Indian Point 3
4Q/2007 Plant Inspection Findings

Initiating Events

Significance: G Jun 29, 2007
Identified By: NRC
Item Type: FIN Finding
FAILURE TO IDENTIFY IN THE CORRECTIVE ACTION PROCESS OR ADEQUATELY EVALUATE A DEGRADED CONDITION ASSOCIATED WITH A HIGH VOLTAGE BUSHING ON A MAIN TRANSFORMER
The inspectors identified a finding of very low safety significance (Green), in that, Entergy failed to identify in the corrective action program an adverse condition associated with the 'B' phase high voltage bushing on the 31 main transformer (MT) that was discovered during testing. The data from that test indicated potential degradation of the 'B' phase high voltage bushing. As a result, this condition was not adequately evaluated before placing the transformer back in service, and the bushing subsequently failed. The transformer failure was entered into their corrective action program.

Entergy replaced the 31 main transformer and conducted a root cause analysis associated with the failure.
The inspectors determined that this finding was more than minor because it is associated with the equipment performance attribute of the Initiating Events cornerstone, and it affected the cornerstone objective of limiting the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, Entergy did not place this issue in the corrective action process, and as a result, did not conduct an adequate evaluation of a degraded condition associated with the 'B' phase high voltage bushing on 31 MT. Subsequently, the bushing failed during power operation and resulted in a reactor trip, an explosion in the transformer yard, and the declaration of a notification of an unusual event. The inspectors evaluated the significance of this finding using Phase 1 of Inspection Manual Chapter (IMC) 0609, Appendix A, “Significance Determination of Reactor Inspection Findings for At-Power Situations.” This finding was determined to be of very low safety significance because, while it was a transient initiator that resulted in a reactor trip, it did not contribute to 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 problem identification and resolution, because Entergy failed to promptly identify an adverse condition in the corrective action program in a timely manner commensurate with its safety significance. (Section 4OA3)
Inspection Report# : 2007003 *(pdf)*

Significance: G Mar 31, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
FAILURE TO INCLUDE THE INTAKE STRUCTURE TRASH RACKS WITHIN THE SCOPE OF THE MAINTENANCE RULE MONITORING PROGRAM
The inspectors identified a Green non-cited violation (NCV) of 10 CFR 50.65(b), in that, Entergy did not include the Indian Point Unit 3 trash rack structures within the scope of the maintenance rule monitoring program. Additionally, Entergy did not demonstrate the performance or condition of the trash racks was being effectively controlled through the performance of appropriate preventive maintenance such that the structure remained capable of performing its intended function. Entergy performed a cleaning of the trash racks to immediately address the lowered service water intake bay level, and they timed service water bay level monitoring to coincide with river low tide cycles. Entergy also entered this issue into the corrective action program as CR-IP3-2007-00453, and developed corrective actions to: modify the requirements for inspection and cleaning of trash racks based on component history and condition monitoring; modify guidance for service water bay level monitoring to be more effective; evaluate maintenance rule system scoping; develop procedural guidance for managing low service water bay levels; and implement a method for monitoring debris fouling of the trash racks.

The inspectors determined that this finding affected the Initiating Events cornerstone and was more than minor because it was similar to Example 7.d in Inspection Manual Chapter (IMC) 0612, Appendix E, “Examples of Minor Issues.” Specifically, equipment performance problems were such that Entergy was unable to demonstrate effective control of the performance or condition of the trash racks through appropriate preventive maintenance as specified by 10CFR50.65(a)(2). 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 that the finding was of very low safety significance (Green) 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. (Section 1R12)

Inspection Report# : 2007002 *(pdf)*

Significance: G Mar 31, 2007
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
INADEQUATE PROCEDURE FOR RECIRCULATION SUMP INTERFERENCE REMOVAL
A Green, self-revealing, non-cited violation of 10 CFR 50, Appendix B, Criterion V, “Instructions, Procedures, and Drawings,” was identified, in that, Entergy’s work package failed to ensure that piping interference was correctly planned for and removed during modifications to the vapor containment and recirculation sumps. On March 9, 2007, during the sump modifications, a section of pipe was cut for interference removal which was different from the piping specified in the work package. This resulted in approximately 385 - 500 gallons of reactor coolant being discharged from the reactor loops into the recirculation sump where personnel were working. The cause of the improper pipe being cut was misidentification of the piping by work planners, followed by a failure of workers to follow steps in the work package that should have identified the work package inadequacy. Immediate corrective actions included a revision to the work package that subsequently welded a cap on the open piping leading from the reactor coolant drain tank to the work site, and plant configuration tags were placed on the residual heat removal interface valves (SI-864E and 864F) to isolate the work area. Entergy entered this issue into the corrective action program as CR-IP3-2007-01059, performed a root cause analysis, and conducted a human performance error review.

The inspectors determined that this finding was more than minor because it was associated with the Procedure Quality attribute of the Initiating Events cornerstone; and, it affected the cornerstone objective of limiting the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, cutting the wrong pipe resulted in the inadvertent draining of reactor coolant system inventory and increased the likelihood of a loss of inventory control. This finding was evaluated using Phase 1 of IMC 0609, Appendix G, “Shutdown Operations Significance Determination Process.” The inspectors evaluated the plant conditions (cold shutdown, reactor coolant system open, refueling cavity less than 23 feet) in accordance with Checklist 3 of Appendix G, Attachment 1, and determined that the finding was of very low safety significance because it did not satisfy the criteria of Table 1 for a "Loss of Control," and the Checklist 3 criteria for maintaining adequate mitigation capability (Core Heat Removal Guidelines, Inventory Control Guidelines, Power Availability Guidelines, Containment Control Guidelines, and Reactivity Guidelines) were met.

The inspectors determined that this finding had a cross-cutting aspect in the area of human performance because the work package used for interference removal was not accurate and did not ensure the correct section of piping was identified and appropriately controlled. (Section 1R17)

Inspection Report# : 2007002 *(pdf)*

Significance: G Mar 31, 2007
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
INADEQUATE PROCEDURE FOR CONDUCT OF RTD CROSS CALIBRATIONS
A Green, self-revealing, non-cited violation of 10 CFR 50, Appendix B, Criterion V, “Instructions, Procedures, and Drawings,” was identified, in that, Entergy failed to ensure that appropriate procedures existed to prevent conflicting activities which led to the opening of the pressurizer power operated relief valves (PORVs) when plant conditions did not require them to be open, leading to a partial plant depressurization during plant heat-up. Entergy entered this issue into their corrective action program as CR-IP3-2007-01691. Entergy took immediate corrective action to stop the

reactor coolant system pressure transient, and they generated corrective actions to clarify the applicable procedure pre-requisites.

The inspectors determined that this finding was more than minor because it was associated with the Procedure Quality attribute of the Initiating Events cornerstone; and, it affected the cornerstone objective of limiting the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, the lack of procedure clarity and poor interpretation of a procedure pre-requisite led to a loss of reactor coolant system pressure as a result of the pressurizer PORV actuation. This finding was evaluated using Phase 1 of IMC 0609, Appendix A, "Determining the Significance of Reactor Inspection Findings for At Power Situations." The inspectors determined that the finding was of very low safety significance because assuming the worst case degradation, the loss of inventory did not exceed the Technical Specification limit for identified reactor coolant system (RCS) leakage, and the finding would not have caused a total loss of another mitigating system safety function.

The inspectors determined that this finding had a cross-cutting aspect in the area of human performance because the applicable procedure prerequisites were not adequate as written to prevent a plant transient. (Section 1R20)

Inspection Report# : 2007002 *(pdf)*

Mitigating Systems

Significance: G Oct 03, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
FAILURE TO MONITOR EMERGENCY LIGHTING SYSTEM IN ACCORDANCE WITH 10 CFR 50.65 (a)(1) ACTION PLAN
The inspectors identified a non-cited violation (NCV) of 10 CFR 50.65, "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," because Entergy did not monitor the performance or condition of the emergency lighting system against licensee-established goals, in a manner sufficient to provide reasonable assurance that the system was capable of fulfilling its intended function. Specifically, in January 2007, Entergy returned the emergency lighting system to a 10 CFR 50.65(a)(2) status without taking appropriate corrective action when established goals were not met in accordance with its action plan. Entergy entered this issue into their corrective action program, and is performing a 10 CFR 50.65(a)(1) evaluation for the emergency lighting system. Entergy also plans to review system performance over the last two years to ensure previous functionality determinations have appropriate engineering bases.

The inspectors determined that this finding was more than minor because it was similar to Example 7.a in Inspection Manual Chapter (IMC) 0612, Appendix E, "Examples of Minor Issues." Specifically, Entergy failed to take appropriate corrective action when established goals were not met in accordance with its Maintenance Rule (a)(1) action plan for the emergency lighting system. The inspectors evaluated the significance of this finding using Phase 1 of IMC 0609, Appendix F, "Fire Protection Significance Determination Process." The inspectors determined that this finding was of very low safety significance because the degradation of safe shutdown functions was low, since the majority of emergency lights were available to support safe-shutdown operator actions in the event of a fire and loss of normal lighting. In addition, backup portable emergency lights and flashlights were available to operators. The inspectors determined this finding had a cross-cutting aspect in the area of human performance because Entergy did not use conservative assumptions when determining the functionality of degraded emergency lights and whether identified emergency light functional failures were maintenance preventable. (H.1(b)) (Section 1R12)

Inspection Report# : 2007004 *(pdf)*

Significance: G Mar 31, 2007
Identified By: NRC
Item Type: NCV NonCited Violation

INADEQUATE PROCEDURE FOR CONTROL OF TEMPORARY MODIFICATION
The inspectors identified a Green, non-cited violation of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," because Entergy failed to generate a procedure of a type appropriate to the circumstances associated with the implementation of a temporary modification to normal control room lighting power. The procedure that was generated lacked precautions, limitations, and prerequisites to prevent a low lighting condition in the control room from existing during implementation of the temporary modification. Consequently, during implementation of this temporary modification there were several control panels that did not have adequate lighting for operators to conduct control board manipulations. Entergy entered this issue into the corrective action program as CR-IP3-2007-00821, took immediate corrective action to add additional lighting to the control room, and generated a contingency procedure to allow backup lighting to be energized, if needed.

The inspectors determined that this finding was more than minor because it caused an actual condition to exist in the control room where lighting at selected control panels was not adequate, and contingency plans were not developed for the potential cases where the temporary lighting that was provided could be lost. This condition was similar to IMC 0612, Appendix E, Example 4.d. Specifically, the lowered level of lighting in the control room was determined to significantly impact the operator's ability to perform certain tasks. The inspectors determined that this finding was not suitable for evaluation using the significance determination process. Consequently, it was reviewed by NRC management and determined to be a finding of very low safety significance in accordance with NRC IMC 0609 Appendix M, "Significance Determination Process Using Qualitative Criteria," because the condition existed for a very limited period of time, other contingency lighting would have been available to the control room staff, and the approximated risk as determined by the regional NRC Senior Reactor Analyst was determined to be very low.

The inspectors determined that this finding had a cross-cutting aspect in the area of human performance because Entergy did not provide an adequate procedure to implement a temporary modification, in that it lacked precautions, limitations, and prerequisites that ultimately resulted in degraded control room lighting. (Section 1R23)

Inspection Report# : 2007002 *(pdf)*

Barrier Integrity

Emergency Preparedness

Significance:  Mar 31, 2007
Identified By: NRC
Item Type: FIN Finding
INADEQUATE CORRECTIVE ACTIONS FOR FAILURE TO APPROPRIATELY MONITOR SERVICE WATER INTAKE BAY LEVEL
The inspectors identified a Green finding because Entergy failed to take adequate corrective actions for an issue associated with monitoring of service water intake bay level. This deficiency could have prevented identification of entry conditions for an emergency action level. Entergy entered this issue into the corrective action program as CR IP3-2007-00453, and initiated several corrective actions, including plans for enhanced monitoring of service water bay levels, backwashing of trash racks, procedural upgrades, correction of service water bay level instrumentation modification installation, development of modifications for enhanced service water level monitoring equipment, and enhanced inspection and cleaning of intake structure trash racks.

The inspectors determined that this finding was more than minor because it was associated with the Emergency Preparedness cornerstone attribute of facilities and equipment; and, it affected the cornerstone objective of ensuring that a licensee is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. Specifically, inadequate monitoring of service water intake bay level could have resulted in failure to declare a notification of unusual event (UE). The inspectors reviewed the EAL entry criteria and determined that this performance deficiency did not affect Entergy's ability to declare any event higher than a UE. The inspectors evaluated this finding using IMC 0609, Appendix B, "Emergency Preparedness Significance

Determination Process," Sheet 1, "Failure to Comply," and determined that it was of very low safety significance because the declaration of a UE based on low service water bay level could have been missed or delayed, consistent with the example provided in the appendix.

The inspectors determined that this finding had a cross-cutting aspect in the area of problem identification and resolution because Entergy did not implement effective corrective actions for a previously identified issue associated with inadequate monitoring of service water intake bay level. (Section 1R17)

Inspection Report# : 2007002 *(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

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