Indian Point 3
1Q/2010 Plant Inspection Findings

Initiating Events

Significance: G Dec 31, 2009
Identified By: NRC
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)*

Significance: G Jun 30, 2009
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to assess and manage the increase in risk prior to the performance of maintenance on valve that was unisolable from the reactor coolant system.
The inspectors identified a non-cited violation (NCV) of 10 CFR 50.65(a)(4), because Entergy personnel did not adequately assess and manage increased risk associated with planned corrective maintenance. Specifically, Entergy staff did not include in their maintenance risk assessment the increase in shutdown plant risk for the repacking of SP-954A, a non-isolable root isolation from the reactor coolant system associated with the sampling system, during fuel reload operations. The inadequate risk assessment and management of the risk associated with this job resulted in a short duration leak in the RCS.

The inspectors determined this finding affected the Initiating Event cornerstone and was more than minor because the risk assessment did not consider maintenance activities that could increase the likelihood of initiating events. The inspectors determined this finding was of very low safety significance because Entergy staff maintained required mitigation capability in accordance with IMC 0609, Appendix G, Attachment 1, Checklist 4. The inspectors determined that this finding had a cross-cutting aspect in the area of Human Performance because personnel did not appropriately plan work activities by incorporating appropriate risk insights, job site conditions, contingencies, and abort criteria consistent with nuclear safety. (H.3(a)) (Section 4OA3)

Inspection Report# : 2009003 *(pdf)*

Significance: G Jun 30, 2009
Identified By: NRC
Item Type: FIN Finding
Failure to have maintenance procedures appropriate for the circumstances, which resulted in disconnected positioner feedback linkage for the No. 33 FRV, and a manual reactor trip.
Entergy personnel did not have adequate procedures appropriate for maintenance associated with air-operated valves. Specifically, existing Entergy maintenance procedures did not ensure that the 33 steam generator (SG) feedwater regulating valve (FRV) positioner feedback arm connecting linkage hardware was properly secured following maintenance. As a result, on May 15, 2009, this linkage became disconnected which led to SG level oscillations that required a manual reactor trip by control room operators. Entergy personnel repaired the valve positioner feedback arm connecting linkage, identified the main cause during a post-transient review, performed extent of condition inspections on similar valves susceptible to the same linkage deficiency, and completed a root cause analysis within the corrective action program under condition report (CR)-IP3-2009-02368.

The inspectors determined the finding is more than minor because the finding is 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, the inadequate procedures resulted in the failure of a non-safety-related portion of the 33 SG FRV and resulted in a manual reactor trip. The inspectors evaluated the significance of the finding using IMC 0609, Attachment 4, and determined this finding did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions would be unavailable. Consequently, the finding is of very low safety significance (Green).

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 air-operated valve positioners associated with the 33 SG FRV. (H.2(c))

Inspection Report# : 2009003 *(pdf)*

Mitigating Systems

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: G 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: 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: NRC
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)*

Significance: G Jun 12, 2009
Identified By: NRC
Item Type: NCV NonCited Violation
Degraded Grid Protection Relay Exceeded Technical Specification Limits
•Green. The inspectors identified an NCV of very low safety significance of 10 CFR 50, Criterion XVI, "Corrective Action," for Entergy's failure to identify and correct a condition adverse to quality related to 480-Volt bus 3A degraded grid protection. Specifically, Entergy staff did not identify and implement adequate corrective actions to ensure the safety-related time delay relay, 62-1/3A, remained functional within its technical specification (TS) surveillance requirement (SR) acceptance criteria when it exhibited abnormal relay drift in October 2007. As a result, the relay drifted out of specification for a portion of the next surveillance period, which should have been reasonably avoided. Additionally, in November 2007, Entergy did not adequately evaluate past operability to determine if NRC reportability criteria per 10 CFR 50.73 were exceeded for the degraded relay condition that existed for a time longer than would be permitted by the TS action statement. Entergy entered the issue into the corrective action program as CR-IP3-2009-02664 and CR-IP3-2009-02773 which includes a final review of reportability by Entergy.

The inspectors determined the finding is more than minor because it is associated with the equipment performance attribute of the Mitigating Systems cornerstone and affects the cornerstone objective of ensuring the reliability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, the 480-Volt bus 3A degraded voltage safety-related time delay relay, 62-1/3A, was degraded and exceeded its TS SR acceptance criteria of 45 seconds during two consecutive surveillance tests. However, the inspectors determined the relay would perform its safety function with a worst-case time delay of 55.9 seconds for a non-safety injection (non-SI) degraded grid condition. The inspectors' review determined this condition would not reasonably have prevented the relay from performing its function, allowing the 480V electrical bus 3A to swap its supply from the offsite grid to the on-site 31 emergency diesel generator prior to the loss or damage of supplied equipment. The inspectors determined the significance of the finding using IMC 0609.04, "Phase 1 – Initial Screening and Characterization of Findings." The finding was determined to be of very low safety significance (Green) because it was not a design or qualification deficiency; did not represent a loss of system safety function; and did not screen as potentially risk-significant due to external initiating events.

The inspectors determined that this finding had a cross-cutting aspect in the area of problem identification and resolution within the corrective action program component because Entergy personnel did not thoroughly evaluate the problem such that the resolution addressed the cause. (Section 4OA2.1.c) (P.1.c per IMC 0305)

Inspection Report# : 2009007 *(pdf)*

Significance: G Jun 12, 2009
Identified By: NRC
Item Type: NCV NonCited Violation
Instrument Air 10CFR 50.65 (a)(2) Performance Demonstration Not Met
Green. The inspectors identified an NCV of very low safety significance of 10 CFR 50.65, "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," paragraph (a)(2), for Entergy's failure to adequately demonstrate that the instrument air (IA) system (a)(2) performance was effectively controlled through performance of appropriate preventative maintenance. Specifically, as evidenced by repeat functional failures of IA compressor solenoid-operated unloader valves in March 2009, the IA (a)(2) performance demonstration was no longer justified in accordance with maintenance rule implementing procedure guidance or consistent with Entergy's previous June 2008 (a)(1) evaluation on the issue. Entergy entered the issue into the corrective action program as CR-IP3-2009-02716.

The inspectors determined the finding was more than minor because it is associated with the equipment performance attribute of the Mitigating Systems cornerstone and affects the cornerstone objective of ensuring the capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, following repetitive maintenance-related functional failures of an instrument air compressor (solenoid-operated) unloader valve in March 2009, Entergy did not identify the instrument air system should be monitored in accordance with 10 CFR 50.65(a)(1) for establishing goals and monitoring against the goals. The inspectors evaluated the significance of this finding using IMC 0609.04, "Phase 1 – Initial Screening and Characterization of Findings." The

inspectors determined that this finding was of very low safety significance (Green) because the finding was not a design or qualification deficiency; did not represent a loss of safety system function; and did not screen as potentially risk significant due to external initiating events.

The inspectors determined that this finding had a cross-cutting aspect in the area of human performance because Entergy did not ensure that available and adequate maintenance resources were applied such that a known IA system deficiency was corrected in a timely manner to prevent repeat functional failures of the instrument air compressor unloader valves. (Section 4OA2.1.c) (H.2.a per IMC 0305)

Inspection Report# : 2009007 *(pdf)*

Barrier Integrity

Emergency Preparedness

Significance: G Dec 31, 2009
Identified By: NRC
Item Type: NCV NonCited Violation
Siren Test Failure
A Green self-revealing non-cited violation (NCV) of 10 CFR 50.47(b)(5) was identified for the failure to use procedures, step lists, or checklists while performing maintenance on the Acoustic Technologies, Inc (ATI) siren system which caused approximately 8% of the siren system to be degraded for 56 days. Specifically, while updating a single voice siren data file, a Science Applications International Corporation (SAIC) technician inadvertently invoked the UPDATE ALL command. The SAIC technician did not use a detailed written procedure or work instruction to perform the siren file updates, but instead relied on performing the task from memory. On September 16, 2009, IPEC conducted a full volume siren test, during which a total of 18 sirens indicated that they failed to function. Of the 18 siren failures, 14 were caused by a Digital Message Board (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. [H.4(c)] (Section 1EP2)

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

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)*

Significance: N/A Jun 12, 2009
Identified By: NRC
Item Type: FIN Finding
2009 Unit 3 PIR Team Summary
The inspectors concluded that Entergy was generally effective in identifying, evaluating, and resolving problems. Entergy personnel identified problems at a low threshold and entered them into the Corrective Action Program (CAP). For most condition reports (CRs) reviewed, the inspectors determined that site personnel screened issues appropriately for operability and reportability, and generally prioritized issues commensurate with the safety significance of the problems. The inspectors determined that causal analyses appropriately considered extent of condition, generic issues, and previous occurrences. The inspectors also determined that corrective actions addressed the identified causes and were implemented in a timely manner. However, the inspectors identified two violations of NRC requirements in the areas of prioritization and evaluation, and effectiveness of corrective actions. The issues were entered into Entergy's CAP during the inspection.

Entergy's audits and self-assessments reviewed by the inspectors were thorough and probing. Additionally, the inspectors concluded that Entergy adequately identified, reviewed, and applied relevant industry operating experience (OE) to Indian Point Unit 3. Based on interviews, observations of plant activities, and reviews of the CAP and the Employee Concerns Program (ECP), the inspectors did not identify concerns with site personnel willingness to raise safety issues nor did the inspectors identify conditions that indicated a negative impact on the site's safety conscious work environment.

Inspection Report# : 2009007 *(pdf)*

Last modified : May 26, 2010