Browns Ferry 2
4Q/2006 Plant Inspection Findings

Initiating Events

Significance: G Mar 31, 2006
Identified By: Self-Revealing
Item Type: FIN Finding
Poor Workmanship and Inadequate Work Instructions for Maintenance on the 2C Reactor Feedwater Pump That Resulted in a Reactor Scram
A Green self-revealing Finding (FIN) was identified for inadequate work instructions and poor work practices associated with maintenance on the 2C reactor feedwater pump that resulted in a Unit 2 reactor trip. This issue was documented in the licensee's corrective action program as Problem Evaluation Report 87178.

This finding is greater than minor because it involved human error and inadequate work instructions that affected the human performance and procedure quality attributes of the Initiating Event Cornerstone to limit the likelihood of those events that upset plant stability and challenge critical safety functions during at-power operations. The finding was determined to be of very low safety significance because all safety-related mitigating systems operated as designed during and following the scram.
Inspection Report# : 2006002 *(pdf)*

Mitigating Systems

Significance: G Dec 31, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
Lack of Assured Cooling Water for Emergency Diesel Generators During SBO Conditions
The inspectors identified a non-cited violation (NCV) of 10 CFR 50, Appendix B, Criterion III, Design Control, that affected Units 2 and 3. The licensee's calculations and procedures did not adequately implement the plant's licensing basis for Station Blackout (SBO), in that, they did not ensure the operating emergency diesel generators (EDGs) would have an adequate cooling water supply during a SBO with certain plant equipment configurations.

This finding is of greater than minor safety significance because it affected the objectives of the Mitigating Systems Cornerstone. It affected the availability and reliability of systems that mitigate initiating events to prevent undesirable consequences. The finding has very low safety significance due to the few very specific combinations of EDG failures that could lead to a loss of cooling water flow to all of the running EDGs. The licensee took prompt corrective action by revising procedures to add immediate operator actions to ensure adequate cooling water supply to the EDGs.
Inspection Report# : 2006005 *(pdf)*

Significance: G Sep 15, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
Safe Shutdown Instruction Directs Operators to Connect 4 KV SD BD "A" to a Potentially Fire-Induced Fault in FA 8
The team identified a non-cited violation (NCV) of Unit 2 Operating License Condition 2.C.14 for an inadequate Safe Shutdown Instruction (SSI) which directed the operator to align credited 4 kV Shutdown Board (SD BD) "A" to its alternate supply (Shutdown Bus 2). This could connect 4kV SD BD "A" to a fire-induced fault and result in a lockout of the "A" emergency diesel generator (EDG), one of two required EDGs for Unit 2 to complete Safe Shutdown (SSD) for a

fire in fire area 8 (FA 8). The licensee established compensatory measures for the issue and entered this performance deficiency into their corrective action program (CAP) for resolution.

The finding is more than minor because this performance deficiency is associated with the reactor safety mitigating system cornerstone attribute of protection against external events, i.e., fire. It also affected the cornerstone objective of ensuring availability of systems that respond to events in that 4kV SD BD “A” could have been de-energized and locked out in response to a postulated fire in FA 8. The inspectors determined that the issue was of very low safety significance (Green) because the finding was judged to have a low degradation impact on safe shutdown in that the deficiency would not have caused a failure of the SSD strategy for FA 8. There was a very short period of time when the fault could have affected 4 kV SD BD “A” and there was significant recovery time available (approximately 2 hours) due to the required SSD loads not being powered from 4 kV SD BD “A”.
Inspection Report# : 2006014 *(pdf)*

Significance: G Sep 15, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
Cellular Phone Communications Unreliable for Alternate Shutdown in FA16
The team identified a non-cited violation (NCV) of Unit 2 Operating License Condition 2.C.14 and Unit 3 Operating License Condition 2.C.7 for failure to have adequate communications to implement alternate shutdown for a fire in fire area (FA) 16 using procedure 2/3-SSI-16.

This issue is a performance deficiency because the cell phone system was unreliable and the F4 portable radio system was not credited for a fire in FA 16. The finding is greater than minor because it affected the ability of the licensee to maintain communications for a fire in FA 16 and is associated with the mitigating systems cornerstone and respective attribute of protection against external factors, i.e., fire in that degraded communications would impact the ability to achieve SSD following a fire. This finding was determined to be a finding of very low safety significance (Green) because it only affected the ability to reach and maintain cold shutdown conditions due to the availability of alternate communications measures (F4 radios) for a time period sufficient to achieve hot shutdown conditions.
Inspection Report# : 2006014 *(pdf)*

Significance: G Jun 30, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Implement Required Fire Watches
A Green non-cited violation of TS 5.4.1.d, Fire Protection Program Implementation, was identified by the inspectors for the licensee’s failure to implement compensatory measures (i.e., roving fire watches) as prescribed by the Browns Ferry Fire Protection Plan for disabled fire detection systems in multiple Fire Areas in the Control Building. This issue was documented in the licensee’s corrective action program as Problem Evaluation Report 102745.

This finding was more than minor since it was associated with the Protection Against External Factors attribute of the Reactor Safety 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. The finding was of very low safety significance because the capability of other principal defense-in-depth fire protection features were unaffected, such as the associated fire barriers, control of transient combustibles, manual fire suppression equipment, and the fire brigade. This finding has a crosscutting element in the area of human performance because the fire protection impairment permits and Fire Watch/Coverage sheets did not provide instructions for conducting compensatory measures (i.e., roving fire watches) in all the necessary fire areas.
Inspection Report# : 2006003 *(pdf)*

Significance: G Mar 31, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Perform An Adequate Risk Assessment
A Green non-cited violation (NCV) of 10 CFR 50.65(a)(4) was identified by the inspectors for the licensee’s failure to

conduct an adequate risk assessment of the Unit 2 systems, and Unit 3 systems affecting Unit 2, that were taken out of service for scheduled maintenance from March 1 through 3, 2006. This resulted in an unrecognized increase in the level of risk as determined by a probabilistic safety analysis (PSA) evaluation by the licensee. This issue was documented in the licensee's corrective action program as Problem Evaluation Report 98414.

This finding is more than minor because it is associated with the Mitigating Systems Cornerstone attribute of equipment performance and adversely affected the cornerstone objective in that the licensee failed to perform an adequate risk assessment prior to conducting online maintenance. The licensee's risk assessment did not consider all the risk significant systems and support systems that were out of service which, when properly evaluated, did result in an increased level of risk from a PSA perspective. However, the finding was of very low safety significance because the risk deficit for Incremental Core Damage Probability was less than 5E-6 and for Incremental Large Early Release Probability was less than 5E-7, and at least two risk management actions were in place. This finding involved the cross cutting aspect of Human Performance for failure to recognize and follow established procedures for adequately assessing the risk associated with online maintenance.
Inspection Report# : 2006002 *(pdf)*

Barrier Integrity

Significance:  Jun 30, 2006
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Primary Containment Leak Via The 2A RHR Heat Exchanger In Excess Of Analyzed Limits
A Green self-revealing non-cited violation of TS 3.6.1.1 was identified due to the licensee's failure to adequately evaluate the significance of a leak from the Unit 2 2A Residual Heat Removal heat exchanger that would have constituted a direct pathway from the suppression pool to the environment during accident conditions. This issue was documented in the licensee's corrective action program as Problem Evaluation Reports 81236 and 83123.

This finding is greater than minor because it is associated with the System, Structure or Component and Barrier Performance attribute of the Barrier Integrity Cornerstone, and adversely affected the cornerstone objective of assuring a containment barrier for protecting the public from radionuclide releases caused by accidents or events. In addition, if left uncorrected it would become a more significant safety concern. The finding was determined to be of very low safety significance because of the short exposure time, and the ability of the operators to detect and isolate the leak. This finding has a cross-cutting element in the area of problem identification and resolution because the licensee did not adequately evaluate an identified problem that adversely affected primary containment integrity, and as such failed to affect a resolution that addressed the cause and extent-of-condition.
Inspection Report# : 2006003 *(pdf)*

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Physical Protection information not publicly available.

Miscellaneous

Significance: SL-IV Mar 31, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
Failure To Report A Safety System Functional Failure Per 10 CFR 50.73
A Severity Level IV non-cited violation (NCV) of 10 CFR 50.73(a)(2)(v)(D) and (vii)(D) was identified by the inspectors for the licensee's failure to submit a licensee event report for a safety system functional failure of the Unit 2 residual heat removal pressure suppression chamber containment isolation valves. This issue was documented in the licensee's corrective action program as Problem Evaluation Report 99193.

In Section IV of the NRC Enforcement Policy, the significance of violations involving the failure to make required reports is not dispositioned using the Reactor Oversight Program's Significance Determination Process. The licensee's failure to provide a written event report does potentially impact the NRC's ability to carry out its regulatory function. However, because this failure to report per 10 CFR 50.73 did not actually impede or influence regulatory action, and the condition that required reporting under 10 CFR 50.73 was previously determined to be of very low safety significance in inspection report 05000260/2005003, the NRC has characterized the significance of this reporting violation as a Severity Level IV in accordance with Section IV.A.3 and Supplement I of the NRC Enforcement Policy.
Inspection Report# : 2006002 *(pdf)*

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