

# Pilgrim 1

## 2Q/2010 Plant Inspection Findings

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### Initiating Events

**Significance:**  Jun 30, 2010

Identified By: NRC

Item Type: FIN Finding

#### **Submerged Medium Voltage Cables**

The inspectors identified a Green finding (FIN) for improper maintenance of underground non-safety related medium voltage electric cables. The inspectors identified that Entergy allowed non-safety related medium voltage cables to remain submerged in water for extended periods of time. Entergy entered this issue into their Corrective Action Program (CAP), and specified corrective actions to identify all underground medium voltage cables included under the Cable Reliability Program, and to identify which manholes should have dewatering capability.

The inspectors determined that the finding was more than minor because it was associated with the Design Control 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 shutdown as well as power operations. Specifically, continued submergence of the non-safety related power cables (from the start-up transformer to electrical buses A2 and A4) could lead to cable failure and cause an event that would affect plant stability. The inspectors performed a Phase 1 Significance Determination Process screening of the finding in accordance with NRC Inspection Manual Chapter 0609, Attachment 4, "Phase 1 - Initial Screening and Characterization of Findings," and determined that the finding was of very low safety significance because the condition did not contribute to both the likelihood of a reactor trip and the unavailability of mitigating systems equipment. The inspectors determined that this finding had a cross-cutting aspect in the Problem Identification and Resolution cross-cutting area, Corrective Action Program component, because Entergy personnel did not thoroughly evaluate the problem when submerged cabling was initially identified [P.1(c)]. (Section 1R06)

Inspection Report# : [2010003](#) (*pdf*)

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### Mitigating Systems

**Significance:**  Mar 10, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

#### **Untimely Corrective Actions to Promptly Correct Leaking Snubber Valves on the "A" Emergency Diesel Generator**

The NRC identified a Green non-cited violation of 10 CFR 50, Appendix B, Criterion XVI, for Entergy's failure to promptly correct a condition adverse to quality. Specifically, Entergy did not correct defective material in their "A" Emergency Diesel Generators (EDG) in a timely manner which led to emergent maintenance and additional unplanned unavailability of the "A" EDG while they replaced cracked snubber valves.

The inspectors determined that the finding was more than minor because the finding was associated with the Equipment Performance attribute of the Mitigating Systems Cornerstone, and adversely affected the cornerstone's objective to ensure the availability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, the "A" EDG was unavailable during snubber valve replacements. The inspectors determined the significance of the finding using IMC 0609.04, "Phase 1 – Initial Screening and Characterization of Findings." The finding was determined to be of very low safety significance (Green) because the finding did not result

in a loss of system safety function of a single train for greater than its Technical Specifications outage time, and did not screen as potentially risk significant due to external initiating events. This finding has a cross-cutting aspect in the Problem Identification and Resolution cross-cutting area, Corrective Action Program component, because Entergy did not take corrective actions in a timely manner. Specifically, Entergy did not replace the “A” EDG snubber valves in a prompt manner after repeated fuel leaks. Entergy’s corrective actions include replacing the seven remaining snubber valves on their “A” EDG. (Section 1R19)

Inspection Report# : [2010002](#) (pdf)

**Significance:** SL-IV Dec 31, 2009

Identified By: NRC

Item Type: VIO Violation

**Incomplete Licensed Operator Medical Examinations**

A Severity Level IV violation (VIO) of 10 CFR 50.9, “Completeness and Accuracy of Information,” was identified due to the submittal of inaccurate medical information for licensed operators. The submittals to the NRC were inaccurate because they certified that the operators had been medically examined and had met all medical qualifications, when in fact, olfactory testing to detect odor of products of combustion had not been performed. The facility has completed corrective actions to develop and administer an appropriate test. All licensed operators passed this new test, and no new license conditions were required.

The licensee’s medical physician failed to adequately test all licensed operators (both initial and renewal licensees) in accordance with 10 CFR 55.21 and 55.33 with respect to ANSI/ANS-3.4 1983. The licensee submitted medical information for its licensed operators and applicants that was incomplete and incorrect in its assessment of the medical condition and general health of its licensed operators and initial applicants. The licensee’s failure to provide complete and accurate information to the NRC, which could have resulted in an incorrect licensing action, is a performance deficiency because the licensee is expected to comply with 10 CFR 50.9, and because it was within the licensee’s ability to foresee and prevent. Because violations of 10 CFR 50.9 are considered to be violations that potentially impede or impact the regulatory process, they are dispositioned using the Traditional Enforcement process. The applicability of cross-cutting aspects related to the performance deficiency of this finding will be determined after NRC review of Entergy’s response to the Notice of Violation. (Section 1R11)

Inspection Report# : [2009005](#) (pdf)

**Significance:**  Oct 01, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to establish adequate procedures to prevent adverse impact due to spurious valve closure caused by fire damage.**

The inspectors identified that Entergy did not ensure that plant procedures were adequate to prevent a spurious actuation from affecting the ability to provide a source of make-up water to the reactor vessel within 20 minutes following the evacuation of the control room during a fire as specified in procedure 2.4.143, Shutdown From Outside the Control Room, Revision 40. The finding was determined to be of very low safety significance (Green) and a NCV of the Pilgrim Nuclear Power Station Technical Specification 5.4.1.d, Procedures. Entergy entered the issue into the corrective action program and planned to implement changes to the procedure to resolve the issue. Entergy also reviewed completed reactor core isolation cooling (RCIC) and high pressure coolant injection (HPCI) system startup job performance measures (JPMs) and performed procedure walkthroughs to assess the time needed to attempt a RCIC start and then transfer to, and start HPCI to confirm these actions could be taken in within the time necessary to prevent lowering vessel level to that of the top of active fuel.

The inspectors determined that this finding was more than minor because it was associated with the procedure quality attribute of the mitigating system 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, during a fire in the control room or cable spreading room there are four valves in each of the RCIC and HPCI systems that could spuriously close due to fire damage to cabling. Procedure 2.4.143 does not ensure that the associated motor control center circuit breakers are opened (to prevent spurious closure) and that the valves are in the correct position prior to starting one of the systems to provide make-up to the reactor vessel. Unidentified spurious closure of the valves during or after startup of the systems could disable the system and delay establishment of reactor vessel makeup. The

inspectors assessed this finding in accordance with NRC IMC 0609, Appendix F, Fire Protection Significance Determination Process. This finding affected safe shutdown capabilities and screened to very low safety significance (Green) in Phase 1 of the SDP because it was assigned a low degradation rating. A low degradation rating was assigned because it was determined to be a minor procedure issue that could be compensated for by operator experience and familiarity. No cross-cutting aspect was assigned because the inspectors concluded this issue was not indicative of current licensee performance. (Section 1R05.01)

Inspection Report# : [2009007](#) (pdf)

**Significance:**  Sep 30, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

### **Failure to Scope Security Diesel Generator into the Maintenance Rule**

The inspectors identified a non-cited violation of very low safety significance (Green) of 10CFR50.65, “Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants”, because Entergy did not include all aspects of the emergency lighting system into the Pilgrim Maintenance Rule scoping document. Specifically, Entergy did not include the security diesel generator which provides backup power to emergency yard lighting which is required to meet Appendix R emergency lighting requirements. Entergy has entered the issue into their corrective action program to add the security diesel generator and normal power supplies for yard emergency lighting into the maintenance rule scoping document.

The finding is more than minor because it is associated with the procedure quality attribute of the Mitigating Systems cornerstone in that the issue affected emergency lighting reliability in support of the accomplishment of the Emergency Operating Procedures (EOP)s. In addition, the security diesel generator has a history of surveillance procedure failures due to oil and coolant temperatures being outside of normal bands and there have been long term equipment issues including: intake louver issues, thermostat performance, radiator hose leaks, and fuel level indicator problems. This history of equipment performance issues does not show effective control of system performance or condition through appropriate preventive maintenance activities. The inspectors determined that the finding is of very low safety significance because it is not a design or qualification deficiency, did not represent a loss of system safety function, did not represent an actual loss of a single train system for greater than the Technical Specification (TS) allowed outage time, and was not made risk-significant because of external events. The finding does not have a cross-cutting aspect since the failure to scope this equipment into the maintenance rule was not recognized during the initial maintenance rule scoping activities and, as a result, is not indicative of current licensee performance. In addition, the current Entergy maintenance rule scoping procedure includes a review for non-safety related systems, structures and components (SSCs) which support EOP implementation and specifically, emergency lighting. This process identified the need to include the security diesel generator into the maintenance rule scoping document when this issue was recently identified and then evaluated by Entergy.

Inspection Report# : [2009004](#) (pdf)

**Significance:**  Sep 30, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

### **Failure to Evaluate for Operability of the “B” RBCCW/SSW Heat Exchanger**

The inspectors identified a non-cited violation of very low safety significance (Green) of 10 CFR 50, Appendix B, Criterion V, “Instructions, Procedures, and Drawings”, because Entergy did not assess operability of the “B” RBCCW/SSW Heat Exchanger (HX) when the HX failed a differential pressure (dP) surveillance. Specifically, operators conducted backwashing of a degraded HX as directed by Entergy procedure 2.2.32, Rev. 80, Attachment 7, “Salt Service Water System”, prior to assessing operability. In addition, Entergy Procedure 8.5.3.14, Revision 27, “SSW Flow Rate Operability Test”, specifically directs backwashing HXs as a corrective action prior to assessing operability when the HXs fail to meet the dP acceptance criteria. Entergy entered this issue into their corrective action program, and actions will include evaluation for revision of applicable procedures to incorporate dP graphs to evaluate for operability.

The performance deficiency is that Entergy did not assess operability of degraded HXs when the HX dP exceeded predetermined values specified in the procedure. The finding is more than minor because it affects the Mitigating Systems Cornerstone objective to ensure the capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). The issue adversely affects the procedure quality attribute of the cornerstone in the area of testing procedures in that the procedure directs taking corrective actions for a degraded HX prior to assessing operability of the HX. The inspectors evaluated this finding using IMC 0609.04, "Phase 1 – Initial Screening and Characterization of Findings". This 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, did not represent an actual loss of a single train system for greater than the TS allowed outage time, and was not made risk-significant because of external events. The inspectors determined that this finding had a cross-cutting aspect in the area of Human Performance, Resources, because Entergy did not provide an adequate procedure. Specifically, site procedures directed operators to take corrective actions prior to assessing operability of a degraded HX. (H.2.c of IMC 0305)

Inspection Report# : [2009004](#) (pdf)

**Significance:**  Sep 30, 2009

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

### **Human Error Resulting in Unplanned HPCI Isolation**

A self-revealing non-cited violation of very low safety significance (Green) of TS 5.4.1, "Procedures", was identified for a procedure error which resulted in the inadvertent isolation of the High Pressure Coolant Injection (HPCI) system. Specifically, a step in Procedure 8.M.2-2.6.3, "HPCI High Steam Line Temperature," which conducted continuity checks of temperature switches, was not adequately completed which caused the HPCI system to isolate. This has been entered into Entergy's corrective action program, and actions taken include revising the procedure to include a step requiring concurrent continuity checks of temperature switches and a wait time of five minutes to allow the temperature switches to reset.

The performance deficiency associated with this finding was that Entergy did not adequately perform continuity checks as specified in the surveillance procedure. This resulted in an inadvertent isolation of the HPCI system. This finding was more than minor because it was associated with the equipment performance attribute of the Mitigating Systems cornerstone. Isolating the HPCI system affected the cornerstone objective to ensure the availability of systems that respond to initiating events to prevent undesirable consequences. Using Inspection Manual Chapter 0609.04, "Phase I Initial Screening and Characterization of Findings," the finding was determined to require a Phase II analysis because the finding resulted in an actual loss of system safety function. Using the Pilgrim site-specific pre-solved initiating event sequences and an exposure time of less than three days with the HPCI system unavailable, the Phase II estimation determined this finding was of very low safety significance (Green). The finding has a cross cutting aspect in Human Error Prevention Techniques under the Work Practices component of the Human Performance area. Specifically, Entergy did not conduct effective self or peer checks to ensure that continuity checks were adequately performed. (H.4.a of IMC 305)

Inspection Report# : [2009004](#) (pdf)

**Significance:**  Jul 10, 2009

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

### **Inadequate Surveillance Procedure Resulting in Failed Standby Liquid Control Train**

A self-revealing non-cited violation of very low safety significance (Green) of Technical Specification (TS) 5.4.1, "Procedures," was identified for inadequate procedural guidance which resulted in repeated lifting of the "A" Standby Liquid Control (SBLC) system relief valve and the subsequent failure of the "A" SBLC system. Specifically, the SBLC system test procedure did not provide precautions or identify methods to avoid exceeding the pressure set point of the pump relief valve during testing. Entergy determined that lifting of the relief valve during test activities resulted in wear of the relief valve over time and its subsequent failure. The issue was entered into the corrective action program and the surveillance procedure was revised to add cautions against exceeding 1300 psig and to reduce the test pressure window upper limit. In addition, if 1350 psig is exceeded, a condition report must be written to evaluate the

impact on the system. Corrective actions are also planned to increase the relief valve design set point and to replace the test throttle valve with one more suited to adjusting system pressure.

The performance deficiency was that Entergy did not specify adequate test controls to ensure that SBLC system relief valve set points were not challenged during test performance. This led to repeated relief valve lifts which over time contributed to the degradation of the relief valve that rendered the “A” train inoperable. The inspectors determined that the finding was more than minor because the finding was associated with the procedure quality attribute of the Mitigating Systems Cornerstone and adversely affected the cornerstone’s objective to ensure the availability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, one train of SBLC was unavailable for several days. Using Inspection Manual Chapter 0609, “Significance Determination Process,” Attachment 0609.04, “Phase 1-Initial Screening and Characterization of Findings,” the inspectors determined that the finding is of very low safety significance because it is not a design or qualification deficiency, did not represent a loss of system safety function, did not represent an actual loss of a single train for greater than its TS allowed outage time and was not made risk significant because of external events. This finding has a cross-cutting aspect in the area of Human Performance, Resources, because Entergy did not provide complete procedures. Specifically, the procedure did not include precautions and/or techniques to avoid exceeding the relief valve set point during testing. (H.2(c) of IMC 0305) (Section 1R22)

Inspection Report# : [2009005](#) (pdf)

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## Barrier Integrity

**Significance:**  Jan 27, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

### **Failure to Implement Operability Determination Process and Temporary Modification Process for Compensatory Measures Required to Maintain Operability of Secondary Containment**

The NRC identified a Green non-cited violation of 10 CFR 50, Appendix B, Criterion V, for Entergy’s failure to implement procedures prescribed for activities affecting quality. Specifically, Entergy did not implement their operability determination process or their temporary modification process for compensatory measures needed to maintain the secondary containment operable.

The inspectors determined that the finding was more than minor because the finding was associated with the Human Performance attribute of the Barrier integrity Cornerstone, and adversely affected the cornerstone’s objective to provide reasonable assurance that physical design barriers (containment) protect the public from radionuclide releases caused by accidents or events. Specifically, operations and engineering did not adequately implement operability determination and temporary modification procedures when degraded and/or non-conforming conditions associated with the secondary containment torus troughs were identified. The inspectors determined the significance of the finding using IMC 0609.04, “Phase 1 – Initial Screening and Characterization of Findings.” The finding was determined to be of very low safety significance (Green) because the finding only represented an impact to the radiological barrier function provided by secondary containment and the standby gas treatment system. This finding has a cross-cutting aspect in the Human Performance cross-cutting area, Work Practices component, because Entergy did not follow procedures. Specifically, Entergy did not implement their operability determination or temporary modification procedures for compensatory measures needed to maintain the secondary containment operable. Entergy’s corrective actions included designating the compensatory measures as necessary to maintain operability for both torus troughs and implementation of temporary modifications for the equipment installed in the plant to support these compensatory measures. (Section 1R18)

Inspection Report# : [2010002](#) (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

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