



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

March 4, 2014

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

**SUBJECT: ANNUAL ASSESSMENT LETTER FOR BROWNS FERRY NUCLEAR PLANT  
UNITS 1, 2 AND 3 (NRC INSPECTION REPORTS 05000259/2013001,  
05000260/2013001 and 05000296/2013001)**

Dear Mr. Shea:

On February 19, 2014, the NRC completed its annual 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 January 1 through December 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, (ADAMS Accession No. ML111290482)) for Browns Ferry Nuclear Plant, dated May 9, 2011.

In accordance with Inspection Manual Chapter (IMC) 0305, "Operating Reactor Assessment Program," because Unit 1 was assessed in the Multiple/Repetitive Degraded Cornerstone column of the NRC's Action Matrix, additional regulatory oversight actions were implemented at your facility. Consistent with NRC Manual Chapter 0305, the NRC conducted a supplemental inspection using Inspection Procedure 95003, "Supplemental Inspection for Repetitive Degraded Cornerstones, Multiple Degraded Cornerstones, Multiple Yellow Inputs, or One Red Input" in June of 2013. The inspection reviewed actions associated with the Red Finding and a White High Pressure Coolant Injection (HPCI) Mitigating System Performance Indicator (MSPI). The inspection results were documented in, NRC Supplemental 95003 Inspection Report 05000259/2013011, 05000260/2013011, and 05000296/2013011 (ADAMS Accession No. ML13234A539).

The results of the inspection indicated that Browns Ferry was being operated safely. The team found that Browns Ferry had made some gains toward improved performance as a result of implementation of the Integrated Improvement Plan (IIP). In addition, based on review of the third party safety culture assessment and the NRC's independent graded safety culture evaluation, the team determined that Browns Ferry had an improved understanding of the importance of a strong safety culture. The team concluded that effective implementation of the IIP, supported by the allocation of adequate resources and continued enhanced oversight by TVA leadership, should lead to substantial and sustained performance improvement.

The NRC also determined that inspection objectives for the Unit 1 White HPCI MSPI had been met during the 95003 inspection. Therefore, in accordance with IMC 0305, "Operating Reactor Assessment Program," the performance issue shall not be considered in the Action Matrix after the performance indicator returns to Green.

Following completion of the 95003 inspection, the NRC issued a Confirmatory Action Letter (CAL) (ADAMS Accession No. ML13232A105) on August 22, 2013. This letter confirmed TVA's Tier 1 actions, items 1 through 10, which when completed by TVA and verified to be adequate by the NRC, would reasonably serve to inform the NRC's decision making regarding closure of the Red Finding and the transition of Browns Ferry Nuclear Plant Unit 1 out of the Multiple/Repetitive Degraded Cornerstone Column consistent with the NRC's Reactor Oversight Process. The NRC performed a follow-up inspection and closed the CAL and Red finding in Confirmatory Action Letter and Severity Level III 10 CFR 50.9 Violation Follow-Up Inspection Report 05000259/2013014, 05000260/2013014, and 05000296/2013014 (ADAMS Accession No. ML14027A742).

Although closure of the Red Finding removed one criterion for assessment that caused Browns Ferry Unit 1 to be placed in Column 4, the unit will remain in Column 4 because of additional inputs to the Mitigating Systems Cornerstone that meet the criteria described in IMC 0305 for a Repetitive Degraded Cornerstone beginning October 1, 2013. This is 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 involving inadequate implementation of a modification associated with safe shutdown instructions documented in inspection report 05000259, 260, 296/2012013 (ADAMS Accession Number ML12226A647), also in the Mitigating Systems Cornerstone, which resulted in a degraded Mitigating Systems cornerstone beginning in the fourth quarter of 2012. A third input was a White HPCI MSPI beginning in the second quarter 2013. These three inputs resulted in Browns Ferry Unit 1 meeting the Repetitive Degraded Cornerstone criteria beginning the fourth quarter of 2013 with a cornerstone that was degraded for more than four consecutive quarters with at least one of the quarters having three or more white inputs.

On February 19, 2014, your staff indicated TVA's readiness for the NRC to conduct a supplemental inspection to review the actions taken to address performance issues at your facility. Therefore, in addition to ROP baseline inspections, the NRC plans to conduct a supplemental inspection in accordance with Inspection Procedure 95002, "Supplemental Inspection for One Degraded Cornerstone or Any Three White Inputs in a Strategic Performance Area," beginning on April 7, 2014. This inspection will review both the White inspection finding and White performance indicator which resulted in the degraded Mitigating Systems cornerstone beginning in the fourth quarter of 2012. 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. This inspection will also inform the NRC's decision making regarding the transition of Browns Ferry Nuclear Plant Unit 1 out of the Multiple/Repetitive Degraded Cornerstone Column consistent with the NRC's Reactor Oversight Process.

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 involving inadequate implementation of a modification associated with safe shutdown instructions 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. As previously described, the NRC will conduct a supplemental inspection pursuant to Inspection Procedure 95002 beginning April 7, 2014.

Since the last performance assessment, Browns Ferry Unit 2 received one additional action matrix input for a White Violation 05000260/2013002-02, "Failure to Follow Operating Procedure Guidance Resulted in Unit 2 Reactor Scram." On January 10, 2014, the NRC issued NRC Supplemental Inspection Report 05000260/2013015, (ADAMS Accession No. ML14010A115) 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 performance issue will not be considered as an Action Matrix input after the end of the fourth quarter of 2013.

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 based on an action matrix input for Unplanned Scrams which exceeded a Green/White threshold in the first quarter 2013. Scrams on May 22, 2012; May 24, 2012; May 29, 2012; and February 25, 2013, caused the threshold to be exceeded. The NRC conducted a supplemental inspection pursuant to Inspection Procedure 95001, "Supplemental Inspection for One or Two White Inputs in a Strategic Performance Area," after the end of the assessment period and will consider the results of the inspection during subsequent assessments of plant performance.

Although plant performance was assessed for each unit as described above, the NRC has not yet finalized the significance of Apparent Violation AV 05000259, 260, 296/2013005-02, "Failure to Maintain Emergency Response Staffing Levels." The final safety significance determination may affect the NRC's assessment of plant performance and the enclosed inspection plan.

During the previous Annual Assessment, dated March 4, 2013, the NRC opened a substantive cross-cutting issue (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)) had been 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.

Actions for this SCCI were reviewed during the fourth quarter as part of the 95003 CAL inspection. TVA implemented and planned a number of corrective actions, which included: implementation of the procedure upgrade project including the pre-work walkdowns of work instructions; the proper use of human performance tools with a focus in the use of verification practices; and the training and qualification of workers. 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 “Complete Documentation and Component Labeling” (H.2(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 issues related to the cross-cutting theme of “Complete Documentation and Component Labeling” (H.2(c)) during the previous six month assessment period.

The NRC identified three cross-cutting themes during the assessment period.

1. The NRC identified a cross-cutting theme in the Work Control component of the Human Performance cross-cutting area. Specifically, four inspection findings for the current 12-month assessment period, each with a documented cross-cutting aspect of “Work Activity Coordination” (H.3.(b)), were identified.
2. The NRC identified a cross-cutting theme in the Work Practices component of the Human Performance cross-cutting area. Specifically, four inspection findings for the current 12-month assessment period, each with a documented cross-cutting aspect of “Procedural Compliance” (H.4.(b)), were identified.
3. The NRC identified a second cross-cutting theme in the Corrective Action component of the Problem Identification and Resolution cross-cutting area. Specifically, five inspection finding for the current 12-month assessment period, each with a documented cross-cutting aspect of “Thorough Evaluation of Identified Problems” (P.1.(c)), were identified.

The NRC determined that an SCCI did not exist for these themes because the NRC does not have a concern with your staff’s scope of effort and progress in addressing the cross-cutting themes. This is based on actions TVA has taken subsequent to the performance deficiencies

associated with the cross cutting aspects (CCA) and trends in performance metrics in the areas of the CCAs that were observed during the CAL follow-up inspection. The NRC will continue to evaluate the effectiveness of your corrective actions during the next assessment cycle and will continue to monitor your staff's effort and progress in addressing these themes.

As a result of the Safety Culture Common Language Initiative, the terminology and coding of cross-cutting aspects were revised beginning in calendar year (CY) 2014. New cross-cutting aspects identified in CY 2014 will be coded under the latest revision to IMC 0310. Cross-cutting aspects identified in the last six months of 2013 using the previous terminology will be converted to the latest revision in accordance with the cross-reference in IMC 0310. The revised cross-cutting aspects will be evaluated for cross-cutting themes and potential substantive cross-cutting issues in accordance with IMC 0305 starting with the CY 2014 mid-cycle assessment review.

The enclosed inspection plan lists the inspections scheduled through June 30, 2015. 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 mid-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 infrequently performed inspections which include: initial reactor operator licensing examinations. We also plan on conducting an infrequently performed inspection per IP 92702, Follow up On Traditional Enforcement Actions Including Violations, Deviations, Confirmatory Action Letters, Confirmatory Orders, And Alternative Dispute Resolution Confirmatory Orders, and IP 43004, Inspection Of Commercial-Grade Dedication Programs.

Additionally, an NRC audit of licensee efforts towards compliance with Order EA-12-049, "Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events" is ongoing. This audit includes an onsite component in order for the NRC to evaluate mitigating strategies as described in licensee submittals, and to receive and review information relative to associated open items. This onsite activity will occur in the months prior to a declaration of compliance for the first unit at each site, and will aid staff in development of an ultimate Safety Evaluation for the site. The date for the onsite component at your site is being coordinated with your staff. A site-specific audit plan for the visit will be provided in advance to allow sufficient time for preparations.

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).

J. Shea

6

Please contact Jonathan Bartley at 404-997-4607 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  
(03/01/2014 – 06/30/2015)

cc distribution via Listserv

J. Shea

6

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J. Shea

7

Letter to Joseph W. Shea from Victor M. McCree dated March 4, 2014

SUBJECT: ANNUAL ASSESSMENT LETTER FOR BROWNS FERRY NUCLEAR PLANT  
UNITS 1, 2 AND 3 (NRC INSPECTION REPORTS 05000259/2013001,  
05000260/2013001 and 05000296/2013001)

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Institute of Nuclear Power Operations (INPO)

ROP Assessment



## Browns Ferry

## Inspection / Activity Plan

03/01/2014 - 06/30/2015

Unit Number	Planned Dates Start	Planned Dates End	Inspection Activity	Title	No. of Staff on Site
1, 2, 3	04/07/2014	04/12/2014	<b>95002</b> IP 95002	<b>- U1&amp;2 95002 INSPECTION</b> Supplemental Inspection for One Degraded Cornerstone or Any Three White Inputs in a Strategic Perfor	4
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
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	05/05/2014	05/09/2014	<b>LR</b> IP 71003	<b>- POST APPROVAL LR INSPECTION - PHASE 3</b> Post-Approval Site Inspection for License Renewal	2
1, 2, 3	06/09/2014	06/13/2014	<b>EP</b> IP 7111402	<b>- EP PROGRAM INSPECTION</b> Alert and Notification System Testing	3
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 7111404	Emergency Action Level and Emergency Plan Changes	
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 711151	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, 3	06/16/2014	06/20/2014	IP 71151	Performance Indicator Verification	
1, 2, 3	08/25/2014	08/29/2014	<b>MODS</b> IP 711117T	<b>- PLANT MODIFICATIONS INSPECTION</b> Evaluations of Changes, Tests, and Experiments and Permanent Plant Modifications	3
1, 2, 3	09/08/2014	09/12/2014	IP 711117T	Evaluations of Changes, Tests, and Experiments and Permanent Plant Modifications	
1	10/13/2014	10/17/2014	<b>ISI</b> IP 7111108G	<b>- UNIT 1 IN-SERVICE INSPECTION</b> Inservice Inspection Activities - BWR	1
1, 2, 3	03/16/2015	03/30/2015	<b>RP</b> IP 71124.01	<b>- RP OCCUPATIONAL BASELINE WEEK 1</b> Radiological Hazard Assessment and Exposure Controls	3
1, 2, 3	03/16/2015	03/30/2015	IP 71124.02	Occupational ALARA Planning and Controls	
1, 2, 3	03/16/2015	03/30/2015	IP 71124.03	In-Plant Airborne Radioactivity Control and Mitigation	
1, 2, 3	03/16/2015	03/30/2015	IP 71124.04	Occupational Dose Assessment	
1, 2, 3	03/16/2015	03/30/2015	IP 71124.05	Radiation Monitoring Instrumentation	
1, 2, 3	03/16/2015	03/30/2015	IP 71151	Performance Indicator Verification	
2	03/23/2015	03/27/2015	<b>ISI</b> IP 7111108G	<b>- UNIT 2 IN-SERVICE INSPECTION</b> Inservice Inspection Activities - BWR	1

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

Unit Number	Planned Dates Start	Planned Dates End	Inspection Activity	Title	No. of Staff on Site
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2

**RP - RP OCCUPATIONAL BASELINE WEEK 2**

1, 2, 3	04/06/2015	04/10/2015	IP 71124.01	Radiological Hazard Assessment and Exposure Controls	
1, 2, 3	04/06/2015	04/10/2015	IP 71124.02	Occupational ALARA Planning and Controls	
1, 2, 3	04/06/2015	04/10/2015	IP 71124.03	In-Plant Airborne Radioactivity Control and Mitigation	
1, 2, 3	04/06/2015	04/10/2015	IP 71124.04	Occupational Dose Assessment	
1, 2, 3	04/06/2015	04/10/2015	IP 71124.05	Radiation Monitoring Instrumentation	
1, 2, 3	04/06/2015	04/10/2015	IP 71151	Performance Indicator Verification	

1

**EP - EP EXERCISE**

1, 2, 3	06/22/2015	06/25/2015	IP 7111404	Emergency Action Level and Emergency Plan Changes	
1, 2, 3	06/22/2015	06/25/2015	IP 7111407	Exercise Evaluation - Hostile Action (HA) Event	
1, 2, 3	06/22/2015	06/25/2015	IP 71151	Performance Indicator Verification	

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