

## Browns Ferry 1 4Q/2014 Plant Inspection Findings

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### Initiating Events

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### Mitigating Systems

**Significance:**  Sep 30, 2014

Identified By: NRC

Item Type: NCV NonCited Violation

#### **Failure to maintain Fire Doors in their Rated Configuration (Section 1R05)**

The NRC identified a Green non-cited violation (NCV) of Browns Ferry Operating License Conditions 2.C for the licensee's failure to maintain fire doors in their rated configuration required by the Fire Protection Report.

Specifically, the licensee failed to ensure that fire doors 497, 501, and 506, for Units 1, 2, and 3 respectively, were latched closed as required for the doors to meet their designed fire rating. The licensee entered this issue in the CAP as PER 921571 and initiated corrective actions to replace the degraded fire doors.

The inspectors determined that the licensee's failure to maintain fire doors 501, 506 and 497 in their rated configuration as required by the Browns Ferry Nuclear Plant Fire Protection Report was a performance deficiency. The finding was more than minor because it was associated with the protection against external factors (fires) attribute of the mitigating systems cornerstone and affected the objective to maintain the reliability and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, failure to ensure fire doors were closed and latched could have resulted in the door opening during a fire, thereby allowing a fire to affect additional equipment important to safety in the exposed fire zone. The finding was screened in accordance with IMC 0609, Appendix F, "Fire Protection Significance Determination Process (SDP)," issued September 20, 2013. The inspectors conducted a Phase I SDP screening utilizing Figure F.1 in Appendix F. Per the Phase I screening criteria, the finding was assigned the category of "Fire Confinement." The inspectors assigned a "Moderate Degradation Rating" to the fire barrier door in accordance with Attachment 2 of Appendix F, because the latching mechanism for the door was non-functional. In accordance with Appendix F, "Supplemental Screening for Fire Confinement Findings," task 1.4.2, this finding screened as very low safety significance (Green) because there was a fully functional automatic suppression system on either side of the fire barrier. The cause of this finding was directly related to the aspect of trending in the problem identification and resolution cross-cutting area. Specifically, over the past several years the licensee documented multiple examples of fire doors failing to consistently latch, in the CAP. The licensee failed to analyze this information in the aggregate to identify and correct the issue (P.4). (Section 1R05)

Inspection Report# : [2014004](#) (*pdf*)

**Significance:**  Sep 30, 2014

Identified By: NRC

Item Type: NCV NonCited Violation

#### **TRM Allowances for Electric Board Room Air Conditioning Units conflicting with Technical Specifications (Section 1R15.1)**

The NRC identified a Severity Level IV (SL-IV) NCV of 10 CFR 50.90, "Application for amendment of license, construction permit, or early site permit," and an associated Green NCV of Technical Specification (TS) 3.8.7

"Distribution System – Operating" for the licensee's failure to obtain a license amendment prior to implementing

changes to the Technical Requirements Manual (TRM) that affected TS 3.8.7 for Units 1, 2, and 3. Specifically, the addition of TRM 3.7.6, Electric Board Room (EBR) Air Conditioning (AC) system resulted in a violation of T.S. 3.8.7 Distribution- Operating for the C and D 4kV shutdown boards (supported by the Unit 2 EBR AC system) being inoperable in mode 1 for longer than the allowed outage time and the action statement not complied with. The licensee's immediate corrective action was to issue administrative guidance to operators for the determination of operability of the 4kV shutdown boards with the Electric Board Room air conditioning system inoperable and initiate actions to submit a TS amendment request as documented in PER 846040.

The performance deficiency was more than minor because it adversely affected the mitigating systems cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the performance deficiency resulted in the licensee not declaring Unit 1 and 2 4kV shutdown boards inoperable and taking actions required by TS 3.8.7 action statement 'E' on multiple occasions. The finding was screened using IMC 0609 Appendix A Exhibit 2, dated June 19, 2012, and was determined to be of very low safety significance (Green) because the finding did not represent an actual loss of function of one or more non-Tech Spec Trains of equipment designated as high safety-significant in accordance with the licensee's maintenance rule program for >24 hrs. The violation was determined to be a Severity Level IV violation using the Enforcement Policy example 6.1.d.2, because it resulted in a condition having a very low safety significance. No cross cutting aspect was assigned in association with the ROP finding because the change to the TRM was performed greater than three years ago and did not reflect current licensee performance. (Section 1R15.1)

Inspection Report# : [2014004](#) (pdf)

**Significance:**  Sep 30, 2014

Identified By: NRC

Item Type: NCV NonCited Violation

**Inadequate NPSH Calculations for Standby Liquid Control Pumps (Section 1R15.2)**

The NRC identified a Green non-cited violation (NCV) of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the licensee's failure to maintain adequate control measures for verifying or checking the adequacy of design of the Standby Liquid Control (SLC) system. Specifically, the licensee's calculations and system testing were both inadequate to demonstrate that the SLC system could meet design requirements under all required operating conditions. The licensee entered this in their CAP as PER 920418 and initiated corrective actions to perform a modification to the SLC system and update design calculations.

The inspectors determined that the licensee's failure to maintain adequate control measures for verifying or checking the adequacy of design of the SLC system as required by 10 CFR 50, Appendix B, Criterion III, "Design Control," was a performance deficiency (PD). Specifically, the licensee's calculations and system testing were both inadequate to demonstrate that the SLC system could meet design requirements under all required operating conditions. The PD was more than minor because it affected the Mitigating Systems Cornerstone attribute of Design Control, and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, there was not an adequate method for ensuring the capability of the design of the SLC system following a design basis accident. The inspectors screened this finding in accordance with IMC 0609, Appendix A, "Significance Determination Process", "Exhibit 2-Mitigating Systems Screening Questions," dated June 19, 2012, and determined the finding was of very low safety significance (Green) because the design deficiency did not result in a loss of operability or functionality. The inspectors determined that no cross cutting aspect was applicable because this finding was not indicative of current licensee performance and occurred more than three years ago. (Section 1R15.2)

Inspection Report# : [2014004](#) (pdf)

**Significance:**  Jun 30, 2014

Identified By: NRC

Item Type: FIN Finding

**RHRWSW pump power cables submerged in water**

An NRC-identified finding was identified for the licensee's failure to adhere to TVA General Specification 40 (G-40) for Installation, Modification, and Maintenance of Electrical Systems, section 3.5.7, which required standing water in Handholes be kept below any safety related cables. Hand hole numbers 15 and 26 were discovered to have had standing water above several of the Residual Heat Removal (RHR) service water (safety related) power cables from January to May 2014.

The licensee's failure to adhere to TVA General Specification 40 (G-40) for Installation, Modification, and Maintenance of Electrical Systems, section 3.5.7, which required standing water in hand holes be kept below any safety related cables was a performance deficiency. Specifically, the licensee allowed hand hole numbers 15 and 26 to have standing water above several of the RHR service water (safety related) power cables. The performance deficiency was more than minor because if left uncorrected, it had the potential to lead to a more significant safety concern including cable degradation and increased likelihood of cable failure. This issue screened as having very low safety significance, Green, using IMC 0609 Appendix A, Exhibit 2, Mitigating Systems Screening Questions issued on June 19, 2012, because it affected the design or qualification of a mitigating SSC but the mitigating SSC maintained its operability. The finding had a cross cutting aspect of Problem Identification and Resolution: Resolution because the licensee failed to ensure that corrective actions addressed the cause of the power cable wetting and failure in 2007. (P.3) (Section 1R06.2)

Inspection Report# : [2014003](#) (*pdf*)

**Significance:**  Mar 31, 2014

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to control transient combustible in designated high risk areas**

An NRC-identified non-cited violation (NCV) of the T.S. 5.4.1.d, Fire Protection Program Implementation, was identified for the licensee's failure to control transient combustible materials in designated high risk areas in Unit 1 and Unit 3. The licensee's corrective action was to remove the combustible materials. The licensee entered this issue into their corrective action program as PER 845630 and 846184.

The performance deficiency was determined to be more than minor, because it was associated with the Protection Against External Factors attribute (Fires) of the Mitigating Systems cornerstone and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, leaving unanalyzed transient combustibles in proximity to safety related equipment could affect the equipment's ability to perform its safety function during a credible fire scenario. The finding was characterized according to IMC 0609, Significance Determination Process (SDP), Appendix F, Attachment 1, Fire Protection SDP Phase 1 Worksheet dated September 24, 2013. This issue screened as low safety significance (Green), per Attachment 1 question 1.3 because it did not affect the ability of the reactor to reach and maintain safe shutdown. The cause of this finding was directly related to the Human Performance cross cutting aspect of Change Management. Plant leaders did not use a systematic process for evaluating and implementing change so that nuclear safety remains the overriding priority. Specifically, the impact of the new procedures for transient combustible controls did not apply change management controls such as site wide communication and training to make workers aware of the new requirements. [H.3] (Section 4OA2)

Inspection Report# : [2014002](#) (*pdf*)

**Significance:**  Feb 28, 2014

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to identify the root cause of the failure of the 1B standby liquid control pump breaker**

An NRC identified non-cited violation (NCV) of 10 CFR Part 50, Appendix B, Criterion XVI, Corrective Action, was identified for the licensee's failure to adequately identify the root cause for a significant condition adverse to quality as defined in NPG-SPP-22.302 Revision 1, "Corrective Action Program Screening and Oversight." Specifically, the licensee initially failed to identify the root cause of the failure of the 1B Standby Liquid Control (SLC) Pump breaker that resulted in the equipment exceeding the Technical Specification Limiting Condition for Operation. The issue was documented in the licensee's corrective action program as Service Request (SR) 851718.

This performance deficiency was more than minor since it adversely affected the Reactor Safety Mitigating Systems cornerstone objective of availability and reliability of affected equipment. Specifically, the failure to determine the cause of a crack in the breaker's phase arc chute that fatigued over time impacted the ability to assign effective corrective actions to prevent recurrence and challenges the reliability of the safety-related equipment to provide required reactivity control capability when required for accident mitigation. The inspectors evaluated the risk of this finding using Manual Chapter 0609, Appendix A, Significance Determination Process (SDP) for Findings at Power. This determination was based on the evaluation that the inoperable equipment did not concurrently affect a single reactor protection system (RPS) trip signal to initiate a reactor scram, nor did it involve control manipulations that unintentionally added positive reactivity or result in a mismanagement of reactivity by operators. The finding had a cross-cutting aspect in the area of Problem Identification and Resolution, in the component of Evaluation, since the licensee failed to thoroughly evaluate issues to ensure that resolutions address causes and extent of conditions commensurate with their safety significance (P.2). (Section 40A2.1.c)

Inspection Report# : [2014007](#) (*pdf*)

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## **Barrier Integrity**

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## **Emergency Preparedness**

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## **Occupational Radiation Safety**

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## **Public Radiation Safety**

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## **Security**

Although the Security Cornerstone is included in the Reactor Oversight Process assessment program, the Commission has decided that specific information related to findings and performance indicators pertaining to the Security Cornerstone will not be publicly available to ensure that security information is not provided to a possible adversary. Other than the fact that a finding or performance indicator is Green or Greater-Than-Green, security related information will not be displayed on the public web page. Therefore, the [cover letters](#) to security inspection reports may be viewed.

## **Miscellaneous**

Last modified : February 26, 2015