FitzPatrick
4Q/2008 Plant Inspection Findings

Initiating Events

Significance: G Jun 30, 2008
Identified By: NRC
Item Type: FIN Finding
Surge arresters not replaced in accordance with preventive maintenance program
A self-revealing finding was identified when one of the 115 kV offsite power transformer 71T-3 surge arresters failed in-service. Specifically, Entergy did not adequately implement maintenance program expectations outlined in EN-DC-324, “Preventive Maintenance Program,” Revision 4 and ensure replacement of the surge arrester upon exceeding its reliable service life. The surge arrester failure contributed to a loss of offsite power.

The inspectors determined that this finding is more than minor because it is associated with the protection against external factors attribute (grid stability) of the Initiating Events cornerstone and affected the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. The inspectors evaluated the significance of this finding using Phase 1 of IMC 0609, Appendix A, “Significance Determination of Reactor Inspection Findings for At Power Situations,” and determined it to be of very low safety significance (Green) because the finding did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions will not be available.

This finding had a cross-cutting aspect in the area of problem identification and resolution because Entergy did not take appropriate corrective actions to promptly replace the surge arrester when it was identified to be past its reliable service life. (P.1(d))

Inspection Report# : 2008003 *(pdf)*

Mitigating Systems

Significance: G Dec 30, 2008
Identified By: NRC
Item Type: NCV NonCited Violation
Quality Standards Not Specified in Design Documents that Resulted in Unsupported HPCI Oil Tubing
An NRC identified NCV of 10 CFR 50 Appendix B, Criterion III, “Design Control,” was identified when Entergy did not assure that appropriate quality standards were specified and included in design documents and that deviations from such standards were controlled. Specifically, Entergy did not ensure the oil tubing within the high pressure coolant injection (HPCI) system remained properly supported and routed with an appropriate slope in accordance with design. The issue was entered into Entergy’s corrective action program as CR-JAF-2008-04040. Corrective actions included establishing work order 172913 to restore the original configuration properly supporting the HPCI tubing lines.

This finding is more than minor because it is associated with the design control attribute of the Mitigating Systems cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, reliability was affected because the unsupported span of tubing was more susceptible to personnel damage and vibration during HPCI operation, both during surveillance testing and also if called upon to perform its safety function. In addition, the tubing was more susceptible to damage and adverse routing changes during maintenance activities. Therefore, over time, the high

pressure fittings associated with the lines would be more likely to suffer failures, retain air bubbles within the lines, and/or leak during pump operation affecting the long-term reliability of the system. This was reasonably within Entergy's ability to foresee and prevent because the governing procedures require tube routings, including support locations, be provided during installation of Class I tubing, and a support bracket was available to attach the tubing. The inspectors evaluated the significance of this finding using Phase 1 of IMC 0609, Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations," and determined it to be of very low safety significance (Green) because the finding represented a design or qualification deficiency confirmed not to result in loss of operability.

The inspectors determined that this finding had a cross-cutting aspect in the area of human performance because the design documents, procedures, and work packages used during the maintenance activities in September and October 2008, were not sufficiently complete to ensure design standards were implemented.
Inspection Report# : 2008005 *(pdf)*

Significance: G Dec 30, 2008
Identified By: NRC
Item Type: NCV NonCited Violation
Conduct of Relay Test Without Plant Impact Review Resulted in Loss of Emergency Bus and Shutdown Cooling
A self-revealing NCV of 10 CFR Part 50.65 (a)(4), "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," was identified when Entergy did not manage the increase in risk during the conduct of relay testing associated with emergency buses. The conduct of the relay testing resulted in an unanticipated loss of shutdown cooling (SDC) function. Entergy implemented corrective actions that included communicating the error to personnel to reinforce management expectations for control of protected equipment and providing an additional level of work authorization review.

This finding is more than minor because it is associated with the Mitigating Systems cornerstone and is related to Entergy's performance in assessing and managing risk. A risk assessment review was not conducted prior to performance of a trip and lockout relay functional test associated with emergency buses. Specifically, this finding reflects inadequate risk management that contributed to a short duration loss of shutdown decay heat removal capability resulting from the inadvertent interruption of flow through the operating train of shutdown cooling with the plant in a cold shutdown condition. This was reasonably within Entergy's ability to foresee and prevent because there were opportunities to recognize and manage the potential risk of losing shutdown cooling and to schedule the maintenance activity at a more appropriate maintenance window or take actions to prevent the loss of shutdown cooling.

In accordance with IMC 0609, Attachment 0609.04, "Phase 1 – Initial Screening and Characterization of Findings," and Appendix G, "Shutdown Operations Significance Determination Process," the inspectors determined that this finding was of very low safety significance (Green). The basis for this determination is that in accordance with IMC 0609, Appendix G, Table 1, "Losses of Control," and Checklist 8, "BWR Cold Shutdown or Refueling Operation Time to Boil > 2 Hours: RCS Level <23 feet Above Top of Flange," this finding did not require quantification and did not constitute a significant loss of thermal margin, based upon the slow reactor coolant system heat-up rate and minimal time of interruption in shutdown cooling system operation. The problem was entered into Entergy's corrective action program as CR-JAF-2008-03805.

The inspectors determined that this finding had a cross-cutting aspect in the area of human performance because Entergy did not plan and coordinate work activities properly to manage the operational impact of work activities. Specifically, Entergy did not recognize that the emergency bus 10600 would be de-energized as a result of the trip and lockout relay functional test.

Inspection Report# : 2008005 *(pdf)*

Significance: G Sep 29, 2008
Identified By: NRC

Item Type: NCV NonCited Violation
Failure to Manage Risk During Maintenance Activity Resulted in Loss of Shutdown Cooling
A self-revealing NCV of 10 CFR Part 50.65 (a)(4), "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," was identified when Entergy did not manage the increase in risk that resulted from removal of the 'B' reactor protection system from service in preparation for conducting maintenance. The removal of the 'B' reactor protection system from service resulted in an unanticipated loss of shutdown cooling (SDC). Entergy took prompt action to communicate the error to station personnel; provide additional oversight for equipment tagouts affecting required safety systems during the remainder of the refueling outage; and entered the issue into the corrective action program.

This finding is more than minor because it is related to maintenance risk assessment and management. In this instance, Entergy did not implement prescribed significant compensatory measures and effectively manage those measures. Specifically, this finding reflects inadequate risk management that contributed to a short duration loss of shutdown decay heat removal capability resulting from the inadvertent interruption of flow through the operating train of shutdown cooling during cavity flood-up, in preparation for refueling. In accordance with IMC 0609, Attachment 0609.04, "Phase 1 – Initial Screening and Characterization of Findings," and Appendix G, "Shutdown Operations Significance Determination Process," the inspectors determined this finding was of very low safety significance (Green). In accordance with IMC 0609, Appendix G, this finding did not require quantification and did not constitute a significant loss of thermal margin, based upon the slow reactor coolant system heat-up rate and minimal time of interruption in shutdown cooling system operation.

The inspectors determined that this finding had a cross-cutting aspect in the area of human performance because Entergy did not plan and coordinate work activities properly to manage operational impact of work activities. Specifically, the impact on shutdown cooling of deenergizing the 'B' reactor protection system was not recognized or assessed. Additionally, a number of processes and barriers, such as the outage risk assessment and protective equipment program, were not used effectively.

Inspection Report# : 2008004 *(pdf)*

Significance:  Aug 01, 2008
Identified By: NRC
Item Type: NCV NonCited Violation
RHR Service Water SOV Corrective Actions
The inspectors identified a Green non-cited violation (NCV) of Title 10 of the Code of Federal Regulations (CFR) Part 50, Appendix B, Criterion XVI, "Corrective Action," because Entergy did not implement adequate corrective actions for the residual heat removal (RHR) service water motor bearing cooling water supply solenoid operated valves (SOVs). Specifically, Entergy did not promptly correct a condition adverse to quality associated with trains of RHR service water motor bearing cooling water supply SOVs following a December 30, 2006 failure of the 'B' RHR service water motor bearing cooling water supply valve. This resulted in unplanned unavailability for the 'C' RHR service water motor on May 4, 2007 due to the failure of the 'C' RHR service water motor bearing cooling water supply valve. Entergy entered this lack of taking prompt corrective action into their corrective action program as CR-JAF-2008-02411. In addition, Entergy replaced the 'B' and 'C' RHR service water motor bearing cooling water supply valves.

This finding was more than minor because it impacted the equipment performance attribute of the Mitigating Systems cornerstone and affected the cornerstone objective of ensuring the availability, reliability and capability of a system that responds to initiating events to prevent undesirable consequences. The finding was evaluated in accordance with Inspection Manual Chapter (IMC) 0609.04, "Phase 1 – Initial Screening and Characterization of Findings." The inspectors conducted a Phase 1 Significance Determination Process (SDP) screening and determined that the finding was of very low safety significance (Green) because the finding was not a design or qualification deficiency, did not represent a loss of system safety function or loss of a single train for greater than its allowed technical specification time, and did not screen as potentially risk significant due to seismic, flooding, or severe weather initiating events.

The inspectors determined that this finding had a cross-cutting aspect in the area of problem identification and resolution because Entergy did not thoroughly evaluate a condition adverse to quality such that the resolutions

addressed the causes and extent of condition, as necessary. Specifically, Entergy's corrective actions following the 2006 SOV failure did not evaluate the in-service condition of the 'A', 'C', and 'D' RHR service water motor bearing cooling water supply valves.

Inspection Report# : 2008008 *(pdf)*

Significance: G Jun 30, 2008
Identified By: NRC
Item Type: NCV NonCited Violation
Quality standards not specified in design documents that resulted in deficient B LPCI battery cable bend radii.
The inspectors identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," because Entergy did not ensure that appropriate quality standards were specified and included in design documents and that deviations from such standards were controlled. Specifically, Entergy did not ensure that the cable bend radius for the 'B' low pressure coolant injection (LPCI) battery inter-tier jumper cables was in accordance with the design. Entergy entered the condition into their corrective action program, issued a work request to establish appropriate bend radii and inspected all other batteries for extent of condition.

The inspectors determined that this finding is more than minor because it is associated with the Design Control attribute of the Mitigating Systems cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, reliability was affected because of additional stresses imposed at the u-bend of the cable which impacts long-term cable reliability. The inspectors evaluated the significance of this finding using Phase 1 of IMC 0609, Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations," and determined it to be of very low safety significance (Green) because the finding represented a design or qualification deficiency confirmed not to result in loss of operability.

The inspectors determined that this finding had a cross-cutting aspect in the area of human performance because the completeness of the design documents, procedures, and work packages used during the maintenance activities in April 2008, were not sufficiently complete to ensure design standards were implemented. (H.2(c)).
Inspection Report# : 2008003 *(pdf)*

Significance: G May 16, 2008
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Procedure Guidance to Address Spurious Failures of the RCIC and LPCI Systems

The team identified a Green non-cited violation of technical specification 5.4.1.d for failure to provide adequate procedure directions in Attachment 6 of AOP-28, "Operation During Plant Fires," Rev. 18, for operators to restore the RCIC system and secure the "A" RHR pump from potential fire-induced cable failures. The licensee entered this issue into their corrective action program and implemented procedure changes to provide operators appropriate guidance to address the spurious failures of both RCIC and LPCI "A" systems in the event of fire in fire zone RB-1C.

The finding was more than minor because it affected the procedure quality attribute of the Mitigating Systems cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, Entergy had not established adequate procedure guidance to restore the RCIC system and secure the "A" RHR pump from fire-induced cable failures in the event of a fire in fire zone RB-1C. The team assessed this finding in accordance with NRC IMC 0609, Appendix F, "Fire Protection Significance Determination Process." This finding screened to very low safety significance (Green) in Phase 1 of the SDP because it was assigned a low degradation rating. The low degradation rating was assigned based on the team's review of the BWR Owners' Group response and walkdowns conducted of procedure AOP-28, "Operation During Plant Fires," Rev. 18. The team concluded that, although a spurious start of the "A" RHR pump with minimum flow condition could occur, an operator would reach the LPCI mode step in the procedure within the maximum expected minimum flow condition evaluated and specified in BWR Owners' Group response of thirty minutes. As a result, a low degradation rating was assigned. (Section 1R05.01)

Inspection Report# : 2008006 *(pdf)*

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Significance: SL-IV Sep 29, 2008
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Make a Written Report of a Non-Conforming Condition Relative to an NRC-Approved Package
A self-revealing NCV of 10 CFR Part 71.95 was identified because Entergy did not provide a written report to the NRC as required by 10 CFR Part 71.95 relative to a non-conforming condition involving the shipment of a NRC-approved package. Entergy was informed that a package it shipped to EnergySolutions™ Barnwell Low Level Radioactive Waste Disposal Facility was found to be in non-conformance with the applicable Certificate of Compliance for the package upon receipt, Entergy did not report the condition to the NRC within 60 days of the occurrence, as required. Failure of Entergy to report the condition, as required by 10 CFR Part 71.95, constitutes a performance deficiency in that the issue is the result of Entergy not meeting a regulatory requirement that was reasonably within Entergy's ability to foresee and correct, and should have been prevented. Entergy entered this issue into the corrective action program as condition report (CR)-2008-02772.

This violation involved a failure to make a required report to the NRC and is considered to impact the regulatory process. Such violations are dispositioned using traditional enforcement process instead of the Significance Determination Process. Using the Enforcement Policy Supplement IV "Transportation," example D4 which states, "a noncompliance with shipping papers, marking, labeling, placarding, packaging or loading not amounting to a Severity Level I, II, or III violation;" the NRC determined this violation is categorized as a SL IV Violation. The Enforcement Policy Supplement I "Reactor Operations" examples D3, D4, and D5 are similar to this issue, in that they discuss examples of failures to make required reports for more than minor events, which are also categorized at Severity Level IV.

This finding has a cross-cutting aspect in the area of problem identification and resolution related - corrective action program, because Entergy performed an insufficient evaluation of a non-conforming condition associated with an NRC-approved package to assure the matter was properly classified, prioritized and evaluated relative to reportability.
Inspection Report# : 2008004 *(pdf)*

Physical Protection

Although the NRC is actively overseeing the Security cornerstone, the Commission has decided that certain findings pertaining to security cornerstone will not be publicly available to ensure that potentially useful information is not

provided to a possible adversary. Therefore, the cover letters to security inspection reports may be viewed.

Miscellaneous

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