

Browns Ferry 3 4Q/2014 Plant Inspection Findings

Initiating Events

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: G 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: G 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*)

Barrier Integrity

Significance:  Mar 31, 2014

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to perform MSIV as-found leakage test under suitable conditions

An NRC identified non-cited violation (NCV) of 10 CFR 50, Appendix B, Criterion XI, “Test Control,” was identified for the licensee’s failure to establish adequate written procedures for the test program to determine MSIV as-found leakage that met the requirements of 10 CFR 50, Criterion XI, Test Control. Specifically, Browns Ferry test procedure 3-SR-3.6.1.3.10 did not specify what suitable testing conditions were required to be established prior to testing. Additionally, the practice of allowing multiple valve strokes prior to testing was contrary to the procedure prerequisite of no allowed preliminary adjustments and constituted unacceptable preconditioning of the tested valves. The licensee’s corrective action was to perform “as-left” leakage measurements under different conditions and enter the issue into the corrective action program as PER 847688.

The finding was more than minor because it adversely affected the Barrier Integrity cornerstone objective to provide reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. Specifically, the failure to determine as-found leakage reduced the ability of the licensee to provide reasonable assurance that the MSIVs would be able to perform their isolation function. The inspectors evaluated the finding using IMC 0609, Appendix A, the Significance Determination Process (SDP) for at-power findings, Exhibit 3 – Barrier Integrity Screening Questions, dated June 19, 2012, and determined the finding was of very low safety significance (Green) because it did not represent an actual open pathway in the physical integrity of reactor containment and did not involve an actual reduction in the function of the hydrogen igniters in the reactor containment. This finding has a cross-cutting aspect in the area of Human Performance, Documentation, because Browns Ferry’s MSIV testing procedures were not complete in that they did not specify all required initial conditions and allowed preconditioning the valves. [H.7] (Section 1R15)

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

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

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