inability of the Unit 1 RHR LPCI Loop II subsystem to perform its safety function.

In addition to providing a way to cool the reactor during normal shutdown cooling operations, the RHR LPCI system is counted on for core cooling during certain accident scenarios. As a result, when the significance of this performance deficiency was assessed, it was determined to have high safety significance representing a "Red" finding because it could have led to core damage had an accident involving a series of unlikely events occurred.

The main contributor to the risk determination for this finding was the core damage frequency contribution due to fire, stemming from Browns Ferry’s use of the self-induced station blackout, or SISBO, approach to mitigating fires. The "Red" finding resulted in Unit 1 being placed in Column IV of the NRC Action Matrix. Units 2 and 3 remain in Column I and performance indicators for all three units remain "Green".

If you would go to slide seven, please, skipping one slide. In early June, TVA submitted an appeal of the "Red" finding. While acknowledging the safety significance of the failed valve, TVA’s letter raised several issues,
including that the Browns Ferry in-service testing program was not inadequate,
and that there was no performance deficiency.

In response, I charted an independent panel that included experts from Regions III and IV, the Office of Nuclear Reactor Regulation, and the Office of New Reactors, to carry out an independent review of the performance deficiency, including the ASME code requirements governing in-service testing to ensure valve to disc failures are detected. Using input from the independent panel, I issued a final letter to TVA in mid-August that sustained the "Red" finding and the violation.

In the letter, I informed TVA that NRC regulations require the components that are important to safe operations be treated in a manner that provides assurance of their performance, and that 10 CFR 50.55(a) requires licensees to establish programs to assure that motor-operated valves, or MOV's, can perform their safety functions.

In-service testing programs, MOV analyses and testing programs, and corrective action programs are examples of programs that licensees use to assure the operability and functionality of MOV's. We found that the inadequate establishment of such programs at Browns Ferry represented a performance deficiency, and that appropriate implementations of the programs would have enabled TVA to promptly identify and correct the failure of the RHR LPCI Loop II outboard injection valve in Unit 1.

If you go back to slide six, please. This slide is a chart that shows the action matrix cornerstone placement of Browns Ferry Units 1 through 3 since the second quarter of 2010. It shows that all three units were in Column III, as the Chairman indicated, due to "Yellow" and "White" findings associated with
Appendix R fire protection issues. That condition, or, that placement actually began in the fourth quarter of 2009. Units 2 and 3 transitioned to Column I during the fourth quarter of 2010 following a successful 95002, supplemental inspection for the "Yellow" and "White" findings. The "Red" finding for Browns Ferry Unit 1, as the chart shows, began in the fourth quarter of 2010 due to the identification of the failed RHR LPCI valve in late October of last year.

At this point, I'll turn the presentation over to Rick Croteau.

RICK CROTEAU: Thank you, Vic. Good morning, Mr. Chairman, Commissioners. I'll provide an overview of the organizational changes in NRC inspection plans to evaluate licensee's actions to address performance issues at Browns Ferry.

To provide dedicated inspection oversight for Browns Ferry, we've reorganized within the division of reactor projects in Region II. Gene Guthrie, who is seated over behind Steve Burns there, was the supervisor for all three Tennessee Valley Authority sites of Sequoyah, Watts Bar, and Browns Ferry. Due to the issues at Browns Ferry, we split out Browns Ferry into a special project, and Gene is dedicated to covering the inspection effort for solely Browns Ferry. We are also utilizing experts from NRC headquarters as well as inspectors from Region II and other regional offices to conduct the inspections at Browns Ferry.

In addition, we've recently named Jimi Yerokun as a senior executive team manager to oversee and facilitate coordination and execution of the inspections at Browns Ferry. Browns Ferry has been challenged by a number of equipment issues, as was mentioned earlier. Over the last two years, there have been eight reactor scrams, four forced outages, and five significant or
urgent down powers, largely due to equipment issues. As a result, our
inspections focused on equipment reliability at Browns Ferry in all three units.
Slide 10, please.

Inspection procedure 95003 describes the supplemental inspection
activities for plants in Column IV of the NRC's Reactor Oversight Process Action
Matrix. The inspection procedure is publicly available to anyone who would like
to look at it. The objective of the inspection is to provide the NRC with
information to be used in deciding whether the continued operation of the facility
is acceptable, or whether additional regulatory actions are necessary to assure
public health and safety.

An additional objective is to evaluate the licensee’s third-party
safety culture assessment that is required as part of the actions for being in
Column IV of the Action Matrix. The staff has planned the supplemental
inspection in three parts. Part I focused on testing programs, including valve
testing, on all three units. The inspection was conducted in September of this
year by a four-person team led by Robert Orlinkowski of the NRC’s Region III
office. Public exit was conducted on October 3rd in the vicinity of the plant.

The general conclusions from the inspection were that the
governing programmatic test procedures met regulatory requirements and were
generally acceptable. However, some issues were identified, and both the NRC
staff and the licensee are following up to ensure that the issues are addressed
properly.

Part II of the inspection will focus on maintenance due to historical
issues with equipment reliability. The inspection is being conducted by a five-
member team, also headed by our Region III inspector John Jandovitz, through
December of this year. The inspection actually started a couple weeks ago and will continue throughout the rest of this year. The team will look at all phases of maintenance on selected safety-related equipment, again, on all three units. We plan to conduct the public exit at the end of the inspection, and that will probably be in the mid-January time frame of 2012.

Part III will complete the formal inspection procedure, the 95003 inspection, and it will be conducted once the licensee indicates that they are ready for the inspection to ensure that TVA has completed the root cause, the extent of cause, and the extent of condition investigations at Browns Ferry, and also ensure that they've completed their independent safety culture assessment.

This inspection will evaluate maintenance, operations, engineering, corrective action, and management oversight decision-making, so it doesn't just focus on the issues that they've had, it goes across the board at the facility. The engineering aspect of this inspection will also include the area of fire protection.

The inspection will be more comprehensive than the Part I and Part II inspections on testing and maintenance. Following the inspection, we will make a recommendation to the Regional Administrator, Director of NRR, and EDO, as to whether any additional NRC actions are warranted. We expect this will be in the first half of calendar year 2012.

I'd like to note that we did not wait for the licensee to tell us they were ready for the Part I and Part II inspections. We perform these inspections as soon as reasonably achievable to ensure there were not any near-term immediate safety concerns at the facility.

Also, programmatically, after each inspection procedure 950003 inspection staff evaluates Lessons Learned and incorporates them into
improvements in the inspection program. There have been several updates of
this nature to inspection procedure 95003. As I mentioned earlier, it calls for an
independent safety culture assessment, and the procedure was revised in
January 2009 based on Lessons Learned from the inspection at Palo Verde.
Specifically, the revision allows the NRC to leverage the results of the licensee's
third-party safety culture assessment and root cause evaluation to more
efficiently and effectively complete the inspection. In this case, however, the
NRC first needs to establish confidence that the third party assessment tools are
valid and reliable, and we'll do that as part of our inspection at Browns Ferry.

In closing, we believe we have the appropriate staff, resources, and
inspection plans to effectively assess TVA's actions in response to the situation
at Browns Ferry. Now, I'd like to turn it back to Bill for the closing remarks.

BILL BORCHARDT: That completes the staff's presentation, and
we're ready to answer any questions.

CHAIRMAN JACZKO: Okay. We'll start with Commissioner
Svinicki.

COMMISSIONER SVINICKI: Thank you for your presentations,
and good morning. There are, in my understanding, there are some potential
generic aspects of the issues associated with this valve inoperability. Will staff
continue to pursue generic resolution of the ASME code testing issues separate
from the resolution of this finding? And, if so, what's the status of this effort?

BILL BORCHARDT: Yeah. This was an item that was identified
early on. NRR has the lead as part of the operating experience. This is one of
the normal inputs to the operating experience program, so NRR has this
underway, so I think that John --
JOHN LUBINSKI: John Lubinski from NRR. We were working with the ASME co-committees, and they formed a working group to relook at the requirements with respect to the inspection of these valves to determine whether or not the requirements are clear and whether or not they need to be modified. This was discussed at the August meeting. They have semi-annual meetings of the ASME code, and the action at that meeting was for the working group to look at this, to make that determination, and they will re-meet in December. NRC does have members of its staff on that working group.

COMMISSIONER SVINICKI: Thank you. What is the staff's assessment of how widespread the IST program deficiency that's been found at Browns Ferry, how widespread is that at Browns Ferry? Do you have an assessment of that yet, or will that be an outgrowth of your further inspections?

VICTOR MCCREE: I think the short answer, Commissioner, is that we're still looking at it, we're still examining it. There's a recognition based on the first Phase One inspection that we've done. We recognize that TVA understands that it's not an isolated issue. It is a programmatic issue, and their follow-up and causal analysis is treating it in that manner. But, we do have additional inspections ongoing now, and we'll be able to get a better handle on that as, in the Phase Two and certainly the formal 95003 inspection we do next year.

COMMISSIONER SVINICKI: Okay. Thank you. On another potentially generic issue, TVA, as I understand it, submitted a Part 21 report on the valve. Have we developed any information regarding the extent to which this valve is used in the operating reactor fleet, or if other similar valves are subject to the same defect?

RICK CROTEAU: Rani's got some information on that.
RANI FRANOVICH: Rani Franovich, NRR staff. Actually, I don’t, but we can get back to the Commission on that. We can find out the status of Part 21 actions.

RICK CROTEAU: I don't know specifically about the Part 21 and where NRR is at with that, but there are similar valves in some applications in some other facilities, and I think there had been some previous generic correspondence associated with that at other facilities, but it's not an extreme, widespread item, and we'll follow up with the Part 21.

COMMISSIONER SVINICKI: Okay. Thank you.

CHAIRMAN JACZKO: And I think, let me add to it, I mean, at Browns Ferry, corrective action was taken with the other valves to weld the plate, the stem and plate together.

RICK CROTEAU: Yeah. I mean, the valve was repaired, and all the other valves on the other units were repaired. So, I think it was a total of six valves associated with this, and ensured that immediately that action was taken to ensure that they didn't have similar problems and were corrected.

COMMISSIONER SVINICKI: Okay. Thank you. The latest assessment letter stated that there are two substantive cross-cutting issues at Browns Ferry, one pertaining to appropriate and timely corrective actions, and the other to thorough evaluation of identified problems. Does the staff assess that the inoperable RHR valve is a symptom of these substantive cross-cutting issues?

RICK CROTEAU: I would say we’re going to follow up on those issues as part of the 95003, so it's hard to do the -- you know, exact cause and effect. But, part of the, you know, after the Davis-Besse event, we changed the
reactor oversight process to incorporate some standard cross-cutting issues to kind of look at the safety culture to see if there were issues associated with that; and, certainly, in these cases, we think there were. TVA has folded that into their safety culture assessment and their follow-up actions, and we will conduct an assessment of that as part of the 95003 inspection.

COMMISSIONER SVINICKI: Okay. Thank you. Thank you. Mr. Chairman?

CHAIRMAN JACZKO: Commissioner Apostolakis?

COMMISSIONER APOSTOLAKIS: Thank you, Mr. Chairman. The "Red" finding, I think, is primarily due to the fact that they have a self-induced station blackout in case of a fire.

So, I saw in the report that there was an estimate of the core damage frequency, something like 7 times 10 to the minus 4, or thereabout. I'm wondering what that number includes. For example, does it include the frequency of fires that would necessitate going to station blackout?

RICK CROTEAU: Yes, that's my understanding. Yes.

COMMISSIONER APOSTOLAKIS: So, the frequency of fire is there. So, if there is in the 10 to the minus 4 or 7 time 10 to the minus 4. Now, you also stated that in an earlier slide that they, I think it was actually Vic, shortly after recognizing this condition operator successfully placed the other loop of RHR in service. Now, when the "Red" finding was found, was that action included in the calculation? In which case, you don't have a problem?

VICTOR MCCREE: No, sir. There were no actual consequences associated with the valve failure. Approximately 90 seconds after opening the outboard injection valve on Loop II, and, of course, with the RHR pump running,
the operators noticed no flow. And, after 90 seconds, they placed the other loop in service. The evaluation for -- after identifying the performance deficiency, we evaluated the potential significance of the valve failure, and, in doing so, when you postulate that the initiating event is a fire, and it's in an area that would require use of the SISBO strategy to mitigate the fire, then you would assume that that other train, in this case, that would have been Loop I, that would have been de-energized, and the loss of that system, for some scenarios, you know --

COMMISSIONER APOSTOLAKIS: So, that number, then Vic, is kind of artificial. There, 7 times 10 to the minus 4 is not really a, it does not represent the frequency of what might actually happen.

RICK CROTEAU: But, then, think there's a fire in the area, you know, that other loop would not be available. It's fires in specific fire zones and fire areas that would have taken out the other loop and the other equipment based on their strategy to do the self-induced station blackout. So, they would be relying solely on that train of low pressure coolant.

COMMISSIONER APOSTOLAKIS: And the frequency of fires occurring in those selected areas --

RICK CROTEAU: Selected --

COMMISSIONER APOSTOLAKIS: -- is part of the calculation?

RICK CROTEAU: Yes, sir.

VICTOR MCCREE: That's correct.

COMMISSIONER APOSTOLAKIS: So, then, it is a realistic assessment?

RICK CROTEAU: Yes. Correct.

COMMISSIONER APOSTOLAKIS: Okay. Good. One thing that is
not very clear to me is, what is it exactly that TVA did not do? Why did they end
up in this situation? Was it that they misinterpreted the guidance in the ASME
code, or they were negligent? It's not very clear to me what the situation is.

RICK CROTEAU: I think that's going to be part of their root cause
analysis that we will look at and the broader issues, with the specifics on the
valve, it was not in their program to -- and this is part of the generic issue, to look
at the stem to ensure on a two-year basis that the valve was actually moving.
They would go on other indications. Okay. So, that's kind of, that may be a
generic aspect, but the other part of it, it was not in their motor operated valve
testing program, which it should have been. We had had previous interaction in
years past on that; it was not in the program, should have been in the program,
and if it had been in that program, it's likely that it would have been discovered
and picked up earlier.

So, it was inadequacies with the in-service testing program, and
actually, as part of the Part I inspection, we did pick up that several other valves
were not in the in-service testing program. To TVA's credit, they had picked up
on that also and already had that in their corrective action program as part of the
previous deficiencies. So, I would say overall it was inadequacy in the in-service
testing program that led to that specific issue. Now, of course, TVA, and we are
looking at the broader issues across the plant with the culture and other
programs of maintenance and equipment reliability.

COMMISSIONER APOSTOLAKIS: So, this is what led to the
decision to have them reevaluate or evaluate their safety culture, that there were
all these root causes or cost-cutting issues? Is that correct?

VICTOR MCCREE: The need for TVA to perform a safety culture
assessment is driven by the fact that they are in Column IV of the Action Matrix, and that's one of the requirements for a plant that's in Column IV is to perform a safety culture --

COMMISSIONER APOSTOLAKIS: That's how it got there.

VICTOR MCCREE: That's correct.

COMMISSIONER APOSTOLAKIS: Okay. Okay. Good. Now, there was a period, again, in the report that, it's not clear for how long that condition persisted, and I think there is a statement that the last time that the valve was operable, it was something like March of '09?

VICTOR MCCREE: Correct.

COMMISSIONER APOSTOLAKIS: And then it was discovered inoperable in June of '10 or something like that. So, we're talking about -- or, October '10.

VICTOR MCCREE: In October of 2010.

COMMISSIONER APOSTOLAKIS: So, it's roughly a year and a half.

VICTOR MCCREE: Correct.

COMMISSIONER APOSTOLAKIS: But, we don't really know when the failure occurred. Is that correct? Somewhere in there.

VICTOR MCCREE: That's correct. And, of course, in evaluating the significance, we only used one year. The process allows us to use the one year period of exposure time.

COMMISSIONER APOSTOLAKIS: Right.

VICTOR MCCREE: But, correct. But, the last time the valve was known to have operated successfully in pass/flow was in March 2009.
Subsequent surveillance testing was not done in a manner that would have demonstrated that flow actually passed through the valve.

COMMISSIONER APOSTOLAKIS: Thank you. Thank you, Mr. Chairman.

CHAIRMAN JACZKO: Commissioner Magwood.

COMMISSIONER MAGWOOD: Good morning. Thank you for your presentation, and for what, I've been following this for some time, and Vic and I have talked about this. I appreciate the effort the staff's put into responding to this, and I appreciate the work you're doing on this.

A couple of questions. One is, I just wanted to react to something that Rick said a few minutes ago, that you found, looking at this, that there were other motor operated valves that were not captured by the IST program? Why was that? Was there a clear reason as to why some of these were not captured by the program?

RICK CROTEAU: I think again we've got to wait. The licensee hasn't finished their root cause, so we've got to let them take a look at it and do their root cause, and then we'll assess the root cause evaluation.

COMMISSIONER MAGWOOD: Were these -- I appreciate that, but were these, as a general manner, were these valves where there was a reasonable question as to why they would be, whether or not they would be in an IST, or -

RICK CROTEAU: I don't think we've drawn a conclusion on that yet. The team still hasn't issued a report, and they're still kind of assessing that situation.

COMMISSIONER MAGWOOD: Okay. And looking in, and going
through background on this, I know that part of the back and forth with TVA
included an assertion by TVA that, in the event of an actual accident, that the
valve plate would have released eventually, and the staff rejected that
conclusion. But, could you elaborate on that? What was the theory behind that,
and what was the staff, how did the staff evaluate that that was not --

RICK CROTEAU: Well, they had done some testing to attempt to
demonstrate that it would have lifted. We took a look at the testing, and we
weren't convinced. It didn't seem to simulate the actual conditions. And then, in
fact, when they ran that and tried to initiate that shut-down cooling, it ran for a
period of time and did not lift. And then, also, when they disassembled the valve,
there was quite an effort necessary to lift that seat from and remove it from the
valve. So, there was some difficulty in removing it there.

Based on all the information they provided, we didn't think that it
was credible, that it would have passed flow under an actual accident condition.

COMMISSIONER MAGWOOD: Okay. Thank you. You've talked
about how Browns Ferry has responded to this, but, obviously, TVA operates
more reactors than Browns Ferry. Has there been an effort to assess these
situations over the entire TVA fleet?

VICTOR MCCREE: Commissioner, I would, I'm sure that TVA will
be prepared to respond to that question in the sense that they've indicated to us
that they're taking this opportunity to not just deal with the specific valve failure or
the specific program issues at Browns Ferry, but they're looking at the
implications across the TVA fleet and what it may mean, in terms of what they
need, changes that they would need to make corporately to address performance
issues, and I'd be interested in their response to your question as well.
COMMISSIONER MAGWOOD: Okay. I'll make sure I ask them that. Let me stay with you Vic because I'm going to ask you to draw some broad conclusions you're not going to be prepared to draw at this point, but I'm going to ask it anyway. You know, whenever you see multiple equipment failures, and you gave a list of the sorts of events over the last two years, it's been eight scrams, four forced outages, five significant urgent down powers, how much of that do you believe at this stage from what you know is, how much of that -- and this maybe gets a little bit to Commissioner Apostolakis' question, I think, but how much of this is more of a cultural problem and programmatic problem, and how much of this is age of equipment?

VICTOR MCCREE: As Rick has indicated several times, TVA's root cause evaluations is ongoing, and we will independently evaluate that. But, the indications that we've obtained thus far and has contributed to the "Red" finding is that there are programmatic program issues associated specifically with the motor operated valve functionality, if you would, and more broadly, as Rick indicated, there have been a number of equipment reliability challenges, with frontline safety systems that have been captured by TVA and its equipment reliability programs. And they've not demonstrated as aggressive an effort to address those issues as they have of late. I believe that's contributed to their being here. And one could argue that there are some cultural aspects of that, and I believe that the safety culture assessment will enable them to see those things a bit more clearly.

So, being in Column IV and being subject to a diagnostic inspection of the scope and breadth and depth of a 95003 has, based on our past experience, reveals a number of opportunities to improve performance, and TVA,
I think, will have the opportunity to take advantage of that to raise the level of performance at Browns Ferry and perhaps across the fleet.

RICK CROTEAU: If I could add on the, one of the things that Part I inspection and Gene has been pointing out, and, I think, even the TVA folks will tell you that it's been kind of a broke/fix mentality with equipment in the past where a piece of equipment breaks, and they just fix it, and they don't go look at why did that fail, and what do we need to do to prevent reoccurrence, so they're back, you know, two years later or some period later, working on the same equipment again, because they don't address the basic issue with the equipment.

COMMISSIONER MAGWOOD: I appreciate that. One last question for you. And this, again, asking you to draw broad conclusions you're not going to be prepared to draw, but I'm going to ask it anyway. Browns Ferry is actually, as we all know, a unique plant, and that's it's the first of TVA's rebuilt plants. And I actually had the opportunity to tour during the rebuilding activity years ago. And I remember thinking at the time that, you know, it's interesting, we'll have to see in the future how well this works out as we have this plant that's been idle for so long going through this rebuilding process and will we put back in service; so now it's back in service and now we're seeing issues, and then just -- and we have more TVA plants that are on the docket to be rebuilt and put back in service. Should we draw any conclusions about the rebuilding of plants in this context, or is this what we see here, is this isolated from that?

VICTOR MCCREE: I don't know that we're in a position to draw any conclusions. I think your question is a very good one, and I'm certainly taking it to heart, and I hope the folks at TVA are taking it to heart as well. In
fact, the failure of this valve, the failure mode, if you would, was introduced when
the valve was refurbished during the Unit 1 recovery. And so there are lessons
to be learned, I believe, in terms of what caused that, would allow that to happen.
And so there's opportunity there, again, in the recovery process or completion, if
you would, process for Watts Bar Unit 2, as well Bellafonte Unit 1 to learn
lessons here.

COMMISSIONER MAGWOOD: That was -- actually I should have
asked you this first, so it did sound that you did say this valve was the original
equipment valve that was rebuilt or refurbished?

VICTOR MCCREE: Yes, there was an extensive amount of
refurbishment, replacement as Unit 1 was recovered, and this was one of the
components that was worked on.

COMMISSIONER MAGWOOD: Excellent. Thank you very much.

CHAIRMAN JACKO: Commissioner Ostendorff?

COMMISSIONER OSTENDORFF: Thank you, Mr. Chairman.

Thank you for your presentations this morning. Bill, I want to start out with you,
but you can defer to either Vic, or Rick, however you want to handle this, but
prior to the "Red" finding, and I'm looking now at the equipment reliability issues
that Rick had referred to on slide nine. Prior to this valve issue, had there been
early warning signs of declining performance by the licensee in this area?

BILL BORCHARDT: Well, there were discrete inspection findings
and Vic had the chart that showed the various columns that the individual units
were in, but, you know, from a nationwide perspective, I wouldn't say that the
Browns Ferry performance drew a lot of attention to itself. You know, we've
mentioned the number of scrams, you have to remember there's 3 units there' so
the numbers kind of add up a little bit if you compare it to single unit sites. So
from my perspective, and from my understanding of, you know, nationwide
operating experience, we’re not seeing extraordinarily different performance from
the Browns Ferry units, compared to the rest of the fleet.

VICTOR MCCREE: The only other thing I'd add to that,
Commissioner and Rick alluded to it. If we were to go back as far as 2006, or
shortly after, when Unit 1 was restarted, there were some performance issues,
again, that we saw related to equipment reliability manifesting itself on Units 2
and 3. We did identify substantive cross-cutting issues at the time, which under
the reactor oversight process are early indicators, if you would, of performance
challenges, performance opportunities. And those types of observations
continued since that timeframe. As I indicated, all three units were placed in
Column III, in the fourth quarter of 2009, and there are and were a number of
front-line safety systems that were in A1 -- the maintenance rule A1. Again,
additional indicators of equipment challenges and a number of reactor trips and
down powers associated with equipment issues. So there was clear opportunity,
in our view, for the licensee to recognize that there were issues there that they
needed to get ahead of.

COMMISSIONER OSTENDORFF: I'm going to follow up Vic with
you and Rick on this question, with respect to equipment reliability, the
maintenance rule implementation, and so forth; outside of the in-service testing
program were there other aspects of the programs that deal with maintenance
that concern you with respect to licensing?

RICK CROTEAU: I think it's too soon to tell on that.

COMMISSIONER OSTENDORFF: We're going to ask the licensee
that; now this happened about a year ago, so you must have some initial
assessment; we're having the meeting today. And I'm going to pressure you on
this a little bit because I think it's part of NRC's job to evaluate how the licensees
are doing. And sometimes you need to wait until you have a report complete, but
you must have some initial gut feel for that.

RICK CROTEAU: We have completed the first week, as I
mentioned, of the Part 2 maintenance inspection. There were no significant
issues identified during that first week. But again I'll point out that just the
approach of the broke/fixed kind of thing, and not addressing root causes on the
equipment, that's kind of the early conclusion we've had in an overall
assessment, that there needs to be more of a getting to what caused the failure
rather than just fixing the individual failures at the facility.

COMMISSIONER OSTENDORFF: Okay, with respect to the other
licensees you deal with in Region 2, is this -- the comment you're just making
there about the broke/fixed, is that -- is this an anomaly for TVA, or do you see
these kinds of issues for other licensees?

RICK CROTEAU: I would say that most folks attempt to get to the
root cause of things to ensure that the conditions don't reoccur.

COMMISSIONER OSTENDORFF: Okay.

VICTOR MCCREE: And I would certainly agree with that. There
are opportunities, I think, that licensees have that there are individual cases
where they don't implement their corrective action programs in the manner that
they would expect, or that the program would require. What we have seen at
Browns Ferry, and it's the reason we're here today, is that there are challenges
that we've seen in the corrective action program, certainly in their in-service
testing and their maintenance program, all of which are important and part of maintaining an appropriate and healthy safety culture, and in ensuring equipment reliability. And a significant part of that is investing in the plant, investing in these programs and that's been a challenge at Browns Ferry.

COMMISSIONER OSTENDORFF: Okay. That's very helpful. Let me ask one last question, and Vic I'll ask both of you and Rick or I'll ask Vic, if you want Rick to also respond, that's fine. Big picture, given everything that's occurred to date, how do you assess the licensee's commitment to improve?

VICTOR MCCREE: Mr. Commissioner, I've had several meetings with TVA leadership, both public meetings as well as drop-ins, and my sense is that they accept our assessment of Browns Ferry's performance, and that there's a commitment, both tangible and otherwise, to fixing problems at Browns Ferry. But the proof is what we'll discern independently by verifying activity and action, and progress at Browns Ferry. And this, the inspection that we are implementing is the most probing, the most thorough type of effort we have, and it'll provide the evidence that we'll need to answer that question with finality sometime in the future. But my sense is that the leadership at TVA is aware of our assessment, and is committed to moving forward.

COMMISSIONER OSTENDORFF: Thank you. Thank you, Mr. Chairman.

CHAIRMAN JACKO: Well, I want to follow up a little bit on some of Commissioner Ostendorff's questions about earlier warning signs, and I think Commissioner Svinicki touched on this as well. One of the open cross-cutting issues, and this is one I think that goes back, I think, four assessment periods, so that would be two -- about two years, six month assessment period, I think that's
right, is in the area of our evaluation of identified problems, I think it's in the
problem identification resolution area. And this is from our mid-cycle
assessment, we were keeping this open, and of course at this point we had
identified the valve failure, but we were keeping this open until -- and these were
the conditions, a comprehensive range of actions are identified in your corrective
action program, your being TVA's, that effectively demonstrate you will address
the cross-cutting theme. So significant increase in the number of findings with
the cross-cutting aspect of thorough evaluation of identified problems, and
increased level of confidence in your ability to deal effectively with operational
equipment issues as related to this cross-cutting theme of thorough evaluation of
identified problems.

So -- and certainly the conditions to close this for things obviously
that appear to be related to what happened with the valve failure. And you know,
is this telling us anything that -- are we taking enough stock of the substantive
cross-cutting issues? Are we doing enough with them when we identify them?
And this was one that was open for four cycles. It almost seems like, to some
extent, we have them and we know that there's a problem and then we wait until
the equipment fails so we can get a finding so we can take some regulatory
action. What is this kind of saying to you, Rick or Vic, or whomever?

RICK CROTEAU: Well I'd just mention that we do look at that as
part of the end cycle, mid-cycle, and when it meets a certain threshold, we look
does it constitute a substantial cost-cutting issue. And then we do follow that up
with inspections once we think they're ready. So it is part of, you know, built into
the program, but we don't slide folks over in a column or anything like that
because of these types of issues unless, as you indicated, that they would have
a finding that would drive us in that direction. But we do do specialized
inspection to follow up and close out substantial cross-cutting issues.

VICTOR MCCREE: The ROP does allow, permit, in fact, it requires
us to use a graded approach when a substantive cross-cutting issue is identified
in any of the areas, whether it's human performance, problem identification
resolution, or safety conscious work environment. And you'll have to correct me,
John, if I get the timeframe wrong, but after the initial identification of a
substantive cross-cutting issue, a licensee is expected to respond, at least in
writing, with their plans to deal with the issue. If that substantive cross-cutting
issue persists after a cycle, after one year, if you would, we would hold a public
meeting to engage the licensee on whether they acknowledge it, and what
actions they're taking to deal with it. If it persists after two cycles, then we have
the option to consider requiring the licensee to conduct a safety culture
assessment to address that.

CHAIRMAN JACKO: In this particular case, what was your
determination on that?

VICTOR MCCREE: This would have been the cycle that we would
have had, however they were placed in Column IV. And I can't recall if it was
Papa 1 Charlie or Papa 1 Delta, the identification or the resolution, they had
actually taken it off and then reinserted it, but replaced the substantive cross-
cutting issue. So there's a graded approach, and as Rick alluded to, we also
have the opportunity, and I'll usually take advantage of it, to rather than
conducting a biannual problem identification resolution inspection under 71152,
the procedure, we do that annually; we would move that inspection forward to get
additional evidence of the licensee's action and progress in these areas.
CHAIRMAN JACKO: So as you did all these things, did you -- what was your gut when looking at all of this? Was the plant where you wanted it to be, and so what could you do about it?

VICTOR MCCREE: They were not where we wanted it to be. We recognize that, again, the programmatic, the performance issues, the findings that we were identifying with the cross-cutting aspects and problem identification resolution were indicative of continuing equipment performance issues; that's where it was manifesting itself. And the findings that were identified in 2009, the "Yellow" and the "White" was an opportunity, if you would, for TVA to address even the broader issues associated with equipment reliability. But certainly now that they're in Column IV, there's a requirement that they do so.

CHAIRMAN JACKO: And if you go back to Unit 1, and again, in hindsight it's always 20/20 and everything looks crystal clear in hindsight, but if you go back to when we closed out -- we had closed out the 95002, and as soon as the next quarter rolled around they would have cleared all of the "Yellow" findings. So, you know, if you look at the chart, which is a good chart, it gives the impression that there was a continuous, but in reality from our perspective they were "Green" in between, you know, there was almost an infinitesimally narrow "Green" band in between the "Yellow" and the "Red".

VICTOR MCCREE: Actually, Mr. Chairman, the 95002 exited on October 22. The event occurred on October 23.

CHAIRMAN JACKO: Right, so there was this, as of, you know, October 22 at say 8:00, mentally we thought they were back in Column I; 12 hours later, whatever it is, mentally then we're putting them back in Column IV.

So, you know, again if I look at this, and I want to look at this skeptically, there is
some extent where I would say well somehow, you know, we had to have missed
something. Because here clearly was a plant that had cross-cutting issues, that
said that we've got some challenges in this equipment reliability. We had it
manifest itself in a fairly significant "Yellow" and “White” finding. We did all our
inspections and we said everything's fine, and then a day later, everything's not
fine again. I mean, what's missing, and what's the problem?

VICTOR MCCREE: Mr. Chairman, I wouldn't argue that, I wouldn't
submit that anything's missing.

CHAIRMAN JACKO: Yeah.

VICTOR MCCREE: We know and acknowledge that licensees
have the primary responsibility for safety. There were sufficient indicators, I
believe, to TVA that an opportunity to deal with the issues at Browns Ferry
without having to be placed in Column IV. And what, I believe, we recognize is
that the licensees who have a strong safety culture and a commitment to strong
and excellent performance take earlier opportunities, they use a substantive
cross-cutting issue as a burning platform to make change, and to fix challenges.

CHAIRMAN JACKO: Let me ask you -- just let me ask you this for
a second though. And I'm not necessarily asking right now -- we'll have a chance
to talk to the Licensee about kind of their performance, but I'm asking a little bit
about our program. To what extent was there overlap between the root cause or
at least what appeared to be some of the causes of the valve failure and the fire
protection findings. I mean, was there overlap in the causes?

RICK CROTEAU: Could ask Gene to speak to that, I mean, Gene,
you are heavily involvement with both of those --

CHAIRMAN JACKO: Because my point here is that I'm not so
much worried about the licensees, I mean ultimately, yes, they have that responsibility to ensure the safe operations. What I'm worried about is our assessment. We assessed on October 22, that they had done enough corrective action to address those things that led to the "Yellow" finding. That's why we were ready to clear it. It wasn't the situation in which we were still believing that there were problems, and that we believed that they had addressed the problems, otherwise we would not have cleared the "Yellow" finding. So if there are common issues between those two findings, the fire protection findings and then the subsequent valve failure, somehow we said it was okay when it wasn't and we missed something. And that's what I'm trying to understand, what, were there common issues or not? And, it's not to criticize, but this is our chance to learn and figure out next time how we can do better.

GENE GUTHRIE: Right, I think, Gene Guthrie, I think when you compare the equipment failure, you know, with the valve failure, and then if you compare the fire protection issues, the fire protection issues were more focused on program, program implementation and meeting the requirements, where, when you look at the valve failure, it's really specific to a component failure, or a piece of equipment failure.

CHAIRMAN JACKO: But did it have an element, I mean, their in-service inspection program was not functioning properly, they had not properly placed the valve, the motor operated valve in the inspection program. Those were programmatic challenges, not equipment problems.

GENE GUTHRIE: Yes, and I agree with that, but when you look at what we inspected as a result of the fire protection "Yellow" findings, "Yellow" and “White”, we were focused -- the 95002 inspection procedure is more narrow.
It focuses specifically on what that violation was, and looks at the root cause and corrective actions that the licensee is going to take as a result of that. And so it is -- it does tend to focus the inspection team on specifically those issues. So when that 95002 inspection was performed, that's what they looked at, was the fire protection program, specifically as it related to meeting the requirements of the Appendix R associated with that and then --

CHAIRMAN JACKO: Thank you. That's helpful. And of course that's then one of the issues with 95003, we have a much broader expanse. But maybe that's something we need to take a look at, is maybe we should push some of that broader look down toward to a 95002 level, and that may perhaps have identified some of these issues a little bit earlier and given us an opportunity to give the licensee an opportunity to make some improvements. Well, good, well thank you.

BILL BORCHARDT: And Mr. Chairman, just that you raised the challenge that we have on cross-cutting issues, and implementation of the reactor oversight program. And not to go into a long history lesson, but before the ROP, we would have, you know, a series of inspection findings; we would generate this general concern. We didn't call it substantive cross-cutting issue back then, but there was this general concern. And the problem we had from a regulatory perspective is that the agency had a very hard time closing the issue. Because, as regulators were very conservative and very cautious, and it's hard to get over the threshold to say everything's okay. So the reactor oversight program got to be much more discrete and specific on individual findings. We retained three substantive cross cutting issues which allow us to raise a level of attention to a general area. I think it's doing that, but you know
it's not perfect and that's why we're continuing to revise the reactor oversight program.


COMMISSIONER APOSTOLAKIS: Vic, you mentioned that in one quarter of '09, all three units were "Yellow". Right?

VICTOR MCCREE: That's correct, actually fourth quarter of calendar 2009.

COMMISSIONER APOSTOLAKIS: I'm wondering, clearly the ROP says you have to do certain things because a particular unit is "Yellow", but is there a provision to do something extra, because all three are "Yellow", in other words, is the ROP focus on the unit, not a multi unit site? A very fashionable thing these days, multi units.

VICTOR MCCREE: That's a very good question. Unlike the failure of the RHR LPCI outboard injection valve on Unit 1 and that finding being associated with that failure. The fire protection program issues at Brown's Ferry affected all three sites -- all three units; so the findings were applied to all three units. Our action was the same; we conducted a single 95002 supplemental inspection of that finding, which applied to all three units.

COMMISSIONER APOSTOLAKIS: This is because, in this particular case, it happened to be the fire protection program.

VICTOR MCCREE: That's correct.

COMMISSIONER APOSTOLAKIS: Let's say it wasn't and I had three units for different reasons they were all "Yellow". Would that trigger something and say wait a minute; something is wrong with the site?

VICTOR MCCREE: No sir and in practice when we conduct
supplemental inspection and response to a greater than "Green" finding. The
inspection effort is applied to the site, there may be some unit specific issues that
the licensee is responding to but the inspection effort is a site wide effort, if you
would, just as even though only Unit 1 is in Column IV, our 95003 all phases are
affecting all three units at Browns Ferry.

COMMISSIONER APOSTOLAKIS: Thank you.

CHAIRMAN JACZKO: Any other questions. Thank you, appreciate it.

[break]

CHAIRMAN JACZKO: We'll now have a presentation from TVA and I'll just note that at the table we have Bill McCollum, who is Chief Operating Officer, Don Jernigan who's-- did I say that right? Jernigan, who is the Senior Vice President of Nuclear Operations; Robert Whalen, who's Vice President for Nuclear Engineering; Keith Polson who is Site Vice President at Browns Ferry and then my understanding is that the presentation will come from Preston Swafford who is the Chief Nuclear Officer.

PRESTON SWAFFORD: Yes sir, that's correct. Bill?

BILL MCCOLLUM: Mr. Chairman, Commissioners, Bill McCollum, chief operating officer Tennessee Valley Authority, appreciate the opportunity to be here today to talk about our work to improve performance at the Browns Ferry Nuclear Plant. What we'd like to do is begin by talking a little bit about the some of the background and our efforts to improve performance at Browns Ferry and then at the end I'll make some comments about our efforts across the TVA fleet and I'll ask Preston Swafford to open with our remarks.
PRESTON SWAFFORD: Thank you Bill. Mr. Chairman,

 Commissioners. When Unit 1 shut down for a refueling outage last October the
 operators discovered that they did not give indication of shutdown flow through
 the Loop II division of RHR heat removal system and immediately, within about a
 90 second period, aligned to the other loop and began injecting and shutdown
 cooling for the refueling outage. No time during that period, was the core in
 jeopardy and in that we did have available systems back up.

 As a result of this problem, troubleshooting found that the valve in
 Loop II had failed and that the valve stem specifically had separated from the
 disc and the disc was found fully in its seat inside the valve. This particular valve
 serves as one of the injection valves for our emergency core cooling system,
 specifically through the LPCI injection system; so it obviously has significant
 safety importance to TVA.

 Since the last time this valve was successfully tested was in March
 of 2009; we did a full flow test at that time and part of, I'm going to say, our weak
 diagnostic issues and some other opportunities is a difference that we've -- I think
 you've spent time this morning with the NRC is talking about the ISP Program
 and our belief of how that system work does not necessarily guarantee that the
 operability of a valve is sustained should you have this separation because the
 configurations valve specifically has flow up underneath the disc and could, in
 some occasions, actually open the valve and whatnot.

 So I think there is a new issue that has to be resolved and has to
 be looked at how do you verify that the intent of the ISP Program is doing what
 it's supposed to do.

 While the valve failure was of low safety significance, relative to the
design basis accidents such as a loss of coolant accident, Loop II of the RHR
system is specifically relied on for reactor core cooling in the event of a
significant fire in certain areas. So, like was also mentioned, we committed to
the SISBO or self induced station blackout methodology and what that boils
down to is we if we were to have a significant fire we would systematically shut
off switch gear to various components leaving this one train as our only available
train to inject and should you have a problem like we had in this valve this is the
only train you've left available to inject into the vessel. So we believe that
originally this was felt to be at least a 20 month period because of the March of
'09 period where we did successfully inject, we used that as the period of time for
the failure mode. Next slide, Page 3.

We do fully acknowledge the high safety significance of this valve
failure and the basis for that conclusion. As a result we are taking extensive
actions to address this issue that will be described later in this presentation.

We're also using this occurrence to focus even more attention on
the areas that need improvement at the entire Browns Ferry Plant and accelerate
those improvements as well, but not only that like the Regional Administrator,
Victor McCree had mentioned, this is an extent of a condition across the fleet, so
what we take away from the Browns Ferry finding will be put into our corporate
corrective action program and taken systematically across the entire fleet.

Although there are maybe some issues to specific Browns Ferry and different
leadership teams and different outcomes, the systemic issues that may be found
there could be broader in nature and we can't afford to be a myopic view and
only attack Browns Ferry.

With regard to the failed RHR valve and it's duplicate valve in the
other loop at Unit 1, the significant strengthening of the stem to disc modifications
were done. So we went to both Unit 2, Unit 3 and the second valve on Unit 1
and there was six valves that were mentioned earlier and we did a significant
modification to those valves. The Part 21 was a thread issue where the stem
was allowed to pull out of the disk and that was determined to be ultimately the
component root cause. What we talked about here and root cause, and part of
our issue of not being as broad in our root cause determination initially, we kind
of looked at this as a component failure and looking at the root cause around
that. We did some extensive review there, but the bigger picture of the
programmatic issues of why was this not detected earlier and those sorts of
issues were not part of our initial root cause. So, what we’ve been working on
now in the last several months has been a broader root cause that gets at the
leadership, the programmatic deficiencies, and those sorts of things that could
have and should have identified this in an earlier manner.

We’ve also taken a number of steps that significantly reduce the
risk posed to the plant as a result of an Appendix R fire that would result from this
and other component failures of this type. Specifically a question asked a little bit
earlier in terms of the relationship I’m going to say to the 002 and the 003, but
our decision to commit to the SISBO logic many years ago is something that’s
been of significant importance to myself and our team for the last two and a half
years, almost from day one on the position we’ve been looking at the
commitment to NFPA 805, how do we build margin back into our models and do
the necessary modifications to the plant.

On top of that, should we have not had that model, our operator
more than likely would have had other tools at their disposal, should this one
valve had failed, and we could have easily went to other and multiple different trains to get water into the vessel, but because of our commitment to SISBO, that was removed. So, with the going forward with building the margin back into the plant, we’ve already done several things that have reduced risk in fire protection arena in our turbine building specifically, our cable trays, and they’re faced with them, and etcetera, as well as putting direction in our procedures until we get our full implementation of NFPA 805. We have actions in our procedures should we have to go into our SISBO logic of protecting the plant from a severe fire, that we also have direction to them should that one train not be operable, that we relied on in the model, then we can empower the operators to reenergize different busses, assuming that probably all of them will not be affected by the local fire, and there are actually some other techniques not requiring either of those busses, those safety busses, as well to get water in, but we had not provided that direction nor have we trained to those alternatives and those are all part of our going forward issues. So, if we were to have the same issue today, we will have minimized already that risk with substantial more improvement coming as we move forward with our NFPA 805 commitments.

On to Page 4, based on their own assessment of the safety significance of this valve, we found that there was a high likelihood that either the operators would have taken another non-proceduralized action to reestablish core cooling or that the valve in fact itself would have functioned in particularly sequence of events occurred, may have actually opened the valve, but we do completely understand that based on the NRC’s evaluation, these factors could not be credited in determining the safety significance of the valve. If we have not trained operators to go reenergize equipment or talk to them, or train them to do
these multiple other options nor have procedures to do that, then saying that that
is something that you can commit to actually would have happened is not in the
best interest of the NRC and we understand that, and concur with that.

We also fully agree that the basic issue in this case is that there’s a
lack of rigor in evaluating information regarding the operation and testing of this
valve. This valve was pulled out of the 89-10 program. We did put in an appeal
in terms of specifically the IST program, because we believe a lot of the actual
IST testing we did was at least at a minimum consistent with how most of the
other industry has done it. But through the detailed root cause we’re executing,
we’ve not completed it at this time, but it’s looking like we had asked to remove
this valve from the 89-10 program years ago. And we do believe that if it was left
in the program, the detailed analysis, or MOVATS or VOTES type traces are
common terms in the industry, that there’s a good chance we would have
identified that this valve has some issue internal to it much sooner. So, the fact
that one is not in our program and two, we removed it, is I think a contributor to
this issue.

And the next slide, Page 5, the original root cause analysis of the
valve failure did not go far enough and that we missed the opportunities; and I've
spoke to that. The detailed diagnostics, there is one point on this too is that this
may have failed as early as '08 and that part of our analysis that was not
accepted out from -- I'm going to say research firms and other companies out in
the West Coast that we employed to do analysis for us. We do have a trace, but
even though it wasn’t fully in the 89-10 program, we actually had a trace like an
89-10 that was developed in the '08 timeframe, we actually had one I think in '06
and this valve did inject, in '06, did inject in '08. We think there is a total of
potentially five times the valve may have injected since this thing failed. That’s
not a hundred percent concluded, but if you look at the traces, there is some
anomaly in it that we’re still evaluating right now that kind of led to some of the
false beliefs that the valve was going to do what it was supposed to do when in
fact it may have been separated even earlier and because we did not do
elaborate testing and in that diagnostic analysis we missed an opportunity to
have caught that.

So, we’re taking this opportunity to look beyond those issues
associated with the valve to broader issues across Browns Ferry, and as I
mentioned, also across the fleet. We are evaluating whether the proper steps
are taken to ensure plant equipment will have the required level of reliability, and
the reliability question is key in that mentioned before, some of the scrams and
other actions and challenges to operations over the last few years.

Since the startup of Unit 1, there have been numerous issues with
Unit 1 startup. Many of them had to do with balance of plant activity so where in
the restoration of the plant we didn’t put QA as an example, as an oversight
function on some of the craftsmanship in the field, and assuming that because it
was not part of the safety related side of it, that that would be acceptable. One of
the questions going forward would be how about our Watts Bar or a Bellefonte.

Well, those would be an example of having extra oversight on the craft level
throughout the whole plant, but we also know that our programs is an issue and
I’ll speak to that in a little -- in a minute, but specifically the rigor around the
program specifically tied to our safety related components, and what not, was
also during that time fractionated; it did not have a strong corporate governance
and there were other deficiencies tied to that, and I’ll speak to that in just a
minute. On to Slide 6 with the safety culture.

There are currently two substantive cross cutting issues identified by the NRC at Browns Ferry, the first being aspect Papa 1 Charlie, which is thorough evaluation of identified problems and the second being at -- the second aspect be Papa 1 delta, which is appropriate and timely corrective actions.

In its mid-cycle assessment letter of August 29, 2011, the NRC expressed a concern with the scope and progress of our efforts to address these issues. Because of the length of time, the Papa 1 delta substantive cross cutting issue has been opened. The NRC requested in its letter that TVA address this SCCI as part of our planned safety culture assessment required by NRC inspection procedure 95003. We have decided to include a review of the actions identified and have already taken to address both SCCIs, not just Papa 1 delta as part of this third party safety culture that we’re now conducting. We consider these SCCIs as related to the broader issues that I spoke to earlier, and the issues of getting at the root causes and getting at the effective corrective actions seems to be in line with the SCCIs that were mentioned both in the prior discussion as well as what I’m mentioning now. On Page 7.

As stated earlier, we’re investigating and analyzing how we do business at Browns Ferry. As part of this, we agree with the NRC’s assessment that there is a culture at the plant of taking a minimalist approach to addressing problems related to equipment reliability, the kind of broke-fix comment made earlier. We appear to have a culture at the plant that tends to take a limited approach to equipment problems rather than looking into why the problem occurred and what needs to be done to preclude it from happening again. Now, during the 002 in addition to that inspection, that team did look significantly at our
corrective action program and they were to a point of closing that out, but there’s
issues in terms of depth that would be very difficult I think from even an
inspection module to see the completeness and thoroughness, but there’s also a
time issue and that timeliness -- or excuse me -- that the quality of these
products from years ago were substantially weaker than what we’re doing today,
not to say that we’re doing today is still getting at all the root cause issues and
thoroughly getting this behind us, but I do believe there’s substantial
improvement today from what there was several years ago. So, that 002
inspection has looked several years back for completeness and I think the going
forward one that we’re in right now will require even more rigor in terms of our
root cause implementation and review.

To address the issue, we need to improve teamwork and
engagement of the plant staff, and one of the questions that may be is, are we
staffed appropriately. We have 1,112 employees onsite. We have a standard
organization that we benchmarked heavily and we really -- because there’s not
too many plants with three units, we came up with a standard Org of 1154; it’s
not necessarily linier from single to double unit and double unit to triple unit, but
we do believe it’s adequate and to date we’ve included an increased staffing in
targeted areas as the line has come forward with the need, and we continue to
look at that. I’ve had very strong support from the COO and CEO, to do what it
takes to fully staff and coordinate this recovery effort, but also what the steady
state staffing would look like for a three unit site.

The plan also in 2012 had a capital budget, an O&M budget of
$434 million, so we think there are adequate resources to improve the plant. We
know there’s a lot of people at the plant and the folks are all committed, and I
think one of the most valued comments we heard from your visit the other day is
the fact that the people recognize that there’s a lot of things to do, but they had
all in all energy to actually take it on and from a safety culture standpoint and
what it takes to really turn around a troubled plant; it starts right there and if I had
that battle ahead of me this could be prolonged and protracted. I currently have
no concerns with adequate resources. The board of directors as well as our
CEO, and the COO, have essentially supported me with any requests forwarded,
and I believe that will be a sustaining action for me as we go forward.

I, as the chief nuclear officer, and the rest of the executive team
here, decided to use this "Red" finding as an added motivation to accelerate
improvements. We’ve not been sitting back in our laurels for the last couple of
years. We’ve been doing a lot of material condition improvements to the plant,
but the extent of the conditions, the detailed root cause as mentioned about why
we’re getting there, those are still issues that we’re still working through and
there’s a great deal of work that was required a few years ago, and there still is
going forward, and though one of the benefits though is through governance
model that I’ll mention in just a minute, the clarity around what needs to be done
is substantially stronger today than it was a few years ago, and from that it’s
more of a matter of planning and coordinating as opposed to we don’t even know
what we need to do. And so we’re more in the let’s go implement phase, and so
the ability to accelerate that is a benefit to the site vice president here, Keith, and
that he has a green light to even shut a unit down if that’s what he needs to do;
albeit, we need to make sure our packages are ready to go, shutting plants down
with people not having work materials or parts, and those sorts of things is not
only not productive, it’s a major distraction to safe operations, but on the other
hand as we prepare and ready ourselves to do these significant material condition improvements, we will do the execution of those when the time is right for the plant, and the full support of the CEO, and COO to accomplish that. On to Page 9.

There are a few improvements already in place. One of the most critical elements to sustainability of this new culture and equipment reliability stands with a strong corporate governance, and oversight. Specifically TVA had a corporate structure for years. I'm not trying to paint that as non-existent, but the model was not one of central governance. For the most part the sites were allowed to be autonomous, and they kind of ran their own site, and they used corporate as what we call a reference material if you will, or reference players. If they needed us, they called us and if they didn’t need us, they made their own decisions. Well, coming from a large fleet, from a -- plant, it recognized immediately that the only way to operate is by heavy benchmarking, the creation of corporate functional area managers, have a central presence in making sure that no single site is allowed to be reduced to the lowest common denominator. So, the corporate functional areas we have are all empowered. They are the decision-makers. They benchmark heavily. They’re out and about in the industry substantially and they then create central documents that all other documents tier down from, thus assuring us the biggest question of sustainability.

We also have key metrics and processes in place. We do substantial numbers of cross self-assessments from corporate and sister plants coming down, and looking at these programs and processes, all of which to ensure that one, we have the best industry standard in place, and two, that they’re actually executing it, and we’re seeing some progress in that area, but
that is another part of the cultural issue, is it will take more than a quarter or two
to really get the behaviors around adopting this central approach. But we are not
at a point of just starting. We’ve actually had some bricks and mortar on the
ground in this arena, and we’re starting to enjoy some of that benefit.

We’ve also already had in place an equipment reliability program.

This was new also and there are many corporate SPPs we call them, or
procedures that give guidance to many of the programs and processes that have
allowed to decay, or did not exist. So with that, we had already started to
uncover a multitude of different program issues, but we did not complete all the
self-assessments nor had we identified all the problems, nor have we to this
date, but we do have a program. We do have assessment modules in place.

We also have plans and calendar dates for executing these, and they go across
the fleet. So, it’s not just a Browns Ferry issue, but if I ask myself from a
sustainability issue, another part with governance also has to be quality
programs and procedures, and processes from a central standpoint. Do they
exist? Are they of quality? How do you know they’re of quality and are you
executing them, and that’s the part we’ve been focusing heavily on, and we
expect to see traction in that arena.

In addition, we spent about $260 million specifically at Browns
Ferry for equipment reliability issues. So, it’s not just a total O&M for bodies and
mandatory regulatory required issues, and those sorts of things. These are
targeted dollars tied to significant material condition improvements. Just a few of
the things done as emergency diesel generator heat exchanger, air dryers,
batteries, have all been replaced. But we still had turbo chargers and other
significant maintenance items still ahead of us on the machines, but they are in
the works and we expect to commence those shortly.

Significant work in our motor operated valve program.

Unfortunately we did wait until kind of the last minute to launch the MOV program, however it is launched and in our last outage, we’ve had in think an upwards of 19 key valves. These are not small, one inch valves, these are large valves to essentially take them apart and do all the modifications that are tied to the motor operated valve program from the joint owner’s group. And then another key program we spent substantial time on is the actual upgrade and getting to within frequency of PMs on major motors. I’d like to say that that’s also been a mature program, but frankly it has not. As mentioned, when you toured the other day, we have replaced two recirc motors in our last outage, for example, that were seven years past OEM’s recommended PM intervals on those motors.

We’ve changed already six RHR motors, just dropped and swapped. We completely changed them out. We changed three RHR service water pump motors and six core spray motors. So, almost all of the majority of our safety related significant pumps have been upgraded with their motors, and we’re going to continue until we get current on all of those motors.

We have some other issues with some pumps proper, like our RHR service water pumps that have aged issues with their casings and what not, and we’re going to be changing those out systematically as well. So, it’s not like we’ve not done a thing in the last few years. We’ve been actively improving and that has shown up in what we call equipment related clock resets. I believe we had in ’09 around 27 clock resets tied to significant equipment failures and I think we’re around 17 or so in 2010, and we’re on track. So, if you look at a number of
clock resets tied to equipment reliability, we’ve been gaining on that. The
number of trips in the last few years, over the last year or so we did obviously
have the tree trips tied to the tornado, but other than that there’ve been some, I’m
going to say, improvement potential in that, but we’re a long ways from out of the
woods. But we do have the indicators now that really track that overall
performance and the commitment from TVA. And our engineering staff is one of
excellence in equipment reliability, and that’s where our primary focus is. So with
that I’m going to turn it over to Bill for final comments.

BILL MCCOLLUM: Okay, thanks, Preston. So, Preston has tried
to go through and characterize a number of issues, some historical and bringing
it up to current time, and I want to put that in perspective. So, our commitment is
that we’re going to run nuclear right at TVA and that means several aspects of
the program have to be top notch. Preston talked a bit about the equipment
issues, specifically going back to the root cause of the LPCI valve failure, and
you heard discussion of a lot of work that went into the specific equipment failure
root cause, because it’s extremely important to us if we’re going to do this right,
that we have to have excellence in engineering. We have to understand exactly
when things fail, why they fail and make sure that our engineering is correct and
we had a good bit of back and forth with the NRC staff to gain clarity around
whether the engineering work that we were doing, the testing we were doing
made sense and explained the failure of the valve, or if there was information to
the contrary, that we heard that back and had that dialogue to get to clarity on the
work that we’d done on equipment failure. Having done that and having gotten
the information, and gotten a clear understanding of exactly what went on inside
that valve with the thread manufacturing that allowed the stem to pull loose from
the disk, we have come to clarity on that. We’ve moved on from that and so I
don’t want anyone to take away from the fact that there was a lot of back and
forth dialogue about the specific equipment issue that we are continuing to dwell
on that. That’s something that needed to be brought to clarity. It’s been done.
The discussion’s been had and we’ve moved forward, and learned from that, but
it’s important that we do the equipment work and the engineering right.

Likewise on the programs, you heard some discussion about
Appendix R, a program where we had historically not been as aggressive as we
needed to be to upgrade that program and we are moving ahead, not only with
taking actions now to reduce our probabilistic risk relative to fires under Appendix
R, but also moving forward to NFPA 805, which will implement as aggressively
as we can and we will take actions along the way to reduce and improve our risk
without waiting for the final resolution of all implementation of an NFPA 805 to do
that.

We talked about ASME IST, where again there was a lot of back
and forth dialogue with staff, and you heard about a generic issue that’s been
referred to ASME committee, because we believed to do this right, to do these
programs right, we need to have clarity around the programs, the requirements,
how you interpret them, how you apply it to specific situations in the plant. Have
we always done that right? No. So, we’re not being defensive about that. We’re
simply trying to make sure we have clarity about how to apply those programs
and make sure we do it right, and that’s our commitment going forward.

So, we have not done as well as we want to in the program area
and Preston outlined a lot of issues or examples of the things that we’re putting in
place to build stronger governance across the fleet, across all of our plants to
ensure that the programs are applied correctly, they’re implemented rigorously and there’s oversight, and questioning of people in the implementation and execution of this work so that we do the programs right. And then looking at corporate and broader issues beyond just Browns Ferry; Preston talked about resources that are being applied. So, we have a commitment to apply all necessary financial and personnel resources to the resolution of issues at Browns Ferry and across our fleet.

As you know, organizationally our efforts in terms of our operating plants and Preston’s organization are organizationally separate at TVA from our efforts regarding new plants at Watts Bar 2, Bellefonte, et cetera. So, those resources are not stretched in terms of trying to apply resources of one organization to both sets of those efforts. Preston has the resources that he needs and is free to ask for more resources, and has gotten as he mentioned, substantially more resources at Browns Ferry, in terms of both O&M capital expenditures, funds, personnel, not only for the teams and people who are addressing these specific issues with the 95003, NFPA 805, those sorts of issues, but in general and applying the maintenance resources that we need at Browns Ferry. That is our top priority to improve operation at Browns Ferry and apply the resources that we need, and if we need to pull resources from another effort within another part of the Tennessee Valley authority outside of nuclear, we’ll certainly do that and apply those resources whenever needed.

So, there’s also a commitment to excellence in operation and Preston outlined a structured approach where we have put a management model in place that provides for a rigorous oversight governance and execution and support model that starts with the corporate support and resources, and the
program definition, and rigorous application down through the execution of those at the plant, and provides independent benchmarking oversight, and questioning of the execution to make sure that we do that right. Has that all been put into place? Is it mature? Is it where we want it to be? No, but that is the model that’s being put in place and we have a commitment to continue to execute that. That comes all the way from the board of directors at the Tennessee Valley Authority and our board Nuclear Oversight Committee, through our chief executive officer, my boss, and from me down to the nuclear operation organization; so we do have efforts in place. We are seeing traction with those efforts. We have a lot of work to continue to do to get to where we need to be, but our commitment is to get there, and to get there rapidly. So, with that we will take any questions.

CHAIRMAN JACZKO: Well, thank you for that presentation. We’ll start with Commissioner Svinicki.

COMMISSIONER SVINICKI: Thank you for your presentations. I’ll start in the context of the Part 21 report TVA submitted. What, if any engagement have you had with other nuclear power plant sites, manufacturers, and vendors concerning this valve design and could you describe those interactions?

PRESTON SWAFFORD: Rob, would you do that?

ROBERT WHALEN: Yes, Commissioner. We have submitted that as mentioned in the licensee event report. We have had direct consultation with General Electric and the crane valve company that is the current owner of the manufacturing company that manufactured this valve, the Walworth Valve Company, back in the 1960s. General Electric has issued at least some documentation to all sites that they believe may have similar products and they
are following their General Electric corrective action process to our understanding.

COMMISSIONER SVINICKI: Okay.

PRESTON SWAFFORD: Questions also about interaction with --

ROBERT WHALEN: We have done benchmarking as part of our root cause with several other sites that have similar valves, not necessarily in the same application, but we are working directly with those facilities.

COMMISSIONER SVINICKI: Okay, thank you. Could you elaborate on the in-service testing interpretation issue that’s being handled more generically, specifically was your interpretation common to other TVA sites and from what you understand, was this interpretation more common in the industry?

PRESTON SWAFFORD: Specifically, we do believe it’s common in the industry, so there may be this generic issue at other locations. There’s two main parts of -- I mean part of it, the testing programs also include 89-10, we’ve already mentioned, where that was deficient in our program, but the other part of actually demonstrating that the valve operated while there’s quarterly requirements that actually go out and ensure that the valve stem moves up and down, and you get the proper light indications, and we were current with that. The other part I think is once I think every two year period you have to demonstrate that the valve would actually operate. Well, that was in ’09 when we did that program, when we did a full flow test and the valve opened. Now, it may have and our analysis now says that it was probably broken even before that in ’08 and in fact it probably did what our other analysis from California said it probably did, but in any event, we aren’t 100 percent sure that’s a true statement, yet more analysis has to roll into it. So, we were believing that we were in
compliance because we did the full flow test every couple of years and then we
did the quarterly operating of the valve stroke indication issue. So, we believe
that’s what the program required and we believed we were compliant.

However, there’s other words that I also say, that we have to -- for
the whole purpose of this is to assure the valve will do its safety function and
that’s the part where the normal means in the industry of doing this full flow
check and the quarterly stroke test is the typical means of doing that, but I think
we’ve discovered that may not be sufficient.

BILL MCCOLLUM: So, in other words doing the normal practice of
stroking the valve, verifying that it stroked and that you got flow may in this
particular case not have given you the confidence that the valve and disk were
not separated or were intact, and that’s an issue that needs to be driven through
in terms of okay, if in this instance that type of testing doesn’t give you the
assurance, then what sort of testing or provisions would you need to fulfill the
intent?

COMMISSIONER SVINICKI: Thank you, I appreciate that elaboration. As Victor McCree described, a safety culture assessment will now be conducted. How effective would a safety culture assessment have been in identifying the underlying issues at the heart of the RHR valve inoperability if a safety culture assessment had been conducted prior to this issue emerging?

PRESTON SWAFFORD: That’s a great question. I’m not sure I’m smart enough to answer it.

BILL MCCOLLUM: Yeah, so I think a couple of things we should talk about, one is that we regularly do synergy surveys, safety culture surveys,
that work is done and there’s opportunities to look at the cultural issues or
indicators, and relate those perhaps to execution of work in the plant.

Without being -- you know, I don’t want to be defensive and say
that culture doesn’t directly impact equipment operation, but I think in this very
specific instance of the failure, this LPCI valve, it’s you know, it’s difficult for me
to take culture and get it down to someone understanding the separation of this
disk and stem, because of an original manufacturing defect and the inadequacy
of the full flow testing that Preston was just talking about, to show that during an
in plant test. So, we’re going to continue that work. We’re obviously -- as part of
the 003, we’ll do an extensive safety culture review and draw all the threads that
we can from that to see how to improve our operation, but that -- making that
specific connection is really tough for me.

COMMISSIONER SVINICKI: Okay, well I appreciate that. I do not
interpret that as any defensiveness. I think it’s cautious to conclude that it would
be very difficult to sit here and draw a very firm line that a safety culture
assessment would have revealed this when again this is a very specific
equipment inoperability issue, and I think I asked the question from the
standpoint that the safety culture assessment cannot be expected or over-relied
upon to reveal you know, all issues. So, I appreciate your honesty in that
answer. I don’t interpret it as defensiveness and I think it reflects that there’s not
an over reliance on a safety culture assessment to reveal these issues. You
need to have, as you’ve described, a multi-pronged improvement approach and I
think you’ve testified to that here today.

Mr. Polson, I think that for you as a site vice president and any of
your peers, at other TVA stations and certainly your peers at other reactor sites
across the country do not want to find themselves sitting at this table, at this kind
of meeting. You’ve heard the NRC senior management presentations. You have
heard your own senior leadership describe the issues at heart here and the
improvement plan. What would you communicate to the Commission from your
perspective as someone who has an undivided attention, day in and day out to
Browns Ferry Units 1, 2, and 3?

KEITH POLSON: Well, what I’d like to communicate is I mean, we
take this very serious, not just myself, the entire site, our whole commitment is to
improve the plant. It’s not just to get through the inspection and get out of
Column I; it’s to improve this plant forever in its sustainability. So, it’s a huge
opportunity, albeit you know, it’s not the greatest thing to be at a 95003
inspection, but it’s getting me the resources and everything that I need to make
this you know, one of the best operating plants in this country and in the world.
So, that is the commitment that we have for my site.

COMMISSIONER SVINICKI: Do you feel that you’re fully
supported by the senior leadership of TVA and anything you need to make that
possible?

KEITH POLSON: Absolutely, and I have been in this situation
before at other troubled plants in the same position, and it was somewhat of a
battle, even though we knew we were in trouble, but to get the funding and the
resources. Here at TVA, anything that I need, I get.

COMMISSIONER SVINICKI: Okay, thank you, and a final specific
question for you or maybe for Preston, would you say that TVA has a clear
understanding of what the NRC will require of you in order to close out the
substantive cross-cutting issues
KEITH POLSON: Yes, I do. I mean if you look at it, it’s the
timeliness and it’s the thoroughness of the evaluations and it’s absolutely right.
There was a cultural issue that we have to break. I think we’re making progress
on that right now and so as issues come in and there’s multiple issues at nuclear
power plants you know, small to large. We’re handling even the smallest issue
with a huge sense of urgency and I think that the NRC will see what we’re doing
and then there will be a clear exit from there.

COMMISSIONER SVINICKI: Okay, thank you. Preston, did you
want to add anything to that?

PRESTON SWAFFORD: Well, I’ll concur with that. We have a
ways to go, but we’ve also put some programmatic things in place. For example,
around thoroughness of root causes and corrective actions. We’ve got
something called CARBS, or Corrective Action Review Boards, but we’ve also
instituted department level corrective action review boards. We’re putting more
rigor in the actual tracking systems, because that’s been a struggle for us and it’s
currently even a struggle in that corrective actions get illuminated into these root
causes and other tools, and then next thing you know we lose track of them or
we defer them frequently. So, part of what this is also doing is the sense of
urgency to drive to conclusion. So it’s one, is getting into the detail, knowing
what the root causes are, but then when you put your corrective action in place,
get after them and get them behind you, and given the resources necessary so
that the targeted part. We have a special team part of, Tim Cleary, sits behind
me is the vice president, is a direct report to me. He’s specifically heading up the
003 inspection, even though Keith has to own it, it’ll never work unless the site
VP is front and center on it, but I also need him very much to pay attention to
three operating units. So, the creation of the position for Tim is to also build the
necessary staff around him to ensure the sense of urgency comes through and
that we’re actually following up on all the corrective actions and the detailed level
around our go forward.

COMMISSIONER SVINICKI: Okay, thank you. Thank you.
CHAIRMAN JACZKO: Commissioner Apostolakis.
COMMISSIONER APOSTOLAKIS: I’d like to continue along with
some or one of the questions from Commissioner Svinicki. I understand you are
doing now a safety cultural assessment, or you have somebody else doing that?
PRESTON SWAFFORD: Yes, sir.
COMMISSIONER APOSTOLAKIS: Is this the first time you are
doing -- such an assessment?
PRESTON SWAFFORD: We did one for the 002, but it’s not to this
scale. We had been using Synergy, which also gives a barometer of the safety
culture at the site and so this will be substantially more. There’ll be a lot more
one on one discussions. The rigor in it will also get input from NRC and their
expertise to make sure that we only do this one time and the one time we do it is
effective.
COMMISSIONER APOSTOLAKIS: Now, this is being done by
some outside --
PRESTON SWAFFORD: By a third party, independent.
COMMISSIONER APOSTOLAKIS: Now what does it entail? I
mean do they come and ask your employees or are they looking at data also,
past performance? I mean there isn’t such a single thing that we call safety
culture or a single way of doing it, and how much confidence should we place in
it?

PRESTON SWAFFORD: There’s a questionnaire. It has substantial industry data input, so they believe it to be a highly effective predictor, the third party firm that puts it together, but also for the magnitude of this, there is going to be a fair amount of kind of one on one discussions to add more input to the conclusions of it. I can’t -- I’m not the expert. Maybe Rod, I’m not sure if you had – this is Rod Ketcher, Vice President of Licensing.

ROD KETCHER: It will be as Preston said. First, we did the survey, which we’ve just completed. Then there’ll be extensive interviews, and then there’ll actually be observations made of plant staff performing their activities.

COMMISSIONER APOSTOLAKIS: But presumably -- I mean on Slide 7, you say there was a long standing culture of taking a minimalist approach to problems. If I were to ask an employee are you taking the minimalist approach, he would say, “No.” I don’t think anybody would agree that they’re taking the minimalist approach, so I don’t know what the value of surveys is. Is there something I’m missing there?

ROD KETCHER: I think that you’re right in the sense that you’re not going to get the answers just from the survey. A lot of it comes from the interview. So, I just had my interview and during that interview we in fact discussed this issue of a minimalist approach, and so you have now people, newer people who are brought into TVA, who are looking at the situation, seeing it in a different light, and in that way I think they’ll be able to get to a broader view of --

COMMISSIONER APOSTOLAKIS: So there’s more to it than just
surveys, yeah -- that’s a good point. Now, staying with the same subject, the
longstanding culture, why was it longstanding? Nobody figured that there was
something -- a problem there or --

PRESTON SWAFFORD: Well, I believe it has to do with, I’m going
to say, the autonomous site and because if you will, you drop a site vice
president in there, you have one person trying to change whatever the culture is
and at Browns Ferry because of their history and the different material condition
issues, I think you could conclude that that culture isn’t to the highest degree and
highest standards that we’re looking for. Yet you couldn’t necessarily draw that
same conclusion to the other sites because, again, they were autonomous, and
so however they started up the strength of certain vice presidents and duration
and those sorts of issues are all parameters. But I do know, going forward, the
central approach with a very strong central governance model with programs,
processes, and procedures starting from the hub will affect that outcome even at
the hardest of plants because of the degree that we do self assessments, probe
our morning calls every morning where the plants do more than just talk about
status. We talk about human performance and equipment issues, those sorts of
things -- are all mechanisms that the central corporate group has to their
disposal, if you will, to see if they’re aligning with us or if they’re drifting to a
different direction and I’m strong enough, if you will, and perceptive enough to
realize those that are kind of drifting off the reservation and those that are staying
fully supportive. So I think the model eventually is going to turn that culture and
it’ll have it, not completely, but mostly similar to the other two sites and will be
one fleet in behavior.

COMMISSIONER APOSTOLAKIS: Thank you. On Slide 4, you
say that TVA identified a number of factors that mitigated the safety significance,
but the NRC did not accept those, which brings me back to my earlier question to
the staff. What is the number that they produce -- the significance determination
process produces, in this case, 7 times 10 to the minus 4, what does it
represent? Does this number allow only the inclusion of events that have been
proceduralized, and ad hoc actions are not allowed? Is that the way the SDP is
structured?

PRESTON SWAFFORD: By and large, I believe that's true.

COMMISSIONER APOSTOLAKIS: Now, if you were doing -- I
don't know, maybe you have done it already, but if you had included those
factors, would that 7 times 10 to the minus 4 be reduced significantly?

PRESTON SWAFFORD: No, it would probably have been "Green".

COMMISSIONER APOSTOLAKIS: It would still be "Red".

PRESTON SWAFFORD: No, it would have probably been "Green".

COMMISSIONER APOSTOLAKIS: So it would have been
reduced?

PRESTON SWAFFORD: Yes.

COMMISSIONER APOSTOLAKIS: By ad hoc actions, do you think
it would go down by --

PRESTON SWAFFORD: Well, I mentioned earlier, for example,
operator actions, the NRC could not credit us with the --

COMMISSIONER APOSTOLAKIS: I understand that, yeah.

PRESTON SWAFFORD: But you would have credited, there were
so many other ways to get water into the vessel that, in fact, from a PRA
standpoint, that value would have been substantially less risk, let's say.
COMMISSIONER APOSTOLAKIS: Rather interesting operation.

ROBERT WHALEN: Yes, Commissioner. The NRC significance determination does really center on the operator actions that would be required based on our legacy self-induced station blackout approach. And each of those actions had to be treated. In their review of scenarios, a human error aspect with each of those had to be summed in that process. And that really drove their analysis of the issue.

COMMISSIONER APOSTOLAKIS: How much would you have reduced it, an order of magnitude?

ROBERT WHALEN: It really hinges on the human error aspects of all those actions and the fact that we had that SISBO approach built into our procedures. And we recognize that that SISBO approach is not appropriate. We are working vigorously to implement NFPA 805 and go away from the SISBO approach. In fact, as Mr. Swafford has mentioned, we have taken interim actions to pull forward modifications from the NFPA 805 work to reduce risk. We have put in alternate pathway options into the procedures. We have also, for the highest risk areas in the NRC Significance Determination being the turbine buildings, we have eliminated the SISBO strategy by installing new fire barriers. We have installed various modifications, circuit modifications, incipient fire modifications and such as well.

COMMISSIONER APOSTOLAKIS: So, there are two issues that come to my mind after your response. Clearly, the model one uses for estimating human error probabilities would be very critical in this case.

ROBERT WHALEN: Yes, sir.

COMMISSIONER APOSTOLAKIS: And, again, there is a number
of models out there one can pick and choose. Our staff has been working on
trying to come up with EPRI and other organizations, to come up with a single
model or maybe one of two models that would be acceptable to everyone. And I
think this situation reinforces the point that we really have to do that. The other
point is when you switch to -- transition to NFPA 805, then everything I
understand from that point on related to fire protection would have to be risk
informed. And would that allow you then to use ad hoc operator actions in that
case? It would be different from the SDP, the Significance Determination
Process?
ROBERT WHALEN: For our NFPA 805 transition, we are right now
nearing completion of the fire PRA, and we’re following that transition process.
In parallel with that, we are pulling forward modifications that are indicated by
that transition, doing them ahead of time, if you wish, in order to reduce the risk.
Because we did not have a fire PRA, the NRC, in doing their significance
determination, had to develop a spreadsheet model and develop --
COMMISSIONER APOSTOLAKIS: One last question. I’ve heard
over the years complaints that one problem with the ROP is that it is risk
informed in many ways but also it is in very significant ways risk-based in the
sense that there is a point number, a point value that is produced -- in this case,
7 times 10 to the minus 4, and the fact that there is uncertainty about that
number, it really plays no role. So in that sense -- and 7 times 10 to the minus 4
clearly is about the threshold of 10 to the minus 4, but what if it were 1.5 times
the minus 4 or 2 times 10 to the minus 4, how much confidence would one have
there that it’s "Red" versus another color? Do you think that’s something that
needs to be corrected, that it’s too much based or focused on point values?
BILL MCCOLLUM: I'll say this example is probably a tough one to deal with for the staff as well as licensees because, as Rob said, if you were to credit some of the other actions that could have been taken, the risk doesn’t just change a small amount; it changes dramatically. So, you’d go from "Red" to "Green". And so it’s -- you use a -- you can use a point value or you can take some opportunities or look at some opportunities that dramatically change the risk. And that may be a hard one to deal with within the ROP process.

COMMISSIONER APOSTOLAKIS: But maybe the dramatic reduction is due to the fact that we're using point values. Maybe with an uncertainty analysis, you wouldn’t see such a dramatic shift. I don’t know. I don’t know. I'm just speculating myself, but it seems to me that's a weak point, not in this particular case. But anyway, thank you, Mr. Chairman.

CHAIRMAN JACZKO: Commissioner Magwood?

COMMISSIONER MAGWOOD: Good morning. You know, I've participated in a few of these types of meetings, and I've concluded that in large respect, they’re pass/fail meetings for the licensee. And it’s not that hard to pass. I mean, basically, all you have to do is say “We understand, we get it, we’re changing.” I mean, that’s pretty much all you have to do. Now, of course, you have to mean it, and we have very good staff who will make sure that the commitments you’re making at the table today are carried out.

In that respect, I do appreciate the detail and the comprehensiveness of your presentation Mr. Swafford. I thought you covered a lot of ground and did it very well. And I appreciate both the details and also the broader perspective. And I also appreciated Bill McCollum’s follow-up where you made a reference to, I think you said the back-and-forth between TVA and the
staff on a variety of issues, but your point was that, you know, we’re moving beyond that. We did it and, in fact, we’re going forward.

However, I was looking at your June 8, 2011 letter -- June 11, excuse me -- which wasn’t that long ago. And I wanted to just sort of read a few things and I just ask you to, with today’s perspective that you’re bringing to the table, sort of give us your thoughts about what you’re -- about where you are today with this. The letter, which I don’t think is actually -- I think Mr. Swafford, says, and I’ll just quote a few things here. “…the actual cause of the failure was found to be manufacturing deficiency, i.e. undersized threads in the disc skirt which resulted in axial separation of disc from the disc skirt/stem assembly… Because TVA could not have reasonably identified the manufacturing deficiency, no licensee performance deficiency existed…TVA considers that Browns Ferry’s IST program and its implementation are in compliance with Section ISTC 4.1 of the O&M code as it’s understood by TVA and many others in the industry, and that no licensee performance deficiency related to IST was related to the valve failure.” And you’ve spoken to this a little bit, but let me give you my perspective, I’m going to ask you to get me your current thinking about this.

When I first heard about this and the staff briefed me on this, obviously, there was concern, an important issue. But I was actually more concerned with TVA’s response to it quite frankly, and this still remains somewhat concerned because, to me, what this says is it wasn’t our fault. And I -- I guess in a very broad sense, it’s my feeling that if you operate a nuclear power plant, you can never say it’s not my fault. And I wanted to hear from you today whether, you know, we’re ever going to hear from TVA again, whatever the circumstances are, that it wasn’t your fault, it was the manufacturer’s fault, it was
ASME’s fault, it wasn’t our fault -- we only operate the plant. So let me give you a chance to respond to that. Because that actually, in this whole instance was the thing that concerned me most.

BILL MCCOLLUM: Yeah, so let me start and I’ll Preston jump in, too. The letter doesn’t say that it’s not our fault. It’s our responsibility to make sure that the equipment operates correctly, that the programs are implemented correctly, and the letter does not anywhere say that it’s not our responsibility or not our fault. The term performance deficiency is a specific term of ardor in regulatory space, has a particular meaning. And so the -- our intent, again, was to make a choice between simply accepting assertions without enough dialogue to make sure that we had really driven out clarity on how the staff saw the specific failure causes of the LPCI valve and how the staff would see what good implementation or effective implementation of the ASME IST program would look like, a choice between accepting with less dialogue or pushing the envelope to drive more dialogue and more clarity on those issues. And that was the choice that we made. Could we have worded the letter differently and been more clear about the intent and that sort of thing? Certainly we could. But our intent was not to say that we didn’t have responsibility. It was to say we owe it to ourselves and the rest of the industry to drive this dialogue further to make sure that we’re really clear about how we see this valve failure and how we see the implementation of the testing requirements being played out. Preston?

PRESTON SWAFFORD: I want to add a little point is that we did believe that the performance deficiency is tied to the conclusion of a "Red" finding and that needing to get the proper performance deficiency nailed would be critical for our success path even out of the 95003 inspection. And when we
reviewed the specific "Red" finding, the IST portion of it, we thought we were in line with the rest of the industry, not that that valve hadn’t separated and not that the valve didn’t have significant safety significance to it. It’s just that before we launch a whole team and move forward, plus the ramifications on the industry, should that not be clarified, was a concern. And I had multiple discussions with the folks around that. So that all combined was the reason that let’s get clarity around the performance deficiency so we can fix the right thing and also not ratchet the whole industry into something that may not be germane to them but you need programs like the 89-10 program is an example.

COMMISSIONER MAGWOOD: Okay, let me -- I understand what you’re saying. I understand what you’re saying. But I hope you understand what I’m saying as well, that, you know, that what I do hear you saying however, is that you are taking responsibility.

PRESTON SWAFFORD: That’s correct.

BILL MCCOLLUM: Absolutely.

COMMISSIONER MAGWOOD: That it seems to me that for any of the operators, you’re going to run into situations where you’re going to have manufacturing issues, you’re going to have IST issues, but at the end of the day, it’s got to be -- it has to be the people at this table that take the final responsibility. And so I -- and I recognize how the process works. You know, you get a letter from NRC, you have to write a letter back. You have to push back. But, you know, I think that, you know, when you think about the people we all serve at this table, the public, I think it would be disturbing for the public to think that the operators of nuclear power plants every had situations where they would sort of simply, you know, sort of pass the buck. You know, I know you’re
not saying that, but let me just say that’s certainly the impression one gets from reading that letter.

PRESTON SWAFFORD: We definitely are not -- in fact, the whole team, nuclear professionals don’t operate well by passing the dollar. And we have to own it first-person, and the chair -- or the Senator the other day asked who was the head on top of the totem pole, if you will, that owns this, and it was very clear that Preston Swafford does, chief nuclear officer. We don’t pass the dollar here.

COMMISSIONER MAGWOOD: I appreciate that. Let me ask a more detailed question. I was talking with the staff about why the -- some of the motor operator valves were left out of the IST program. Can you talk a bit about that? Why were some of these valves outside the program?

PRESTON SWAFFORD: We -- and what we’re, I think, mainly talking about is the 89-10 program specifically. For example, this valve was in the IST program. We did the flows. Checking thee quarterly strokes, but it was not in the 89-10 program. We had removed it and submitted essentially documentation to the staff to get it removed from the program. Since our own internal root cause and evaluation, I think some of the information we submitted was not correct, so the basis for what we were concluding -- this was in 1997 -- to have this valve removed from the program was not based on -- I’m going to say quality engineering and development. So, what we’re looking at is those valves that got pulled out, what was the justification for that, was there rigor in that or not, and then taking corrective actions appropriately, not just at Browns Ferry, but any potential at the other two sites as well.

COMMISSIONER MAGWOOD: Okay, good, so that -- this is a
fleet-wide activity.

PRESTON SWAFFORD: Yes, it is.

COMMISSIONER MAGWOOD: Great. And just finally, I heard your conversation with Commissioner Apostolakis about the SISBO strategy, so my understanding is that you are moving away from that. You’re relying on NFPA 805 as the mechanism to get you there.

PRESTON SWAFFORD: That’s correct. Upon starting up Unit 1, there was substantial dialogue between the Commission and TVA on that. For whatever reasons, we chose not to commit to NFPA 805 within the window, if you will, that in retrospect was not in our best interests. But nonetheless, that’s the way that went. But since two and a half years ago when we committed to NFPA 805, we’ve been diligently working to get out of SISBO. We’ve been doing the plant mods and like the engineering VP had mentioned, Rob, we’ve already done substantial enough work in the turbine building such that the SISBO logic for applicability there is no longer required or won’t be shortly upon completion. So, the other plants have SISBO but most of them took a little bit different attack in that they did detailed analysis of cabling, cabling routing, and knew the outcomes of it, where we essentially just took the SISBO position and didn’t do a lot of that analysis, so our ability to, one, minimize operator manual actions and as well as to be able to, if you will, target the utilization of the SISBO logic to a much narrower band was not accomplished. And therein lies where our goal forward is. And we do expect over the next year to essentially have submitted our LAR and --

COMMISSIONER MAGWOOD: What about the other plants in the fleet? Are you expecting to --
PRESTON SWAFFORD: Those plants are designed. They’re much newer. And when I was talking other SISBO plants, they’re not our other two plants. They are, I think, four or five other plants that have a self-induced station blackout as a liable mechanism, but their programs, I’m not trying to indict them. They did many other things through the years that Browns Ferry did not do. But our Sequoyah and Watts Bar are much newer design. They have a lot more Appendix R codes fully implemented at the stations, and their manual actions are substantially less. But we are still looking at NFPA 805 as a potential option or some hardening, if you will, of our Appendix R actions on those plants as well.

COMMISSIONER MAGWOOD: Okay, thank you. Thank you very much.

CHAIRMAN JACZKO: Commissioner Ostendorff?

COMMISSIONER OSTENDORFF: Thank you, Mr. Chairman. I appreciate the candor of your presentations today. And I want to bore down on a topic that Commissioner Apostolakis broached in his questioning. Mr. Swafford, that goes to Slide 7. I’m really struck, I mean, thinking about this -- your slide, and I appreciate the openness of it. It says “long-standing culture of taking a minimalist approach to problems that adversely affect equipment reliability.” And we’re all creatures of our own experiences and I’m just struck by my experience in the nuclear Navy. Twenty-five years ago when I was engineering an old Westinghouse attack submarine, I had a very similar problem to a separated stem disk assembly and a reactor plant valve. I won’t go into details. Those remain classified. But I’m struck by the material issue here but also the broader implications of your statements.
So I’m going to shift away a little bit from this particular LPCI valve and talk more about the overall history of the equipment reliability and maintenance practices that Unit 1 or across the entire TVA fleet. And when I go back to the slide, “there’s a long-standing culture,” I have to say, well, whose responsibility is it. At what level of the organization have decisions been made to not properly maintain or perhaps to -- you know, you acknowledged I think Rick Croteau’s comment about broke-fixed, but at some level in the organization, irrespective of how well your program is set up on paper or what kind of resources you provide, it’s the execution of that program in day-to-day operations or during an outage, it’s the execution on the deck plates that really drives the equipment status of your plant.

So can you comment a little bit about, you know, where in the organization is the culpable group or line of management or line of operators or an engineering QA, site VP, I don’t know. I’d be interested in your perspective because to me, that’s a -- you made a very interesting statement here on Slide 7.

PRESTON SWAFFORD: Well, I -- you know, I’ll just tell you that it almost always starts at the top. I mean, people emulate their bosses, and you can’t necessarily get to that point in three months, but enough time, people will emulate their bosses. They will do what they think their boss needs done. So when you are bypassing excellent equipment reliability standards as terms of how do we get it fixed and keep the plant up at 100 percent power or how do we do whatever, people will read that and then they’ll multiply it times 10, so to speak, and that if I -- if the plant was ever denied an activity, we have several components. For example, I mentioned some of these pumps, we’ve got to procure, some we’ve already done.
But it’s more than that. We had traveling screens for example that we send divers down and fix, right. But today the leadership is -- we’re tired of that, right. We need to do whole hog, pull the whole screen modules out, try to replace them. So it starts, I think, with the top and that they have to read from me is that we’ve going to take the hit on this is not about just getting by anymore. We have to fix it and fix it right. And then you put in place people like Don Jernigan and Keith Polson who have completely signed up for that model. Now these plants have been allowed in certain cases to decay. I mean, there’s a lot of focus on starting up Unit 1, maybe not as much focus on Unit 2 and 3. Three units by themselves are a unique beast in themselves and takes a lot of extra leadership, attention, and organizational strength to get through it all. But it’s also a powerful organization that once it turns the ship and starts moving forward, they can probably accelerate that recovery from that culture.

So it starts with the top planting a very clear picture. We’re going to have central governance. We’re going to have the best standards. We’re going to have check and balance organizations in place. We have the key metrics, and then we’re going to fully fund and staff. And then from there, we’re going to look at performance, check and adjust as we go forward. And eventually, the culture will revive to that of this is the new standard, this is what they mean, and this is what we expect to have happen. So we’re a little bit of “trust me.” We’re kind of early in it so I can’t tell you we’ve arrived, but I do think the foundational things that have been put in place the last few years are starting to see signs.

I'll give you one other little tidbit of this strength of the governance model, and there have been several at the station. But the one most notably is these two recirc pump motors I mentioned that were seven years past their O&M
minimal. Now, maybe they would have lasted longer. I don’t know. But they were scheduled, and the engineering staff wanted them changed out, and the site ended up, for whatever reason, deciding they wanted to defer them. But the governance model went down to the corporate VP of engineering, he came in my office and he says, “That’s unacceptable. We cannot go another outage without changing those motors and getting them back in interval.” So we changed them out.

But we also are blessed with the power service shop in Muscle Shoals, Alabama that does detailed motor overhauls including recirc pump motor site overhauls. And they tore that -- one of the two down for us and found that it was imminent failure, right. So those standards resonating through the whole site that there’s a new sheriff in town and that we’re not going to live with and tolerate these types of material condition issues has been a big boost for us.

COMMISSIONER OSTENDORFF: Now, let me stop you because I want to make sure because you say top, I want to clarify that. Is the top the CNO, is the top the site VP, is the top engineering? Does it depend upon the issue? I’m trying to understand what autonomy does the site have as far as making a decision to defer maintenance or not. Or is this a decision that’s kicked up to corporate?

PRESTON SWAFFORD: The site can choose to do that, and they have a rigorous process that they go through. But from time to time, they may not make the right call, but we, for example, have a corporate outage planning challenge meeting, for example. And my engineer and his staff from corporate come in and they talk about all material that’s in the outage and all the material equipment issues that they have moved out of the outage. And so, we do a
detailed list of any work order that’s not in the outage and what was their rationale for choosing to push it out. So it is a barrier that we have put in place in the last two years to actually look at this to help the site make the overall right call. Because there’s pressures on them, even though we supported them adequately with resources, there’s no such thing as unlimited money. So you still have to prioritize. And if they end up making the decision that isn’t in the best interest of TVA, I feel good that we’ve kind of now have a plan --

COMMISSIONER OSTENDORFF: I’m going to cut you off there. I want to go to another question. I want to ask this question to Mr. Polson. I just couldn’t help this because of time considerations here. I want to talk about monitoring of maintenance to ensure proper maintenance procedures are followed quality assurance practices, proper materials certification of materials that are used. Let’s say you’re repairing a valve or you’re swapping out a circuit breaker or replacing a seal ring on a pump. Can you talk a little about what happens at your site with respect to ensuring that maintenance is monitored by management or by other -- whether it be by your site management or by corporate?

KEITH POLSON: Yeah, well, there’s several different things that we have. First of all, we have a quality assurance program. And depending on which equipment you’re working on, that dictates --

COMMISSIONER OSTENDORFF: Oh, let me refrain this real quick because I have limited time. I’m only talking about maintenance monitoring by people who are not directly responsible. You know, usually you have a worker person and then -- I’m using my Navy experience -- and then a quality insurance inspector. So people who are not directly responsible for doing the
work but I use the phrase “command monitoring,” or leadership monitoring, however you want to look at it from TVA’s perspective. I’m interested in how do you -- how do you understand as a leader of the organization that your maintenance is being conducted properly?

KEITH POLSON: So, we have an observation program. We’re required to do four observations per month. And that’s senior managers all the way down to first-line supervisors. And then what we’ve also implemented over about the past year and a half, we call it “a day in the plant” where I’m required to take a whole day where I’d put on jeans and I go out in the plant, and there’s specific maintenance activities that I monitor that whole day. And then the next day when we have -- we have what we call a “Plant of the Day Meeting.” It’s a senior leadership meeting. And then there’s a report-out. So myself, my direct reports, plant manager, direct reports all participate in that program. And that’s on a daily basis that we do that.

COMMISSIONER OSTENDORFF: Okay. And then how about the corporate side now, Mr. Swafford, in the analogous-type process that you guys have to kind of take the pulse of how maintenance is being performed or -- go ahead.

ROBERT WHALEN: We now have corporate component engineers in the corporate liability department. If there is a plant issue with a pump, we have a pump component engineer. He gets dispatched to go be hands in the field and make sure the right parts are being used, are we digging into it deeply enough, similar turbine-type activities -- AOVs, MOVs, to be more rigorous on troubleshooting, root cause, corrective action in the field.

PRESTON SWAFFORD: An example that I think is pretty powerful
here is we did put a pump, a rotating equipment component player in corporate.

And I believe he was instrumental in our HPSI system that was mentioned by the group before us, Victor's team, is that we still had some safety system performance issues and we've been gaining on them, but the HPSI has been an issue that we've struggled with at the site for quite some time. During the startup with Unit 1, the craft, if you will, put a bearing in backwards, one-half of a bearing in backwards, and the plant -- and the HPSI system has run. It's always been a little bit in the alert, but with the addition of this new component engineer looking at that pump performance, said something's not right, went down to the station and asked the site vice president to take it out of service because we just needed to find out what was going on. And they discovered that there was an original installation issue wrong with it. So that's one of some of the checks and balances, but it's also real-time engagement with the site and specific component competency.

COMMISSIONER OSTENDORFF: Thank you. Thank you, Mr. Chairman.

CHAIRMAN JACZKO: Just one comment I'll make and then I did just have a question, but this issue, and I don't mean to belabor this point on the risk significance. But TVA did make a comment that they believed that the risk would be "Green". The staff did do a detailed analysis, and I know maybe, again, at the technical level there may be disagreements, but the staff -- the conclusion of the staff in the final notification on the "Red" finding did indicate that even if they took into consideration the operators taking action, they'd modeled that through -- well, they did sensitivity analysis, and sensitivity analysis showed that the overall risk would be reduced by a factor of eight. And this is not a sufficient
enough reduction to have changed the significance of the finding.

In addition, they looked at control building fire scenario which had not been evaluated in these -- the phase 3 risk models to get to the phase 3 after they do the initial screening. And that based on that, that the using this risk contributor which was not even in the original -- that would add an additional five times 10 to the minus five to the overall risk impact to the valve failure. So, their conclusion is based on our review and the aforementioned factors are considered either collectively or individually. And those are including the control building fire scenario risk and the potential for operation action to use alternate cooling methods. The lower bound of risk for the valve performance deficiency remained greater than one times ten to the minus four.

So, again, I appreciate that your position was that it was "Green", but the factors that you had considered as mitigating the staff did analyze, and based on the staff's analysis, it did not change the outcome nonetheless of the findings. So, that was actually, as I was visiting the facility, was something that was of significance to me, you know, as I recalled that. So, and I mean, this, regardless, I think, was a significant event regardless of how what non-proceduralized actions were taken that we still would have seen something, at least according to the staff's analysis, above the "Red" or at a "Red" finding.

The one question I wanted to ask, you know, we’ve talked a lot about -- and there have been some good questions from my colleagues about, you know, how you’re managing this activity, how are you doing all this -- but one of the things we haven’t touched on is all the things unrelated to addressing the deficiencies that lead to the valve failure. For instance, there’s activities with the power uprates ongoing. I believe we may have finished our reviews on those.
I’m not sure where we are. I’m looking for somebody who might know. But I believe at least for one of the units, we’ve completed our assessment. Have you given any thought to postponing those activities, any mods or that you would need to make in the plant pending kind of the get well program showing some signs of progress? Or will you kind of continue with those activities as well? What’s your plan for that?

PRESTON SWAFFORD: Two points is like the EPU is an example. One of the things that Bill had mentioned on his opening remarks is how we were organized and that from the beginning that it was recognized that we had a lot of work to do for our fleet, specifically Brown’s Ferry. So major projects like the EPU project was taken off of my plate and given to a counterpart of mine who also is responsible for the construction of Watts Bar 2 and the steam generator replacement that’s coming up on Sequoyah. So these are very large projects that could be very large distracters to me and have been afforded the staff, if you will, to take that off, and they report directly to Bill. So the EPU is one that I believe, for the most part, we’re on hold until the regulatory framework is well enough understood so that we don’t waste the energy, if you will, especially the distraction to Keith and his team until that road is really cleared. But maybe Bill?

BILL MCCOLLUM: Well, and we make a specific decision too, because there were obviously regulatory issues in the timeline of the EPU was uncertain. We made a decision to essentially break apart two aspects of that. One is regulatory approval of an extended power uprate. The other was all the equipment work that would be associated with an uprate, and we decided that it made sense to proceed with the equipment work at Brown’s Ferry because it
helped us to deal with some of the issues that we talked about earlier, upgrading pumps, upgrading equipment, gaining more margin on the secondary side of the plant or the balance of the plant, that sort of -- so that seemed to be beneficial to Brown’s Ferry in terms of dealing with equipment margin, plant operation; and we funded and proceeded on with that work, independent of the licensing work to raise the license power level. And so that effort is basically on hold until we do more work to improve performance at Brown’s Ferry.

CHAIRMAN JACZKO: Well, yeah, and I appreciate that. And that was really more my issue. You know, obviously -- well, you can separate the licensing perhaps. You can’t separate the plant, so to speak, and those equipment changes and modifications if they weren’t necessarily having a direct safety impact could be a distraction to maintenance, could be a distraction to operators as they deal with those different issues. So, it’s good to hear that that is a bit on hold then until some of these issues get resolved. I think that seems to be a decision in the best interest of safety, so.

Again, I appreciate your presentations. Victor and his team, I think, have done a good job of communicating to you all what our expectations are. They obviously have the primary lead in working to get our kind of inspection and our assessment in a place where we can give you good information and they’ll continue to do that as we go forward with their continued 95003. You know, I certainly encourage you to work expeditiously to resolve those issues and to ultimately let us wrap up that in an affirmative way. So, I know they’ll continue to ask all the right questions and tell you what you need to hear. And I think as long as everyone’s committed to the same goal, which is a safer operation at Brown’s Ferry, I think we’ll get there. So, thank you very much for being here.
[Whereupon, the proceedings were concluded]