

Indian Point 3

1Q/2009 Plant Inspection Findings

Initiating Events

Significance:  Sep 29, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Follow Procedures Results in the Inadvertent Start of Two Auxiliary Boiler Feed Pumps at Power.

A self-revealing, non-cited violation (NCV) of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was identified when maintenance technicians incorrectly attached electrical jumpers during a surveillance test and caused the inadvertent start of two motor-driven auxiliary feedwater pumps while at the plant was at full power operation. Entergy entered this issue into the corrective action program for resolution as CR-IP3-2008-01863. Additional actions included a root cause evaluation, communication to maintenance personnel regarding similar events in 2008, as well as reinforcement of human error reduction tools, and proper actions when faced with unexpected circumstances or results.

The inspectors determined that the finding was more than minor because it was associated with the Human Performance attribute of the Initiating Events cornerstone, and impacted its objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during power operations. Specifically, that human error resulted in a plant transient that unnecessarily challenged an automatic safety function and the unexpected start of safety-related pumps when not warranted. This finding was determined to be of very low safety significance, using Phase 1 guidance contained in IMC 0609, "Determining the Significance of Reactor Inspection Findings for At-Power Situations." Specifically, that the finding 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. The significant contributor to the event was that the technicians did not utilize self-check and peer-check skills that would have prevented the event, and proceeded in the face of unexpected circumstances when a jumper became dislodged during testing. (H.4(a))

Inspection Report# : [2008004](#) (*pdf*)

Significance:  May 15, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to establish and implement adequate corrective actions for procedural inadequacy

Green. The inspectors identified a Green NCV of Title 10 of the Code of Federal Regulations Part 50 (10 CFR 50), Appendix B, Criterion XVI, "Corrective Action," because Entergy did not establish and implement adequate corrective actions for a condition adverse to quality involving procedural inadequacy associated with reactor trips. Specifically, during Entergy's evaluation to determine reactor trip common causes performed in April 2007, Entergy identified that weak procedure guidance and procedural inadequacy was a common adverse cause associated with Unit 2 and Unit 3 reactor trips experienced during 2006 and 2007. The inspectors determined that Entergy's corrective action implemented to address the adverse condition in CR-IP3 2007-1849, specific to procedural adequacy as it relates to reactor trip reduction efforts, was not adequate. Entergy did not take specific or prompt action besides reliance upon on a long-standing, existing procedure upgrade project. As a result, timely and effective corrective actions were not taken to address procedural adequacy related to reactor trip reduction efforts. Entergy issued condition report CR-IP2-2008-2650 to address the issue.

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 impacts 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 failure to take effective and timely reactor trip reduction corrective actions for procedural inadequacy resulted in corrective actions not being implemented to ensure plant procedures reasonably prevent and minimize challenges that could result in unplanned reactor trips. This finding was evaluated using Phase 1 of Inspection Manual Chapter (IMC) 0609, Appendix A, "Determining the Significance of Reactor Inspection Findings for At-Power Situations." This finding was determined to be of very low safety significance (Green) because, while it is a transient initiator contributor that could result 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 did not take appropriate corrective actions to address procedural adequacy issues in a timely manner commensurate with its significance. (P.1(d) per IMC 0305)

Inspection Report# : [2008009](#) (pdf)

Mitigating Systems

Significance:  Dec 31, 2008

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

34 Control Building Fan Bearing Failures Caused by Torque and Lubrication Deficiencies.

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 properly include the appropriate torque requirements and lubricant in plant instructions and procedures during replacement and maintenance of bearings for the 34 Control Building Exhaust Fan. Specifically, between January 2006 and September 2008, Entergy used a grease to lubricate 34 CB Fan bearings that was incompatible with grease contained in the pre-lubricated bearings supplied by the manufacturer. Additionally, Entergy failed to provide adequate procedural guidance to ensure proper torque values were used to torque the 34 CB Fan pillow block bolts to preclude movement of the fan bearings. Failure to provide the appropriate qualitative and quantitative guidance in maintenance procedures resulted in the 34 CB Fan bearings being replaced in January 2006; June 2008; and again in September 2008. Entergy has corrected the incompatible grease issue and included vendor-recommended torque values during the most-recent bearing replacement for the 34 CB Fan in September 2008.

The inspectors determined that this finding impacts the Mitigating Systems cornerstone. The finding is greater than minor because it impacts the attribute of equipment performance and affects the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The significance of this finding was determined using a Phase 1 SDP screening and was determined to be Green because the high vibrations of the 34 CB Fan is a qualification deficiency that does not result in loss of operability or functionality.

The finding had a cross-cutting aspect in problem identification and resolution in that Entergy did not thoroughly evaluate problems such that the resolutions addressed the causes when equipment failed on an increased frequency. (P.1(c))

Inspection Report# : [2008005](#) (pdf)

Significance:  Sep 29, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Follow Maintenance Procedures Results in Degraded EDG for 37 Days.

A self-revealing, non-cited violation (NCV) of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was identified when maintenance personnel improperly performed a maintenance procedure that resulted

in two adjacent cylinders of the 33 emergency diesel generator (EDG) being locked-out without fuel oil supply for approximately 37 days. Entergy entered this issue into the corrective action program, performed a root cause evaluation, performed extent of condition inspections of similar EDGs on-site, instituted immediate procedure changes to preclude recurrence, and communicated the human error attributes that contributed to the event to plant personnel.

The inspectors determined that the finding was more than minor because it was associated with the Human Performance attribute of the Mitigating Systems cornerstone, and impacted its objective to ensure the availability and reliability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the locked-out cylinders degraded the full rated capacity of the EDG and unavailability hours were utilized to resolve the high exhaust temperatures identified during surveillance testing on July 11, 2008. This finding was determined to be of very low safety significance (Green), using Phase 3 guidance contained in IMC 0609, "Determining the Significance of Reactor Inspection Findings for At-Power Situations." Specifically, a bounding analysis was performed with the conservative assumption that the 33 EDG was considered inoperable for 37 days.

The inspectors determined that this finding had a cross-cutting aspect in the area of Human Performance, in that maintenance personnel did not utilize self-check, peer-check, and documentation skills that would have prevented the event. Specifically, maintenance personnel failed to verify that all fuel injection pump control latches were not engaged prior to the installation of injection pump covers, and required signature verification that indicated successful completion of this step in the applicable maintenance procedure. (H.4(a))

Inspection Report# : [2008004](#) (*pdf*)

Significance:  Aug 14, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate Design Control of Internal Recirculation Pumps

•Green. The team identified a non-cited violation (NCV) of 10 CFR 50, Appendix B, Criterion III, Design Control, because Entergy did not verify the adequacy of the internal recirculation pump minimum flow rates. Specifically, Entergy did not verify the adequacy of the pump minimum flow rates for sustained operation under low flow rate conditions or for strong-pump to weak-pump interactions which could result in dead-heading the weaker pump during parallel pump operation. Following identification of the issue, Entergy revised the Emergency Operating Procedures (EOP) to not start a second internal recirculation pump during conditions of high head recirculation, submitted a licensee event report (LER) for each generating unit, and entered the issue into the corrective action program.

The finding was determined to be more than minor because it is associated with the design control attribute of the Mitigating Systems (MS) Cornerstone and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. On Unit 2, the team determined the finding was of very low safety significance because it was a design or qualification deficiency confirmed not to result in loss of operability or functionality. On Unit 3, the finding was determined to be of very low safety significance based on a Significance Determination Process (SDP) Phase 3 risk assessment.

Also, the Unit 3 finding had a crosscutting aspect in the area of Problem Identification and Resolution because Entergy did not implement operating experience information through changes to station processes, procedures, and equipment. (IMC 0305 aspect P.2 (b)) (Section 4OA5)

Inspection Report# : [2008010](#) (*pdf*)

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

Significance:  Mar 31, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Follow Radiation Protection Procedures

The inspectors identified a Green non-cited violation of Technical Specification 5.4.1.a, "Procedures," because Entergy personnel did not generate condition reports or investigation paperwork for multiple high dose-rate alarms as required by station procedures. Specifically, personnel did not generate the required condition reports and adequately document the investigations for 21 instances of unplanned or un-briefed electronic dosimeter alarms that occurred between January 2009 and March 2009. The performance deficiency resulted in workers receiving unanticipated dose rate alarms with no formally-documented investigation prior to returning to work in a Radiologically Controlled Area. Entergy entered the finding into the corrective action program as condition report CR-IP3-2009-01253 and 01318.

The finding is more than minor because it is associated with the Occupational Radiation Safety cornerstone attribute of programs and process, and adversely affected the objective to ensure adequate protection of worker health and safety from exposure to radiation. Moreover, the inspectors identified a programmatic deficiency to maintain and implement programs to keep exposures as low as reasonably achievable, because multiple examples were identified regarding the failure to satisfy station radiation protection procedures. Using the Occupational Radiation Safety Significance Determination Process, the inspectors determined that the finding was of very low safety significance (Green) because it did not involve: (1) as low as is reasonably achievable planning and controls, (2) an overexposure of an individual, (3) a substantial potential for overexposure, or (4) an impaired ability to assess dose.

The inspectors determined that the finding had a cross-cutting aspect related to procedural adherence in the Work Practices component of the Human Performance area. Specifically, Entergy employees did not follow procedures to generate condition reports and document investigations when high dose-rate alarms were received by workers. H.4(b)

Inspection Report# : [2009002](#) (*pdf*)

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, 2008

Identified By: NRC

Item Type: VIO Violation

Site Access Procedure Violation

Site Access Procedure Violation -EA-08-209. (Involved willfulness)

There was no cross-cutting aspect.

Inspection Report# : [2008012](#) (*pdf*)

Significance: N/A May 15, 2008

Identified By: NRC

Item Type: FIN Finding

95001 Supplemental Inspection (Unplanned Scrams per 7000 Critical Hours)

The NRC performed this supplemental inspection to assess Entergy's evaluation associated with the Unit 3 Initiating Events cornerstone performance indicator (PI) for Unplanned Scrams per 7000 Critical Hours. This PI crossed the Green/White threshold (value > 3.0) in the second quarter of 2007 when Indian Point Unit 3 experienced its fourth reactor trip. At the time of this inspection, the performance indicator for Unplanned Scrams per 7000 Critical Hours for Indian Point Unit 3 had returned to below the Green/White threshold.

The inspectors determined that Entergy generally identified the performance issues that led to the White PI, identified root and contributing causes of the issues, and had taken or planned actions to address the identified causes and prevent recurrence of the issues. However, the inspectors identified one finding and several observations associated with weaknesses in Entergy's causal evaluations and corrective actions. Additionally, the inspectors noted that Entergy personnel performed several self-assessments and revisions to their causal evaluations before fully identifying the performance issues and establishing appropriate corrective actions to prevent recurrence. This caused a delay of a scheduled NRC supplemental inspection for this issue in September 2007.

Notwithstanding the observations and one finding as described in this report, the inspectors concluded that Entergy's overall performance was acceptable in determining the root and contributing causes of the performance deficiencies that led to the White performance indicator. Additionally, Entergy had planned or completed corrective actions to prevent recurrence of these performance deficiencies. As a result, consistent with Inspection Manual Chapter 0305, "Operating Reactor Assessment Program," a parallel White inspection finding will not be opened for this performance indicator that had previously exceeded the Green/White threshold and agency follow-up beyond the baseline inspection program is not warranted.

Inspection Report# : [2008009](#) (*pdf*)

Last modified : May 28, 2009