



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

January 27, 2014

EA-11-018  
EA-11-252  
EA 13-185

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

**SUBJECT: BROWNS FERRY NUCLEAR PLANT – CONFIRMATORY ACTION LETTER AND SEVERITY LEVEL III 10 CFR 50.9 VIOLATION FOLLOW-UP INSPECTION REPORT 05000259/2013014, 05000260/2013014, AND 05000296/2013014**

Dear Mr. Shea:

On December 13, 2013, the U.S. Nuclear Regulatory Commission (NRC) completed a follow-up inspection at Browns Ferry Nuclear (BFN) Plant Units 1, 2, and 3 and discussed the results of this inspection with Mr. Keith Polson and other members of your staff. The inspection results are documented in the enclosed inspection report.

On August 9, 2013, the Tennessee Valley Authority (TVA) submitted a letter to the NRC, Commitments Related to the Browns Ferry Integrated Improvement Plan (IIP) (Agencywide Documents Access and Management System (ADAMS) Accession No. ML13224A263), committing to a specific set of actions associated with the issues identified during the NRC's 95003 Inspection, Supplemental Inspection for Repetitive Degraded Cornerstones, Multiple Degraded Cornerstones, Multiple Yellow Inputs or One Red Input, and implementation of the Browns Ferry Nuclear IIP, completed in June 2013 (ADAMS Accession No. ML13234A539). In TVA's August 9 letter, TVA identified short term actions, referred to as Tier 1 actions, that would be completed by the dates specified in the Enclosure to the letter. The TVA commitment letter also stated that an additional set of actions, referred to as Tier 2 actions, would be completed to ensure sustained excellent performance and fulfill the long-term success criteria described in TVA's IIP. The NRC reviewed the TVA committed Tier 1 and Tier 2 actions and 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. This letter also confirmed the NRC understands that the items listed as Tier 2 Commitments (items 11 through 31) would be subject to NRC inspection following TVA's written notice to the NRC of their completion. The completion of the Tier 2 Commitments will be subject to inspection as part of the routine base line ROP inspection program.

This follow-up inspection to the Tier 1 Commitments and Severity Level III Violation was performed in part to: 1) determine if adequate corrective actions were implemented for one Severity Level (SL)-III Violation and 10 CAL items; 2) verify that the root causes of these enforcement actions were identified, that their generic implications were addressed, and that the licensee's programs and practices were appropriately enhanced to prevent recurrence; and 3) determine whether closure of the Red Finding and SL III Violation were consistent with the NRC's Reactor Oversight Process and Enforcement Policy. Based upon NRC's inspection of and closure of the Tier 1 Commitments, the NRC has concluded that the Confirmatory Action letter Tier 1 Commitments Related to the IIP (EA 13-185) is closed. The basis for the NRC's conclusion is documented in the enclosed report. We understand that TVA will continue to implement the IIP and Tier 2 commitment items, and that TVA will provide written correspondence informing the NRC when each of the actions addressed on the Tier 2 list of commitments, items 11 through 31, are completed. As stated in our August 22 letter, the NRC requests that this correspondence include the basis for closing of the commitment item in the context of the internal TVA reviews established in the IIP. The NRC acknowledges TVA's commitment to complete the Tier 2 items to ensure sustained excellent performance and the achievement of the long-term success criteria established in the IIP.

In our Annual Assessment Letter dated May 9, 2011, we informed you that Browns Ferry Unit 1 was placed in the Multiple/Repetitive Degraded Cornerstone Column (Column 4) of the NRC's Action Matrix. In accordance with Inspection Manual Chapter (IMC) 0305, "Operating Reactor Assessment Program," this decision was made on the basis of a Red Finding in the Mitigating Systems cornerstone. The NRC has determined that the results of this inspection, in conjunction with the previously completed inspection activities, provided adequate assurance that the completed or planned corrective actions were sufficient to address the performance that led to the Red Finding associated with the failure of 1-FCV-74-66 and SL III Violation of 10 CFR 50.9, "Completeness and Accuracy of Information". The Red Finding (EA-11-018) and the 10 CFR 50.9 SL III Violation (EA-11-252) are closed. Therefore, the performance issue associated with the Red Finding will not be considered as an Action Matrix input after the end of the fourth quarter of 2013.

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 other inputs to the Mitigating Systems Cornerstone that meet the criteria described in IMC 0305 for a Repetitive Degraded Cornerstone beginning October 1, 2013. The other inputs included a White High Pressure Coolant Injection Mitigating Systems Performance Indicator (MSPI) and a White Emergency AC MSPI which resulted in a degraded Mitigating Systems cornerstone beginning in the fourth quarter of 2012. The third input was a White finding for the failure to follow the engineering change procedure associated with Safe Shutdown Instruction training which was effective through the end of the first quarter of 2013. These three inputs resulted in Browns Ferry Unit 1 meeting the Repetitive Degraded Cornerstone criteria in the first 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.

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In accordance with Title 10 of the *Code of Federal Regulations* 2.390, "Public Inspections, Exemptions, Requests for Withholding," of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC's Public Document Room or from the Publicly Available Records (PARS) component of the NRC's ADAMS which is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

**/RA/**

Victor M. McCree  
Regional Administrator

Docket Nos.: 50-259, 50-260, 50-296  
License Nos.: DPR-33, DPR-52, DPR-68

Enclosure:  
Inspection Report 05000259, 260, 296/2013014  
and Attachment

cc distribution via ListServ

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Letter to Joseph W. Shea from Victor McCree dated January 27, 2014

SUBJECT: BROWNS FERRY NUCLEAR PLANT – CONFIRMATORY ACTION LETTER AND SEVERITY LEVEL III 10 CFR 50.9 VIOLATION FOLLOW-UP INSPECTION REPORT 05000259/2013014, 05000260/2013014, AND 05000296/2013014

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**NUCLEAR REGULATORY COMMISSION**

**REGION II**

Docket Nos.: 50-259, 50-260, 50-296

License Nos.: DPR-33, DPR-52, DPR-68

Report Nos.: 05000259/2013014, 05000260/2013014, 05000296/2013014

Licensee: Tennessee Valley Authority (TVA)

Facility: Browns Ferry Nuclear Plant, Units 1, 2, and 3

Location: Corner of Shaw and Nuclear Plant Roads  
Athens, AL 35611

Dates: December 2 – 13, 2013

Inspectors: C. Kontz, Sr. Project Engineer, RII (Team Lead)  
F. Saba, Sr. Project Manager, NRR  
M. Riches, Project Engineer, RII  
J. Worosilo, Sr. Project Engineer, RII  
B. Fuller, Sr. Operations Engineer, RI  
T. Hartman, Sr. Resident Inspector, RIV  
M. Keefe, Human Factors Specialist, NRR  
N. Pitoniak, Fuel Facility Inspector, RII

Approved by: Jonathan H. Bartley, Chief  
Reactor Projects Branch 6  
Division of Reactor Projects

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## SUMMARY

Inspection Report (IR) 05000259, 260, 296/2013014; 12/02/2013 – 12/13/2013; Browns Ferry Nuclear Plant, Unit 1, 2, & 3; Follow-up Inspection - Inspection Procedure (IP) 92702

This report covers a 2-week period of follow-up inspection by eight resident, region-based, and headquarters personnel that reviewed the actions associated with Confirmatory Action Letter (CAL) dated August 22, 2013, (Items 1-10). This inspection included evaluation of two additional escalated enforcement actions for closure. Additionally, the inspection documented observations associated with the inspection activities to be used during agency assessments of licensee performance and determination of follow-on agency actions.

### Inspection Objectives:

- To determine whether adequate corrective actions had been implemented for one SL III Violation and 10 CAL Tier 1 items.
- To verify that the root causes of these enforcement actions had been identified, that their generic implications had been addressed, and that the licensee's programs and practices had been appropriately enhanced to prevent recurrence.
- To determine whether CAL actions were effectively implemented as appropriate to enable the assessment of the issues identified during the IP 95003 inspection for continued improvement in plant performance for consideration in the assessment of the transition of Browns Ferry Unit 1 out of the Multiple/Repetitive Degraded Cornerstone Column.
- To determine whether closure of the Red Finding and SL III Violation was appropriate, consistent with the NRC's Reactor Oversight Process and Enforcement Policy.

No findings were identified. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4, dated December 2006.

### A. NRC-Identified and Self-Revealing Findings

None.

### B. Licensee-Identified Violations

None.

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## REPORT DETAILS

### 1. BACKGROUND

In NRC Follow-up Assessment Letter dated May 9, 2011, (ADAMS Accession No. ML111290482), the NRC informed TVA that Browns Ferry Unit 1 was placed in the Multiple/Repetitive Degraded Cornerstone Column (Column 4) of the NRC's Action Matrix. In accordance with NRC Inspection Manual Chapter (IMC) 0305, "Operating Reactor Assessment Program," this decision was made on the basis of a Red Finding in the Mitigating Systems cornerstone. On May 24, 2013, the U.S. Nuclear Regulatory Commission (NRC) completed the onsite portion of an inspection at the Browns Ferry Nuclear Plant (BFN), Units 1, 2, and 3. The inspection was conducted in accordance with the guidance contained in IMC 0305 and IP 95003, "Supplemental Inspection for Repetitive Degraded Cornerstones, Multiple Degraded Cornerstones, Multiple Yellow Inputs, or One Red Input," dated February 9, 2011, and was performed in response to the facility's designation as having a Repetitive Degraded Cornerstone, as defined by the NRC's Reactor Oversight Process (ROP).

To guide its performance improvement activities in response to the Red Finding, TVA developed an Integrated Improvement Plan (IIP), which it submitted to the NRC on August 23, 2012 (ADAMS Accession No. ML12240A106). The IP 95003 supplemental inspection procedure was conducted at Browns Ferry to gain insights into the breadth and depth of safety, organizational, and programmatic issues which TVA addressed in its IIP.

The overall result and conclusion of the inspection, as documented in NRC Supplemental IP 95003 Inspection Report 05000259/2013011, 05000260/2013011, And 05000296/2013011, (ADAMS Accession No. ML13234A539), was that the plant was being operated safely and that TVA had made some progress in improving Browns Ferry station performance. However, the inspection results showed that TVA needed to aggressively continue the IIP implementation to achieve substantial performance improvement. The team identified multiple areas that warranted revision to the IIP to ensure that performance improvement would be achieved. The areas were associated with Safety Culture, Procedure Quality, Human Performance Verification Program, and an Operations Led Organization.

### 2. SAFETY CULTURE

The independent graded safety culture assessment performed during the IP 95003 inspection confirmed that the results obtained from the 2011 and the 2013 independent safety culture analysis were a reasonable characterization of the culture that existed at the site during that time period. The assessment found that employees perceived notable improvements in safety culture across the site. Employees had recognized a notable change in the overall focus of the site, from a production-focus and an emphasis on doing the minimum required to keep the plant running, to a safety-focus and emphasis on making conservative decisions. Employees also indicated that they had greater trust in upper management and perceived an increased level of support for raising safety concerns and increased emphasis on raising standards for safe

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performance. Despite the overall improved safety culture, translating the safety culture beliefs into repeatable, sustainable safety culture behaviors still remained a challenge at Browns Ferry. Some station personnel including operators, technicians, and their immediate supervisors were challenged to routinely exhibit site standards and expectations when performing normal duties and responsibilities involving work practices, decision making, and implementation of the problem identification and resolution programs.

### 3. CONFIRMATORY ACTION LETTER - EA 13-185

On August 9, 2013, TVA submitted a letter to the NRC, "Commitments Related to the Browns Ferry IIP" (ADAMS Accession No. ML13224A263), committing to a specific set of actions to be completed in the near term. TVA stated that these actions, referred to as Tier 1 actions, would be completed by the dates specified in the Enclosure to the letter. The TVA commitment letter also stated that an additional set of actions, referred to as Tier 2 actions, would be completed to ensure sustained excellent performance and fulfill the long-term success criteria described in TVA's IIP. The NRC reviewed the TVA committed Tier 1 and Tier 2 plans and issued a Confirmatory Action Letter (CAL) (ADAMS Accession No. ML13232A105) on August 22, 2013. This letter confirmed TVA's actions, which when effectively implemented and validated by the NRC, would support NRC's performance assessment of Browns Ferry Unit 1.

### 4. OTHER ACTIVITIES

#### 4OA5 Other Activities

##### .1 Follow-up On Confirmatory Action Letter (IP 92702)

During the inspection the team performed a follow-up review of TVA's implementation of commitments identified in Confirmatory Action Letter dated August 22, 2013 (ADAMS Accession No. ML13232A105), item numbers 1 - 10. This inspection also included evaluation of two escalated enforcement actions for closure. Additionally, the inspection documented observations associated with the inspection activities to be used during agency assessments of licensee performance and determination of follow-on agency actions.

#### A. Evaluation of Inspection Requirements

The team conducted onsite inspection of each traditional enforcement Violation and CAL item with respect to timeliness, completeness, and adequacy of licensee actions in the following areas. This inspection included actual physical verifications of equipment and processes, and interviews of licensee staff as required. Additionally, the team performed assessment of the licensee actions and documented observations.

Corrective Actions: The team reviewed the following for each item inspected:

1. Licensee management assignment of responsibility for implementing corrective actions, including any necessary changes in procedures and practices.
2. Ensured corrective actions were fully implemented.
3. Reviewed status of commitment actions per the CAL.
4. Verified corrective actions to prevent recurrence (CAPRs) were implemented in a timely manner and address the root cause.

Root Cause Analysis: The team performed the following to review the adequacy of the applicable licensee root cause analyses:

1. Reviewed the status of the licensee's effectiveness review per the plan established in the Root Cause Analysis (RCA).
2. Reviewed the extent of condition and extent of cause for completeness and accuracy.
3. Ensured root causes were identified and evaluations supported RCA conclusions.

Generic Implications Analysis: The team reviewed the adequacy of licensee analysis to ensure potential generic issues/applicability was evaluated.

Assessment: The team performed assessments of the implementation of each CAL item and of the following items to evaluate the sustainability and continuous improvement of licensee performance:

- The effectiveness of the licensee's corrective action program in identifying, evaluating, and correcting problems,
- Licensee auditing, self-assessments, and performance metrics,
- Licensee's Safety Culture in order to identify any indications of reluctance to report safety issues by licensee personnel or underlying safety culture issues.

B. Items Reviewed

.1 (Closed) Confirmatory Action Letter Item #1 – Safety System Reliability Plan

*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.*

TVA completed and closed their action plan for Commitment #1 on November 30, 2013. The team performed a detailed review of the implementation of the CAL commitment and determined that the licensee met the commitment. This item is closed.

a. Inspection Scope

The team reviewed the licensee's completion of the Tier 1 commitment related to their SSRP and determined that they have reduced the maintenance backlog and addressed the material condition of the emergency equipment cooling water, residual heat removal

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service water, reactor core isolation cooling, high pressure coolant injection, core spray, residual heat removal, and emergency diesel generators systems.

b. Findings and Observations

No findings were identified.

The team determined that the licensee's actions increased the reliability of these safety systems. The licensee reviewed the outstanding work orders for the selected systems and eliminated duplicate work and work that was no longer valid or required. Any items that were removed from the scope had to be approved by a committee comprised of the same quorum as the original team and approved by the Plant Manager. The remaining items were then prioritized and a work-down curve was created. The licensee brought in additional support to prepare and complete these work orders.

.2 (Closed) Confirmatory Action Letter Item #2 – Work Management

*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:*

- *T-week work planning and schedule development appropriately considers deferrals (Milestone Adherence, Scope Stability (T-6) and Scope Survival (T-16));*
- *Work selection (Critical Preventative Maintenance Work Orders (PM WOs) in 2<sup>nd</sup> Half of Grace, On-line Corrective Maintenance Backlog (Critical Work Orders (WOs)) and On-line Deficient Maintenance Backlog (Critical WOs));*
- *Availability of maintenance resources and parts (Scope Stability (T-6) and Schedule Stability (T-3), Critical PM WOs in 2nd Half of Grace);*
- *Work package quality (Packages Ready at T-10 and On-Line Schedule Adherence/Completion);*
- *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 Adherence to work schedule (Schedule Adherence/Completion).*

TVA completed and closed their action plan for Commitment #2 on Nov 21, 2013. The team performed a detailed review of the implementation of the CAL commitment and determined that the licensee met the commitment. This item is closed.

a. Inspection Scope

The team reviewed the licensee's completion of the Tier 1 commitment related to their Work Management Plan and determined they have demonstrated that worker and supervisor behaviors regarding the work management process have improved. The team observed briefings given to Operations, Engineering, Maintenance, Chemistry, Radiation Protection, and Work Control personnel by their respective management, to reinforce expectations that personnel should stop if the work product (work order,

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procedure, tagout instructions, etc.) was not correct or appropriate to continue and notify their supervisor for resolution.

b. Findings and Observations

No findings were identified.

The team observed several planning meetings at different stages of the work management process. Overall, the planning meetings were functional and effective. The planning meetings still needed to ingrain a questioning attitude and openness to challenge during these meetings. Actions that were a result of the meetings were tracked through the work management process and assigned owners. Due to a computer issue, the station was challenged with preparing and issuing schedules. This led to some challenges to the work management staff and led to the need to re-perform one of the meetings, but only after the meeting was held.

The performance indicators used by the work management groups have shown improvement. A change in scheduling software resulted in a negative impact to a few of the indicators. This was a result of how the program counts and bins schedule changes. Despite this impact, the licensee was still trending in a positive direction with the indicators. The team did discuss with management the trap of managing indicators instead of addressing process issues. The licensee was aware of the traps and planned to continue to focus on strengthening the process to receive the desired outcome.

Discussions with various personnel across the work management staff identified that resources (personnel) was the biggest concern to maintaining the progress they have made and continuing to improve. Management put a big emphasis on not only hiring additional personnel, but also hiring the right people for the needed positions. The team observed work in the field and watched a maintenance group stop work, get their supervisor involved, and get resolution to the issue prior to continuing the work. This was evidence that the expectations from the management were becoming ingrained in the workers.

The team observed that Senior Manager, Work Management held frequent meetings with his staff to maintain oversight and support both online and outage groups together. These were designed to promote communication between the groups.

Overall, the team determined the licensee had made significant improvement, but still required continued action to reach intended goals. This is agreed upon across the licensee's staff.

.3 (Closed) Confirmatory Action Letter Item #3 – 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.*

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TVA completed and closed their action plan for Commitment #3 on October 31, 2013. The team performed a detailed review of the implementation of the CAL commitment and determined that the licensee met the commitment. This item is closed.

a. Inspection Scope

Commitment #3 addressed long-standing procedure quality and procedure adherence issues. The licensee developed procedure 95003-009, "BFN Procedure Upgrade Project," which detailed the licensee's strategy for successful implementation of the Procedure Upgrade Project (PUP). The team reviewed the procedure to determine whether the procedural issues identified during the IP 95003 inspection were adequately addressed by the procedure. The review included the licensee's interim and long-term action plans, the methodology for prioritization of procedure revisions, changes to the procedure development and review process, and the resources and training identified to support implementation. The team also reviewed the licensee's methods for monitoring the progress and effectiveness of the project including the selected metrics, projected milestones and planned field observations.

b. Findings and Observations

No findings were identified.

The team concluded that the licensee's actions were adequate to ensure a sustainable procedure revision process that will address the long-standing quality issues associated with the site procedures. Discussions with the program owners identified approximately 7,500 procedures that will require some level of modification. Of these, a "proof of concept" subset of 64 procedures was identified for revision with the goal to have 80 percent completed as part of the closure criteria for the commitment. At the time of inspection, only six procedures had been revised. A review of the six procedures revised as part of the PUP indicated that the new revisions addressed the procedural quality issues. While the quality of the revised procedures was noteworthy, the sample size was too small to provide any meaningful feedback concerning sustainability of the effort. The reason for the small quantity was due to a decision by the program owners to focus on developing and implementing the core curriculum for the procedure writers assigned to the project based on the certification program provided by the Professional Procedure Writers Association (PPA). At the time of the inspection, 16 procedure writers have either been assigned (TVA) or hired (contractors) to support project implementation. With the exception of four procedure writers with previous PPA certification, all of the procedure writers have either completed the training or are scheduled to complete it in the near future.

For the current fiscal year (2014) adequate funding has been allotted to PUP. The project was expected to take approximately three years to complete. Currently, funding has not been set aside beyond fiscal year 2014. The program owners stated that funding for the outlying years is addressed in the project plan, but TVA's funding process doesn't commit funds beyond one year out. TVA will need to ensure that adequate funding is provided in the outlying years to bring the project to completion.

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The team also reviewed the licensee's efforts to integrate the PUP with the work planning process through the implementation of 0-TI-415, "Procedure Quality Tools (Package Walkdown Checklist)." Any new or revised procedure linked to a work order receives a walkdown at T-3 (i.e., three weeks before performance of the work). The results of the walkdown are documented on the 0-TI-415 checklist. The team observed work order walkdowns and procedural reviews using the new 0-TI-415 checklists. The walkdowns were conducted by experienced mechanical and electrical maintenance personnel. In both instances, the workers conducted thorough reviews of the work orders using the new 0-TI-415 checklists. During both observations, the work orders were rejected because of issues with the procedures and comments were documented on the 0-TI-415 checklists. The team verified that service requests (SRs) were written to correct the issues with the procedures.

During the walkdowns, the team questioned maintenance personnel on the use of "concurrent" versus "independent" verification as well as "critical actions." Their answers were consistent with the guidance contained in the site's implementing procedures. The team also asked the maintenance workers whether they were aware of any changes in attitudes in their department. Both groups indicated that line and upper management were stressing the importance of identifying and fixing problems with procedures; line supervisors were writing SRs as soon as they received a deficient 0-TI-415 checklist. The team also conducted a trend review of the SRs associated with procedure issues before implementation of the PUP up to the inspection week. The review indicated a marked increase in the number of SRs associated with procedural issues, which supports the assertion that procedure issues are receiving more attention.

The team conducted a detailed review of some of the training initiatives designed to support the PUP. Specifically, the team reviewed the training needs analysis for an Independent Qualified Reviewer (IQR), and determined them to be a thorough analysis of the skills and qualifications needed to perform the task. The team also reviewed the training materials for several modules of the core curriculum for procedure writers. The team determined that the content provided adequate level of detail to support the training objectives identified in each of the lesson plans. The team also observed the administration of one of the courses associated with the core curriculum and found the course to be highly interactive and the instructors knowledgeable on the subjects being taught.

The team also reviewed the performance metrics relating to procedure quality and procedure adherence. While some of the inputs into each of the metrics are still red, they are trending in the positive direction. The program owners periodically review the inputs assigned to each performance metric to determine whether they are providing an accurate indication of the actual condition of the focus area.

.4 (Closed) Confirmatory Action Letter Item #4 - Verification Practices

*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*

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*will be reviewed to verify 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.*

TVA completed and closed their action plan for Commitment #4 on November 1, 2013. The team performed a detailed review of the implementation of the CAL commitment and determined that the licensee met the commitment. This item is closed

a. Inspection Scope

The team reviewed TVA Corporate Procedures and determined they are now in alignment concerning verification techniques: "Peer Check," "Independent Verification," (IV) and "Concurrent Verification," (CV). NPG-SPP-22.202, "Human Performance Tools," contains the definitions and methodology for performing each of the designated verification techniques. NPG-SPP-10.3, "Verification Program," contains the criteria used to determine when verification is required to confirm actions and configuration; and refers to NPG-SPP-22.202 for the methodology of performing the verification.

The team observed a sample of briefings that were given to Operations, Engineering, Maintenance, Chemistry, Radiation Protection, and Work Control personnel by their respective management to reinforce expectations for the use of verification practices.

The team observed a sample of Dynamic Learning Activities (DLAs) performed by Operations, Engineering, Maintenance, Chemistry, Radiation Protection, and Work Control personnel to demonstrate the use of each verification technique, and were evaluated by the respective Department managers. Activities included use of mockups for demonstrating verification techniques during valve and switch manipulations, and placement of clearance tags.

b. Findings and Observations:

No findings were identified.

The licensee reviewed the "Conduct of" procedures to ensure alignment with the HU procedures, and revised the procedures as required to remove definitions and methods duplicated from the corporate HU tools procedures. The "Conduct of" procedures are corporate documents; and therefore may still contain some references to other verification techniques due to practices inherent at the other TVA sites. Browns Ferry has committed to only use peer check, independent verification and concurrent verification.

Interim actions were initiated to resolve embedded procedure conflicts via standing orders and department directives identifying the proper HU tools for use. The interim actions directed corrective actions to be taken for conflicts identified in work documents until the procedure upgrade program was fully implemented.

The licensee procedure upgrade program (PUP) has been initiated, with a priority list developed and procedure revisions being processed. Recent successes include identification of numerous work documents and procedures with improper verification techniques during pre-job procedure reviews and walk-downs. The inappropriate work documents were rejected prior to use in the field, until revision to include proper verification methods was completed.

The team identified that training activities conducted had potential to negatively train personnel. Switch and valve manipulations during the DLAs were primarily focused on demonstrating the techniques for Peer Check, IV and CV. The valves and switches were essentially identical, so there was no obvious reason why one switch or valve manipulation was verified using IV when the other manipulation was verified using CV, which would not reinforce the underlying reason for using a CV verse an IV. This was a missed opportunity to reinforce why different methods of verification are used in different situations.

The objective quality evidence submitted with the closure package for PER 769637-004 included all of the procedure pages used for performance of the DLA for Engineering department personnel. Clicking sequentially through the marked-up procedure pages showed a wide disparity in the use of the circle/slash method of place keeping. Proper place keeping was not one of the objectives of the DLA, and there did not appear to be any commentary on the grading sheet concerning place keeping. This is another example where negative training may occur due to a missed opportunity to enforce HU tools.

The team observed Operations briefings performed prior to the Unit 3 power maneuver on Wednesday, December 4, 2013. The briefings demonstrated good reinforcement of the use of the majority of the HU tools found in Appendix A of NPG-SPP-22.202 such as 2-minute rule, self-checking, procedure adherence, three-way communications, and peer checking. The power maneuver was performed in a careful, deliberate manner. Reactivity management was given the appropriate attention during the maneuver.

The team discussed verification practices with a Shift Manager (not on duty) including the DLA (out of the box) training activities. He stated that there was a lot of attention paid to these activities by management. The team's observations were shared concerning negative training when the scope of the DLA was too narrowly focused.

.5 (Closed) Confirmatory Action Letter Item #5 - H.2(c) Inspection Readiness

*TVA commits to complete the actions necessary to support the NRC's inspection of the H.2(c) substantive cross-cutting issue (complete, accurate and up-to-date design documentation, procedures, work documents, and component labeling).*

TVA completed and closed their action plan for Commitment #5 on November 4, 2013. The team performed a detailed review of the implementation of the CAL commitment and determined that the licensee met the commitment. This item is closed



a. Inspection Scope

The team reviewed the timeliness, completeness, and adequacy of licensee actions regarding the H.2(c) substantive cross-cutting issue. The team verified that licensee management had assigned responsibility for implementing corrective actions, including any necessary changes in procedures and practices concerning the H.2(c) substantive cross-cutting issue. The team also verified that the corrective actions were fully implemented and demonstrated an improvement in licensee's performance. The team performed interviews, reviewed procedures, and observed pre-work walkdowns per the licensee procedure 0-TI-415 quality checklist to assess the licensee's implementation of the corrective actions to address the H.2(c) substantive cross-cutting issue.

b. Findings and Observations

No findings were identified.

Browns Ferry staff concentrated in the following areas to address the H.2(c) substantive cross-cutting issue: 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.

As discussed in Commitment #3, the licensee prepared a comprehensive procedure upgrade project. This project is still in the implementation phase. The project is expected to take approximately three years to complete. Browns Ferry had determined that approximately 7,500 procedures would be revised by this project. At the time of the inspection, only six procedures had been revised. The reason for the small number of procedures revised was because the initial efforts by the procedure writers were unsatisfactory and it was decided to put all of the writers through the complete training program. Browns Ferry indicated that this has already displayed benefits in the quality of products that were delivered. The team noted that the project seems to be more goal-oriented (quality procedures) rather than schedule-oriented (number of procedure revised). (See Commitment #3, Procedure Upgrade Project, for additional information)

Browns Ferry developed a new station technical instruction to provide a common standard for pre-work walkdowns on work instructions (0-TI-415, Procedure Quality Tool (Package Walkdown Checklist)). The team observed a couple of these walkdowns. In both instances, the workers conducted thorough reviews of the work orders using the technical instruction. If work orders and/or procedures were rejected during the walkdowns, a service request was written to correct the issues identified. The pre-work walkdowns were integrated into the work planning process at T-3 (three weeks before performance of work) in order to provide sufficient time to correct issues with either the work order or the procedures supporting the work activity. There was an increasing trend in the number of PERs related to procedure/work order issues entered in the corrective action program. This trend supported that procedure issues were receiving more attention at the station.

In the proper use of human performance tools area, the fleet procedure describing fundamental human performance tools was reviewed and revised. The team noted management presence and interactions with the station personnel. Browns Ferry was using ePOP (observation program) to monitor field observations and feedback to the staff as part of the observation program. Observations were documented in more detail to ensure the right message was conveyed to the staff. Even though the quantity of observations completed was important to the station, the Human Performance Manager indicated that there was a big focus in the quality of those observations. The main purpose of the program was to change the behavior of the staff by providing positive coaching and peer coaching.

Dynamic learning activities were performed by Operations, Engineering, Maintenance, Chemistry, Radiation Protection, and Work Control personnel to demonstrate the use of each verification techniques. Activities included use of mockup to demonstrate verification techniques during valve and switch manipulations, and placement of clearance tags. The team questioned maintenance personnel on the use of “concurrent” versus “independent” verification as well as “critical actions.” Their answers were consistent with the guidance contained in the site’s implementing procedures. (See Commitment #4, Verification Practices, for additional information)

As discussed above, training the procedure writers was one of the reasons why only a small number of procedures were revised as of the date of the inspection. A core curriculum had been identified for procedure writers and modules have either been developed or modified to align with the certification program of the PPA. Most of the procedure writers had completed the training. The team reviewed the needs analysis for the IQR and it appear to be a thorough analysis of the skills and qualifications necessary to perform the task. Also, the team observed one of the training modules for the procedure writers. It was well-organized, highly interactive, and the instructors were knowledgeable about the topics.

The team concluded that the corrective actions completed by Browns Ferry had resulted in an improved performance in addressing the H.2(c) substantive cross-cutting issue. The high number of PERs that were generated demonstrated an increased awareness of the importance of procedure quality at the station. It is important for the station to keep the focus on procedure quality and to continue with the implementation of the procedure upgrade project. The continued management involvement and oversight observed by the team provided reasonable assurance that performance improvement would be achieved.

.6 (Closed) Confirmatory Action Letter Item #6 – Corrective Action Program

*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.*

TVA completed and closed their action plan for Commitment #6 on Nov 21, 2013. The team performed a detailed review of the implementation of the CAL commitment and determined that the licensee met the commitment. This item is closed

a. Inspection Scope

The team reviewed the timeliness, completeness, and adequacy of licensee actions in the areas of service request generation threshold, description quality, and PER trending. The team verified that licensee management had assigned responsibility for implementing corrective actions, including any necessary changes in procedures and practices in the areas listed above. The team also verified that the corrective actions were fully implemented and demonstrated an improvement in licensee's performance. The team performed interviews, reviewed the daily population of SRs, and attended PER Screening Committee (PSC), Corrective Action Review Board (CARB), and Performance Improvement Coordinator meetings to assess the licensee's implementation of the corrective actions implemented in the areas listed above.

b. Findings and Observations

No findings were identified.

The team noted that Browns Ferry management involvement and oversight in the low generation threshold of SRs was evident. This was demonstrated by the high number of SRs generated in the last several months. Based on field observations, the workforce was more engaged in the initiation of SRs. On multiple occasions, plant personnel demonstrated an increased level of confidence that issues entered into the corrective action program would get addressed.

The team recognized that with the increased quantity of SRs, the quality of the SRs was challenged. However, the PSC monitors the quality of SRs and data since July 2013 demonstrate an improvement in this area. Similarly, PSC holds related to SR quality showed a decreasing trend.

In the PER trend area, department CARBs and the PSC reviewed trends on a monthly basis in addition to the quarterly integrated trend report. The team determined that the changes to the PER trending process and the implementation of the tracking tool had improved the station PER trending performance. However, Browns Ferry recognizes that they still have some inconsistencies in the quality and compliance with the integrated trend report procedure template within the department. The station had already initiated actions to address this issue.

The team concluded that the corrective actions completed by Browns Ferry had resulted in sustainable performance improvements in the areas of SR generation threshold, SR quality and PER trending. The continued management involvement and oversight observed by the team provided reasonable assurance that performance improvement would be achieved.

.7 (Closed) Confirmatory Action Letter Item #7 – 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.*

TVA completed and closed their action plan for Commitment #7 on November 22, 2013. The team performed a detailed review of the implementation of the CAL commitment and determined that the licensee met the commitment. This item is closed.

a. Inspection Scope

The team reviewed 31 License Amendment Requests (LARs) associated with design changes that the licensee selected for review. Four of these were designated for review as Tier 1 commitment items and completed. Twenty-seven were designated for review as Tier 2 commitment items with only one completed at the time of inspection and the remaining 26 LAR reviews were scheduled to complete by June 30, 2014. The team reviewed the RCA for the 10 CFR 50.9 Violation and the implementation of the two Corrective Actions to Prevent Recurrence (CAPRs) that were identified. CAPR-1, Verify NPG-SPP-09.3, was revised to provide a process that will give specific guidance to ensure adequate technical rigor in the preparation and verification of the design change documents. CAPR-2, revised BP-213, "Managing TVA's Interface with the NRC," to require all correspondence affecting the design basis have an engineering organization assigned as responsible for Independent Technical Reviews (ITRs) in accordance with TVA's Nuclear Quality Assurance Plan (TVA-NQA-PLN89-A). The team reviewed the engineering training records and interviewed Engineering and Licensing personnel to ensure adequate understanding of responsibilities and tracking of qualifications of individuals assigned the ITR responsibilities. The team reviewed qualification records for personnel qualification in Initiating and Completing an Engineering Change Package and qualification in Preparing Technical Evaluations. The team reviewed design basis change documents since implementation of the CAPRs and verified consistent utilization of the ITR. The team reviewed the status of the station review of 23 Engineering programs identified during the extent of condition and extent of cause for the Red Finding. Interviews were conducted with Engineering supervisors and managers to ensure adequate identification of scope for the extent of condition and extent of cause. A detailed review was performed of the most recent design change package submittal to verify compliance with revised site procedures.

b. Findings and Observations

No findings were identified.

The team noted that RCA 60411 identified a formal effectiveness review be completed 12 months following the implementation of the CAPRs. Although several focused self-assessments were conducted over the past 12 months, the station had not formally

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assigned a specific action with a due date to complete this formal effectiveness review due in February 2014. Completion of this effectiveness review was entered into the corrective action program as a specific action during the inspection with a due date of February 2014. The team also noted that the original PER 497736 associated with the 10 CFR 50.9 Violation regarding FCV-74-52 and FCV-74-66 was initially screened by the station as a level "B" and assigned an Apparent Cause Evaluation consistent with existing plant procedures in effect at the time of discovery. Subsequently, the Apparent Cause was re-screened to a RCA based on screening procedure revisions and incorporated into RCA 604811 that addressed the Alternate Leakage Treatment LAR. This required the original RCA 604811 to be revised, delaying actions and closure. The station identified the screening issue discrepancy. The team noted that the station had developed a desktop instruction to assist licensing personnel in reviewing and processing LER submissions based on various plant procedures. No discrepancies were identified between the requirements of the procedures and the desktop instruction, however, the team identified that the desktop instruction was not controlled by formal plant processes addressing changes and revisions. This presented a vulnerability in the case that plant procedures are revised and the desktop instruction is not revised accordingly. The station entered this issue into the corrective action program for resolution.

.8 (Closed) Confirmatory Action Letter Item #8 – Metrics Transition

*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.*

TVA completed and closed their action plan for Commitment #8 on October 4, 2013. The team performed a detailed review of the implementation of the CAL commitment and determined that the licensee met the commitment. This item is closed

a. Inspection Scope

The team reviewed the status of the licensee's transition of the metrics used to evaluate the IIP to gain alignment with TVA Nuclear Power Group Fleet Metrics. The team reviewed the licensee's process for transition to understand the methodology and steps used to implement the transition. The comparative analysis and basis for the transition were reviewed to determine if the transition was performed in a deliberate and systematic manner. The initial and final states of the metrics were reviewed to determine if the transition was performed in a manner that supported the licensee's stated goals for the transition including: 1) assure a broader perspective on aspects of performance beyond the IP 95003 focus areas; 2) provide a perspective of performance relative to the TVA fleet and a frame of reference relative to industry performance; and 3) support a strategy to sustain improvement toward excellence.

b. Findings and Observations

No findings were identified.

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The team noted that the transition actions were completed and implementation of review and improvement efforts was ongoing. The methods used to implement the transition were deliberate and included evaluations of content, thresholds, and targets for post transition metrics. Applicability of metrics beyond the focus of the IP 95003 focus areas was addressed. Following transition, metrics were observed to be used in monitoring both specific topical area and aggregate changes in performance. Additionally, new indicators were added to fleet metrics in support of monitoring performance improvement initiatives not covered by existing fleet metrics.

The team observed implementation and review of the revised metrics and found that there was a high level of scrutiny being placed on the validity and use of the post-transition metrics. Emphasis was being placed on ensuring the metrics were providing appropriate information to meet the stations intended goals and objectives.

.9 (Closed) Confirmatory Action Letter Item #9 – Safety Culture

*TVA commits to take actions to further demonstrate improvement and sustainability of the safety culture at BFN.*

TVA completed and closed their action plan for Commitment #9 on November 22, 2013. The team performed a detailed review of the implementation of the CAL commitment and determined that the licensee met the commitment. This item is closed

a. Inspection Scope

For Commitment #9, the team reviewed the recent Employee Concerns Program effectiveness review, and the most recent safety culture self-assessment pertaining to employee behaviors in the field not matching their attitudes. The team also interviewed several Department managers about their views about the progress of the safety culture at the station. The team also observed procedure walk-downs in the field to better understand progress on the procedure upgrade process. The team also observed a quarterly Nuclear Safety Culture Monitoring Panel (NSCMP) meeting.

b. Conclusions/Assessment

The team concluded that overall, Browns Ferry had made significant progress in many areas. The procedure upgrade project had improved the quality and usability of the site's procedures. In addition, there was a noted change of worker behaviors while performing work in the field. Workers would stop when unsure, and use human performance tools.

During the team follow-up inspection, the team observed a NSCMP quarterly meeting. Previous feedback to the station indicated a lack of rigor with the discussions during the panel, and a concern with the time allotted for the meeting discussion. As a result, Browns Ferry participated in a benchmarking trip to an Institute of Nuclear Power Operations highly rated station to understand what a good monitoring panel looks like. Based on the lessons learned from that benchmarking, Browns Ferry incorporated changes into the NSCMP process. During the November 2013 quarterly meeting, the

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station allotted a two and a half hour window for the panel, and the team observed that the discussions were robust and managers were challenging each other and making decisions at an appropriate level. The team observed that the feedback given during the IP 95003 inspection was internalized and was being implemented at the site.

Through management interviews, the team noted that staffing levels have increased, and station management was cognizant of the potential issues with eliminating the contractors hired to work on the work order backlog. The team noted that even though the reduction of contractor personnel was supposed to begin months ago, management was aware that in order to maintain sustainability with reduced staffing, equipment reliability must improve in order to keep the backlog at a minimum.

There were still issues with procedure quality at the site. However, quality issues were being recognized and entered into the procedure change process. Workers stopped when unsure and informed their supervisors of issues with the procedures.

During the inspection, the team discovered that the number of anonymous PERs had declined since the IP 95003. It was stated in the last Safety Culture Committee meeting that the station had the lowest number of anonymous PERs in the last nine quarters. The normal anonymous PER rate had been somewhere between 18-36 anonymous PERs a month however, in November 2013, there were only six.

During the inspection, the team followed members of the outage work order (WO) team conducting a field walkdown of WO 114220722, BFN-3-CKV-031-1433. The WO was for disassembly and inspection of the check valve. The WO team conducted and documented the walkdown using 0-TI-415 and the Field Walkdown Checklist. Using the criteria contained in the checklist, the WO team identified issues with the acceptance criteria and multiple actions contained with the steps. The WO team placed a "maintenance hold" on the work order and provided a copy of the checklist to the first line supervisor to initiate a SR to revise the procedure. Discussions with the first-line supervisor and WO team indicated a good understanding of the intent of the procedure checklist. The interview also revealed that the WO team members had a high degree of confidence that their comments would be addressed and had seen positive results from the disposition of previous walkdown comments.

In an attempt to gain insights from industry experience, the site had participated in several benchmarking trips and benchmarking learning opportunities were being captured in the CAP. During CARB and PSC meetings, management was identifying and rewarding good-catches, and highlighting expected performance.

Since the IP 95003 inspection, the site had made changes and improvements to the observation program. The team received information from several department managers that the station had implemented "delegation days" where they were able to delegate someone else to attend station meetings so that they would be available to be visible in the field and conduct observations. The team also received positive comments about the "Coach of the Day" program, which allowed for daily inter-disciplinary coaching. In addition, the site was using positive reinforcement to encourage station personnel to participate in coaching anyone on site, including coaching management.

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As demonstrated by the examples below, the team determined that Browns Ferry had begun to implement significant changes that, if maintained with the same rigor, would continue to improve the site's safety culture. In some cases, the programs were so newly implemented that it was too early to tell how sustainable they would be, but the team believed that there was potential for these programs to promote long-term sustainability.

#### 0-TI-415 Implementation:

The team asked the Maintenance workers whether they were aware of any changes in attitudes in their department. Both groups indicated that line and upper management were stressing the importance of identifying and fixing problems with procedures and line supervisors were writing SRs as soon as they received a deficient 0-TI-415 checklist. Previously, when procedure issues were identified and brought to line management, the issues received very little attention.

#### Problem Evaluation Reports:

During the inspection, the team requested trending information on the number of PERs related to procedure issues that were entered into the system since August 2013, which are as follows:

- August – ~80
- September through October – 370
- November through December – 437

The team determined that the trend supported that procedure issues were receiving more attention [H.2(c)].

#### Procedure Upgrade Project (PUP):

During the inspection the team met with the program owners and discussed the following:

- **Level of Effort:** The team had determined that the PUP will affect ~7,500 procedures. At the time of the inspection, only six procedures had been revised [H.2(c)]. The reason for the difference between predicted and actual was explained that initial efforts by the procedure writers were unsatisfactory and it was decided to put all of the writers through the complete training program. The program seemed to be more goal-oriented (quality procedures) rather than schedule-oriented (number of procedures revised).
- **Resources:** Sixteen procedure writers have either been hired (contractors) or assigned (TVA) to the PUP [H.2(c)]. This was in addition to the procedure writers assigned to the Procedures department.



- **Training:** A core curriculum had been identified for procedure writers and modules had either been developed or modified to align with the certification program of the Professional Procedure Writers Association [H.2(c)]. The team reviewed the needs analysis for the IQR and determined that it appeared to be a thorough analysis of the skills and qualifications necessary to perform the task. The team also attended one of the training modules for the procedure writers. It was well-organized, highly interactive, and the instructors were knowledgeable about the topics.
- **Metrics:** The team reviewed the metrics for the procedure upgrade project (Procedure Use and Adherence, Procedure/Instruction Quality, and Training). While some of the performance indicators were still red they were trending in the positive direction [H.2(c)]. The licensee also indicated that they periodically review the performance indicators assigned to each metric to determine whether they were providing an accurate indication of the actual health of the focus area.

.10 (Closed) Confirmatory Action Letter Item #10 – Improve the Operational Focus of BFN

*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 part of the plan.*

TVA completed and closed their action plan for Commitment #10 on October 18, 2013. The team performed a detailed review of the implementation of the CAL commitment and determined that the licensee met the commitment. This item is closed

a. Inspection Scope

The team reviewed the corrective actions associated with PER 731831 (Operations Centric Gaps to Excellence Plan) to determine if improvements were being made in the operational focus of Browns Ferry. The team reviewed performance metrics developed as part of the plan, conducted interviews, and performed field observations.

b. Findings and Observations

No findings were identified.

The team determined that the site had taken a broad range of actions in support of their efforts to make Browns Ferry an “Ops Centric Organization with a strong Operational Focus.” The licensee had implemented multiple communication actions concerning the initiative during both the creation and dissemination of the new focus efforts throughout the organization. Three areas of focus were targeted with specific corrective actions; protected equipment, housekeeping, and work control expectations. As part of the efforts, the licensee performed benchmarking, training needs analysis, and conducted a site survey. Additionally, Operations department procedures were revised to reflect the new focus.

Newly created and existing metrics were utilized to monitor attributes of site operations that could be used to assess the site trends associated with operations focus. The team noted that progress was shown by their metrics and was strongly supported by interviews with staff. Additionally, observations associated with the inspection of the other CAL items were reviewed for any insight or implication on the sites operations focus. The team concluded that although there were clear indications that progress was being made, continued efforts were necessary to achieve their goals of sustained excellence. The team also found that the licensee staff was cognizant of this and was very supportive of the continued efforts required to reach their intended goals.

.2 (Closed) Red Finding (EA-11-018) and SL III 10 CFR 50.9 Violation (EA-11-252)

The team determined that the results of this inspection, in conjunction with the previously completed inspection activities, provided adequate assurance that the completed or planned corrective actions were sufficient to address the performance that led to the Red Finding associated with the failure of 1-FCV-74-66 and SL III Violation of 10 CFR 50.9, "Completeness and Accuracy of Information" (4OA5.1.B.7). The Red Finding (EA-11-018) and the 10 CFR 50.9 SL III Violation (EA-11-252) are closed.

.3 Correction to IR 05000259/2013011, 05000260/2013011, and 05000296/2013011

Inspection Report 05000259/2013011, 05000260/2013011, and 05000296/2013011 documented non-cited violation 05000259, 260, 296/2013011-05, Maintenance Personnel Not Following Clearance Procedure, as having a cross cutting aspect of H.2(c) when the correct designation for the described cross-cutting aspect of "the licensee ensures supervisory and management oversight of work activities such that nuclear safety is supported" was H.4(c).

4OA6 Meetings, Including Exit

On December 13, 2013, team members discussed the preliminary inspection results with Mr. Keith Polson, Site Vice President, and other members of the licensee's staff. The team verified no proprietary information was retained or documented in the report.

**SUPPLEMENTARY INFORMATION**

**KEY POINTS OF CONTACT**

**Licensee**

M. Acker, Licensing Engineer  
P. Chase, 95003 Recovery  
V. Dennis, Work Week Manager  
G. Doyle, Director, 95003 Recovery  
M. Durr, Management Development, Function Area & Outage Oversight  
D. Green, Licensing Contractor  
D. Hughes, Senior Manager, Operations  
S. Hunnewell, Director of Engineering  
B. Kays, Licensing Contractor  
M. Oliver, Site Licensing Manager  
K. Polson, Site Vice President  
M. Rasmussen, Senior Manager, Work Control  
M. Richerson, Employee Concerns Specialist  
T. Scott, Performance Improvement Manager  
S. Spears, Superintendent, Electrical Maintenance

**LIST OF ITEMS OPENED, CLOSED AND DISCUSSED**

**Closed**

05000259, 260, 296/2011011-04	VIO	Inaccurate Information Provided Regarding Scoping of Motor Operated Valves in the Generic Letter 89-10 Program (4OA5.2)
05000259/2011008-01	VIO	RHR Subsystem Inoperable Beyond the TS Allowed Outage Time (4OA5.2)

**Discussed**

05000259, 260, 296/2013011-05	NCV	Maintenance Personnel Not Following Clearance Procedure Violation (4OA5.3)
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## LIST OF DOCUMENTS REVIEWED

### Section 40A5: Other Activities

#### PERS:

816178	816207	816270	816393	816502
516458	760220	755599	797710	797719
812103	606910	543130	509627	516458
673442	679307	682577	685091	685096
685101	686324	693072	695253	696481
696485	696489	696511	709020	709173
713306	724202	731649	731651	739197
752515	806154	808220	508189	229734
435440	475878	484548	507475	680792
707531	710182	723886	727398	727405
755599	769060	769637	776629	698866
505709	680792	484548	651000	782014
810853	801399	753980	793588	623211
475878	756600	755599	725419	227638
246527	304722	329704	497736	532466
555197	593491	604811	715124	755599
762747	790109	733606	731831	745457
722859				

#### Procedures:

3-SR-3.8.1.6 Common Accident Signal Logic, Rev. 17  
BFN-37757, BFN-0-RLY-211-DC-C1, HGA Relay Replacement PM 0000A  
EPI-0-000-MOV001 Electrical Preventative Maintenance for Limitorque Motor Operated Valves 0063  
MMDP-1 Maintenance Management System 0027  
NPG-SPP-06-1 Work Order Process, Rev. 2  
NPG-SPP-07.0 Work Management, Rev. 0  
NPG-SPP-07.1 On-Line Work Management, Rev. 10  
NPG-SPP-07.1.2 On-Line Ready-Ready, Rev. 5  
NPG-SPP-07.1.4 Work Control Prioritization – On Line, Rev. 3  
NPG-SPP-07.1.5 Work Control Performance Indicators – On Line, Rev. 1  
NPG-SPP-07.3 Work Activity Risk Management Process, Rev. 14  
PPA-AP-907-005, Procedure Writers' Manual, Rev. 1  
PPA-AP-907-001, Procedure Process Description, Rev. 1  
NPG-SPP-10.3, Verification Program, Rev. 1  
NPG SPP-22.202, Human Performance Tools, Rev. 5  
NPG SPP-07.6, NPG Work Control Planning Procedure, Rev. 7  
NPG SPP-01.2, Administration of Site Technical Procedures, Rev. 9  
NPG SPP-01.1, Administration of Standard Programs & Processes (SPPs); Standard Department Procedures (SDPs); and Business Practices (BPs), Rev. 3  
INPO 06-002, Human Performance Tools for Workers, April 2006  
0-TI-415, Procedure Quality Tools (Package Walkdown Checklist), Rev. 2  
Procedure 95003-009, Procedure Upgrade Project, Rev. 1  
3-OI-2, Condensate System, Rev. 51  
3-OI-2, Condensate System, Rev. 52

2-OI-2, Condensate System, Rev. 96  
 2-OI-2, Condensate System, Rev. 97  
 1-OI-2, Condensate System, Rev. 26  
 1-OI-2, Condensate System, Rev. 27  
 1-SR-3.6.1.5.2, Suppression Chamber-Reactor Building Vacuum Breaker Cycling, Rev. 4  
 1-SR-3.6.1.5.2, Suppression Chamber-Reactor Building Vacuum Breaker Cycling, Rev. 5  
 1-OI-3, Reactor Feedwater System, Rev. 35  
 1-OI-3, Reactor Feedwater System, Rev. 36  
 1-OI-6, Feedwater Heating and Misc Drains System, Rev. 22  
 1-OI-6, Feedwater Heating and Misc Drains System, Rev. 23  
 03-023-OWA-2012-0172 Pri 1  
 02-001-OWA-2013-0046 Pri 1  
 01-069-OWA-2013-0049 Pri 1  
 WM-1.1 Organization and Structures, Rev. 0  
 WM-1.2 Formatting Requirements and Procedure Components, Rev. 0  
 WM-1.3 Grammar and Sentence Structure, Rev. 0  
 WM-1.4 Action Verb List, Rev. 0  
 WM-1.5 Abbreviations, Acronyms, and Symbols, Rev. 0  
 WM-1.6 Annunciator/Alarm Response Instructions/Procedures, Rev. 0  
 TPD-PWG, NPG Procedure Writer/Reviewer Training Program Description, Rev. 1  
 Guideline BSL001.003, BSL Owner Author Guideline, Rev. 4  
 UG-001, Technical and Complex Technical Procedure Template Users Guide, Rev. 6  
 UG-016, Using MS Word 2007 in TVA Procedure Templates, Rev. 1  
 UG-013, Using the Interactive TVA Validation Filter, Rev. 2  
 Hot Keys for Procedure Writers  
 BSL Owner Author Quick Reference  
 NPG-SPP 22.202 Human Performance Tools, Rev. 5  
 NPG-SPP 10.3 Verification Program, Rev. 5  
 OPDP-1 Rev30, Conduct of Operations  
 BFN-NOER-13-052  
 Ops Standing Order OS 189  
 Maintenance Directive 2013-003  
 Radflash 08-14-13  
 Eng Guidelines CV IV  
 Chemistry SO 13-02 Rev. 01  
 RCI-17 Rev 75, Control of High Radiation Areas and Very High Radiation Areas 0-TI-415,  
 "Procedure Quality Tools (Package Walkdown Checklist)," Rev. 3,  
 NPG-SPP-07.6, "NPG Work Control Planning Procedure," Rev. 8  
 NPG-SPP-22.202, "Human Performance Tools," Rev. 5  
 NPG-SPP-22.304, "PER Trending  
 NPG-SPP-22.307, PER Effectiveness Reviews, Rev. 0, dated 8/30/13  
 NPG-SPP-09.3.1, Guidelines for Preparation of Design Inputs and Change Impact Screen, Rev  
 0002, 1/18/13  
 NPG-SPP-09.3.2, Risk Ranking, Compensating Actions, and Augmented Reviews, Rev. 0,  
 dated 2/8/13  
 NPG-SPP-03.10, Managing TVA's Interface with NRC, Rev. 0, dated 2/11/13  
 NPG-SPP-22.302, Corrective Action Program Screening and Oversight, Rev. 1, dated 11/20/13  
 NPG-SPP-22.300, Corrective Action Program, Rev. 0, dated 8/30/13

NPG-SPP-22.306, Root Cause Analysis, Rev. 0, dated 8/30/13  
 NPG-SPP-09.3, Plant Modifications and Engineering Change Control, Rev. 15, dated 9/30/13  
 NPG-SPP-22.305, Apparent Cause Evaluations, Rev. 0, dated 8/30/13  
 NPG-SPP-09.2, Equipment Environmental Qualification (EQ) Program, Rev. 2, dated 1/25/13  
 TVA-NQA-PLN89-A, Nuclear Quality Assurance Plan (NQAP), Rev. 28, dated 8/30/13  
 NPG-SPP 02.2.2 Fleet Metrics Report  
 NPG-SPP 10.0 Plant Operations  
 NPG-SPP 01.3 HOUSEKEEPING  
 OPDP-1 Conduct of Operations  
 OPDP-1 R30 08-06-2013  
 OPDP-1 R27 04-11-2013  
 OPDP-1 R26 02-18-2013

Work Orders:

110689236	114419242	113204811	114510532	114708938
115101030	09-715749-000	114709408	114220722	115051980

Other:

T+1 Schedule for Work Week 1342  
 T-6 Schedule for Work Week 1343  
 T-3 Schedule for Work Week 1343  
 T-0 Schedule for Work Week 1343  
 T-3 Schedule for Work Week 1346  
 T-16 Schedule for Work Week 1412  
 Touch Points to assess Effectiveness of Site Work Control Department  
 Touch Points to assess Effectiveness of Site Maintenance Department  
 BFN-WC-S-13-009 Compliance with Work Management Process/Procedures  
 September 20, 2013  
 Planning Training Matrix November 6, 2013  
 95003 CAL Commitment Action Plan – Tier 1, Commitment 2 Work Management Plan  
 October 4, 2013  
 Tier 1 Call Commitment #02 Work Management Process Improvement November 21, 2013  
 PM 500132638 Calibrate 3-TS-31-634 & 3-TS-31-638 000  
 BFN-37757 BFN-0-RLY-211-DC-C1, HGA Realy Replacement PM0000A  
 Browns Ferry Nuclear Plant – Work Week 05/20/2013 Scheduling Performance Indicators  
 May 29, 2013  
 TPD-PLN Nuclear Power Group Nuclear Planner Training Program – Training Program  
 Description 1  
 95003 CAL Commitment Action Plan – Tier 1, Commitment 1 Safety System Reliability Plan  
 November 30, 2013  
 Exemption - Sturm  
 Exemption - Stannard  
 Exemption - Noblitt  
 Exemption - Clark  
 Revisions to Commitment Action Plans  
 Remaining Open Actions with Action Owners  
 Commitment #3 - Signed PUP Package, Rev. 0  
 0-OI-1234, Out of the box evaluation (OBE) for CV/IV

OPL173-217-DLA, Dynamic Learning Activity, Rev. 1  
 OBE Course Attendance Sheet for AUOS  
 TPD-PLN, Nuclear Planner Training Program – Training Program Description  
 NPG Writers Guide Training Presentation  
 TPD-PWG, Procedure Writer/Reviewer Training Program Description  
 October 2013 Metric: Site Human Performance Coaching Contact: Supervisors Meeting Paired Requirements  
 October 2013 Metric: Site Human Performance Coaching Contact: Supervisors Meeting Observations Requirements  
 October 2013 Metric: Site Human Performance Coaching Contact: Observation Quality  
 Observation Detail: ACE 793642  
 Observation Detail: ACE 788195  
 Observation Detail: 784087  
 Observation Detail: 783134  
 Observation Detail: 772092  
 Observation Detail: 771620  
 ITR report – Q1FY13  
 ITR report – Q2FY13  
 ITR report – Q3FY13  
 ITR report – Q4FY13  
 SARB package – December 3, 2013  
 PSC package – December 3, 2013  
 PSC package – December 4, 2013  
 CARB package – December 4, 2013  
 SR 800618  
 95003 Transition Performance Metric: CA Backlog (Open Corrective Actions > 180 days)  
 95003 Transition Performance Metric: Apparent Cause Evaluation Grading  
 95003 Transition Performance Metric: Root Cause Analysis Grading  
 95003 Transition Performance Metric: Analysis Time of Level B PER CAP Development  
 95003 Transition Performance Metric: Analysis Time of Level A PER CAP Development  
 95003 Transition Performance Metric: Monthly CAP Health  
 95003 Transition Performance Metric: PERs and PER Actions Closure Quality  
 TVA Letter dated 8/30/13, Updated Reply to Notice of Violation; EA-11-252; and Follow-up to 10 CFR 50.9, “Completeness and Accuracy of Information”, Notification  
 TVA Letter dated 8/23/12, Integrated Improvement Plan Summary  
 Browns Ferry Nuclear 95003 Integrated Improvement Plan Actions, Rev. 4, dated 8/26/13  
 BFN 95003-002, Collective Evaluation and Action Plan Development, Rev. 3, dated 7/13/12  
 BFN-PI-S-14-018, Assessment of Recent 10 CFR 50.9 Issues, Rev. 1, dated 11/21/13  
 95003 CAL Commitment Action Plan-Tier 1 Commitment 7 10 CFR 50.9 Project Plan, Rev. 1, dated 11/22/13  
 ESP070.103, Mentoring/Position Specific Guide for Engineering Change Package, Rev. 28, dated 5/14/13  
 ESP070.109, Mentoring/Position Specific Guide for Technical Evaluations, Rev. 28, dated 5/14/13  
 PER 790109 Root Cause Analysis Report, Rev. 0, dated 11/22/13  
 TVA Cause Evaluation Handbook, Rev. 5, dated 8/30/13  
 BFN-PI-S-14-014: PER 753980 Interim Effectiveness Review  
 BFN-PI-S-14-020: Confirmatory Action Letter Commitment #6: Validate improvement was

achieved in the corrective action program in the areas of SR generation threshold, problem description quality, and PER trending.

CRP-PA-13-012, Browns Ferry Mid-Cycle Integrated Performance Assessment

CRP-PA-I-14-001, BFN Problem Identification and Resolution Readiness Assessment, Rev. 1

October 2013 Fleet Metrics

Revisions to Commitment Action Plans\_11\_14\_13

2013-10 Oct 95003 Metrics

2013-09 Sep 95003 Metrics

2013-08 Aug 95003 Metrics

2013-07 Jul 95003 Metrics

2013-06 Jun 95003 Metrics

2013-05 May 95003 Metrics

2013-03 Mar 95003 Metrics

2013-02 Feb 95003 Metrics

2013-01 Jan 95003 Metrics

2012-12 Dec 95003 Metrics

2012-11 Nov 95003 Metrics

2013-04 Apr 95003 Metrics

08 - 733606-006 CAL Report 131021

08 - 733606-005 CAL Report 131021

08 - 733606-004 CAL Report 131021

08 - 733606-003 CAL Report 131021

08 - 733606-002 CAL Report 131021

08 - 733606-001 CAL Report 131021

08 - Metrics Commitment Completion 131021

08 - Metrics Basis Document 131021

08 - 755599-008 CAL Report 131025

8 - Signed Metric Action Package Rev 0

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CRP-OPS-S-14-004 NPG-SPP-07.3.4 Protected Equipment Snapshot

Ops Centric Metrics

731831-023 WM-1

731831-022 WM010628 131792619[1]

731831-022 U1 CORE SPRAY LP II OUTAGE CRITICAL PATH 062113

731831-022 1D DG OUTAGE CRITICAL PATH BC-GC 062113

731831-017 TNA - WBN-2013-OTG-030 132732883[1]

731831-017 NPG-SPP-07 3 014847456 132732855[1]

731831-017 BFN-2013-OTG-073

731831-017 206370PE RASCAL

731831-017 20635PE CAF

731831-017 2013-035 PER 754930-001 Protected Equipment

731831-010 Revised Briefing Material 132830710[1]

731831-010 Remaining Individuals 132822450 132830708[1]

731831-010 Remaining Crew 132830706[1]

731831-009 Ops-Centric Survey Results10152013 2 132880852[1]

731831-008 Touch-Points for Work Control 131993771[1]

731831-008 Touch-Points for Rad Protection 131993767[1]

731831-008 Touch-Points for Operations 131993757[1]



731831-008 Touch-Points for Maintenance 2 131993738[1]  
731831-008 Chemistry and Environmental Touch Points July 2013 131993736[1]  
731831-006 std Metrics\_ra 132240832[1]  
731831-006 New Aggregate Ops Centric Metrics-BFN 132240827[1]  
731831-006 BFN 132240835[1]  
10 - Ops Centric Commitment Completion 131018  
10 - Ops Centric Basis Document R1 131018  
10 - 755599-010 CAL Report 131018  
10 - 731831-023 CAL Report 131021  
10 - 731831-022 CAL Report 131021  
10 - 731831-021 CAL Report 131021  
10 - 731831-020 CAL Report 131022  
10 - 731831-019 CAL Report 131022  
10 - 731831-017 CAL Report 131022  
10 - 731831-016 CAL Report 131021  
10 - 731831-015 CAL Report 131021  
10 - 731831-014 CAL Report 131021  
10 - 731831-013 CAL Report 131021  
10 - 731831-012 CAL Report 131022  
10 - 731831-011 CAL Report 131022  
10 - 731831-010 CAL Report 131022  
10 - 731831-009 CAL Report 131022  
10 - 731831-008 CAL Report 131021  
10 - 731831-007 CAL Report 131022  
10 - 731831-006 CAL Report 131021  
10 - 731831-005 CAL Report 131022  
10 - 731831-003 CAL Report 131021  
10 - 731831-002 CAL Report 131021  
10 - 731831-001 CAL Report 131021  
10 - Signed Ops Centric Package Rev 0 131004\_MBB