

# Pilgrim 1

## 1Q/2008 Plant Inspection Findings

---

### Initiating Events

**Significance:**  Dec 31, 2007

Identified By: NRC

Item Type: FIN Finding

#### **Improper Calibration of Vacuum Trip Switch Results in an Automatic Reactor Scram**

A Green self-revealing finding was identified for Entergy's failure to ensure the proper verification and calibration of condenser vacuum trip switch VTS-1 during refueling outage (RFO) 16. Specifically, personnel did not ensure that the proper verification/calibration technique was employed to determine the as-found low condenser vacuum turbine trip setpoint. Additionally, when the technician identified that the as-found data was significantly outside of historical as-found values, he did not question the validity of the data nor did he obtain a peer check. The technician then calibrated the instrument using the incorrect as-found data which resulted in an incorrect low vacuum trip setpoint and a subsequent turbine trip and reactor scram on July 10, 2007.

This finding is more than minor because it is associated with the human performance attribute of the Initiating Events Cornerstone and affects the cornerstone objective of limiting the likelihood of those events that upset plant stability during power operations. The finding is 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 would be unavailable. This finding has a cross-cutting aspect in the area of Human Performance, Work Practices, because Entergy proceeded in the face of uncertainty or unexpected circumstances when the VTS-1 setpoint was found significantly outside of expected as-found values. [H.4(a)] (Section 4OA3)

Inspection Report# : [2007005](#) (*pdf*)

**Significance:**  Jun 30, 2007

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

#### **Failure to provide adequate instructions for adjusting MO-1201-85 packing resulted in premature packing failure.**

A self-revealing non-cited violation of very low safety significance was identified for Entergy's failure to provide adequate work instructions, as required by Pilgrim Technical Specification 5.4.1, "Procedures," to adjust packing on reactor water cleanup valve MO-1201-85, in October 2003. The lack of adequate instructions led to premature packing failure on March 17, 2007, which increased unidentified drywell reactor coolant system leakage, and required a plant shutdown. The direct cause was the failure to apply sufficient compression to the packing when last adjusted in October 2003. Entergy personnel repaired and successfully retested the valve. Entergy entered this issue into their corrective action program and initiated action to develop a packing adjustment procedure, evaluate back seating inaccessible valves, and institute preventive maintenance items to verify the packing gland fastener torque for inaccessible valves.

The finding was more than minor because it adversely affected the equipment performance attribute and objective of the Initiating Events cornerstone of limiting the likelihood of those events that upset plant stability and challenge critical safety functions during power operations. The finding screened to very low safety significance (Green) per IMC 0609, Appendix A, "Determining the Significance of Reactor Inspection Findings for At-Power Situations," because the maximum observed leak rate did not exceed the Technical Specifications limit for identified reactor coolant system leakage, the finding did not contribute to both the likelihood of a reactor trip and the unavailability of a function of a mitigating system, and the finding did not increase the likelihood of a fire or internal/external flood. This finding has a cross-cutting aspect in the area of Human Performance, Resources, in that Entergy did not ensure that packing adjustment procedures were adequate [H.2(c)]. (Section 1R12)

Inspection Report# : [2007003](#) (*pdf*)

**Significance:**  Jun 30, 2007

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

**Inadvertent decrease in reactor vessel level due to personnel error.**

A self-revealing non-cited violation of very low safety significance was identified for Entergy's failure to properly implement procedure EN-OP-102, "Protective and Caution Tagging," as required by Pilgrim Technical Specification 5.4.1, "Procedures." Specifically, on May 3, 2007, a senior reactor operator approved the removal of a danger tag from 4-HO-50 without ensuring the appropriateness of the component's specified restoration position. As a result, the valve, which was serving as a single point of isolation between the reactor coolant system and the drywell equipment sump, was opened, and approximately six inches of reactor coolant drained from the reactor vessel before the drain path was identified and isolated. Entergy entered this issue into their corrective action program and initiated additional controls and oversight for tagout operations with the potential to interface with the reactor vessel fluid boundary.

The failure to specify the appropriate restoration position constituted a performance deficiency that resulted in an inadvertent decrease of the reactor vessel level totaling six inches. The finding is more than minor because it is associated with the configuration control attribute of the Initiating Events cornerstone, and it affected the associated cornerstone objective of limiting the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown operations. Because this event involved a six inch loss of level, the finding screened to very low safety significance (Green) in accordance with Table 1 of IMC 0609, Appendix G, "Shutdown Operations Significance Determination Process." The finding had a cross-cutting aspect in the area of Human Performance, Work Control, in that Entergy made a change to a planned work activity, the restoration of 4-HO-50, without fully evaluating the impact of this change on the plant [H.3(b)]. (Section 1R20)

Inspection Report# : [2007003](#) (*pdf*)

---

## Mitigating Systems

**Significance:**  Mar 31, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

**Inadequate Risk Assessment for Emergent Maintenance on A5 Emergency Bus Undervoltage Relays**

The inspectors identified a Green non-cited violation (NCV) of 10 CFR 50.65(a)(4) for Entergy's failure to conduct an adequate risk assessment for emergent maintenance on the A5 Emergency Bus undervoltage relays. Specifically, the inspectors noted that Entergy had downgraded an on-line risk assessment from Red to Green without a valid technical basis and did not recognize the unavailability of the automatic function of the Emergency Diesel Generator (EDG); as a result, Entergy did not evaluate or specify risk management actions.

This finding is more than minor because the risk assessment had incorrect assumptions that changed the outcome of the assessment. The inspectors conducted a screening in accordance with IMC 0609, "Significance Determination Process," Appendix K, "Maintenance Risk Assessment and Risk Management Significance Determination Process." The finding was determined to be of very low safety significance (Green) because the Incremental Core Damage Probability Deficit for the timeframe that the relays were removed from service was significantly less than 1E-6 due to the short amount of time the EDG was unavailable in the automatic mode and the reasonable assurance that operators could manually tie the EDG to the bus in the event of a Loss Of Offsite Power.

This finding has a cross-cutting aspect in the area of Human Performance, Decision Making, because Entergy did not use a systematic process to make a risk-significant decision, when faced with an unexpected plant condition. [H.1(a)]

Inspection Report# : [2008002](#) (*pdf*)

**Significance:**  Sep 30, 2007

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to establish goals and monitor the performance of the HVAC system against them per 10 CFR 50.65(a)(1)**

The inspector identified a NCV of 10 CFR 50.65, "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," for Entergy's failure to establish goals or monitor the performance of the Heating, Ventilation,

and Air Conditioning (HVAC) system per 10 CFR 50.65(a)(1). The system was placed in (a)(1) status and corrective action was performed to resolve a fan belt failure. The system was then returned to (a)(2) status without setting goals and establishing monitoring requirements. The system subsequently experienced a fan belt failure during the time frame that normally would have been monitored.

The inspector determined that the licensee's failure to set goals and monitor system performance against them in a manner sufficient to provide reasonable assurance that such systems and components were capable of fulfilling their intended functions was a performance deficiency. The performance deficiency was more than minor because it affected the Equipment Performance attribute of the Mitigating Systems Cornerstone and because it affected the associated Cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesired consequences. The finding was of very low safety significance because it did not result in the loss of system safety function; did not represent the actual loss of safety function of a single train for greater than its Technical Specification allowed outage time; and was not risk significant due to seismic, flooding, or severe weather initiating events. (Section 1R12.2)

Inspection Report# : [2007004](#) (pdf)

**Significance:**  Jun 30, 2007

Identified By: NRC

Item Type: NCV NonCited Violation

#### **Inadequate Maintenance Procedure Results in Repetitive Emergency Diesel Generator Load Oscillations.**

A self-revealing Green non-cited violation (NCV) of Technical Specification 5.4.1 was identified for an inadequate procedure used to lubricate the mechanical governor linkages associated with the 'A' emergency diesel generator (EDG). The inadequately lubricated governor linkages caused load oscillations on the 'A' EDG which resulted in a procedurally required EDG shutdown during a monthly operability surveillance test on May 15, 2007. Entergy determined the cause of the oscillations and corrected the problem by cleaning and lubricating the mechanical governor linkages. The maintenance procedure was also revised to provide a more detailed description of the required EDG linkage lubrication task.

This finding is more than minor because it is associated with the Procedure Quality attribute of the Mitigating Systems cornerstone. The issue affected the cornerstone objective of ensuring the reliability and availability of systems that respond to initiating events to prevent undesirable consequences, in that, the 'A' EDG was shutdown and removed from service to perform troubleshooting and repairs to the fuel rack linkages. Following a Phase 1 evaluation, this finding was determined to be of very low safety significance (Green) since the finding did not result in a loss of operability, a loss of system safety function, an actual loss of a single train for greater than its Technical Specification allowed outage time, or screen as potentially risk significant due to a seismic, flooding, or a severe weather initiating event. This finding has a cross-cutting aspect in the area of human performance, Resources, because Entergy did not provide adequate procedure guidance to personnel to ensure proper lubrication of the 'A' EDG governor linkages.

[H.2(c)] (Section 4OA2.a(3)(a))

Inspection Report# : [2007006](#) (pdf)

**Significance:**  Jun 30, 2007

Identified By: NRC

Item Type: NCV NonCited Violation

#### **Failure to Take Effective Corrective Actions to Correct Recurring SRV Surveillance Failures**

The team identified a Green NCV of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Actions," for the failure to take timely or effective corrective action to resolve repetitive safety and relief valve (SRV) surveillance test failures. Specifically, Entergy has not resolved recurring SRV lift setpoint surveillance test failures considering the industry experience that identifies likely causes and recommended corrective actions. Entergy personnel entered this condition into their corrective action program as CR-07-02920. The planned corrective action for this issue is to install a plant modification to independently actuate the SRVs using the Automatic Depressurization System (ADS).

This finding is more than minor because it is associated with the Mitigating Systems cornerstone and effects the cornerstone objective of ensuring the reliability of systems that respond to initiating events to prevent undesirable circumstances. Specifically, the failure to adequately address SRV pilot valve corrosion bonding and setpoint drift in a timely manner, has resulted in repeat non-conservative SRV lift points above Technical Specification limits. Following a Phase 1 evaluation, this finding was determined to be of very low safety significance (Green) since no

loss of function has occurred. This finding has a cross-cutting aspect in the area of problem identification and resolution, Corrective Action Program, because Entergy has not taken timely or effective corrective actions to address a safety issue commensurate with its significance and complexity. [P.1(d)] (Section 40A2.a(3)(b))

Inspection Report# : [2007006](#) (*pdf*)

**Significance:**  Jun 30, 2007

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

### **Failure to follow procedures resulted in the loss of shutdown cooling.**

A self-revealing non-cited violation of very low safety significance was identified for Entergy's failure to implement procedures for testing the analog trip system (ATS) as required by Pilgrim Technical Specification 5.4.1, "Procedures." Specifically, on April 12, 2007, Instrumentation and Controls (I&C) technicians calibrated pressure transmitter PT-263-50A when plant conditions and the requirements of procedure 8.M.2-8.1 did not allow that activity. This resulted in an inadvertent Group 3 primary containment isolation signal which isolated reactor shutdown cooling for 25 minutes. After recovering shutdown cooling, Entergy entered this issue into their corrective action program, conducted a stand down to review this event with I&C personnel, and initiated action to review this and similar procedures which require varying plant conditions.

The finding is more than minor because it is associated with the Mitigating Systems cornerstone attribute of equipment performance and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The finding was determined to be of very low safety significance, in accordance with IMC 0609, Appendix G, "Shutdown Operations Significance Determination Process," because it did not increase the likelihood of a loss of reactor coolant system (RCS) inventory or degrade Entergy's ability to terminate a leak path or add RCS inventory if needed. Throughout this event, adequate thermal margin was maintained since the calculated RCS time-to-boil was greater than 32 hours. This finding has a cross-cutting in the area of Human Performance, Work Practices, in that personnel did not follow the procedure for testing the ATS [H.4(b)]. (Section 1R13)

Inspection Report# : [2007003](#) (*pdf*)

---

## **Barrier Integrity**

---

## **Emergency Preparedness**

---

## **Occupational Radiation Safety**

---

## **Public Radiation Safety**

**Significance:**  Sep 30, 2007

Identified By: NRC

Item Type: NCV NonCited Violation

### **Non-Representative Sampling of the Reactor Building Exhaust Vent**

The inspector identified a NCV of TS 5.5.4.c, "Radioactive Effluent Controls Program," for Entergy's failure to obtain representative effluent samples. Specifically, the sample flow rate through the isokinetic nozzles for the reactor building vent was too high to allow for representative samples. Entergy evaluated the impact of nonrepresentative (anisokinetic) sampling and determined the impact on the calculated doses to be minimal and within the uncertainties of typical sampling methodology.

The performance deficiency is that Entergy failed to obtain representative effluent samples of the reactor building vent, as required by the TS and the Offsite Dose Calculation Manual (ODCM). The finding is greater than minor because it is associated with the plant equipment and instrumentation attribute of the Public Radiation Safety Cornerstone and affects the cornerstone objective of ensuring adequate protection of public health and safety from exposure to radioactive materials released into the public domain as a result of routine plant operation. The finding was determined to be of very low safety significance because it impaired Entergy's ability to assess dose, although Entergy was able to assess dose, and dose to the public did not exceed the limits of 10 CFR 50, Appendix I, or 10 CFR 20.1301(d).

Inspection Report# : [2007004](#) (*pdf*)

---

## 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:** N/A Jun 22, 2007

Identified By: NRC

Item Type: FIN Finding

### **Biennial Assessment of the Pilgrim Problem Identification and Resolution Program.**

The team determined that Entergy was effective at identifying problems and placing them in the corrective action program (CAP). Once entered into the CAP, these items were screened and prioritized in a timely manner using established criteria, and they were properly evaluated commensurate with their safety significance. The condition review group (CRG) performed thorough discussions of new issues and ensured the issues were classified properly. Overall, the evaluations identified the causes of the problem, assessed the extent of condition, and developed appropriate corrective actions. An exception was noted for the resolution of emergency diesel generator (EDG) load oscillations. There were multiple occurrences of small load oscillations before the problem was identified and corrected; this resulted in a finding. Corrective actions were typically implemented in a timely manner, but the team found that in one case, main steam safety relief valve corrective actions were not timely and did not prevent recurrence; this resulted in a finding. On the basis of interviews conducted during this inspection, workers at the site felt free to input safety findings into the corrective action program. The team found that Entergy's self-assessments and audits were self-critical and consistent with the team's observations.

Inspection Report# : [2007006](#) (*pdf*)

Last modified : June 05, 2008