

# Indian Point 3

## 1Q/2012 Plant Inspection Findings

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### Initiating Events

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### Mitigating Systems

**Significance:** N/A Mar 31, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

#### **Failed to Submit an LER for a Single Cause of Two Auxiliary Boiler Feedwater Trains Inoperable**

The inspectors identified a Severity Level IV, NCV of 10 CFR 50.73(a)(2)(vii), because Entergy personnel did not provide a written Licensee Event Report (LER) to the NRC within 60 days of identifying a single condition which caused two trains of auxiliary feedwater (AFW) to become inoperable.

The safety-grade nitrogen backup to instrument air in the auxiliary boiler feed pump (ABFP) room is designed to provide 30 minutes of motive force to air operated AFW valves in the event that non-safety-related instrument air is lost. The discharge flow control valves (FCVs) for the ABFPs are designed to fail full open on a loss of all air pressure in order to ensure AFW is provided to the steam generators for decay heat removal. However, with the FCVs full open, the motors for 31 and 33 motor-driven ABFPs could reach an overcurrent condition, which, if coincident with degraded bus voltage, could cause the motor circuit breakers to trip open approximately 400 seconds from breaker amptector actuation. To protect the pump motor circuit breakers from possible trip while the nitrogen system is not available, and ensure AFW operability, a dedicated operator is required to be stationed locally to provide manual control of the FCVs if instrument air is lost. However, on October 11, 2011, Entergy personnel caused two trains of AFW to become inoperable for 45 minutes when they isolated the nitrogen backup system to instrument air during maintenance and did not station a dedicated operator as a compensatory measure. This issue was entered into Entergy's CAP as CR-IP3-2012-00394.

This violation involved not making a required report to the NRC and is considered to impact the regulatory process. Such violations are dispositioned using the traditional enforcement process instead of the Significance Determination Process. Using the Enforcement Policy Section 6.9, "Inaccurate and Incomplete Information or Failure to Make a Required Report," example (d)(9), which states "A licensee fails to make a report required by 10 CFR 50.72 or 10 CFR 50.73," the NRC determined this violation is more than minor and is categorized as a Severity Level IV violation.

Because this violation involves the traditional enforcement process with no underlying technical violation that would be considered more than minor in accordance with IMC 0612, a cross-cutting aspect is not assigned to this violation. Inspection Report# : [2012002](#) (*pdf*)

**Significance:**  Mar 31, 2012

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

#### **Inadequate Procedure and Instructions for Placing Pressure Regulator in Service**

A self-revealing NCV of very low safety significance (Green) of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was identified, because Entergy personnel did not ensure written maintenance instructions and an operating procedure were adequate, which resulted in damage to a safety-related relief valve in the nitrogen backup system to instrument air in the ABFP room and unavailability of the system while the valve was repaired. This issue was entered into Entergy's CAP as condition reports CR-IP3-2011-04651 and CR-IP3-2012-00819.

The finding is more than minor because it is associated with the Procedure Quality attribute of the Mitigating Systems cornerstone and affected the cornerstone objective to ensure the availability and capability of systems that respond to initiating events to prevent undesirable consequences. Using IMC 0609.04, "Phase 1 – Initial Screening and Characterization of Findings," the inspectors determined this finding was of very low safety significance (Green), because the finding was not related to 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 the finding had a cross-cutting aspect in the area of Human Performance, because Entergy personnel did not provide complete, accurate and up-to-date procedures and work packages. Specifically, the work instructions for the regulator maintenance and the operating procedure used to place the regulator back in service did not direct Entergy personnel to reduce the regulator setpoint prior to placing it in service.

Inspection Report# : [2012002](#) (*pdf*)

**Significance:**  Mar 31, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

**Failed to Update Operating Procedures and Licensing Basis Documents with Nitrogen Backup System Design and Support Function for AFW System Operability**

The inspectors identified a Green NCV of 10 CFR 50, Appendix B, Criterion III, "Design Control," because Entergy personnel did not ensure that the design basis for the nitrogen backup system to instrument air was correctly translated into specifications, drawings, procedures, and instructions. Specifically, Entergy personnel did not ensure that information regarding the safety function of the nitrogen backup system to instrument air in the ABFP room and its relation to the operability of the AFW system was translated into operating procedures and licensing basis documents, which directly contributed to inadequate compensatory measures during corrective maintenance and resulted in two inoperable trains of AFW. This issue was entered into Entergy's CAP as condition reports CR-IP3-2011-4651 and CR-IP3-2012-00393.

The finding is more than minor because it is associated with the design control attribute of the Mitigating Systems cornerstone and adversely affects the objective to ensure the capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Using IMC 0609.04, "Phase 1 – Initial Screening and Characterization of Findings," the inspectors determined this finding was of very low safety significance (Green), because the finding was related to a design or qualification deficiency confirmed to result in a loss of operability of two trains of AFW; however, the finding did not represent a loss of safety system function because the turbine-driven ABFP was available and operable, and the motor-driven pumps remained functional, because off-site voltage was not degraded and the Instrument Air System was still available during the short duration of AFW system inoperability. The finding also did not screen as potentially risk significant due to external initiating events. The finding does not have a cross-cutting aspect because the performance deficiency is not reflective of current performance.

Inspection Report# : [2012002](#) (*pdf*)

**Significance:**  Mar 31, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

**Inadequate Corrective Actions Associated with Degraded Motor Cutoff Switches on 480 Volt Breakers**

The inspectors identified an NCV of very low safety significance, of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Actions," because Entergy personnel did not promptly identify and correct, a condition adverse to quality associated with degraded motor cutoff (MCO) switches utilized on Westinghouse DS-style 480 Volt breakers. In particular, the MCO switches were related to breakers that did not operate on February 18, 2004, for a breaker that was intended for use for MCC-36D and on November 11, 2010, for the 32 containment spray (CS) pump. The inspectors determined that Entergy did not identify, correct, and replace in a timely manner, degraded, original-style, Westinghouse MCO switches that exist in DS-style 480V breakers at Unit 3. These switches exhibited contact degradation and other internal failure mechanisms that resulted in intermittent operation, and caused safety-related breaker malfunctions. This inadequate evaluation of MCO switch failures and development of appropriate corrective actions resulted in the subsequent failure on August 19, 2011, of the 32 component cooling water (CCW) pump circuit breaker.

Also, Technical Specification (TS) 3.6.6.A, requires that with one CS train inoperable, the train must be restored to operable with 72 hours, or if the required action and associated completion time are not met, be in Mode 3 within 6 hours and Mode 5 within 84 hours. Contrary to the above, between August 18, 2010 and November 12, 2010, the 32 CS pump was inoperable for approximately 86 days without the pump being returned to operable status, or the start of a reactor shutdown. Additionally, during this same period of inoperability, the redundant 31 CS pump was inoperable on October 17th and 25th, which is considered a TS-prohibited condition because TS 3.6.6.F, required immediate entry into TS 3.0.3 and subsequent shutdown to Mode 3 within 7 hours with two CS trains inoperable. Also, because during the same period of inoperability for the 32 CS pump in 2010, the 33 emergency diesel generator (EDG) was inoperable on September 14-15th, October 5-6th, and November 4th, actions to meet TS 3.8.1.b were not met, due to the inoperability of redundant components supported by the EDG, and therefore is also considered a TS-prohibited condition. Corrective actions included the LER submittal, performance of a higher-tier apparent cause evaluation to determine the cause of the breaker failures, revisions to applicable preventive maintenance procedures to ensure future breaker maintenance activities include (1) criteria for installation of new, enhanced motor cutoff switches, where applicable, and (2) expanded resistance checks are performed to verify switch reliability and satisfactory operation.

The inspectors determined that not identifying and correcting a condition adverse to quality associated with the 32 CCW breaker failure to close on demand, in August 2011 was a performance deficiency. The inspectors concluded the problem was within Entergy's ability to foresee and correct. Specifically, available information from previous internal failures, external industry failures, and vendor information, should have been utilized to identify the deficient internal contacts of the "old-style" MCO switches and inform the identification and implementation of appropriate corrective actions following the 32 CS pump circuit breaker MCO switch malfunction in November 2010. The inspectors determined that if appropriate corrective actions had been identified and implemented, they could have prevented the subsequent failure of the 480V breaker during the August 2011, Loss of 138kV off-site power event associated with the 32 CCW pump because of its MCO switch malfunction. This performance deficiency was more than minor in accordance with IMC-0612, because it was associated with the Equipment Performance attribute of the Mitigating Systems cornerstone and adversely affected its objective of ensuring the availability, reliability, and operability of systems that respond to initiating events to prevent undesirable consequences. The intermittent failures of the MCO switches prevented successful breaker operation that impacted associated safety-related components utilized to mitigate design basis events. The finding was determined to be of very low safety significance (Green), following IMC-0609, Appendix A, "Determining the Significance of Reactor Inspection Findings for At-Power Situations," and the resultant conclusion by the Region I Senior Reactor Analyst following performance of the Significance Determination Process (SDP) Phases 1, 2 and 3.

This finding has a cross-cutting aspect in the area of Problem Identification and Resolution associated with the attribute of Operating Experience, because Entergy personnel did not utilize available vendor, external and internal operating experience information to support plant safety, in that they did not identify and prioritize replacement of degraded MCO switches with the improved/enhanced switches that have been available since 2003.

Inspection Report# : [2012002](#) (pdf)

**Significance:**  Aug 05, 2011

Identified By: NRC

Item Type: FIN Finding

### **Procedural Requirements of Engineering Change Process Not Implemented**

The inspectors identified a finding of very low safety significance (Green) because Entergy personnel did not adequately implement the procedural requirements of EN-DC-115, "Engineering Change Process," during the installation of a modification to the 33 instrument air desiccant dryer. Specifically, Entergy staff incorrectly replaced fuses in the motor control center (MCC) which powers the dryer with smaller capacity fuses, rather than replacing existing control power fuses in the dryer control panel with fuses of increased capacity, as intended by the design change. As a result, the fuses in the MCC performed their intended function and burned out, deenergizing the dryer, and leading to excessive unavailability of the dryer and high humidity air in the instrument air header. Entergy staff entered this issue into their corrective action process as condition report (CR)-IP3-2011-03798.

The inspectors determined the finding was more than minor because the finding was similar

to the "more than minor if" statement associated with example 5.b of Inspection Manual Chapter (IMC) 0612 Appendix E, "Examples of Minor Issues." Additionally, the finding was more than minor because it was associated with the Equipment Performance attribute of the Mitigating Systems cornerstone and affected the cornerstone objective to ensure the availability and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, the unavailability of the 33 instrument air dryer caused moist air in the instrument air header which in turn led to high humidity and low pressure alarms on the 33 instrument air header. The inspectors evaluated the finding using IMC 0609, Attachment 4, "Phase 1 - Initial Screening and Characterization of Findings," and 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 system safety function, and did not screen as potentially risk significant due to external initiating events. This finding had a cross-cutting aspect in the area of Human Performance, associated with the Work Control attribute. Specifically, Entergy personnel did not adequately coordinate the planning and implementation of the engineering change process, which involved several site departments, and resulted in incorrectly installed fuses and multiple missed opportunities to both prevent and identify the error.

Inspection Report# : [2011010](#) (pdf)

**Significance:**  Aug 05, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

#### **Inadequate Corrective Action for Degraded EDG SW Piping**

The inspectors identified a Green non-cited violation (NCV) of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," for Entergy's failure to take adequate corrective actions for a condition adverse to quality involving service water (SW) pipes to the emergency diesel generators (EDGs). Specifically, Entergy personnel did not take timely and appropriate corrective actions for carbon steel pipe wall thinning on the common SW supply lines to the EDGs. Entergy staff entered this issue into their corrective action process as condition report (CR)-IP3-2011003831. Entergy's short-term corrective actions included a structural engineering inspection, an operability evaluation, redirecting the source of continual wetting, and reprioritizing the SW piping refurbishment work order. Subsequent to this inspection, Entergy personnel performed ultrasonic testing of the affected area on one of the pipes that they concluded was most affected and confirmed that the pipe remained operable.

The finding was more than minor because it left uncorrected the performance deficiency had the potential to lead to a more significant safety concern. Specifically, the continuing wetting and associated external corrosion of the pipe without appropriate monitoring could adversely impact the structural integrity of one or both EDG SW supply headers. The inspectors evaluated the finding in accordance with Inspection Manual Chapter (IMC) 0609, Attachment 0609, Attachment 4, "Phase 1 - Initial Screening and Characterization of Findings," and determined the finding was 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 was not risk significant with respect to external events. This finding had a cross-cutting aspect in the area of Problem Identification and Resolution, associated with the Corrective Action Program attribute. Specifically, Entergy personnel did not take timely corrective actions to address SW carbon steel pipe wall thinning due to external corrosion and periodically monitor the pipe for further degradation, commensurate with the safety significance of the pipe.

Inspection Report# : [2011010](#) (pdf)

**Significance:**  Jun 30, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

#### **Inadequate Procedure and Procedural Compliance for 33 Inverter Overhaul**

The inspectors identified a Green NCV of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," because Entergy did not assure that the overhaul of the 33 inverter was prescribed by an appropriate procedure and that the overhaul was performed in accordance with the procedure, which resulted in restoring the safety-related inverter to service without completing the necessary post-maintenance testing. Specifically, during March 2011, an overhaul of the 33 inverter was performed with an inadequate procedure and a portion of the post-maintenance testing was not performed. This issue was entered into Entergy's corrective action program (CAP) as condition reports CR-IP3-2011-03148 and CR-IP3-03432.

This finding is more than minor because it is associated with the procedure quality attribute of the Mitigating Systems Cornerstone and adversely affects the objective to ensure the capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Using IMC 0609.04, "Phase 1 - Initial Screening and Characterization of Findings," the inspectors determined this finding was of very low safety significance (Green) because the finding was not related to a design or qualification deficiency, did not represent a loss of system safety function, and the finding did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event.

The finding has a cross-cutting aspect in the area of Human Performance associated with the Work Practices attribute, because Entergy personnel did not ensure that supervisory and management oversight of work activities was adequate. Specifically, the work order for the overhaul of the 33 inverter was issued with inadequate guidance; the work was, in part, performed without using procedures; and a portion of the post-maintenance testing was not performed, as required.

Inspection Report# : [2011003](#) (pdf)

**Significance:**  May 27, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

### **Inappropriate Interim Compensatory Measure for Service Water Strainer Backwash Function**

The team identified a Green, Non-Cited Violation (NCV) of Indian Point Nuclear Generating Unit 3 Operating License Condition 2.H, in that Entergy did not establish an appropriate interim compensatory measure for several fire areas where 10 CFR 50 Appendix R paragraph III.G.2 fire protection deficiencies associated with the fire protection of service water (SW) strainer motors and backwash valves existed. Specifically, Entergy in response to Regulatory Issue Summary (RIS) 2006-10, "Regulatory Expectations with Appendix R Paragraph III.G.2 Operator Manual Actions," dated June 30, 2006, identified on September 5, 2006, that operator manual actions (OMAs) were being utilized in several fire areas instead of the fire protection options specified in paragraph III.G.2 and without an exemption from the NRC staff. For fire areas that potentially impacted the electrical circuits to the SW strainers, Entergy continued to maintain the OMA to manually backwash SW strainers as an interim compensatory measure while seeking NRC staff approval through the exemption process. The team identified that the interim compensatory measure was inappropriate because it was too complex and beyond the limited scope of an OMA to achieve and maintain postfire hot shutdown. Entergy entered the Unit 3 SW strainer OMA issue into its corrective action program for long term resolution as condition report CR-IP3-2011-02951 and promptly established an hourly fire watch in fire areas where SW strainer circuits may be affected.

This finding is more than minor because it is associated with the External Factors attribute (fire) of the Mitigating Systems Cornerstone and adversely affected its objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the reliability of SW was not ensured for fire scenarios that damage circuits to the SW strainer motor or backwash valve. The team evaluated this issue using Phase 1 of IMC 0609, Appendix F, Fire Protection Significance Determination Process (SDP), and determined that the issue screened to Green because a low degradation factor was assigned. The team assigned

a low degradation factor because although the manual actions were beyond the scope of an OMA and Entergy did not appropriately evaluate feasibility, the team determined several hours would likely exist to complete the action before strainer differential pressure (d/p) challenged SW flow to the emergency diesel generators and the OMA would be successful to maintain adequate SW flow.

The team determined that this finding has a cross-cutting aspect in the area of Problem Identification and Resolution associated with the attribute of the corrective action program because Entergy personnel did not thoroughly evaluate necessary considerations associated with the Unit 3 SW strainer OMA. Specifically, Entergy walked down all OMAs on May 20, 2011, to evaluate feasibility but did not identify issues related to incomplete pre-staged tools, an OMA procedure with steps associated with normal maintenance conditions that would delay implementation, and control room annunciator circuits that may be affected by the fire.

Inspection Report# : [2011008](#) (*pdf*)

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## Barrier Integrity

**Significance:**  Dec 01, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

### **Failure to Correctly Implement an Approved Setpoint Change to Reactor Protection System Instruments**

The team identified a non-cited violation of 10 CFR 50, Appendix B, Criterion III, "Design Control," in that Entergy did not ensure that design changes, including field changes, were subject to design control measures commensurate with those applied to the original design. Entergy implemented an instrument setpoint change, but delayed re-calibration of the in-field setpoint values and did not evaluate the adequacy of the in field actual setpoints, which were later found outside the value required by the design basis. Specifically, Entergy revised surveillance procedures for the Unit 2 reactor protection system (RPS) over-power delta-temperature (OPdT) instrument to use a setpoint value specified in the Core Operating Limits Report (COLR). However, the procedures were not required to be performed until the next regularly scheduled surveillance period. Technical Specification 3.3.1 requires the allowable values to be set as specified by the COLR. Two of the four instrument channels had in-field values outside of the required allowable value. Entergy entered this issue into their corrective action program and performed an immediate operability evaluation and determined that the OPdT instrument was capable of performing its intended functions with the current in field values.

The team determined that the failure to ensure in-service instrument setpoint values satisfied design and licensing basis requirements was a performance deficiency. This issue was more than minor because it was associated with the design control attribute of the Barrier Integrity Cornerstone and adversely affected the cornerstone objective to provide reasonable assurance that physical design barriers (e.g., fuel cladding) protect the public from radionuclide releases caused by accidents or events. The team performed a Phase 1 Significance Determination Process screening, in accordance with NRC IMC 0609, Attachment 4, "Phase 1 – Initial Screening and Characterization of Findings," and determined the finding was of very low safety significance (Green) because it affected only fuel barrier portion of the barrier integrity cornerstone.

The team determined that this finding had a cross-cutting aspect in the area of Human Performance, Work Practices because Entergy did not ensure adequate supervisory or management oversight of a design change.

Inspection Report# : [2011007](#) (*pdf*)

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## Emergency Preparedness

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# Occupational Radiation Safety

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## Public Radiation Safety

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## 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.

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## Miscellaneous

Last modified : May 29, 2012