



Tennessee Valley Authority, 1101 Market Street, Chattanooga, Tennessee 37402

August 9, 2013

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Regional Administrator, Region II  
U.S. Nuclear Regulatory Commission  
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245 Peachtree Center Avenue, NE, Suite 1200  
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Browns Ferry Nuclear Plant, Unit 1  
Renewed Facility Operating License No. DPR-33  
NRC Docket No. 50-259

**Subject: Commitments Related to the Browns Ferry Integrated Improvement Plan**

- References:**
1. Letter from the Nuclear Regulatory Commission (NRC) to the Tennessee Valley Authority (TVA), "Final Significance Determination of a Red Finding, Notice of Violation, and Assessment Follow-Up Letter (NRC Inspection Report No. 05000259/2011008) Browns Ferry Nuclear Plant," dated May 9, 2011
  2. Letter from TVA to NRC, "Appeal of Final Significance Determination of a Red Finding and Reply to a Notice of Violation; EA-11-018," dated June 8, 2011
  3. Letter from TVA to NRC, "Revised Reply to Notice of Violation; EA-11-018," dated March 18, 2013
  4. Letter from TVA to NRC, "Integrated Improvement Plan Summary," dated August 23, 2012
  5. Letter from TVA to NRC, "Preparedness for Nuclear Regulatory Commission Inspection Procedure 95003," dated February 15, 2013
  6. Letter from NRC to TVA, "Browns Ferry Red Finding and Notice of Violation," dated August 16, 2011

The purpose of this letter is to submit commitments to the Nuclear Regulatory Commission (NRC) associated with Tennessee Valley Authority's (TVA) continuing efforts to improve performance at the Browns Ferry Nuclear Plant (BFN). The commitments in this letter are specific to certain actions in the BFN Integrated Improvement Plan (IIP).

In Reference 1, the NRC notified TVA that they had assessed the performance of BFN, Unit 1, to be in the Multiple/Repetitive Degraded Cornerstone Column of the NRC's Action Matrix (i.e., Column 4) beginning in the fourth quarter of calendar year 2010. This assessment was based on the Notice of Violation issued for failure to establish adequate design control and perform adequate maintenance on the Unit 1 outboard low pressure coolant injection (LPCI) valve,

1-FCV-74-66. The degraded condition of this valve led to the residual heat removal system loop II being unable to fulfill its safety function. Subsequently, in Reference 6, the NRC concluded that it was appropriate to provide the more broadly stated performance deficiency as the failure to establish adequate programs to ensure that motor-operated valves continue to be capable of performing their design basis safety functions. This was done to ensure a comprehensive evaluation and corrective actions by TVA for the LPCI valve failure.

As described in References 2 and 3, TVA has conducted extensive reviews, assessments, and causal analyses using insights and guidance from NRC Inspection Procedure (IP) 95003, "Supplemental Inspection for Repetitive Degraded Cornerstones, Multiple Degraded Cornerstones, Multiple Yellow Inputs or One Red Input." These reviews, assessments, and causal analyses were performed to understand the underlying issues associated with performance at BFN and to guide efforts and development of actions to achieve sustained improved performance and reduce risk.

In Reference 4, TVA provided the NRC staff with a copy of the BFN IIP Summary. The IIP Summary described the approach that TVA is using to guide station efforts to improve performance at BFN to sustainable levels of excellence and to reduce station risk. The IIP Summary provided an overview of the diagnostic evaluation process used for identifying the underlying fundamental problems contributing to the safety culture and operational performance issues. The summary also discussed the process for identifying the key actions and listed performance monitoring indicators used to assess the effectiveness of the implemented actions. The summary further described how any future events or newly identified conditions would be expeditiously evaluated and incorporated into the corrective action process. Finally, the IIP Summary included the criteria that TVA established to determine readiness for NRC's 95003 supplemental inspection.

In Reference 5, TVA informed the NRC that BFN's performance sufficiently satisfied the IIP Summary inspection readiness criteria and that TVA was prepared for the 95003 supplemental inspection. The NRC completed the onsite portion of the 95003 inspection in May 2013 and conducted an inspection exit meeting on July 11, 2013.

Subsequent to the inspection, TVA developed a number of additional actions to continue the performance improvement achieved to date through implementation of the IIP. Additionally, actions have been developed to further ensure the effectiveness and sustainability of the performance improvement. These additional actions are being tracked through the corrective action program and have been added to the IIP.

TVA is committing, by this letter, to complete a specific set of actions in the near term referred to as Tier 1 actions. These actions, which are identified below and detailed in the Enclosure to this letter, will be completed by the dates specified in the Enclosure. These Tier 1 actions, when completed by TVA and subject to successful inspection by the NRC, can reasonably serve to inform NRC's decision making regarding closure of the Reference 1 Red Finding and the transition of BFN Unit 1 out of the Multiple/Degraded Cornerstone Column consistent with the NRC's Reactor Oversight Process.

TVA is also committing to an additional set of actions referred to as Tier 2 actions. These Tier 2 actions, which are identified below and detailed in the Enclosure to this letter, will be completed by

the dates specified. The Tier 2 actions are focused on ensuring sustained excellent performance and the achievement of the long term success criteria described in Section 8.0 of the Reference 4 IIP Summary. The completion of the Tier 2 actions will be subject to a rigorous series of internal TVA reviews as discussed below.

### Tier 1

- Safety System Reliability Plan (SSRP) - TVA commits to complete the SSRP work scheduled to be completed during the fall of 2013.
- Work Management Process - TVA commits to demonstrate that worker and supervisor behaviors supporting implementation of the work management process show improvement.
- Procedure Upgrade Project - TVA commits to develop and implement a Procedure Upgrade Project that will include interim actions, use a risk based approach to upgrading procedures, and be supported by a training program to address common error traps and reinforce clear standards of procedure quality and use.
- Verification Program - TVA commits to develop and implement corrective actions to verify that Human Performance Procedures accurately describe Peer Check, Concurrent Verification, and Independent Verification techniques.
- Corrective Action Program (CAP) - TVA commits to complete the actions necessary to support the NRC's inspection of the H.2(c) substantive cross-cutting issue and to demonstrate improvement in the Corrective Action Program in the areas of Service Request generation threshold, description quality, and Problem Evaluation Report trending.
- Completeness and Accuracy of Information - TVA commits to complete the actions necessary to support the NRC's conduct of IP 92702, "Follow-up on Traditional Enforcement Actions Including Violations, Confirmatory Action Letters, Confirmatory Orders, and Alternative Dispute Resolution Confirmatory Orders," for the Motor-Operated Valve Related Notice of Violation of Title 10 of the Code of Federal Regulations (10 CFR) Part 50.9, EA-11-252.
- Safety Culture - TVA commits to take actions to further demonstrate improvement and sustainability of the safety culture at BFN.
- Operationally Focused Organization - TVA commits to take actions to improve the operational focus of BFN.

### Tier 2

- Safety System Reliability Plan - TVA commits to complete the SSRP.
- Closeout of Fundamental Problems (FPs) - TVA commits to assess the effectiveness of the IIP actions and close the FPs in accordance with Procedure 95003-007,

“Project Review Boards.” This procedure requires all closed actions for each FP to be reviewed by BFN’s Closure Review Board. These closed actions will also be reviewed collectively by BFN’s Effectiveness Review Challenge Board. The final closure of the FP Areas listed below is dependent on the results of these effectiveness and sustainability reviews.

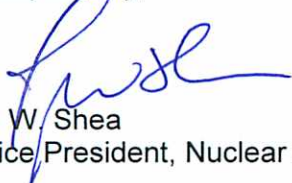
- Technical Rigor
- Continuous Learning Environment
- Safety Conscious Work Environment
- Employee Concerns Program
- Design and Configuration Control
- Corrective Action Program
- Governance & Oversight
- Inappropriate Reliance on Process
- Resource Management
- Strategic Equipment Management
- Procedure Use & Adherence
- Equipment Programs & System Management
- Independent Oversight
- Operational Focus
- Management & Leadership Standards
- Work Management
- Equipment Performance Monitoring & Trending
- Training
- Procedure Instruction & Quality

As discussed with the NRC staff in a telephone call on August 1, 2013, TVA will inform the NRC, in writing, of the following:

- Completion of each commitment and readiness for inspection;
- A change to a commitment including the reason for the change; and
- Any change to commitment due dates in advance of the due date.

The regulatory commitments made in this letter are listed in the Enclosure. Should you have any questions concerning this submittal, please contact James E. Emens, BFN Nuclear Site Licensing Manager at (256)729-2636.

Respectfully,



J. W. Shea  
Vice President, Nuclear Licensing

Enclosure: List of New Regulatory Commitments  
cc: See Page 2

U.S. Nuclear Regulatory Commission  
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August 9, 2013

cc (Enclosure):

NRC Senior Resident Inspector - Browns Ferry Nuclear Plant

**ENCLOSURE**

**Tennessee Valley Authority**

**Browns Ferry Nuclear Plant, Unit 1**

**List of New Regulatory Commitments**

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## REGULATORY COMMITMENTS

Commitment No.	IIP PER Action No.	Commitment Description	Commitment Due Date
<b>Tier 1 Commitments</b>			
1	755599-001	Complete the Safety System Reliability Plan (SSRP) project scope as defined in Problem Evaluation Report (PER) Action 760220-002. The SSRP original scope and purpose are defined in PER Action 760220-001.	11/30/2013
2	755599-002	<p>Demonstrate that worker and supervisor behaviors supporting implementation of the work management process show improvement. This improvement will be measured by existing performance metrics. The areas to be assessed and metrics used will include:</p> <ul style="list-style-type: none"> <li>• T-week work planning and schedule development appropriately considers deferrals (Milestone Adherence, Scope Stability (T-6) and Scope Survival (T-16));</li> <li>• Work selection (Critical Preventative Maintenance Work Orders (PM WOs) in 2nd Half of Grace, On-line Corrective Maintenance Backlog (Critical Work Orders (WOs)) and On-line Deficient Maintenance Backlog (Critical WOs));</li> <li>• Availability of maintenance resources and parts (Scope Stability (T-6) and Schedule Stability (T-3), Critical PM WOs in 2nd Half of Grace);</li> <li>• Work package quality (Packages Ready at T-10 and On-Line Schedule Adherence/Completion);</li> <li>• Coordination of clearance orders and inter-departmental support (T-4 Clearances Ready, Walkdowns at T-4 Performance, Limiting Condition for Operation Management, and T-Week Engagement); and</li> <li>• Adherence to work schedule (Schedule Adherence/Completion).</li> </ul>	11/22/2013
3	755599-003	The Procedure Upgrade Project (PUP) implementation will include defined interim actions (i.e., risk based approach, and a T-Week review that will include Verbs, Notes, Cautions, Verifications, and Step Validation), development of the long term plan, a timeline for completing specific procedure revisions with clearly established due dates, and a risk based approach to addressing procedure priorities. Project priorities ensure that these procedure upgrades include the standards needed to support the work management T-Week process, provide alignment to industry standards with the use of "Should," "Shall," and "May," and establish criteria for consistent use of "Notes," "Cautions," and validation sign off. The PUP will be supported by a training program consisting of the resources (i.e., instructors and training material) to address common error traps and reinforce clear standards of procedure quality and use.	11/01/2013

## REGULATORY COMMITMENTS

Commitment No.	IIP PER Action No.	Commitment Description	Commitment Due Date
4	755599-004	Document critical thinking and establish corrective actions to verify or revise if necessary that the Human Performance (HU) Procedures accurately describe Peer Check, Concurrent Verification, and Independent Verification techniques. Additionally, the "Conduct of" procedures for Operations, Maintenance, Engineering, and Chemistry will be reviewed to verify that they align with the HU instructions for verification and revised, if necessary. Affected field implementing procedures will be corrected in accordance with the Procedure Upgrade Plan.	11/01/2013
5	755599-005	Complete the corrective actions necessary to address the cross-cutting theme in the Resources component of the Human Performance & Error Prevention cross-cutting area delineated in the Annual Assessment Letter for Browns Ferry Nuclear Plant Units 1, 2, and 3 dated March 4, 2013 (Problem Evaluation Report 651000).	11/04/2013
6	755599-006	Demonstrate improvement in the Corrective Action Program in the areas of Service Request generation threshold, description quality, and Problem Evaluation Report trending. These improvements will be measured by self assessments and be in alignment with actions taken in accordance with the Integrated Improvement Plan.	11/22/2013
7	755599-007	Complete the actions necessary to support the NRC's conduct of Inspection Procedure 92702, "Follow-up on Traditional Enforcement Actions Including Violations, Confirmatory Action Letters, Confirmatory Orders, and Alternative Dispute Resolution Confirmatory Orders," for the Motor-Operated Valve Related Notice of Violation of Title 10 of the Code of Federal Regulations (10 CFR) Part 50.9, EA-11-252.	11/22/2013
8	755599-008	Transition the performance metrics being used to assess the effectiveness of the Integrated Improvement Plan to align with industry standards of excellence upon issuance of the September 2013 TVA-Nuclear Power Group Fleet Metrics.	10/21/2013
9	755599-009	Complete the actions in Problem Evaluation Report 757451 (BFN Safety Culture Continuous Improvement and Sustainability Plan) that address the areas of: attitudes not matching behaviors; work management; staffing levels; strategic approach to quality procedures; observations impacted by competing responsibilities; effectiveness of Nuclear Safety Culture Monitoring Panel; and Browns Ferry/Corporate strategic approach to Human Performance improvement.	11/22/2013
10	755599-010	Complete the actions in Problem Evaluation Report 731831 (Operations Centric Gaps to Excellence Plan) to improve the operational focus of Browns Ferry. Improvement will be monitored through the use of performance metrics developed as a part of the plan.	10/18/2013



## REGULATORY COMMITMENTS

Commitment No.	IIP PER Action No.	Commitment Description	Commitment Due Date
<b>Tier 2 Commitments</b>			
11	755599-011	Complete the Safety System Reliability Plan (SSRP) project scope as defined in Problem Evaluation Report (PER) Action 760220-003. The SSRP original scope and purpose are defined in PER Action 760220-001.	05/30/2014
12	755599-012	Close the "Technical Rigor" fundamental problem in accordance with Procedure 95003-007, "Project Review Boards."	05/31/2014
13	755599-013	Close the "Continuous Learning Environment" fundamental problem in accordance with Procedure 95003-007, "Project Review Boards."	05/31/2014
14	755599-014	Close the "Safety Conscious Work Environment" fundamental problem in accordance with Procedure 95003-007, "Project Review Boards."	05/31/2014
15	755599-015	Close the "Employee Concerns Program" fundamental problem in accordance with Procedure 95003-007, "Project Review Boards."	05/31/2014
16	755599-016	Close the "Design and Configuration Control" fundamental problem in accordance with Procedure 95003-007, "Project Review Boards."	06/30/2014
17	755599-017	Close the "Corrective Action Program" fundamental problem in accordance with Procedure 95003-007, "Project Review Boards."	06/30/2014
18	755599-018	Close the "Governance & Oversight" fundamental problem in accordance with Procedure 95003-007, "Project Review Boards."	06/30/2014
19	755599-019	Close the "Inappropriate Reliance on Process" fundamental problem in accordance with Procedure 95003-007, "Project Review Boards."	06/30/2014
20	755599-020	Close the "Resource Management" fundamental problem in accordance with Procedure 95003-007, "Project Review Boards."	07/31/2014
21	755599-021	Close the "Strategic Equipment Management" fundamental problem in accordance with Procedure 95003-007, "Project Review Boards."	07/31/2014
22	755599-022	Close the "Procedure Use & Adherence" fundamental problem in accordance with Procedure 95003-007, "Project Review Boards."	08/31/2014
23	755599-023	Close the "Equipment Programs & System Management" fundamental problem in accordance with Procedure 95003-007, "Project Review Boards."	08/31/2014

## REGULATORY COMMITMENTS

<b>Commitment No.</b>	<b>IIP PER Action No.</b>	<b>Commitment Description</b>	<b>Commitment Due Date</b>
24	755599-024	Close the "Independent Oversight" fundamental problem in accordance with Procedure 95003-007, "Project Review Boards."	08/31/2014
25	755599-025	Close the "Operational Focus" fundamental problem in accordance with Procedure 95003-007, "Project Review Boards."	09/30/2014
26	755599-026	Close the "Management & Leadership Standards" fundamental problem in accordance with Procedure 95003-007, "Project Review Boards."	12/15/2014
27	755599-027	Close the "Work Management" fundamental problem in accordance with Procedure 95003-007, "Project Review Boards."	12/15/2014
28	755599-028	Close the "Equipment Performance Monitoring & Trending" fundamental problem in accordance with Procedure 95003-007, "Project Review Boards."	12/15/2014
29	755599-029	Close the "Training" fundamental problem in accordance with Procedure 95003-007, "Project Review Boards."	12/15/2014
30	755599-030	Close the "Procedure and Instruction Quality" fundamental problem in accordance with Procedure 95003-007, "Project Review Boards."	12/15/2014
31	755599-031	Complete the Safety System Reliability Plan (SSRP) project scope as defined in Problem Evaluation Report (PER) Action 760220-004. The SSRP original scope and purpose are defined in PER Action 760220-001.	09/30/2014