



Home > Nuclear Reactors > Operating Reactors > Reactor Oversight Process > Plant Summaries > Indian Point 2 > Quarterly Plant Inspection Findings

## Indian Point 2 – Quarterly Plant Inspection Findings

### 2Q/2017 – Plant Inspection Findings

On this page:

- Initiating Events
- Mitigating Systems
- Barrier Integrity
- Emergency Preparedness
- Occupational Radiation Safety
- Public Radiation Safety
- Security

### Initiating Events

**Significance:** G Dec 31, 2016

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

#### **Failure to Follow RPS Logic Train B Actuation Logic Test**

A self-revealing NCV of Technical Specification (TS) 5.4.1(a), "Procedures," was identified because Entergy did not follow procedure 2-PT-2M3A, "Reactor Protection System Logic Train B Actuation Logic Test and Tadot," required by NRC Regulatory Guide 1.33, Appendix A, during planned testing on July 6, 2016, resulting in a Unit 2 reactor trip. Specifically, Entergy positioned key #183 in the channel B reactor logic key lock switch to the defeat position without procedural guidance and prior to commencing 2-PT-2M3A. 2-PT-2M3A requires that the reactor trip bypass breaker B be racked in when the channel B reactor protection logic key lock switch is taken to defeat to prevent a reactor trip. Entergy entered this issue into the corrective action program (CAP) as CR-IP2-2016-04320. The corrective actions include procedure enhancements, operations work challenges, and a site all hands meeting.

This finding was determined to be more than minor because it is associated with the human performance attribute of the Initiating Events cornerstone and affected the cornerstone objective to limit the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, Entergy operated plant equipment without direction from procedural guidance which resulted in an unplanned reactor trip. This finding was determined to be of very low safety significance (Green) because it did not cause the loss of mitigation equipment relied upon to transition the plant from the onset of the trip to a stable shutdown condition, high energy line-breaks, internal flooding, or fire. This finding had a cross-cutting aspect in the area of Human Performance, Field Presence, because Entergy leaders did not reinforce standards and expectations with regard to procedure use and adherence. Specifically, Entergy did not have sufficient urgency for changing worker behaviors through the work observation program.

Inspection Report# : 2016004 (*pdf*)

## Mitigating Systems

**Significance:** G Sep 30, 2016

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

### **Missed Inspections on Automatic Voltage Regulator Cards Results in Emergency Diesel Generator Failure to Run**

The inspectors identified a self-revealing Green NCV of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Actions," because between 2012 and 2016, Entergy did not perform vendor specified inspections of the 23 emergency diesel generator (EDG) automatic voltage regulator (AVR) cards. As a result, on March 7, 2016, and March 10, 2016, the 23 EDG failed to run due to poor voltage regulation caused by degraded connections on the AVR card. Entergy replaced the AVR card in the 23 EDG, repaired similarly degraded solder joints on the AVR cards for the 21 and 22 EDGs, and wrote CR IP2-2016-1260 and CR-IP3-2016-1370.

The inspectors determined that this performance deficiency was more than minor because it is associated with the Equipment Performance attribute of the Mitigating Systems cornerstone and adversely affected its objective to ensure the reliability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the 23 EDG failed to run on March 7, 2016, and March 10, 2016. The inspectors evaluated the finding in accordance with IMC 0609, Appendix A and concluded it required a detailed risk evaluation (DRE). The DRE was performed by a Region I SRA and concluded the performance deficiency resulted in a change in core damage frequency of low E-8/year or very low safety significance (Green). The inspectors determined that this violation was not indicative of current performance because the last time Entergy would reasonably have been prompted to create corrective actions to perform periodic inspections was during the initial inspections in 2010. Therefore, no cross-cutting aspect was assigned.

Inspection Report# : 2016003 (*pdf*)

**Significance:** G Sep 30, 2016

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

### **Failure to Maintain Two Qualified AC Sources of Offsite Power**

The inspectors identified a self-revealing Green NCV for failing to comply with Technical Specification (TS) Limiting Condition of Operation (LCO) 3.8.1, "Electrical Power Systems, Alternating Current (AC) Sources - Operating," from February 26, 2014, to March 29, 2016. Specifically, Entergy failed to maintain the auto transfer function for the 6.9 kilovolt (kV) offsite electrical buses in an operable condition because the safety injection (SI) anticipatory signal to the station auxiliary transformer (SAT) load tap changer (LTC) was disconnected. As a result, one of two qualified offsite AC circuits was not operable. Entergy initiated corrective actions and promptly restored the SAT LTC SI signal to operation prior to restarting the plant from the refueling outage.

The failure to restore the LTC SAT SI signal following maintenance activities was a performance deficiency that was more than minor because it is associated with the Equipment Performance attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, the failure to reinstate the SAT LTC SI anticipatory signal following maintenance resulted in the qualified offsite source of AC power becoming inoperable for a period of time in excess of the TS allowable outage time. In accordance with IMC 0609, Appendix A, "The Significance Determination Process for Findings at Power," the inspectors determined that the finding was of very low safety significance (Green) because a detailed risk analysis determined the likelihood of core damage was less than E-8/year. The inspectors determined that the finding had a cross cutting aspect of Human

Performance, Work Management, because Entergy did not implement a process of controlling and executing work activities. The work process did not coordinate with different groups or job activities to ensure the state links were restored at the end of the work activities.

Inspection Report# : 2016003 (*pdf*)

## **Barrier Integrity**

### **Emergency Preparedness**

### **Occupational Radiation Safety**

**Significance:**  Sep 30, 2016

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

#### **Entry into a High Radiation Area without Radiological Briefing**

The inspectors identified a self-revealing NCV of TS 5.7.1e when workers entered the Unit 2 Fuel Storage Building (FSB) truck bay that was posted and controlled as a high radiation area (HRA) without receiving a briefing on the dose rates prior to entering the HRA. Specifically, on June 6, 2016, two nuclear plant operators (NPOs) entered the Unit 2 FSB truck bay to hang tags on the backup spent fuel pool cooling filters. The NPOs signed in on a HRA radiation work permit (RWP) but did not receive a briefing on the radiological conditions in this work area. After entering the HRA, one worker received an electronic dosimeter dose rate alarm; and subsequently, both workers promptly exited the area. Immediate corrective actions included restricting the access of the two NPOs to the radiologically controlled area (RCA). The issue was entered into Entergy's corrective action program (CAP) as CR IP2 2016-03610.

The failure to adhere to a radiological briefing prior to entry into a HRA is a performance deficiency that was reasonably within Entergy's ability to foresee and correct. The performance deficiency was determined to be more than minor based on similar example 6.h in IMC 0612, Appendix E, "Examples of Minor Issues," and because it adversely affected the Human Performance attribute of the Occupational Radiation Safety cornerstone objective. Specifically, Entergy violated the TS 5.7.1e HRA radiological briefing requirements designed to protect workers from unnecessary radiation exposure. Using IMC 0609, Appendix C, "Occupational Radiation Safety Significance Determination Process," the finding was determined to be of very low safety significance (Green) because it did not involve: (1) ALARA occupational collective exposure planning and controls, (2) an overexposure, (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 of Human Performance, Procedure Adherence, in that the workers did not follow processes, procedures, and work instructions for entering a posted HRA.

Inspection Report# : 2016003 (*pdf*)

**Significance:**  Sep 30, 2016

Identified By: Self-Revealing

Item Type: FIN Finding

#### **Failure to Maintain Radiation Exposure ALARA During Unit 2 Reactor Cavity Liner Repairs**

The inspectors identified a self-revealing finding (FIN) of very low safety significance due to Entergy having unintended occupational collective exposure resulting from performance deficiencies in work planning while preparing to perform reactor cavity liner repair activities during the spring 2016 Unit 2 refueling outage. Inadequate work planning that included an incomplete scope of work, welding method qualification, and inadequate timing of shield placement resulted in unplanned, unintended collective exposure due to conditions that were reasonably within Entergy's ability to foresee. The work activity planning deficiencies resulted in the collective exposure for these activities increasing from the planned dose of 2.386 person-rem to an actual dose of 10.305 person-rem. This issue was entered into Entergy's CAP as CR-IP2-2016-02528, CR IP2 2016 02502, and CR-IP2-2016-02548.

The performance deficiency was more than minor because it was associated with the Program and Process attribute of the Occupational Radiation Safety cornerstone and adversely affected the cornerstone objective to ensure the adequate protection of the worker health and safety from exposure to radiation. Additionally, the performance deficiency was more than minor based on similar example 6.i in Appendix E of IMC 0612, "Examples of Minor Issues," in that the actual collective dose exceeded 5 person-rem and exceeded the planned, intended dose by more than 50 percent. In accordance with IMC 0609, Appendix C, "Occupational Radiation Safety Significance Determination Process," the finding was determined to be of very low safety significance (Green) because Entergy had an issue involving ALARA Planning, and Unit 2's current three-year rolling average collective dose is less than the significance determination process criterion of 135 person-rem per pressurized water reactor unit. The finding had a cross-cutting aspect in the area of Human Performance, Work Management, in that the lack of accurate planning for work activities adversely impacted radiological safety.

Inspection Report# : 2016003 (*pdf*)

## **Public Radiation Safety**

**Significance:**  Sep 30, 2016

Identified By: NRC

Item Type: VIO Violation

### **Inadequate Control of Floor Drains to Minimize Groundwater Contamination**

The inspectors identified an NOV of 10 CFR 20.1406(c), "Minimization of Contamination," for Entergy's failure to conduct operations to minimize the introduction of residual radioactivity into the subsurface of the site (groundwater). Specifically, Entergy did not maintain the floor drain systems clear of obstructions and interferences and did not verify the ability of the floor drains to handle the volume and flowrates for draining activities being conducted. In January 2016, a spill caused by multiple floor drain obstructions resulted in the backup of contaminated water onto the floor of the 35-foot elevation of the primary auxiliary building (PAB) and the subfloor of the FSB and subsequent leakage to onsite groundwater. Entergy entered this issue into their CAP as CR-IP2-2016-00264, CR-IP2-2016-00266, and CR-IP2-2016-00564 with actions to characterize and evaluate the leak. Similarly, in June/July 2016, another event occurred due to an obstructed flow path through a floor drain in the FSB, which spilled to the subfloor and contaminated the onsite groundwater. This event was documented by Entergy in CR-IP2-2016-05060.

The issue is more than minor because it is associated with the Program and Process attribute of the Public Radiation Safety cornerstone and adversely affected the cornerstone objective to ensure Entergy's ability to prevent inadvertent release and/or loss of control of licensed material to an unrestricted area. In accordance with IMC 0609, Appendix D, "Public Radiation Safety Significance Determination Process," the finding was determined to be of very low safety significance (Green) because Entergy had an issue involving radioactive material control but did not involve transportation or public exposure in excess of 0.005 Rem. The finding had a cross-cutting aspect in the area of Problem Identification and Resolution, Resolution, in that effective corrective actions to address issues identified in two prior groundwater contamination events since 2014 were not implemented in a timely or effective manner, which could have prevented two additional groundwater contamination events that occurred in 2016.

Inspection Report# : 2016003 (*pdf*)

## **Security**

The security cornerstone is an important component of the ROP, which includes various security inspection activities the NRC uses to verify licensee compliance with Commission regulations and thus ensure public health and safety. The Commission determined in the staff requirements memorandum (SRM) for SECY-04-0191, "Withholding Sensitive Unclassified Information Concerning Nuclear Power Reactors from Public Disclosure," dated November 9, 2004, that specific information related to findings and performance indicators associated with the security cornerstone will not be publicly available to ensure that security-related information is not provided to a possible adversary. Security

inspection report cover letters will be available on the NRC Web site; however, security-related information on the details of inspection finding(s) will not be displayed.

## **Miscellaneous**

Current data as of : August 03, 2017

*Page Last Reviewed/Updated Wednesday, August 10, 2016*