



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**  
REGION II  
245 PEACHTREE CENTER AVENUE NE, SUITE 1200  
ATLANTA, GEORGIA 30303-1257

September 3, 2013

Mr. Joseph W. Shea  
Vice President, Nuclear Licensing  
Tennessee Valley Authority  
1101 Market Street, LP 3D-C  
Chattanooga, TN 37402-2801

**SUBJECT: MID-CYCLE ASSESSMENT LETTER FOR THE BROWNS FERRY NUCLEAR PLANT UNITS 1, 2 AND 3 (NRC INSPECTION REPORTS 05000259/2013006, 05000260/2013006 and 05000296/2013006)**

Dear Mr. Shea:

On August 15, 2013, the NRC completed its mid-cycle performance review of the Browns Ferry Plant, Units 1, 2 and 3. The NRC reviewed the most recent quarterly performance indicators (PIs) in addition to inspection results and enforcement actions from July 1, 2012, through June 30, 2013. This letter informs you of the NRC's assessment of your facility during this period and its plans for future inspections at your facility.

The NRC determined the plant performance at Browns Ferry Unit 1 during the most recent quarter was within the Multiple/Repetitive Degraded Cornerstone column of the NRC's Reactor Oversight Process Action Matrix, beginning the fourth quarter 2010, based on the issuance of one finding classified as having a high safety significance (Red) in the Mitigating Systems Cornerstone. This was detailed in Final Significance Determination of a Red Finding, Notice of Violation, and Assessment Follow-Up Letter (NRC Inspection Report No. 05000259/2011008, (ML111290482)) for Browns Ferry Nuclear Plant, dated May 9, 2011.

Since the last performance assessment follow-up, Browns Ferry Unit 1 received two additional action matrix inputs: 1) Mitigating System Performance Index, High Pressure Injection Systems (HPCI), which changed from Green to White during this reporting period based on a PRA model update effective first quarter 2013; and 2) Mitigating System Performance Index, Emergency AC Power Systems, which crossed the Green-to-White threshold beginning the fourth quarter 2012. Both of these performance indicators will be inspected as part of separate supplemental inspections.

The additional inputs did not change the current assessment of performance for Unit 1 based on the safety significance of these performance indicators since Unit 1 was assessed to be in the Multiple/Repetitive Degraded Cornerstone Column of the Reactor Oversight Process Action Matrix since the fourth quarter of 2010.

Because Unit 1 was assessed in the Multiple/Repetitive Degraded Cornerstone column of the NRC's Action Matrix, additional regulatory oversight actions will be implemented at your facility. These actions could include: 1) conducting supplemental inspections of the individual and

collective issues; 2) issuing a confirmatory action letter to document TVA's commitments stemming from its performance improvement plan (or other actions, as warranted); and 3) conducting public meetings to discuss progress in implementing your improvement initiatives. Consistent with NRC Manual Chapter 0305, the NRC conducted an Inspection Procedure 95003, "Supplemental Inspection for Repetitive Degraded Cornerstones, Multiple Degraded Cornerstones, Multiple Yellow Inputs, or One Red Input." The inspection results are outside the subject assessment period and will be reviewed during future assessments.

The NRC determined the performance at Browns Ferry Nuclear Plant Unit 2 during the most recent quarter was within the Degraded Cornerstone column of the Reactor Oversight Process Action Matrix beginning the fourth quarter of 2012, based on the Emergency AC Power Systems performance indicator in the Mitigating Systems Cornerstone crossing the Green-to-White threshold beginning the fourth quarter 2012, in combination with the White finding documented in inspection report 05000259, 260, 296/2012013 (ADAMS Accession Number ML12226A647), also in the Mitigating Systems Cornerstone.

Because Unit 2 was assessed in the Degraded Cornerstone column of the NRC's Action Matrix, additional regulatory oversight actions will be implemented at your facility. The NRC will conduct a supplemental inspection (Inspection Procedure 95002) when you have notified us of your readiness for the NRC to review the actions taken to address each of these issues. This inspection will review both the White inspection finding and White performance indicator. This inspection procedure is conducted to provide assurance that the root and contributing causes for the individual and collective risk significant performance issues are understood, to independently assess the extent of condition, to provide assurance that the corrective actions are sufficient to prevent recurrence, and to independently determine if safety culture components caused or significantly contributed to individual and collective risk-significant performance issues.

In addition, at the end of the assessment period the NRC had not yet finalized the significance of Apparent Violation 05000260/2013002-02, "Failure to Follow Operating Procedure Guidance Resulted in Unit 2 Reactor Scram." The final safety significance determination was not considered in the NRC's assessment of plant performance or the enclosed inspection plan for Unit 2.

The NRC determined the performance at Browns Ferry Nuclear Plant Unit 3 during the most recent quarter was within the Regulatory Response Column of the NRC's Reactor Oversight Process Action Matrix. As detailed in Final Significance Determination Of A White Finding, Notice Of Violation, And Assessment Follow-Up Letter (NRC Inspection Report No. 05000259,260,296/2012013) for Browns Ferry Nuclear Plant, dated August 13, 2012, Unit 3 was determined to be in the Regulatory Response Column beginning in the second quarter 2012. On November 23, 2012, the NRC issued NRC Supplemental Inspection Report 05000259/2012014, 05000260/2012014, 05000296/2012014, (ML12331A180) for completion of an inspection pursuant to IP 95001, "Supplemental Inspection for One or Two White Inputs in a Strategic Performance Area," for the White finding. The inspection was completed satisfactorily and the finding was an action matrix input until the end of the first quarter 2013.

Since the last performance assessment follow-up, Browns Ferry Unit 3 received one additional action matrix input for Unplanned Scrams which exceeded a Green/White threshold in the first quarter 2013. Scrams on May 22, 24, and 29, 2012, and February 25, 2013, caused the threshold to be exceeded. The input did not change the current assessment of performance for

Unit 3 based on the safety significance of this performance indicator and that the two concurrent inputs were from different cornerstones. The NRC will conduct a supplemental inspection (Inspection Procedure 95001, Supplemental Inspection for One or Two White Inputs in a Strategic Performance Area) when you notify us of your readiness for the NRC to review the actions taken to address the White Unplanned Scrams PI.

In its Annual Assessment Letter, dated March 4, 2011, (ML11063042), the NRC opened a Substantive Cross-Cutting Issue (SCCI) in the Corrective Action Program component of the Problem Identification and Resolution cross-cutting area in the aspect of "appropriate and timely corrective actions" (P.1(d)). Additionally, in its Annual Assessment Letter, dated March 3, 2010, (ML100620960), the NRC opened a SCCI in the Corrective Action Program component of the Problem Identification and Resolution cross-cutting area, in the aspect of "thorough evaluation of identified problems" (P.1(c)).

Actions for these SCCIs were reviewed during the second quarter as part of the 95003 inspection effort. For the P.1(c) and P.1(d) SCCIs, the licensee implemented and planned a number of corrective actions, which included: revising the corrective action program basis and implementation procedures; a vision of excellence in CAP from the Chief Nuclear Officer; defining roles and responsibilities of performance coordinators in effectively managing the CAP; requirements and mechanisms to ensure appropriate safety and regulatory risk screening for conditions adverse to quality in the CAP; a revised strategic approach to managing site resources and organizational capacity; equipment maintenance integrated tracking and trending process; and revised user interface and standardization of the database for integrated tracking and trending process. The NRC assessed that the corrective actions taken appeared reasonable to address the causes of the SCCIs.

Following evaluation of insights provided from NRC inspection activities and a review of recent performance, this SCCI is being closed based on the following:

- Inspectors determined that an appropriate and comprehensive range of actions were identified by the Corrective Action Program to address the cross-cutting theme;
- There was no significant increase in the number of findings with the cross-cutting aspect of "thorough evaluation of identified problems" (P.1(c)) during the previous twelve month assessment period;
- Based on TVA's actions there was an increased level of confidence in the licensee's ability to deal effectively with operational and equipment issues as related to the cross-cutting theme of "thorough evaluation of identified problems" (P.1(c)) during the previous six month assessment period.

During the Annual Assessment, dated March 4, 2013, the NRC opened a SCCI in the area of Human Performance & Error Prevention. Specifically, six Green inspection findings with a documented cross-cutting aspect of "complete documentation and component labeling" (H.2.(c)) were identified. The NRC determined that an SCCI existed because the NRC had a concern with your staff's scope of effort and progress in addressing the cross-cutting theme. Although you identified and implemented a range of actions to address the cross-cutting theme; these actions had not yet proven effective in substantially mitigating the cross-cutting theme, even though a reasonable duration of time has passed. This SCCI will continue to remain open pending completion and NRC review of your actions to address this SCCI, based on the following: 1) An appropriate and comprehensive range of actions identified by the Corrective Action Program, which will effectively address the cross-cutting theme; 2) No significant

increase in the number of findings with the cross-cutting aspect of “Complete Documentation and Component Labeling” (H.2.(c)) during the previous twelve month assessment period; and 3) An increased level of confidence in your ability to deal effectively with operational and equipment issues as related to the cross-cutting theme of “Complete Documentation and Component Labeling” (H.2.(c)) during the previous six month assessment period.

The enclosed inspection plan lists the inspections scheduled through December 31, 2014. Routine inspections performed by resident inspectors are not included in the inspection plan. The inspections listed during the last nine months of the inspection plan are tentative and may be revised at the end-of-cycle performance review. The NRC provides the inspection plan to allow for the resolution of any scheduling conflicts and personnel availability issues. The NRC will contact you as soon as possible to discuss changes to the inspection plan should circumstances warrant any changes. This inspection plan does not include security related inspections, which will be sent via separate, non-publicly available correspondence.

In addition to the baseline inspections at your facility, we also plan on conducting temporary instructions and infrequently performed inspections which include: initial reactor operator licensing examinations; TI 2515/182, “Review of the Implementation of the Industry Initiative to Control Degradation of Underground Piping and Tanks;” and IP 92702, Follow up On Traditional Enforcement Actions Including Violations, Deviations, Confirmatory Action Letters, Confirmatory Orders, And Alternative Dispute Resolution Confirmatory Orders.

In accordance with 10 CFR 2.390 of the NRC’s “Rules of Practice,” a copy of this letter will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC’s document system (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Please contact Scott Shaeffer at 404-997-4521 with any questions you have regarding this letter.

Sincerely,

*/RA/*

Victor M. McCree  
Regional Administrator

Docket No.: 50-259, 50-260, 50-296  
License No.: DPR-33, DPR-52, DPR-68

Enclosure: Browns Ferry Inspection/Activity Plan  
(09/01/2013 – 12/31/2014)

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increase in the number of findings with the cross-cutting aspect of “Complete Documentation and Component Labeling” (H.2.(c)) during the previous twelve month assessment period; and 3) An increased level of confidence in your ability to deal effectively with operational and equipment issues as related to the cross-cutting theme of “Complete Documentation and Component Labeling” (H.2.(c)) during the previous six month assessment period.

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PUBLICLY AVAILABLE       NON-PUBLICLY AVAILABLE       SENSITIVE       NON-SENSITIVE  
ADAMS:  Yes      ACCESSION NUMBER: ML13246A184       SUNSI REVIEW COMPLETE       FORM 665 ATTACHED

OFFICE	RII:DRP	RII:DRP	RII:DRP	RII:ORA	RII:ORA		
SIGNATURE	JXH /RA/	SMS /RA/	RPC /RA/	LDW /RA/	VMM /RA/		
NAME	JHeisserer	SShaeffer	RCroteau	LWert	VMcCree		
DATE	08/21/2013	08/21/2013	08/29/2013	08/29/2013	08/29/2013		
E-MAIL COPY?	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO

J. Shea

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Letter to Joseph W. Shea from Victor M. McCree dated September 3, 2013

SUBJECT: MID-CYCLE ASSESSMENT LETTER FOR THE BROWNS FERRY NUCLEAR  
PLANT UNITS 1, 2 AND 3 (NRC INSPECTION REPORTS 05000259/2013006,  
05000260/2013006 and 05000296/2013006)

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ROP Reports

## Browns Ferry

## Inspection / Activity Plan

09/01/2013 - 12/31/2014

Unit Number	Planned Dates Start End	Inspection Activity	Title	No. of Staff on Site
1	01/01/2013 12/31/2013	<b>95003</b> IP 95003	<b>- 95003 INSPECTION</b> Inspection For Repetitive Degraded Cornerstones, Multiple Degraded Cornerstones, Multiple Yellow Inp	22
1, 2, 3	10/21/2013 10/25/2013	<b>TFPI</b> IP 7111105T	<b>- TRIENNIAL FIRE PROTECTION INSP</b> Fire Protection [Triennial]	4
1, 2, 3	11/04/2013 11/08/2013	IP 7111105T	Fire Protection [Triennial]	
1, 2, 3	10/15/2013 10/17/2013	<b>TI-182</b> IP 2515/182	<b>- TI-182 BURIED PIPING/TANK - PHASE 2</b> Review of the Implementation of the Industry Initiative to Control Degradation of Underground Piping	1
1, 2, 3	01/06/2014 01/10/2014	<b>HS</b> IP 7111107T	<b>- TRIENNIAL HEAT SINK PERFORMANCE</b> Heat Sink Performance	1
1, 2, 3	02/10/2014 02/14/2014	<b>PI&amp;R</b> IP 71152B	<b>- PROBLEM IDENTIFICATION AND RESOLUTION</b> Problem Identification and Resolution	4
1, 2, 3	02/24/2014 02/28/2014	IP 71152B	Problem Identification and Resolution	
1, 2, 3	02/24/2014 02/28/2014	<b>RP</b> IP 71124.01	<b>- RAD HAZARDS ANALYSIS AND TRANSPORTATION</b> Radiological Hazard Assessment and Exposure Controls	2
1, 2, 3	02/24/2014 02/28/2014	IP 71124.08	Radioactive Solid Waste Processing and Radioactive Material Handling, Storage, and Transportation	
1, 2, 3	02/24/2014 02/28/2014	IP 71151	Performance Indicator Verification	
1	03/31/2014 04/04/2014	<b>OL EXAM</b> V23433	<b>- INITIAL LICENSE EXAM PREP</b> BROWNS FERRY/APRIL 2014 INITIAL EXAM AT POWER FACILITIES	3
3	04/14/2014 04/18/2014	<b>ISI</b> IP 7111108G	<b>- UNIT 3 SG IN-SERVICE INSPECTION</b> Inservice Inspection Activities - BWR	1
1	04/28/2014 05/02/2014	<b>OL EXAM</b> V23433	<b>- INITIAL LICENSE EXAM WEEK 1</b> BROWNS FERRY/APRIL 2014 INITIAL EXAM AT POWER FACILITIES	3
1, 2, 3	06/09/2014 06/13/2014	<b>EP</b> IP 7111402	<b>- EP PROGRAM INSPECTION</b> Alert and Notification System Testing	1
1, 2, 3	06/09/2014 06/13/2014	IP 7111403	Emergency Preparedness Organization Staffing and Augmentation System	
1, 2, 3	06/09/2014 06/13/2014	IP 7111405	Correction of Emergency Preparedness Weaknesses and Deficiencies	
1, 2, 3	06/09/2014 06/13/2014	IP 71151	Performance Indicator Verification	
1, 2, 3	06/16/2014 06/20/2014	<b>RP</b> IP 71124.06	<b>- RP PUBLIC RADIATION SAFETY BASELINE</b> Radioactive Gaseous and Liquid Effluent Treatment	2
1, 2, 3	06/16/2014 06/20/2014	IP 71124.07	Radiological Environmental Monitoring Program	
1, 2	06/16/2014 06/20/2014	IP 71151	Performance Indicator Verification	
1, 2, 3	08/25/2014 08/29/2014	<b>MODS</b> IP 7111117T	<b>- PLANT MODIFICATIONS INSPECTION</b> Evaluations of Changes, Tests, and Experiments and Permanent Plant Modifications	3

This report does not include INPO and OUTAGE activities.  
This report shows only on-site and announced inspection procedures.

Browns Ferry

Inspection / Activity Plan

09/01/2013 - 12/31/2014

Unit Number	Planned Dates Start End	Inspection Activity	Title	No. of Staff on Site
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1, 2, 3	09/08/2014 09/12/2014	<b>MODS</b> IP 7111117T	<b>- PLANT MODIFICATIONS INSPECTION</b> Evaluations of Changes, Tests, and Experiments and Permanent Plant Modifications	3
1	10/27/2014 10/31/2014	<b>ISI</b> IP 7111108G	<b>- UNIT 1 IN-SERVICE INSPECTION</b> Inservice Inspection Activities - BWR	1

Comments:

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