Indian Point 3
3Q/2010 Plant Inspection Findings

Initiating Events

Significance: G Apr 23, 2010
Identified By: NRC
Item Type: FIN Finding
Corrective Actions That Were Developed to Address Causal Factors Associated with Reactor Trips Were Not Implemented in a Timely Manner
The inspectors identified a finding of very low safety significance (Green) related to the untimely completion of corrective actions that were associated with the August 10, 2009, Unit 3 automatic reactor trip due to the generator primary lockout relay trip and the May 15, 2009, Unit 3 manual trip initiated in response to an uncontrollable rise in steam generator water level that was caused when a main feedwater regulating valve did not Enclosure 3 properly control level. Specifically, Entergy personnel did not ensure that some corrective actions to inspect non-safety related components that could contribute to similar initiating conditions were scheduled and completed in a timely manner commensurate with their safety significance. The problem was entered into Entergy's corrective program as CR-IP2-2010-3299. Corrective actions included developing
schedules to complete the corrective actions.

The inspectors determined that this finding was more than minor because it was associated with the protection against external factors attribute (grid stability) and equipment performance attribute (reliability) 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 power operations. Specifically, there is a potential for an increased probability of a reactor trip because corrective actions that were developed were not completed in a timely manner. The inspectors determined that this finding increased the likelihood of a reactor trip and was reasonably within Entergy's ability to foresee and prevent because corrective action program records were available which documented the plant equipment and program status and condition. The inspectors evaluated the significance of this finding using IMC 0609.04, "Phase I - Initial Screening and Characterization of Findings." The finding was determined 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.

The inspectors determined that this finding had a cross-culling aspect in the area of problem identification and resolution within the corrective action program component because Entergy personnel did not take appropriate corrective actions to address safety issues and adverse trends in a timely manner, commensurate with their safety significance and complexity. Specifically, corrective actions to validate and correct the possible causes of the reactor trips were not scheduled and completed in a timely manner.
Inspection Report# : 2010007 *(pdf)*

Significance: G Dec 31, 2009
Identified By: Self-Revealing
Item Type: FIN Finding
Inadequate Maintenance on MBFPs Results in Unexpected Downpower and Subsequent Reactor Trip
A self-revealing finding (FIN) of very low safety significance was identified because Entergy personnel did not ensure adequate maintenance was conducted on the 31 and 32 main boiler feed pumps (MBFPs). Specifically, the inspectors determined that Entergy maintenance personnel did not implement maintenance procedures and utilize available vendor information to ensure the 32 MBFP coupling installation was conducted with appropriate tolerances; 32 steam generator water level (SGWL) controller reset times were not set appropriately; and high pressure governor valve stroke settings for 31 MBFP were appropriate. These maintenance performance issues in combination contributed to plant transients including an unplanned power reduction and an automatic reactor trip.

The finding was more than minor because the finding was associated with the equipment performance attribute 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. Specifically, maintenance performance issues resulted in reliability challenges to the non-safety related feedwater pumps and resulted in unplanned plant transients. The inspectors evaluated the finding using IMC 0609, Attachment 4, "Initial Screening and Characterization of Findings," and determined the finding was of very low safety significance because it did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions would not be available.

The inspectors determined that this finding had a cross-cutting aspect in the area of Human Performance because Entergy personnel did not ensure effective supervisory and management oversight of maintenance and design control activities regarding the MBFPs.
Inspection Report# : 2009005 *(pdf)*

Mitigating Systems

Significance: G Sep 30, 2010
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Inadequate Identification and Correction of a Condition Adverse to Quality to Ensure the Continued Availability of the Safety-Related No. 31 Static Inverter
A self-revealing, non-cited violation (NCV) of very low safety significance (Green) of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Actions," was identified because Entergy personnel did not adequately identify and correct a condition adverse to quality to ensure the continued availability of the safety related 31 static inverter. Specifically, Entergy personnel did not complete previously-identified corrective actions to ensure capacitors in critical components of the inverter were identified and replaced in a timely manner prior to the occurrence of age-related failures. Entergy personnel determined that degraded commutation capacitors were the cause of a fuse failure on September 14, 2010, and were identified to be 13 years old and installed significantly longer than the nine years recommended by the vendor. Entergy personnel entered the issue into the corrective action program and replaced the capacitor.

The finding was more than minor because the finding was associated with the Mitigating Systems cornerstone attribute of equipment performance and affected the cornerstone objective of ensuring the availability and reliability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the 31 static inverter incurred unnecessary unavailability hours and was inoperable and unavailable for approximately five days following the fuse failure on September 14, 2010. The inspectors determined 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, and was not risk significant with respect to external events.

The inspectors determined that this finding had a cross-cutting aspect in the area of Problem Identification and Resolution because Entergy personnel did not complete adequate and timely corrective actions to implement a capacitor program and identify critical capacitors for replacement prior to a failure that resulted in the unavailability of a safety related inverter.
Inspection Report# : 2010004 *(pdf)*

Significance: G Jul 01, 2010
Identified By: NRC
Item Type: FIN Finding
Procedural Requirements for N-38 Component Classification for Preventative Maintenance Not Implemented
An NRC-identified finding of very low safety significance was identified because Entergy personnel did not implement procedural requirements for component classification. Specifically, Entergy staff did not classify the N-38 neutron detector as a high critical component, contrary to the guidance provided in EN-DC-153, "Preventative Maintenance (PM) Component Classification." As a result, N-38 was not included in the site power supply PM

program in 2008 which contributed to the detector's low voltage power supply (LVPS) failure on September 15, 2009, due to age-related degradation, causing a safety system functional failure of N-38. The issue was entered into Entergy's corrective action program. The LVPS was replaced, an extent of condition was performed, and N-38 and other remote shutdown instrumentation were appropriately classified as high critical for preventative maintenance in accordance with site procedures.

The finding is more than minor because it is associated with the Equipment Performance 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, the age-related failure of the power supply resulted in N-38 being inoperable for a period of time. A Region I Senior Reactor Analyst (SRA) evaluated the significance of the finding using IMC 0609, Appendix F, "Fire Protection Significance Determination Process," and qualitatively determined that the finding screened as very low safety significance (Green) because it only affected the ability to reach and maintain cold shutdown conditions.

The inspectors determined that this finding had a cross-cutting aspect in the area of Human Performance within the Decision Making component because Entergy personnel did not make safety-significant decisions using a systematic process, to ensure safety was maintained, including obtaining interdisciplinary input and reviews on safety significant decisions. Specifically, Entergy staff did not incorporate the procedural direction within EN-DC-153 to classify N-38 as a high-critical component.
Inspection Report# : 2010003 *(pdf)*

Significance: G Jul 01, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Operability Evaluation for Neutron Detector N-38 Anomalous Behavior
An NRC-identified NCV of very low safety significance of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was identified because Entergy personnel did not perform an adequate operability evaluation in accordance with procedure EN-OP-104, "Operability Determination Process." Specifically, Entergy personnel did not incorporate interdisciplinary input and adequate technical information to ensure the continued operability of the neutron detector N-38 when testing and subsequent troubleshooting indicated that the N-38 LVPS was degraded on September 24, 2009. As a result, N-38 was not declared inoperable until October 14, 2009, when Entergy personnel recognized that the LVPS had failed and took action to replace the LVPS. Entergy staff performed a past operability evaluation and determined that N-38 was inoperable since September 15, 2009. Entergy personnel entered this issue into their corrective action program. Corrective actions planned include providing neutron detector system training to maintenance and engineering, revising procedural requirements for identifying and correcting potential neutron detector performance issues and revising LER 2009-009 to report the additional N-38 inoperability identified during the past operability review.

The finding is more than minor because it is associated with the Equipment Performance 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, because N-38 was inappropriately determined to be operable on September 24, 2009, N-38 accrued an additional 21 days of inoperability, during which time it was unable to perform its safety function. A Region I SRA evaluated the significance of the finding using IMC 0609, Appendix F, "Fire Protection Significance Determination Process," and qualitatively determined that the finding screened as very low safety significance (Green) because it only affected the ability to reach and maintain cold shutdown conditions.

The inspectors determined that this finding had a cross-cutting aspect in the area of Human Performance within the Decision Making component because Entergy staff did not make safety-significant decisions using a systematic process, especially when faced with uncertain plant conditions, to ensure safety was maintained. Specifically, Entergy staff did not fully incorporate engineering, maintenance, and vendor input to fully evaluate and properly ascertain the operability of N-38 when instrument performance anomalies were identified in September 2009.
Inspection Report# : 2010003 *(pdf)*

Significance: G Mar 30, 2010

Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Inadequate Maintenance Procedures for the Steam-Driven Auxiliary Boiler Feedwater (AFW) Pump
A self-revealing finding of very low safety significance was identified because Entergy personnel did not have adequate procedures appropriate for the circumstances for maintenance associated with the steam-driven auxiliary feedwater (AFW) pump. Specifically, Entergy implemented maintenance procedures associated with the 32 AFW pump, which contained coupling gap dimensions inconsistent with vendor requirements, and did not ensure appropriate shaft axial alignment for continued, reliable pump operation. As a result, in February 2010, high pump axial vibrations exceeded operability limits during scheduled surveillance testing, the pump was removed from service, and troubleshooting was initiated to determine the cause. Entergy personnel performed turbine-end bearing replacements, oil flush and refill of all bearing housings, performed coupling inspections and shaft alignment, successfully performed post-maintenance surveillance testing, and performed an apparent cause evaluation within the corrective action program under condition report (CR)-IP3-2010-00541 and IP3-2009-04592.

The inspectors determined the finding is more than minor because the finding is associated with the procedure quality objective 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, the inadequate procedures resulted in increased unavailability to evaluate and correct vibration and other issues between November 2009 and February 2010. The inspectors evaluated the significance of the finding using IMC 0609, Attachment 4, and determined this finding was not a design or qualification deficiency, did not result in a loss of safety function, and was not impacted by external events. Consequently, the finding is of very low safety significance.

The inspectors determined that this finding had a cross-cutting aspect in the area of Human Performance because Entergy staff did not ensure that complete, accurate and up-to-date procedures were available to perform appropriate maintenance on a safety-related AFW pump.
Inspection Report# : 2010002 *(pdf)*

Significance:  Mar 30, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Preconditioning of RWST Level Switch
An NRC-identified non-cited violation (NCV) of very low safety significance of 10 CFR 50, Appendix B, Criterion XI, “Test control,” was identified because Entergy technicians conducted unacceptable preconditioning by cycling the Refueling Water Storage Tank (RWST) lo-lo level alarm switch prior to recording the as-found set-point during Technical Specification Surveillance Requirement (SR) 3.5.4.5.

The finding was more than minor because the finding was associated with the Mitigating Systems cornerstone attribute of procedure quality and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, preconditioning of the RWST Lo-Lo Level Alarm switch could mask its actual as-found condition and result in an inability to verity its operability, as well as make it difficult to determine whether the switch would perform its intended safety function during an event. The inspectors evaluated the finding using IMC 0609, Attachment 4, “Initial Screening and Characterization of Findings,” and determined the finding was of very low safety significance because the finding is not a design or qualification deficiency, did not result in the loss of a safety function, and was not risk significant due to external events.

The inspectors determined that this finding had a cross-cutting aspect in the area of Problem Identification and Resolution because Entergy did not implement and institutionalize operating experience (OE) through changes to station processes, procedures, equipment, and training programs. Specifically, Entergy did not utilize NRC published guidance and lessons learned from recent preconditioning incidents at Entergy sites to preclude preconditioning the RWST Lo-Lo Level Alarm Switch prior to recording the as-found switch set-point.
Inspection Report# : 2010002 *(pdf)*

Significance: SL-IV Dec 31, 2009
Identified By: NRC

Item Type: VIO Violation
Incomplete Licensed Operator Medical Examinations
An NRC-identified SL IV Violation of 10 CFR 50.9, “Completeness and accuracy of information” was identified because Entergy submitted inaccurate medical information for licensed operators. The inspectors identified Entergy submittals to the NRC were inaccurate due to the omission of a tactile test (test performed to ensure that operators can distinguish among various shapes of control knobs and handles by touch) from the required licensed operator medical examinations. The inspectors determined that Entergy’s medical physician did not adequately test all licensed operators (both initial and renewal licensees) in accordance with 10 CFR 55.21 and 10 CFR 55.33 with respect to ANSI/ANS-3.4 1983. However, Entergy had submitted medical information, as required by 10 CFR 55 for licensed operators and applicants that stated the testing had been performed satisfactorily. Following identification of the issue, Entergy personnel entered the issue into the corrective action program (CR-IP3-2009-04487) and completed corrective actions to develop and administer an appropriate test. The inspectors noted that all licensed operators passed this new test and no new license conditions were required.

Entergy’s failure to provide complete and accurate information to the NRC could have resulted in an incorrect licensing action and is a performance deficiency because the licensee is required to comply with 10 CFR 50.9. Because this violation of 10 CFR 50.9 is considered to be a violation that potentially impedes or impacts the regulatory process, it is dispositioned using the traditional enforcement process. The finding was more than minor because documents which provided the information to the NRC were signed under oath by the company medical physician and the Site Vice President. Because there was no evidence that operators mis-operated equipment due to omitted tactile tests, the finding was determined to be of very low safety significance (SL IV).

The applicability of cross-cutting aspects related to the performance deficiency of this finding will be determined after NRC review of Entergy’s response to the Notice of Violation.

Inspection Report# : 2009005 *(pdf)*
Inspection Report# : 2010003 *(pdf)*

Significance: G Dec 31, 2009
Identified By: NRC
Item Type: NCV NonCited Violation
Untimely Compensatory Measures for Degraded EDG Pressure Switches
An NRC-identified NCV of very low safety significance of 10 CFR 50, Appendix B, Criterion XVI, “Corrective Actions,” was identified because Entergy personnel did not adequately correct a condition adverse to quality to ensure the continued operability of emergency diesel generators (EDGs). Specifically, Entergy personnel did not ensure that contacts associated with EDG jacket water pressure switches for the air start systems were in the appropriate state following EDG operations to support EDG restart. Additionally, after identification of the specific cause, Entergy personnel did not implement continuity checks on the EDGs to ensure continued operability after EDG operation in a timely manner.

The finding was more than minor because the finding was associated with the Mitigating Systems cornerstone attribute of equipment performance and affected the cornerstone objective of ensuring the availability and reliability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the 33 EDG incurred unavailability hours and reliability was impacted during EDG standby conditions with one air start sub-system available. The inspectors determined the finding was of very low safety significance because the finding was not a design or qualification deficiency, did not represent a loss of safety function, and was not risk significant with respect to external events.

The inspectors determined that this finding had a cross-cutting aspect in the area of Problem Identification and Resolution because Entergy personnel did not implement adequate corrective actions to address continued EDG operability concerns with degraded jacket water pressure switches in a timely manner.
Inspection Report# : 2009005 *(pdf)*

Significance: G Dec 31, 2009
Identified By: NRC

Item Type: NCV NonCited Violation
Failure to Promptly Identify and Correct a MCCB Service Life Nonconformance
An NRC-identified non-cited violation (NCV) of very low safety significance of 10 CFR 50, Appendix B, Criterion XVI, “Corrective Actions,” was identified because Entergy personnel did not promptly identify and correct a condition adverse to quality regarding molded-case circuit breaker (MCCB) nonconformance. Specifically, in 2004, Entergy personnel determined that a population of MCCBs in safety related applications were beyond the design life as specified in Westinghouse Technical Bulletin, TB-04-13. However, Entergy’s scheduled replacement timeframe (through 2011) for those affected safety related MCCBs was not consistent with the safety significance of the issue or adequately supported through an engineering justification considering, at that time, a number of the MCCBs were in service for greater than the 20-year design life.

The finding was more than minor because the finding was associated with the Mitigating Systems cornerstone attribute of equipment performance and affected the cornerstone objective of ensuring the reliability of the electrical distribution system to respond to initiating events to prevent undesirable consequences. Specifically, the MCCB breakers that exceeded their expected design life could impact their reliability to respond to design basis events and plant transients. The inspectors determined the finding was of very low safety significance because the finding was a design qualification deficiency confirmed not to result in loss of operability or function. Specifically, no actual loss of function could be attributed to operating with MCCBs greater than 20 years in service and the inspectors’ review of an Entergy operability determination concluded the MCCBs were an operable but nonconforming condition.

This finding has a cross-cutting aspect in the area of Problem Identification and Resolution because on several occasions Entergy personnel did not thoroughly evaluate MCCB qualification issues including operability and functionality considerations. This included an opportunity to evaluate the condition in 2008 when engineers identified residue indicative of grease breakdown.
Inspection Report# : 2009005 *(pdf)*

Significance: G Dec 31, 2009
Identified By: Self-Revealing
Item Type: FIN Finding
Inadequate Post-Maintenance Testing and Resultant Failure of 6.9kV Breaker Auto-Transfer Following Plant Trip
A self-revealing finding (FIN) of very low safety significance was identified because Entergy personnel did not perform adequate post-maintenance functional testing to ensure 6.9kV breakers were able to perform intended safety functions. Specifically, in July 2009, during a planned maintenance activity, maintenance personnel installed a 6.9kV breaker without adequate post-maintenance testing. As a result, on August 10, 2009, following an automatic plant trip, a 6.9kV breaker failed to operate due to a bent lever and prevented the automatic transfer of a 480-Volt safety bus from its onsite electrical power source to its appropriate off-site electrical sources, as required.

The finding was more than minor because the finding is associated with the procedure quality performance attribute of the Mitigating Systems cornerstone and affected the associated cornerstone objective to ensure the reliability of systems that respond to initiating events to prevent undesirable consequences. The finding was considered to be of very low safety significance (Green) in accordance with IMC 0609, Attachment 4, “Phase 1 – Initial Screening and Characterization of Findings,” because the finding was not a design or qualification deficiency, did not result in the loss of a safety function, and was not risk significant due to external events.

The inspectors determined that this finding had a cross-cutting aspect in the area of Human Performance because Entergy personnel did not ensure adequate planning (work control) was performed to ensure post-maintenance functional testing was appropriate for the 6.9kV bus tie breakers.
Inspection Report# : 2009005 *(pdf)*

Barrier Integrity

Emergency Preparedness

Significance: G Dec 31, 2009
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Siren Test Failure
A self-revealing NCV of very low safety significance of 10 CFR 50.47(b)(5) was identified because Entergy personnel did not ensure the alert and notification system (ANS) sirens remained available for notification of the populace within the plume exposure pathway emergency planning zone (EPZ). Specifically, Entergy personnel did not use procedures, step lists, or checklists while performing maintenance on the ANS siren system which caused approximately 8% of the siren system to be degraded for 56 days. The siren technicians did not use a detailed written procedure or work instruction to perform siren file updates, but instead relied on performing the task from memory. As a result, on September 16, 2009, Entergy conducted a full volume siren test during which a total of 18 sirens indicated a failure to function. Entergy personnel entered the siren failures into their corrective action process for resolution and performed a root cause of the event to determine the short and long term corrective actions.

The finding was more than minor because it was associated with the Emergency Preparedness (EP) cornerstone attribute of facilities and equipment, and impacted the cornerstone objective of ensuring that Entergy is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. This finding was evaluated using IMC 0609 Appendix B, "Emergency Preparedness Significance Determination Process (SDP)" and was determined to be of very low safety significance (Green).

This finding has a cross-cutting aspect associated with the area of Human Performance because Entergy did not ensure adequate supervisory and management oversight of work activities performed by siren technicians (DMB) failure due to an incorrect data file being installed. Entergy entered the siren failures into their corrective action process for resolution and performed a root cause of the event to determine the short and long term corrective actions.

The finding is greater than minor because it is associated with the EP cornerstone attribute of Facilities and Equipment, and impacted the cornerstone objective of ensuring that Entergy is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. This finding was evaluated using IMC 0609 Appendix B, "Emergency Preparedness Significance Determination Process (SDP)" and was determined to be of very low safety significance. The cause of this finding is related to the cross-cutting element of human performance.

Inspection Report# : 2009005 *(pdf)*

Occupational Radiation Safety

Public Radiation Safety

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

Last modified : November 29, 2010