

Pilgrim 1

4Q/2011 Plant Inspection Findings

Initiating Events

Significance: **W** Jul 20, 2011

Identified By: Self-Revealing

Item Type: VIO Violation

Failure to Implement Conduct of Operations and Reactivity Control Procedures during Reactor Startup

A self-revealing finding was identified involving the failure of Pilgrim personnel to implement conduct of operations and reactivity control standards and procedures during a reactor startup, which contributed to an unrecognized subcriticality followed by an unrecognized return to criticality and subsequent reactor scram.

The significance of the finding has been determined to be White, or of low to moderate safety significance. The finding is also associated with one apparent violation of NRC requirements specified by Technical Specification 5.4, "Procedures." There was no significant impact on the plant following the transient because the event itself did not result in power exceeding license limits or fuel damage. Additionally, interim corrective actions were taken, which included removing the Pilgrim control room personnel involved in the event from operational duties pending remediation, providing additional training for operators not involved with the event, and providing increased management oversight presence in the Pilgrim control room while long term corrective actions were developed. Entergy staff entered this issue, including the evaluation of extent of condition, into its corrective action program (CR-PNP-2011-2475) and performed a Root Cause Evaluation (RCE).

The finding is more than minor because it was associated with the Human 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, the failure of Pilgrim personnel to effectively implement conduct of operations and reactivity control standards and procedures during a reactor startup caused an unrecognized subcriticality followed by an unrecognized return to criticality and subsequent reactor scram. Because the finding primarily involved multiple human performance errors, probabilistic risk assessment tools were not well suited for evaluating its significance. The inspection team determined that the criteria for using IMC 0609, Appendix M, "Significance Determination Process Using Qualitative Criteria," were met, and the finding was evaluated using this guidance, as described in Attachment 4 to this report. Based on the qualitative review of this finding, the NRC has concluded that the finding was of low to moderate safety significance (White).

The inspection team determined that multiple factors contributed to this performance deficiency, including: inadequate enforcement of operating standards, failure to follow procedures, and ineffective operator training. The Entergy RCE determined that the primary cause was a failure to adhere to established Entergy standards and expectations due to a lack of consistent supervisory and management enforcement. The inspection team concluded that the finding had a cross-cutting aspect in the Human Performance cross-cutting area, Work Practices component, because Entergy did not adequately enforce human error prevention techniques, such as procedural adherence, holding pre-job briefs, self and peer checking, and proper documentation of activities during a reactor startup, which is a risk significant evolution. Additionally, licensed personnel did not effectively implement the human performance prevention techniques mentioned above, and they proceeded when they encountered uncertainty and unexpected circumstances during the reactor startup [H.4(a)].

Inspection Report# : [2011012](#) (*pdf*)

Inspection Report# : [2011013](#) (*pdf*)

Significance: **G** Jun 30, 2011

Identified By: NRC

Item Type: FIN Finding

Submerged Medium Voltage Cables

Green. The inspectors identified a Green finding (FIN) for the 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, specified corrective actions to increase the dewatering frequency of the affected manhole, and then installed an automatic dewatering pump.

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 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 implement corrective actions in a timely manner to ensure that underground cables were not submerged, commensurate with the safety significance and complexity of the degraded condition [P.1(d)]. (Section 1R06)

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

Mitigating Systems

Significance:  Dec 31, 2011

Identified By: NRC

Item Type: FIN Finding

Written NRC Biennial Written Examinations did not meet Qualitative Standards

Green. The inspectors identified a Green finding of 10 CFR 55.59, "Requalification," based on a determination that greater than 20 percent of the biennial requalification written exam questions administered to licensed operators during weeks three and four of the 2010 examination cycle were unacceptable. Entergy entered this issue into the corrective action program (CR-PNP-2011-04561).

The inspectors determined that the finding was more than minor because it was associated with the Human Performance attribute of the Mitigation Systems cornerstone and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, the finding affected the quality and level of difficulty of biennial written exams which potentially impacted Entergy's ability to appropriately evaluate licensed operators. The risk importance of this issue was evaluated using IMC 0609, Appendix I, "Licensed Operator Requalification Significance Determination Process (SDP)." Appendix I was entered using the number of written exam questions that did not meet the qualitative standard for the written exam questions. The qualitative standard used by the inspectors is defined in NUREG-1021, Rev. 9, ES-602, Attachment 1, "Guidelines for Developing Open-Reference Examinations," and Appendix B, "Written Examination Guidelines." Since 28.6 percent of the questions reviewed did not meet the guidance, Block 16 of Appendix I applied, specifically, "Were more than 20 percent of the written questions sampled by the inspectors unacceptable?" Based on this screening criteria, the finding was characterized by the SDP as having very low safety significance (greater than 20 percent unacceptable), or Green. A review of the cross-cutting aspects was performed and no cross-cutting aspect was identified that would be considered a contributor to the cause of the finding. (Section 1R11)

Inspection Report# : [2011005](#) (pdf)

Significance: TBD Dec 31, 2011

Identified By: NRC

Item Type: AV Apparent Violation

Licensed Operators Stood Watch Without Being Medically Qualified

TBD. The inspectors identified an apparent violation (AV) of Title 10 of the Code of Federal Regulations (10 CFR) 55.53 and 10 CFR 55.21 related to Entergy's medical examinations of licensed operators. Specifically, at various times over a period of almost four years, ten operators did not meet certain medical requirements (for stamina and/or blood pressure) for performing NRC-licensed operator activities, and the operators continued to perform NRC-licensed activities. Additionally, Entergy did not perform complete medical testing of its licensed operators, in that five of those licensed operators had not been administered stamina tests for more than two years and therefore did not complete their NRC-required biennial medical exam. Immediately after the NRC identified the issue, Entergy restricted operators from watch until they could pass the requirements of their medical testing. Entergy entered this issue into their corrective action program (CR-PNP-2011-04554).

The inspectors determined that Entergy's failure to ensure that licensed operators met the license conditions associated with medical testing prior to performing license activities was a performance deficiency that was within Entergy's ability to foresee and correct and should have been prevented. The inspectors determined that Traditional Enforcement applies, as the issue had the potential to impact the NRC's ability to perform its regulatory function because the NRC relies upon the accurate certification by the licensee's medical examiner to ensure all licensed operators meet the medical conditions of their license. Specifically, ten operators had not taken the stamina test during their annual physical, but were certified by the medical examiner and licensee as being fit to safely perform their watch-standing duties. Additionally, five of those operators had not taken the stamina test during their biennial physical, but were certified by the medical examiner and licensee as being fit to safely perform their watch-standing duties. Lastly, an individual who had not passed their blood pressure examination, and required a license condition to take medication, was placed back on watch-standing duty without such a license condition. The performance deficiency was screened against the Reactor Oversight Process (ROP) per the guidance of Inspection Manual Chapter (IMC) 0612, Appendix B, "Issue Screening." No associated ROP finding was identified and no cross-cutting aspect was assigned. These issues are being characterized as an apparent violation in accordance with the NRC's Enforcement Policy, and its final significance will be dispositioned in separate future correspondence. (Section 1R11)

Inspection Report# : [2011005](#) (pdf)

Significance: TBD Dec 31, 2011

Identified By: NRC

Item Type: AV Apparent Violation

Entergy did not Provide Complete and Accurate Medical Information for Licensed Operator Renewal Applications

TBD. The inspectors identified an AV of 10 CFR 50.9, "Completeness and Accuracy of Information," related to Entergy's medical examinations of licensed operators. Specifically, Entergy did not provide information to the NRC that was complete and accurate in all material respects, in that Entergy submitted two NRC licensed operator renewal applications which certified that the applicants met the medical requirements for license renewal when in fact they did not complete the required stamina tests. Entergy entered this issue into their corrective action program (CR-PNP-2011-04554).

The inspectors determined that Entergy's failure to provide complete and accurate information to the NRC was a performance deficiency that was within Entergy's ability to foresee and correct and should have been prevented. The inspectors determined that Traditional Enforcement applies, as the issue had the potential to impact the NRC's ability to perform its regulatory function. Specifically, Entergy did not provide information to the NRC that was complete and accurate in all material respects, in that although Entergy had not administered complete medical examinations of licensed operators in accordance with American National Standards Institute/American Nuclear Society (ANSI/ANS) 3.4-1983 (because it had not conducted stamina testing), it submitted two NRC Form 396s for renewal of operator licenses which certified that the applicants met the medical requirements of ANSI/ANS 3.4-1983. Subsequently, the NRC made a licensing decision based on this information that was not complete and accurate in all material respects. The performance deficiency was screened against the ROP per the guidance of IMC 0612, Appendix B, "Issue Screening." No associated ROP finding was identified and no cross-cutting aspect was assigned. This issue constitutes an apparent violation in accordance with the NRC's Enforcement Policy, and its final significance will be dispositioned in separate future correspondence. (Section 1R11)

Inspection Report# : [2011005](#) (pdf)

Significance: TBD Dec 31, 2011

Identified By: NRC

Item Type: AV Apparent Violation

Entergy did not Notify the NRC Within 30 Days of Discovering Changes in Medical Conditions

TBD. The inspectors identified an AV of 10 CFR 50.74, "Notification of Change in Operator or Senior Operator Status." Specifically, Entergy did not notify the NRC within 30 days of discovering a change in medical condition for two licensed operators. Subsequently, Entergy submitted notifications for both operators on November 10, 2011, and entered the issue into their corrective action program (CR-PNP-2011-04554).

The inspectors determined that Entergy's failure to notify the NRC within 30 days of discovering the change in medical condition for two licensed operators was a performance deficiency that was within Entergy's ability to foresee and correct and should have been prevented. The inspectors determined that Traditional Enforcement applies, as the issue had the potential to impact the NRC's ability to perform its regulatory function because if a licensed operator has a change in medical condition, the NRC may need to perform a review for consideration of a licensing action. Specifically, Entergy had not notified the NRC within 30 days of learning of a change in medical condition for two licensed operators for which a license condition was required. The performance deficiency was screened against the ROP per the guidance of IMC 0612, Appendix B, "Issue Screening." No associated ROP finding was identified and no cross-cutting aspect was assigned. This issue constitutes an apparent violation in accordance with the NRC's Enforcement Policy, and its final significance will be dispositioned in separate future correspondence. (Section 1R11)

Inspection Report# : [2011005](#) (pdf)

Significance: SL-IV Dec 31, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

Entergy Incorrectly Credited Operators Proficiency Watch-Standing Experience and the Operators Subsequently Stood Watch

SL-IV. The inspectors identified a Severity Level IV NCV of 10 CFR 55.53 (e) and (f), "Conditions of Licenses," because Entergy incorrectly credited two individuals for proficiency watch-standing experience and then these operators subsequently stood watch without meeting the minimum proficiency requirements necessary to maintain an active license. Entergy implemented immediate corrective action that included discontinuing the practice of crediting the emergency core cooling system (ECCS) and Extra Balance of Plant (BOP) positions for proficiency. Entergy entered this issue into their corrective action program (CR-PNP-2011-04649).

The inspectors determined that Entergy incorrectly credited two individuals for proficiency watch-standing experience and then these operators subsequently stood watch in the control room. This error constitutes a performance deficiency that was within Entergy's ability to foresee and correct and should have been prevented. The inspectors determined that Traditional Enforcement applies, as the issue had the potential to impact the NRC's ability to perform its regulatory function because if a licensed operator fails to meet the conditions of their license, the NRC may need to perform a review for consideration of a licensing action, and if the information regarding an individual's qualifications is not accurately presented, the NRC could potentially make an incorrect licensing decision based on the inaccurate information. Specifically, Entergy did not ensure that two reactor operator (RO) licensed individuals maintained their RO licenses in an active status in the 2nd quarter 2011, prior to standing RO watches in the 3rd quarter 2011 which violated a license condition as specified in 10 CFR 55.53 (e) and (f). The performance deficiency was screened against the ROP per the guidance of IMC 0612, Appendix B, "Issue Screening." No associated ROP finding was identified and no cross-cutting aspect was assigned. This issue is similar to violation example 6.4.c.1(c) in the NRC Enforcement Policy for a Severity Level III violation because it involves noncompliance with a condition stated on an individual's license. However, since there were no adverse impacts to nuclear safety, the NRC has determined that this issue constitutes a Severity Level IV NCV in accordance with the NRC's Enforcement Policy. (Section 1R11)

Inspection Report# : [2011005](#) (pdf)

Significance:  Oct 06, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate Evaluation of the Adequacy of the 4160 Volt Emergency Bus 95% Voltage Alarm and Load Shed Relay Design

Green: The team identified a finding of very low safety significance involving a non-cited violation (NCV) of 10 CFR Part 50, Appendix B, Criterion III, Design Control, because Entergy had not verified the adequacy of the 4160 volt emergency bus 95% voltage alarm/load shed relay design regarding the potential for multiple starts of the salt service water (SSW) and reactor building closed cooling water (RBCCW) pump motors. Additionally, Entergy had not verified the adequacy of design with respect to the ability of the SSW pump motors to restart following a load shed of the motors without tripping the motor control center (MCC) thermal overload (TOL) relays at design basis degraded voltage conditions. Entergy entered the issue into their corrective action program and implemented measures to bypass the SSW pump motor TOL relay motor trips based on their initial review of TOL margin. The team determined this to be a conservative action which ensured under all conditions including degraded voltage, that the SSW pump motors would not be inadvertently tripped due to TOL margin concerns.

The performance deficiency was determined to be more than minor because it was associated with the design control attribute of the Mitigating Systems Cornerstone and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The team evaluated the finding in accordance with IMC 0609, Significance Determination Process, Attachment 0609.04, "Phase 1 - Initial Screening and Characterization of findings." The finding was determined to be of very low safety significance because it was a design deficiency confirmed not to result in a loss of operability. This finding was not assigned a cross-cutting aspect because it was a historical design issue not indicative of current performance. (Section 1R21.2.1.1)

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

Significance:  Oct 06, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate Test Control of Safety Related Batteries

Green: The team identified a finding of very low safety significance involving a non-cited violation (NCV) of 10 CFR Part 50, Appendix B, Criterion XI, Test Control, because Entergy did not adequately perform battery discharge testing and assure that the battery discharge test procedures incorporated requirements contained in applicable design documents for multiple cycles of Technical Specification (TS) required surveillance testing of the station batteries. Specifically, test results have been negatively impacted because of improper use of battery test equipment and tests had errors with load profiles. Entergy entered these issues into the corrective action program to evaluate and correct the deficiencies in the battery testing program and ensure any future testing requirements are met.

The performance deficiency was determined to be more than minor because it was associated with the procedure quality attribute of the Mitigating Systems Cornerstone and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The team evaluated the finding in accordance with IMC 0609, Significance Determination Process, Attachment 0609.04, "Phase 1 - Initial Screening and Characterization of Findings." The team determined the finding was of very low safety significance because it 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 a seismic, flooding, or severe weather initiating event. This finding had a cross-cutting aspect in the area of Human Performance, Resources Component, because Entergy did not ensure that complete, accurate, and up-to-date procedures were available and adequate to assure nuclear safety. Specifically, the battery discharge test procedures did not ensure that capacities were correctly measured and service test profiles were correctly translated from the battery design calculations. (IMC 0310, Aspect H.2(c)) (Section 1R21.2.1.2)

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

Significance:  Oct 06, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate Evaluaton of the Affect of Non Class I Equipment Internal Flooding on Redundant Safety Related

Equipment

Green: The team identified a finding of very low safety significance involving a non-cited violation (NCV) of 10 CFR Part 50, Appendix B, Criterion III, Design Control, because Entergy did not verify the adequacy of the design with respect to ensuring that safety-related equipment would be adequately protected from a postulated flood originating in the turbine building. Specifically, Entergy did not correctly evaluate a failure of seawater system piping or equipment that could challenge the doors separating the turbine building from the reactor building auxiliary bay, which would require timely operator identification and action to secure the seawater pumps to prevent the common mode failure of redundant safety-related components. Entergy entered the issue into their corrective action program, evaluated the immediate operability of systems potentially affected by the postulated flooding scenario, and provided interim guidance to operators.

The performance deficiency was determined to be more than minor because it was associated with the design control attribute of the Mitigating Systems Cornerstone and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The team evaluated the finding in accordance with IMC 0609, Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations," and completed a Phase 3 risk evaluation using the Pilgrim Standardized Plant Analysis Risk (SPAR) model, Revision 8.15 and SAPHIRE 8. Based upon the Phase 3 evaluation, the finding was determined to be of very low safety significance. The finding was not assigned a cross-cutting aspect because it was a historical design issue not indicative of current performance. (Section 1R21.2.2.3)

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

Significance:  Sep 30, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Verify the Adequacy of the Design for the 'C' Salt Service Water Pump

Green. The inspectors identified a Green NCV of 10 CFR Part 50, Appendix B, Criterion III, Design Control, because Entergy's design control measures did not ensure two-over-one seismic protection of the 'C' Salt Service Water (SSW) Pump. Specifically, Entergy did not ensure that a Class I to Class II interface would not result in a failure of a Class I component ('C' SSW Pump). Corrective actions included installing a temporary modification (i.e., water shield), to protect the pump motor from potential spray effects of a Class II piping failure and performing an extent of condition review.

The inspectors performed a review of Inspection Manual Chapter (IMC) 0612, Appendix E, "Examples of Minor Issues," and did not find a similar more than minor example. The finding was determined to be more than minor because it was associated with the Protection Against External Events (i.e., seismic) attribute of the Mitigating Systems Cornerstone, and adversely affected the cornerstone's objective to ensure the reliability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the 'C' SSW pump motor was vulnerable to water spray from a failed Class II pipe during a seismic event which could have rendered the pump inoperable. The inspectors used IMC 0609.04, "Phase 1 – Initial Screening and Characterization of Findings," and determined that further evaluation was required since the finding was potentially risk significant due to a seismic initiating event. As a result of this screening, a Phase 3 evaluation was conducted by a regional Senior Reactor Analyst (SRA). The condition was assessed as Green, with a change in core damage frequency (CDF) calculated to be $1.29E-8$. Since the finding was assessed to have a CDF of less than $1E-7$, large early release frequency was not required to be assessed. The finding does not have a cross-cutting aspect since the failure to verify the adequacy of design with respect to ensuring two-over-one seismic protection for the 'C' SSW pump is not indicative of current licensee performance. In addition, current Entergy design procedures require rigorous Class II-over-I criteria for all new modifications. (Section 1R06)

Inspection Report# : [2011004](#) (pdf)

Significance:  Jun 30, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Enter Technical Specifications after Loss of Control Rod Indication

Green. The inspectors identified a Green NCV of Technical Specification (TS) 3.3.B.1 “Control Rod Operability,” for Entergy’s failure to enter and perform the actions prescribed in Technical Specifications after losing control rod position indication. Entergy has since restored control rod position indication by repairing a failed power supply. Condition report CR-PNP-2011-0272 was written to address the power supply failure and condition report CR-PNP-2011-0511 was subsequently written to address Entergy’s administration of TSs.

The inspectors determined that the issue 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 reliability of systems that respond to events to prevent undesirable consequences (i.e., core damage). Specifically, the locations of the control rods were indeterminate which could substantially impact operator’s abilities to implement Emergency Operating Procedures. IMC 0609, “Significance Determination Process,” Attachment 0609.04, “Phase 1-Initial Screening and Characterization of Findings,” was used to evaluate the significance of the finding. Attachment 0609.04, Table 4a, was used to evaluate the impact of the finding on loss of operability or functionality. The inspectors determined that the function of the control rods to add negative reactivity to the core during an event was not affected (SCRAM time and control rod worth were not affected). In addition, alternate means were available to operators to determine control rod position and once the power supply was restored, the control rods were determined to have remained in their original positions. Also, since the finding is not potentially risk significant due to a seismic, flooding or severe weather initiating event, the finding was determined to be of very low safety significance (Green).

The inspectors determined that this issue had a cross-cutting aspect in the Decision Making component of the Human Performance cross-cutting area. Specifically, Entergy did not use conservative assumptions in decision making and adopt a requirement to demonstrate that the proposed action is safe in order to proceed rather than a requirement to demonstrate that it is unsafe in order to disprove the action. In this case, Entergy did not take the conservative approach to enter Technical Specifications when faced with a degraded condition affecting control rod operability [H.1(b)]. (Section 1R15)

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

Significance:  Jun 30, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

Transient Combustible Loading in SLC Room in Excess of the Fire Hazards Analysis Limit

•Green. The inspectors identified a Green NCV of License Condition 3.F of the Pilgrim Facility Operating License (DPR-35) for the failure to evaluate transient combustible fire loading in the Standby Liquid Control (SLC) room. Specifically, Entergy did not evaluate the acceptability of transient combustibles that had been moved into the SLC room which were in excess of the allowed combustible loading discussed in the Fire Hazards Analysis. Entergy immediately walked down the area, established compensatory measures, and completed a transient combustibles evaluation. Entergy has since removed the transient combustibles from the area.

The inspectors determined that the failure to evaluate the transient combustibles was more than minor based on a similar example described in Inspection Manual Chapter 0612, “Power Reactor Inspection Reports,” Appendix E, “Examples of Minor Issues,” Section 4k. Specifically, the fire loading exceeded the Fire Hazard Analysis assumption and was not evaluated for acceptability. The finding is also associated with the Protection Against External Events attribute of the Mitigating Systems cornerstone and could have adversely affected the cornerstones objective to ensure the availability of systems that respond to events to prevent undesirable consequences (i.e., core damage). Specifically, a fire in the SLC room could affect the availability of the SLC system to respond to an event. IMC 0609, “Significance Determination Process,” Appendix F, “Fire Protection Significance Determination Process,” was used to evaluate the significance of the finding. The safety significance of the finding was determined to be very low because the degradation factor was low; that is, the transient combustible evaluation process subsequently identified nearly the same level of fire protection effectiveness and reliability for the SLC room as it would have if the degradation had not been present.

This finding had a cross-cutting aspect in the Human Performance cross-cutting area, Work Control component; in that, Entergy did not coordinate work activities to ensure the interdepartmental

coordination necessary to assure plant and human performance. Specifically, the refueling organization did not notify fire protection engineering to ensure an evaluation of the transient combustible loading was completed for the SLC room [H.3(b)]. (Section 1R05)

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

Significance:  Jun 30, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate Risk Assessment for Planned Maintenance and Testing on RCIC, SLC and ATS Systems

Green. The inspectors identified a Green NCV of 10 CFR 50.65 paragraph (a)(4) for Entergy's failure to conduct an adequate risk assessment for planned Analog Trip System (ATS) testing. Specifically, the inspectors identified that Entergy had not analyzed the impact to the risk of the plant with a reactor low pressure master trip unit removed from service during the ATS test. The removal of this instrument resulted in an Orange risk condition. Entergy has implemented corrective actions to revise the risk assessment procedure to provide specific guidance on assessing surveillance procedures which affect multiple components; established guidance to complete risk assessment reviews six weeks prior to the scheduled performance of planned work and test activities; and provided guidance and training on the above to personnel involved in the risk assessment process.

The inspectors determined that this issue was more than minor because the actual overall plant risk was in a higher licensee-established risk category (Orange) than what Entergy had previously determined (Yellow). Entergy's risk assessment had incorrect assumptions that changed the outcome of the assessment. The inspectors performed 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 reactor low pressure instrument was removed from service was less than 1E-6 (approximately 1E-8).

This finding had a cross-cutting aspect in the Human Performance cross-cutting area, Decision Making component, because Entergy did not use a systematic process to make a risk-significant decision [H.1(a)]. (Section 1R13)

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

Significance:  Mar 31, 2011

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

Inadequate Corrective Actions for RCIC Torus Suction Valve

Green. A self-revealing Green NCV of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," was identified for Entergy's failure to correct a condition adverse to quality. Entergy did not correct a Reactor Core Isolation Cooling (RCIC) torus suction valve which had failed to close during testing on October 4, 2010. On January 5, 2011, the same valve again failed to close during testing. Pilgrim's corrective actions included cleaning and replacing circuit breaker contacts and revising maintenance procedures to perform periodic resistance checks on motor control center circuit breaker cubicle secondary disconnects. Entergy has entered this issue into the corrective action program (CR-PNP-2010-3486 and CR-PNP-2011-0046).

The inspectors determined that the finding was more than minor because it was associated with the Equipment Performance attribute of the Mitigating Systems Cornerstone, and adversely affected the cornerstone's objective to ensure the reliability and availability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the RCIC torus suction valve failure to close affected the reliability of the RCIC system, and the RCIC system was made unavailable during system troubleshooting and repairs in January 2011. 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 involve a design or qualification deficiency resulting in a loss of operability or functionality, did not result in a loss of system safety function of a single train for greater than its Technical Specification outage time, and did not screen as potentially risk significant due to external initiating events. The capability of RCIC to perform its function was not lost since the torus suction valve would have been able to be cycled open in the event RCIC needed to be aligned to the torus. This

finding had a cross-cutting aspect in the Problem Identification and Resolution cross-cutting area, Corrective Action Program component, because Entergy did not thoroughly evaluate the problem with the RCIC torus suction valve such that the resolution in October 2010 addressed the causes and corrected the problem. [P.1(c)] (Section 1R19)

Inspection Report# : [2011002](#) (pdf)

Significance: G Mar 04, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

Torus Air Temperature 10 CFR 50.65(a)(2) Performance Demonstration Not Met

GREEN. The NRC identified a NCV of 10 CFR 50.65, "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," paragraph (a)(2), for Entergy's failure to adequately demonstrate primary containment system (a)(2) performance was effectively controlled through performance of appropriate preventive maintenance.

Specifically, as evidenced by repeat functional failures of torus air temperature indication during the fall of 2009 and January 2010, the (a)(2) performance demonstration was no longer justified in accordance with Entergy's maintenance rule implementing procedure guidance. Entergy entered this issue in their corrective action process (CR-PNP-2011-00880) to evaluate corrective actions needed to address this issue.

The inspectors determined that the finding was more than minor because it was 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. Specifically, failures of torus air temperature indication present a challenge to operators who rely on the indication to diagnose and respond to initiating events. Per the guidance provided in Inspection Procedure 71111.12, "Maintenance Effectiveness," issued 11/16/2009, inspectors considered this performance deficiency to be a Category III finding since a historical review revealed a continuing declining trend in performance of the instrument, as indicated by additional functional failures. Because this issue was classified as Category III, the inspectors determined the significance of this finding using IMC 0609.04, "Phase 1 - Initial Screening and Characterization of Findings." The inspectors determined that this finding was of very low safety significance (Green) because it was not 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 this finding has a cross cutting aspect in the area of problem identification and resolution. Specifically, Entergy did not properly evaluate and classify the torus air temperature indication failures with respect to the maintenance rule. [P.1(c)]

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

Significance: G Mar 04, 2011

Identified By: NRC

Item Type: FIN Finding

Failure to Follow Corrective Action Process for HPCI Diaphragm Degraded Condition

GREEN. The NRC identified a finding of very low significance for Entergy's failure to follow their corrective action process in the identification, documentation, and evaluation of a degraded condition. Specifically, Entergy failed to recognize, fully document, and evaluate in their corrective action process that an installed diaphragm in the High Pressure Coolant Injection (HPCI) System exceeded its manufacturer-recommended service life. Entergy entered this issue in their corrective action process (CR-PNP-2011-0917) to evaluate and determine corrective actions to address this issue.

The inspectors determined the finding was more than minor because it is similar to example 4(a) of NRC Inspection Manual Chapter (IMC) 0612, Appendix E, 'Minor Examples,' in that

Entergy did not perform an evaluation that was later determined to adversely affect safety-related equipment. The inspectors determined the finding was of very low safety significance (Green) using IMC 0609.04, "Phase 1 - Initial Screening and Characterization of Findings" in that the finding involved a qualification deficiency not resulting in the loss of operability of HPCI.

The finding has a cross-cutting aspect in the area of problem identification and resolution associated with the corrective action program because Entergy did not identify that exceeding the service life of the PCV-2301-238 diaphragm was a condition adverse to quality. [P.1(a)]

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

Barrier Integrity

Significance:  Sep 30, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Identify a Primary Containment System Maintenance Rule Functional Failure and Thereby Establish Monitoring Requirements for the System

Green. The inspectors identified a Green NCV of 10 CFR 50.65, paragraph (a)(1) and (a)(2), "Requirements for Monitoring the Effectiveness of Maintenance of Nuclear Power Plants," because Entergy did not monitor the performance of the Primary Containment System (Drywell to Torus Vacuum Breaker Components) against license-established goals to provide reasonable assurance that these components are capable of fulfilling their intended functions. Specifically, Entergy did not identify a functional failure of the Drywell to Torus Vacuum Breaker Component portion of the Primary Containment System and thereby did not recognize that the system exceeded its unavailability performance criteria, requiring a Maintenance Rule (a)(1) evaluation. Entergy subsequently conducted an (a)(1) evaluation and concluded that the system should be classified as (a)(1), corrective actions specified, and system monitoring completed.

The finding is more than minor because it is associated with the Barrier Performance attribute of the Barrier Integrity cornerstone, in that the issue affected the Primary Containment System reliability due to the failure to recognize the need to evaluate the system for goals, corrective actions, and monitoring. 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 degraded condition had been corrected by the time of the failure to accurately evaluate the maintenance rule functional failure. As a result, this finding did not involve a design or qualification deficiency, did not result in a loss of system safety function, and did not screen as potentially risk significant due to external initiating events. The finding has a cross-cutting aspect in the Human Performance cross-cutting area, Decision Making component; in that, Entergy did not use conservative assumptions when evaluating the degraded Drywell to Torus Vacuum Breakers condition to correctly conclude that a functional failure had occurred. Specifically, Entergy did not consider that the function of these vacuum breakers would be required as soon as plant conditions exceeded 212F, and therefore, the procedural guidance for Technical Specification applicability not being exceeded was an incorrect basis for this decision [H.1(b)]. (Section 1R12)

Inspection Report# : [2011004](#) (*pdf*)

Significance:  Sep 30, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Accurately Assess Risk of Maintenance on Standby Gas and Secondary Containment

Green. The inspectors identified a Green NCV of 10 CFR 50.65(a)(4) because Entergy did not assess and manage risk during elective maintenance for both 'A' and 'B' trains of the StandBy Gas Treatment (SBGT) system. Specifically, Entergy did not consult qualitative guidance in their risk assessment process procedures before removing both trains of SBGT from service and, therefore, removing the Secondary Containment key safety function while online. Corrective actions planned include evaluating and revising risk assessment procedures, and communicating qualitative risk assessment guidance to Senior Reactor Operators and Work Week Managers.

A review of NRC Inspection Manual Chapter (IMC) 0612, Appendix E, "Minor Examples," identified that Section 7, Maintenance Rule, Example e, reflected a similar more than minor example. This finding was determined to be more than minor because Entergy's risk assessment failed to account for the loss or significant uncompensated impairment of a key operating safety function. In addition, the finding affected the Human Performance attribute of the Barrier Integrity cornerstone's objective to ensure that physical design barriers (containment) protect the public from radionuclide releases caused by accidents or events. The inspectors performed an evaluation in accordance with IMC 0609, "Significance Determination Process," Attachment 4, "Phase 1 -Initial Screening and Characterization of Findings," and determined that the finding was of very low safety significance (Green) because the finding only represented a degradation of the radiological barrier function provided for the SBT system. The inspectors determined that this finding had a cross-cutting aspect in the Human Performance cross-cutting area, Work Control component, because Entergy did not plan work activities by incorporating appropriate risk insights [H.3(a)]. (Section 1R13)

Inspection Report# : [2011004](#) (pdf)

Significance:  Jun 30, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to enter Technical Specifications for CHREAFS

Green. The inspectors identified a Green NCV of Technical Specification (TS) 3.7.B.2.f, "Standby Gas Treatment System and Control Room High Efficiency Air Filtration System (CRHEAFS)," for Entergy's failure to enter and perform the actions prescribed in TS after the Control Room Envelope (CRE) was breached during work on a vital area door into the CRE. Entergy has since repaired the vital area door and restored the CRE.

This finding was more than minor because it was associated with the Human Performance attribute of the Barrier Integrity cornerstone (maintain the radiological barrier function of the control room) and adversely affected the cornerstone objective to provide reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. Specifically, the inoperable CRE could affect the operator's ability to occupy the control room under adverse radiological, chemical, or smoke conditions while responding to an event. IMC 0609, "Significance Determination Process," Attachment 0609.04, "Phase 1- Initial Screening and Characterization of Findings," was used to evaluate the impact of the finding on loss of operability or functionality of the CRE and CHREAFS, and it was determined that further evaluation was required since the finding had the potential to impact the control room envelope due to the effects of smoke and toxic gas. As a result of this screening, a Phase 3 evaluation was conducted by a Senior Reactor Analyst (SRA). The SRA conducted a qualitative evaluation and determined the risk impact on control room habitability, due to this finding, from smoke and toxic gas to be low (Green). Specifically, the Pilgrim Station Individual Plant Examination for External Events (IPEEE), sections 5.3.3 and 5.3.4, identified that the overall risk from on-site and off-site chemical release was low.

The inspectors determined that this issue had a cross-cutting aspect in the Work Control component of the Human Performance cross-cutting area. Specifically, Entergy did not plan and coordinate work activities affecting the CRE such that interdepartmental coordination assured plant and human performance. In this case, Operations was not made aware that Maintenance would be working on the control room vital door [H.3(b)]. (Section 1R15)

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

Significance:  Apr 15, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

This inspection item is Official Use Only - Security-Related Information. See inspection report for details.

This finding, affecting the Barrier Integrity Cornerstone, is related to mitigative measures developed to cope with losses of large areas of the plant; in response to Section B.5.b. of the February 25, 2002, Interim Compensatory Measures (ICM) Order (EA-02-026) and related NRC guidance. This finding has been designated as "Official Use Only - Security-Related Information;" therefore, the details of this finding are being withheld from public disclosure. This finding has a cross-cutting aspect in the area of Problem Identification and Resolution (Corrective Action

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

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 Mar 04, 2011

Identified By: NRC

Item Type: FIN Finding

Pilgrim 2011 Biennial PI&R Inspection Summary

The inspectors concluded that Entergy was generally effective in identifying, evaluating, and resolving problems. Entergy personnel identified problems, entered them into the corrective action program at a low threshold, and prioritized issues commensurate with their safety significance. However, the inspectors identified one finding which was not a violation of regulatory requirements, in the area of problem identification. In most cases, Entergy appropriately screened issues for operability and reportability, and performed causal analyses that appropriately considered extent of condition, generic issues, and previous occurrences. However, the inspectors identified one finding that was a violation of NRC requirements, in the area of effectiveness of prioritization and evaluation of issues. The inspectors also determined that Entergy typically implemented corrective actions to address the problems identified in the corrective action program in a timely manner.

The inspectors concluded that, in general, Entergy adequately identified, reviewed, and applied relevant industry operating experience to Pilgrim Nuclear Power Station operations. In addition, based on those items selected for review, the inspectors determined that Entergy's selfassessments and audits were thorough.

Based on the interviews the inspectors conducted over the course of the inspection, observations of plant activities, and reviews of individual corrective action program and employee concerns program issues, the inspectors did not identify any indications that site personnel were unwilling to raise safety issues, nor did they identify any conditions that could have had a negative impact on the site's safety conscious work environment.

Last modified : March 02, 2012