

## FitzPatrick

# 3Q/2016 Plant Inspection Findings

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### Initiating Events

**Significance:** G Sep 30, 2016

Identified By: Self-Revealing

Item Type: FIN Finding

#### **DRAFT Inadequate Preventive Maintenance Results In Transformer Failure and Reactor Scram**

DRAFT A self-revealing Green finding (FIN) was identified for Entergy staff's failure to properly implement the requirements of EN-DC-324, "Preventive Maintenance Program," Revision 16, to ensure proper preventive maintenance (PM) was implemented for non-safety-related 4KV transformer 71T-5. Specifically, Action Request (AR) 127566, PM change request to perform inspection, cleaning, and electrical testing of 4KV transformer 71T-5 was retired without a review by engineering as required by the PM program. As a result, transformer 71T-5 remained in service beyond its effective life without proper condition monitoring and maintenance, leading to its failure and a reactor scram on June 24, 2016. Entergy staff developed corrective actions to address the failure which included replacement of the transformer and re-establishing the condition monitoring and PM task. Entergy also performed an extent of condition review that confirmed the PM to clean, inspect, and test similar non-safety-related dry-type transformers was still active and performed within its required frequency.

This finding is more than minor because it is associated with the Equipment Performance attribute of the Initiating Events cornerstone and affected the cornerstone objective of limiting the likelihood of those events that upset plant stability and challenge critical safety functions during power operations. Specifically, Entergy staff failed to ensure an adequate PM was in place for transformer 71T-5. The PM to ensure adequate cleaning and testing was cancelled in 2011, and transformer 71T-5 ultimately failed on June 24, 2016, resulting in a manual reactor scram. In accordance with IMC 0609.04, "Initial Characterization of Findings," and Exhibit 1 of IMC 0609, Appendix A, "The Significance Determination Process for Findings At-Power," issued June 19, 2012, the inspectors determined that this finding is of very low safety significance (Green) because although the performance deficiency caused a reactor scram, it did not result in the loss of mitigation equipment relied upon to transition the plant from the onset of the trip to a stable shutdown condition. The inspectors did not assign a cross-cutting aspect to this finding because it is not indicative of current licensee performance. Specifically, the performance deficiency was determined to have occurred in 2011, the guidance in EN-DC-324 is clear regarding the PM change process, and no additional failures to follow the process have resulted in significant reactor transients.

Inspection Report# : [2016003](#) (*pdf*)

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### Mitigating Systems

**Significance:** G Mar 31, 2016

Identified By: NRC

Item Type: NCV Non-Cited Violation

#### **Unintended HPCI Pump Suction Transfer during Pressure Control Mode Operation**

The inspectors identified a Green NCV of Title 10 of the Code of Federal Regulations (10 CFR) 50, Appendix B,

Criterion V, "Instructions, Procedures, and Drawings," for failure to maintain a condition specified in an emergency operating procedure. Specifically, while operating the high pressure coolant injection (HPCI) system in the pressure control mode, operators failed to override automatic transfer of the HPCI pump suction from the condensate storage tank (CST) to the suppression pool prior to the transfer actually occurring. As a result, operators had to revert to using the safety/relief valves (S/RVs) for pressure control, which introduced additional, unnecessary plant challenges. As immediate corrective action, operators secured HPCI, overrode the automatic HPCI pump suction transfer, realigned the pump suction to the CST, and restarted HPCI in the pressure control mode. The issue was entered into the corrective action program (CAP) as condition report (CR)-JAF-2016-00765.

The finding was more than minor because it was associated with the human performance attribute 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 operators' failure to timely override automatic transfer of the HPCI suction to the suppression pool resulted in an additional, avoidable post-scrum pressure and level transient being placed on the reactor pressure vessel (RPV) and unnecessarily reduced the thermal capacity of the suppression pool. In accordance with IMC 0609.04, "Initial Characterization of Findings," and Exhibit 2 of IMC 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," the inspectors determined that this finding was of very low safety significance (Green) because the performance deficiency was not a design or qualification deficiency, did not involve an actual loss of a safety function of a single train for greater than its technical specification (TS) allowed outage time, and did not screen as potentially risk-significant due to a seismic, flooding, or severe weather initiating event. The finding had a cross-cutting aspect in the area of Human Performance, Procedure Adherence, because operators did not follow guidance of EOP-2 for the HPCI pump suction to be aligned to the CST by bypassing the HPCI pump suction swap to the suppression pool in a timely manner, such that the swap actually occurred (H.8).

Inspection Report# : [2016001](#) (pdf)

**Significance:**  Mar 31, 2016

Identified By: NRC

Item Type: NCV Non-Cited Violation

#### **Uncontrolled RPV Level Increase after Initiation of RHR Shutdown Cooling**

The inspectors identified a Green NCV of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for failure to take actions specified in the procedure for initiation of shutdown cooling. Specifically, prior to placing the 'A' loop of the residual heat removal (RHR) system into shutdown cooling, an operator was not stationed to close the condensate transfer system cross-connect valve to the 'A' RHR loop (10RHR 274), nor was the valve immediately closed after initiation of shutdown cooling, as specified by the operating procedure. This resulted in a significant loss of operational control, in that RPV level increased to the point of putting water down the main steam lines. As immediate corrective action, operators closed 10RHR-274, thus stopping the RPV inventory increase. The issue was entered into the CAP as CR JAF 2016 00273.

The finding was more than minor because it was associated with the human performance attribute 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 resultant loss of RPV level control represented a significant loss of operational control that could have affected the operability of the HPCI and reactor core isolation cooling (RCIC) systems, as well as the S/RVs, had their use again been required in the near term. In accordance with IMC 0609.04, "Initial Characterization of Findings," and Exhibit 2 of IMC 0609, Appendix A, "The Significance Determination Process for Findings At Power," the inspectors determined that this finding was of very low safety significance (Green) because the performance deficiency was not a design or qualification deficiency, did not involve an actual loss of a safety function of a single train for greater than its TS allowed outage time, and did not screen as potentially risk-significant due to a seismic, flooding, or severe weather initiating event. The finding had a cross-cutting aspect in the area of Human Performance, Challenge the Unknown, because operators did not stop when faced with uncertain conditions. Specifically, without otherwise having maintained status control on

the condensate transfer system cross-connect valve to the 'A' RHR loop, operators did not stop to positively establish the condition of the valve when it appeared in a conditional step in the procedure (that is, "if 10RHR-274 is open, then station an operator at 10RHR-274") (H.11).

Inspection Report# : [2016001](#) (*pdf*)

**Significance:**  Dec 31, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

### **Unintended Elevated Plant Risk During EDG Maintenance**

The inspectors identified a Green NCV of Title 10 of the Code of Federal Regulations (10 CFR) 50.65, "Requirements for monitoring the effectiveness of maintenance at nuclear power plants," for failure to adequately manage the increase in risk during planned maintenance on the 'A' emergency diesel generator (EDG). Specifically, Entergy staff action to make the 'C' EDG unavailable while the 'A' EDG was already unavailable resulted in an unplanned increase in overall plant risk and deviation from the approved EDG outage risk management plan from a risk category of Green to the next higher risk category of Yellow. As immediate corrective action, the issue was entered into the corrective action program (CAP) as condition report (CR)-JAF-2015-05242.

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, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the 'C' EDG was not available when it should have been, in accordance with the approved risk management plan, which resulted in an unplanned escalation of risk from Green to Yellow. Additionally, this finding was similar to example 7.e in IMC 0612, Appendix E, "Examples of Minor Issues." In accordance with IMC 0609.04, "Initial Characterization of Findings," and Exhibit 2 of IMC 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," the inspectors determined that this finding was of very low safety significance (Green) because the performance deficiency was not a design or qualification deficiency, did not involve an actual loss of safety function, did not represent actual loss of a safety function of a single train for greater than its Technical Specification (TS) allowed outage time, and did not screen as potentially risk-significant due to a seismic, flooding, or severe weather initiating event. The finding had a cross-cutting aspect in the area of Human Performance, Work Management, because FitzPatrick did not execute the 'A' EDG maintenance outage work activities as planned, and after deviating from that plan, did not identify and manage the risk of barring the 'C' EDG while the 'A' EDG was unavailable [H.5].

Inspection Report# : [2015004](#) (*pdf*)

## **Barrier Integrity**

**Significance:**  Mar 31, 2016

Identified By: NRC

Item Type: NCV Non-Cited Violation

### **Inadequate Post-Maintenance Testing of the Reactor Building Ventilation System Resulted in Short-Term Inoperability of Secondary Containment**

The inspectors identified a self-revealing NCV of TS 5.4, "Procedures," for FitzPatrick staff's failure to perform adequate post-maintenance testing (PMT) following maintenance on a limit switch in the reactor building ventilation system in August 2014, that, along with another unrelated component failure in the reactor building ventilation system, resulted in secondary containment pressure, relative to the outside pressure, exceeding the TS limit of 0.25 inches of vacuum water gauge. As immediate corrective action, operators started both trains of the standby gas treatment system (SBGTS), which restored secondary containment pressure to within the TS limit. Operators

subsequently secured the 'A' refuel floor exhaust train and placed the 'B' train in service. The issue was entered into the CAP as CR-JAF-2015-04166.

The finding was more than minor because it was associated with the configuration control attribute of the Barrier Integrity cornerstone and affected the cornerstone objective to provide reasonable assurance that physical design barriers (fuel cladding, reactor coolant system, and containment) protect the public from radionuclide releases caused by accidents or events. Specifically, as a result of this event, secondary containment was not preserved, in that secondary containment pressure exceeded the limit of TS surveillance requirement (SR) 3.6.4.1.1. In accordance with IMC 0609.04, "Initial Characterization of Findings," and Exhibit 3 of IMC 0609, Appendix A, "The Significance Determination Process for Findings At-Power," the inspectors determined that this finding was of very low safety significance (Green) because the performance deficiency was not a pressurized thermal shock issue, did not represent an actual open pathway in the physical integrity of the reactor containment, did not involve an actual reduction in function of hydrogen igniters in the reactor containment, and only represented a degradation of the radiological barrier function provided by the reactor building and SBGTS. The finding had a cross-cutting aspect in the area of Human Performance, Resources, because FitzPatrick staff did not ensure that procedures for PMT of the reactor building refuel floor exhaust damper limit switch following maintenance performed in August 2014, were adequate to support the nuclear safety function of the secondary containment (H.1).

Inspection Report# : [2016001](#) (*pdf*)

**Significance:** N/A Mar 31, 2016

Identified By: NRC

Item Type: NCV Non-Cited Violation

**Untimely 10 CFR 50.72 Notification of Inoperable Secondary Containment**

The inspectors identified a SL IV NCV of 10 CFR 50.72, "Immediate Notification Requirements for Operating Nuclear Power Reactors," because unplanned inoperability of the secondary containment system was not reported to the NRC within eight hours of the occurrence, as required by 10 CFR 50.72(b)(3)(v), "Event or Condition That Could Have Prevented Fulfillment of a Safety Function." Specifically, following reasonable resolution of questions regarding the reliability of secondary containment differential pressure (d/p) instrumentation indications, FitzPatrick staff did not promptly report that, during a transfer from normal reactor building ventilation in service to the reactor building being isolated with the SBGTS in service, reactor building d/p briefly dropped below the TS required minimum value of 0.25 inches of vacuum water gauge and therefore caused the secondary containment system to be inoperable. As immediate corrective action, the event was reported to the NRC in accordance with 10 CFR 50.72(b)(3)(v). The issue was entered into the CAP as CR-JAF-2015-05244 and CR JAF 2015-05265.

The inspectors determined that the failure to inform the NRC of the secondary containment system inoperability within eight hours in accordance with 10 CFR 50.72(b)(3)(v) was a performance deficiency that was reasonably within Entergy's ability to foresee and correct. The inspectors evaluated this performance deficiency in accordance with the traditional enforcement process because the issue impacted the regulatory process, in that a safety system functional failure was not reported to the NRC within the required timeframe, thereby delaying the NRC's opportunity to review the matter. Using Example 6.9.d.9 from the NRC Enforcement Policy, the inspectors determined that the violation was a SL IV (more than minor concern that resulted in no or relatively inappreciable potential safety or security consequence) violation, because Entergy personnel failed to make a report required by 10 CFR 50.72 when information that the report was required had been reasonably within their ability to have identified. In accordance with IMC 0612, "Power Reactor Inspection Reports," traditional enforcement issues are not assigned cross-cutting aspects.

Inspection Report# : [2016001](#) (*pdf*)

**Significance:** N/A Dec 31, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

**Untimely 10 CFR 50.72 Notification of Inoperable Secondary Containment**

The inspectors identified a Severity Level (SL) IV NCV of 10 CFR 50.72, "Immediate Notification Requirements for

Operating Nuclear Power Reactors,” because inoperability of the secondary containment system was not reported to the NRC within eight hours of when the need to do so should reasonably have been recognized, as required by 10 CFR 50.72(b)(3)(v), “Event or Condition that Could Have Prevented Fulfillment of a Safety Function.” Specifically, positive pressure in the secondary containment due to a previously unidentified equipment malfunction that occurred during transition between the reactor building being isolated and normal reactor building ventilation being in service was not promptly recognized as a condition that caused the single train secondary containment system to be inoperable and therefore to be reportable under 10 CFR 50.72. This issue was entered into the CAP as CR-JAF-2015-05244 and CR-JAF-2015-05265.

The inspectors determined that the failure to inform the NRC of the secondary containment system inoperability within eight hours in accordance with 10 CFR 50.72(b)(3)(v) was a performance deficiency that was reasonably within Entergy’s ability to foresee and correct. The inspectors evaluated this performance deficiency in accordance with the traditional enforcement process because the issue impacted the regulatory process, in that a safety system functional failure was not reported to the NRC within the required timeframe, thereby delaying the NRC’s opportunity to review the matter. Using Example 6.9.d.9 from the NRC Enforcement Policy, the inspectors determined that the violation was an SL IV (more than minor concern that resulted in no or relatively inappreciable potential safety or security consequence) violation, because Entergy personnel failed to make a report required by 10 CFR 50.72 when information that the report was required had been reasonably within their ability to have identified. In accordance with IMC 0612, “Power Reactor Inspection Reports,” traditional enforcement issues are not assigned cross-cutting aspects.

Inspection Report# : [2015004](#) (*pdf*)

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## Emergency Preparedness

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## Occupational Radiation Safety

**Significance:**  Jun 30, 2016

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

### **Failure to Determine Dose Rates Prior to Entering a High Radiation Area (Section 2RS1)**

The inspectors identified a self-revealing, Green NCV of technical specification (TS) 5.7.1, “High Radiation Area.” Specifically, on January 24 and 25, 2016, operations personnel failed to notify the Radiation Protection (RP) department and non-licensed operators in the field when operating plant equipment, which created high radiation areas (HRAs). These areas therefore were not surveyed by RP to determine dose rates prior to non-licensed operators entering the areas. Personnel entry into HRAs without knowledge of the current dose rates is a performance deficiency. In both instances, RP evaluated the operators’ dose, validated the dosimeter alarms, surveyed both areas in response to the dose rate alarms, and reposted the areas as HRAs. Entergy documented the events in condition reports (CR)-JAF-2016-00269 and CR-JAF-2016-00369

The finding was more than minor because it resulted in the unintended exposure of two workers and affected the Occupational Radiation Safety cornerstone attribute of program and process associated with exposure/contamination controls and if left uncorrected could result in more significant exposures. The finding was determined to be of very low safety significance (Green) because it was not related to as low as is reasonably achievable (ALARA), did not result in an overexposure or a substantial potential for overexposure, and did not compromise the licensee’s ability to assess dose. A cross-cutting aspect of Human Performance, Teamwork, was associated with this finding. Specifically,

licensed operators did not communicate to RP or non-licensed operators in the field when operating plant equipment which caused plant radiological conditions to change.

Inspection Report# : [2016002](#) (*pdf*)

**Significance:**  Jun 30, 2016

Identified By: NRC

Item Type: NCV Non-Cited Violation

**Failure to Conduct Operations to Minimize the Introduction of Residual Radioactivity to the Site (Section 2RS8)**

The NRC identified a Green NCV of Title 10 of the Code of Federal Regulations (10 CFR) 20.1406(c) due to Entergy not conducting operations to minimize the introduction of residual radioactivity into the site. For at least the past four years, Entergy allowed leakage of the solid radwaste processing system to occur resulting in spilled radioactive waste which accumulated and remained on the floor of the filter sludge tank room in the radwaste building. The failure to remove the accumulated solid radioactive waste is a performance deficiency. Entergy entered this issue into their corrective action program (CAP) as CR-JAF-2016-01784 with actions to characterize the extent of residual radioactivity and evaluate cleanup actions.

This issue is more than minor because it is associated with the program and process attribute of the Public Radiation Safety cornerstone and affected the cornerstone objective to ensure the licensee's ability to prevent inadvertent release and/or loss of control of licensed material. The finding had a cross-cutting aspect in the area of Problem Identification and Resolution, Resolution, in that the condition was known to exist for over four years, impacted the radwaste system effectiveness to process solid radwaste, and had not been corrected.

Inspection Report# : [2016002](#) (*pdf*)

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## Public Radiation Safety

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## Security

Although the Security Cornerstone is included in the Reactor Oversight Process assessment program, the Commission has decided that specific information related to findings and performance indicators pertaining to the Security Cornerstone will not be publicly available to ensure that security information is not provided to a possible adversary. Other than the fact that a finding or performance indicator is Green or Greater-Than-Green, security related information will not be displayed on the public web page. Therefore, the [cover letters](#) to security inspection reports may be viewed.

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## Miscellaneous

**Significance:** SL-III Dec 31, 2011

Identified By: NRC

Item Type: VIO Violation

**EA-10-090/EA-10-248/EA-11-106 RP Technician Willful Violations**

During NRC investigations initiated on July 1, 2009, February 5, 2010, and April 8, 2010, violations of NRC requirements were identified. The following requirements were violated: 10 CFR 20.1703, 'Use of individual respiratory protection equipment'; 10 CFR 20.1501, Subpart F, 'Surveys and Monitoring'; 10 CFR 50.9, 'Completeness and accuracy of information'. Contrary to the listed requirements, the licensee employees willfully violated multiple procedures and incorrectly documented completion of surveys and respirator fit tests.

These violations are categorized collectively as a Severity Level III violation. The NRC offered and Entergy accepted to conduct Alternative Dispute Resolution (ADR) for the above listed violations. The NRC has issued Confirmatory Order (CO) EA-10-090, EA-10-248, EA-11-106 in response to the agreed upon ADR actions. As addressed in the CO, no civil penalty was assessed based on previous actions completed and actions agreed to be completed by the licensee.

Inspection Report# : [2011009](#) (*pdf*)

Last modified : December 08, 2016