

February 2, 2007

Mr. Michael A. Balduzzi  
Site Vice President  
Entergy Nuclear Operations, Inc.  
Pilgrim Nuclear Power Station  
600 Rocky Hill Road  
Plymouth, MA 02360-5508

SUBJECT: PILGRIM NUCLEAR POWER STATION - NRC INTEGRATED INSPECTION  
REPORT 05000293/2006005

Dear Mr. Balduzzi:

On December 31, 2006, the US Nuclear Regulatory Commission (NRC) completed an inspection at your Pilgrim Nuclear Power Station. The enclosed integrated inspection report documents the inspection findings, which were discussed on January 11, 2007, with you and members of your staff.

This inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

This report documents one NRC-identified finding and one licensee-identified finding of very low safety significance (Green), both of which involved a violation of NRC requirements. However, because of the very low safety significance and because the issues have been entered into your corrective action program, the NRC is treating the issues as non-cited violations (NCV), in accordance with Section VI.A.1 of the NRC's Enforcement Policy. If you contest any NCV in this report, you should provide a response with the basis for your denial, within 30 days of the date of this inspection report, to the U.S. Nuclear Regulatory Commission, ATTN.: Document Control Desk, Washington, D.C. 20555-0001; with copies to the Regional Administrator, Region I; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555-0001; and the NRC Resident Inspector at Pilgrim.

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Sincerely,

**/RA/**

Raymond J. Powell, Chief  
Projects Branch 5  
Division of Reactor Projects

Docket No. 50-293  
License No. DPR-35

Enclosure: Inspection Report 50-293/06-05  
w/ Attachment 1: Supplemental Information  
w/ Attachment 2: Mitigating System Performance  
Index Verification

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U.S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket No: 50-293

License No: DPR-35

Report No: 05000293/2006005

Licensee: Entergy Nuclear Operations, Inc.

Facility: Pilgrim Nuclear Power Station

Location: 600 Rocky Hill Road  
Plymouth, MA 02360

Dates: October 1, 2006 through December 31, 2006

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N. Sieller, Project Engineer  
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Approved By: Raymond J. Powell, Chief  
Projects Branch 5  
Division of Reactor Projects

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## SUMMARY OF FINDINGS

IR 05000293/2006-005; 10/01/2006 -12/31/2006; Pilgrim Nuclear Power Station; Evaluations of Changes, Tests, or Experiments.

The report covered a 13-week period of inspection by resident inspectors. One Green finding which was a non-cited violation (NCV) was identified. The significance of most findings is indicated by their color (greater than Green, or Green, White, Yellow, Red) using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process" (SDP). Findings for which the SDP does not apply may be Green or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 3, dated July 2000.

### A. NRC-Identified and Self-Revealing Findings

#### Cornerstone: Mitigating Systems

- Green. The inspector identified a non-cited violation (NCV) for Entergy's failure to perform an adequate safety evaluation per 10 CFR 50.59. Specifically, a screening safety evaluation (SE) for surveillance 8.M.3-1, Special Test for Automatic ECCS [Emergency Core Cooling Systems] Load Sequencing of Diesels and Shutdown Transformer with Simulated Loss of Offsite Power and Special Shutdown Transformer Load Test, dated March 10, 2005, failed to provide an adequate basis to demonstrate that the surveillance procedure could be modified without obtaining a Technical Specification (TS) amendment from the NRC for TS 4.9.A.1. As a result, Entergy failed to conduct a complete surveillance test, as required by TS 4.9.A.1, to demonstrate functionality of the 'B' train systems. Entergy entered this issue into the corrective action program as condition reports (CRs) 200503343 and 200604598, invoked the provisions of TS 4.0.3 for an incomplete surveillance, and completed a risk evaluation for a surveillance delayed greater than 24 hours.

Because the issue affected the NRC's ability to perform its regulatory function, this finding was evaluated using the traditional enforcement process. The finding was determined to be more than minor because the change in test method required NRC review and approval prior to implementation. The finding was classified as Severity Level IV because it involved conditions evaluated as having very low safety significance by the Significance Determination Process (SDP). Specifically, the failure to conduct a complete surveillance test in accordance with TS 4.9.A.1 did not result in the loss of operability of a safety system. The finding had a cross-cutting aspect related to the Decision-Making component of the Human Performance area in that Entergy did not use conservative assumptions in their 50.59 decision making process and failed to fully evaluate the licensing basis in their 50.59 safety evaluation. (Section 1R02)

### B. Licensee-Identified Violations

A violation of very low safety significance, which was identified by the licensee, has been reviewed by the inspector. Corrective actions taken or planned by the licensee have been entered into the licensee's corrective action program. The violation and corrective actions are listed in Section 4OA7 of this report.

## REPORT DETAILS

### Summary of Plant Status

Pilgrim Nuclear Power Station (PNPS) operated during the period at 100 percent core thermal power, except for short periods of planned operation at reduced power for routine testing and maintenance, and a planned down power to 50 percent on October 11, 2006, to perform a thermal backwash of the main condenser.

## 1. REACTOR SAFETY

### **Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity**

#### 1R01 Adverse Weather Protection (71111.01)

##### a. Inspection Scope (1 sample)

The inspector reviewed the site preparations for cold weather and performed walkdowns of plant systems during the advent of cold weather in December 2006. The inspector assessed Entergy's cold weather preparations to verify that the adverse weather did not render key safety systems inoperable. The safety systems reviewed during the inspection included the station air system, the emergency diesel generators (EDGs), and the blackout diesel generator. The inspector reviewed documentation to determine whether station procedure 8.C.40, Cold Weather Surveillance, had been completed prior to the onset of cold weather.

The inspector also reviewed CRs to determine whether Entergy had identified cold weather related issues and entered them into the corrective action program. The inspector reviewed the corrective actions to determine whether actions were appropriate to resolve the issues. The references used in this review are listed in Attachment 1 to this report. This activity represented one inspection sample.

##### b. Findings

No findings of significance were identified.

#### 1R02 Evaluation of Changes, Tests, or Experiments (71111.02)

##### .1 URI 05000293/2005003-01, Test for Automatic Emergency Core Cooling System (ECCS) Load Sequencing

##### a. Inspection Scope

NRC Region I requested a review by the Office of Nuclear Reactor Regulation (NRR) (reference TAC No. MD0178) of the adequacy of Entergy's change to surveillance procedure 8.M.3-1, Special Test for Automatic ECCS Load Sequencing of Diesels and Shutdown Transformer with Simulated Loss of Offsite Power and Special Shutdown Transformer Load Test. NRR provided the results of its review in Task Interface

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Agreement (TIA) 2006-01, dated October 2006, and in a Safety Evaluation Report (SER), dated November 17, 2006. This inspection report documents the result of the review and closes the Unresolved Item (URI). The references used in this review are listed in Attachment 1 to this report.

b. Findings:

Introduction: The inspector identified a NCV for the licensee's failure to perform an adequate SE per 10 CFR 50.59. The issue was determined to be of very low safety significance (Green) and constituted a Severity Level IV NCV. Specifically, the licensee failed to perform an adequate SE for changes made to procedure 8.M.3-1, Special Test for Automatic ECCS Load Sequencing of Diesels and Shutdown Transformer with Simulated Loss of Offsite Power and Special Shutdown Transformer Load Test.

Description: On March 10, 2005, Entergy used their 10 CFR 50.59 screening process to approve a safety evaluation and a change to procedure 8.M.3-1, Special Test for Automatic ECCS Load Sequencing of Diesels and Shutdown Transformer with Simulated Loss of Offsite Power and Special Shutdown Transformer Load Test. One aspect of the change involved removing the automatic sequencing of the reactor building closed cooling water (RBCCW) and salt service water (SSW) pumps (emergency loads) during the 'B' train simulated loss of offsite power (LOOP)/loss-of-coolant accident (LOCA) testing. The 'A' train test included these loads. The inspector noted that TS 4.9.A.1.b and 4.9.A.1.c required the energization of the auto-connected emergency loads through the load sequencer to verify loading onto the EDGs and shutdown transformer (SDT), respectively. Entergy justified the change based on the TS 4.9.A.1 bases and by crediting pump start overlap testing. Entergy noted that the TS 4.9.A.1 bases only referenced starting and loading major loads such as the residual heat removal (RHR) and core spray pump motors. The inspector determined that the overlap testing did not actually verify the load sequencing following an EDG start from ambient conditions as prescribed by TS 4.9.A.1.b, nor SDT loading following an EDG trip as prescribed by TS 4.9.A.1.c. As a result, the inspector questioned whether Entergy needed a TS Amendment to make this change.

NRC Region I requested a review by the NRR (reference TAC No. MD0178). NRR provided the results of its review in TIA 2006-01, dated October 2006, and in a SER, dated November 17, 2006. The NRC staff concluded that the intent of TS 4.9.A.1 requires that the test be done simulating actual emergency conditions. Testing the EDG without sequencing all the loads defined in the Updated Final Safety Analysis Report (UFSAR) Table 8.5.1 would not be in compliance with TS 4.9.A.1.b. The technical basis is that the surveillance demonstrates that the EDG can provide the load capability and torque needed to maintain generator speed (frequency), and that the voltage regulator and excitation system can provide the high reactive power necessary to maintain terminal voltage within design limits. Overlap testing should be limited to small loads, such as motor operated valves (MOVs). Thus, Entergy failed to conduct a complete surveillance test as required by TS 4.9.A.1 to demonstrate operability of the 'B' train systems. The cause of the violation was that Entergy failed to complete an adequate 10

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CFR 50.59 evaluation for the proposed change to surveillance procedure 8.M.3-1, and failed to recognize that the change required prior approval by the NRC.

The NRC position regarding EDG testing per TS 4.9.A was presented to Entergy management on October 18, 2006. The licensee invoked the provisions of TS 4.0.3 for an incomplete surveillance and completed a risk evaluation for a surveillance delayed greater than 24 hours. The risk evaluation was completed in accordance with industry guidance document, technical specification task force (TSTF) - 358, and determined that the incomplete surveillance resulted in an incremental core damage probability (CDP) and large early release frequency (LERF) that were well below the significance threshold values of  $1\text{E-}06$  and  $1\text{E-}07$ , respectively. Thus, Surveillance Requirement (SR) 4.9.A.1 could be delayed until the next refueling outage with no significant increase in risk. The licensee stated the RBCCW and SSW pumps would be tested during the integrated ECCS test at the next refueling outage (RFO 16).

Analysis: A performance deficiency was identified in that Entergy did not develop an adequate basis to support the 10 CFR 50.59 screening SE dated March 10, 2005. The SE for procedure 8.M.3-1 failed to demonstrate that a change to the technical specifications incorporated in License DPR-35 was not required prior to changing the procedure. The finding was determined to be more than minor because the change in test method required NRC prior review and approval. The condition associated with the finding (i.e., the failure to include all pump motor loads in the integrated ECCS Load Sequence test) was determined to be of very low safety significance because it did not result in the loss of operability of a safety function.

This issue has very low risk significance based on the following evaluation. The functional capabilities of the 'B' EDG and associated components have been demonstrated on the basis of overlap testing. Overlap testing is, in general, an industry-wide, NRC accepted practice. Procedure 8.E.29.1 demonstrates the auto start of all SSW pumps and 8.E.30.1 demonstrates the auto start capability of the RBCCW pumps. The failure to include all 'B' train loads during the RFO 15 test had very low significance because the 480 volt RBCCW/SSW motors would add a small additional load to the 'B' EDG in comparison to the large margins available at the applicable time in the LOCA load sequence. The minimal impact of the RBCCW/SSW pumps on the loading sequence is evident in the RFO 15 'A' train test data, which showed minimal EDG generator voltage/current perturbations during the start of the RBCCW/SSW pumps. The RBCCW/SSW pumps are started much later in the loading sequence, and well after the EDG has had time to recover voltage following the start of the larger 4 kV loads. Further, in a June 5, 2006 letter to NRC, Entergy demonstrated that the 'B' EDG has sufficient kV margin to start and run both RBCCW and SSW pumps. Thus, it is reasonable to consider the 'B' EDG operable until the next test despite the deficiencies in the RFO 15 integrated ECCS/LOOP test method. On this basis, the item impacts the Mitigating System Cornerstone and screens to GREEN using IMC 0609 phase 1 SDP evaluation, Appendix A, because (a) the finding is not a design or qualification deficiency, (b) there is no loss of safety function for a mitigating system; and, (c) there are no seismic, fire, flooding or severe weather initiating implications associated with the finding.

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Because the issue affected the NRC's ability to perform its regulatory function, this finding was evaluated using the traditional enforcement process. The issue was classified as Severity Level IV because the violation of 10 CFR 50.59 involved conditions evaluated as having very low safety significance by the SDP. The finding had a cross-cutting aspect related to the Decision-Making component of the Human Performance area. Specifically, Entergy did not use conservative assumptions in their 50.59 decision making process and failed to fully evaluate the licensing basis during the 50.59 safety evaluation.

Enforcement: 10 CFR 50.59(c)(1) states, in part, that a licensee may make changes to procedures described in the UFSAR without obtaining a license amendment only if a change to the TS is not required. Contrary to this requirement, Entergy failed to provide an adequate basis to demonstrate that a change to the technical specifications incorporated in License DPR-35 was not required prior to changing surveillance procedure 8.M.3-1, Special Test for Automatic ECCS Load Sequencing of Diesels and Shutdown Transformer with Simulated Loss of Offsite Power and Special Shutdown Transformer Load Test. Because the violation is classified as Severity Level IV and has been entered into Entergy's corrective action program as CRs 200503343 and 200604598, this violation is being treated as a NCV, consistent with Section VI.A of the NRC Enforcement Policy. **NCV 0500293/2006005-01: Failure to perform an adequate 50.59 evaluation for a change to a surveillance test required by Technical Specification 4.9.A.1.** Unresolved item URI 05000293/2005003-01 is closed.

1R04 Equipment Alignment (71111.04)

a. Inspection Scope (3 samples)

The inspector completed a partial system review of the risk significant systems listed below during periods when its redundant train or system was out-of-service for maintenance and/or testing, or following restoration of the system or train from maintenance. The position of key valves, breakers, and control switches required for system operability were verified by field walkdown and/or review of the main control board indicators. To ascertain the required system configuration, the inspector reviewed plant procedures, system drawings, the UFSAR, and the TS. The references used for this review are listed in Attachment 1 to this report. This inspection activity represented three samples.

- The 'A' and 'B' trains of the standby liquid control (SLC) system on 10/10/06;
- The 'A' and 'B' trains of the RHR system on 10/17/06; and
- The 'A' and 'B' trains of the core spray system on 10/30/06 and 10/31/06.

b. Findings

No findings of significance were identified.

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1R05 Fire Protection (71111.05)

.1 Quarterly Fire Protection Inspection

a. Inspection Scope (5 samples)

The inspector toured selective areas of the plant to observe conditions related to: (1) transient combustibles and ignition sources; (2) fire detection systems; (3) manual firefighting equipment and capability; and (4) passive fire protection features. The inspector verified adequate material condition of active and passive fire protection systems features and their operational lineup and readiness. The inspector also reviewed the applicable fire hazard analysis fire zone data sheets. The inspector verified that the licensee addressed fire protection deficiencies in the corrective action program. The references used for this review are listed in the Attachment 1 to this report. This inspection activity represented five samples.

- Fire Zone 1.13, Reactor Building 74 ft, Fuel Pool Cooling Pumps;
- Fire Zone 2.6, Turbine Building 23 ft, Hydrogen Seal Oil Supply;
- Fire Zone 1.29, Reactor Auxiliary Building 23 ft, Water Treatment;
- Fire Zone 1.27, Reactor Auxiliary Building 3 ft, Condensate Transfer Area; and
- Fire Zone 1.27A, Reactor Auxiliary Building 3 ft, Condensate Demineralizer Galley.

b. Findings

No findings of significance were identified.

.2 Annual Fire Drill Observation

a. Inspection Scope (1 sample)

The inspector observed an unannounced fire drill conducted on December 21, 2006, per procedure ENN-DC-189, Fire Drills. The unannounced drill involved a simulated fire in the onsite Technical Support Center portion of the Operations and Maintenance Building. The inspector observed fire personnel performance to determine whether the licensee's fire fighting pre-plan strategies per procedure 5.5.2, Special Fire Fighting Procedure, were utilized, the pre-planned drill scenario was followed, and the drill objectives were met. The inspector confirmed that proper security and radiological controls were applied; proper protective clothing and breathing apparatus were donned; sufficient fire fighting equipment was brought to the scene; the fire brigade leader's fire fighting directions were clear; and communications with the plant operators and between fire brigade members were effective. The inspector confirmed the drill critique identified areas to enhance fire brigade performance. The inspector verified that the licensee identified appropriate corrective actions for identified deficiencies and entered the issues into the corrective action program (reference CRs 200604618 and 200604619). This activity represented one inspection sample.

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b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures (71111.06)

a. Inspection Scope (1 sample)

The inspector reviewed protective measures in place to protect against internal flooding of the auxiliary bay compartments that house the RBCCW pumps, heat exchangers, and electrical switchgear. The inspection was performed during maintenance on the 'D' RBCCW pump, which required the RBCCW piping in the 'B' auxiliary bay be opened. The inspector performed visual inspections of the water tight door separating the 'A' and 'B' compartments, curbing around switchgear, and the de-watering lines from each compartment to the torus room. Isolation of the RBCCW system, established in accordance with protective tag out, 1-Cycle-16-30A-0027-P-202B, was confirmed by walkdown and review of station drawings. Operability of the 'A' and 'B' auxiliary bay flooding alarms was confirmed by review of completed surveillance 8.E.30.1, Closed Cooling Water System (CCWS) Instrumentation Calibration and Functional Test. The inspector reviewed licensee actions to address the condition described in CR 200603750. This inspection activity represented one sample for internal flood protection.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Regualification Program (71111.11Q)

.1 Resident Inspector Quarterly Review

a. Inspection Scope (1 sample)

The inspector observed a licensed operator simulator annual exam given on October 3, 2006. The exam was administered using scenarios SES-141, and SES-162, and involved both operational transients and design basis events. The inspector verified for each exam that simulator conditions were consistent with the scenarios and reflected the actual plant configuration (i.e., simulator fidelity). The inspector observed the crew's performance to determine whether the crew met the scenario objectives, accomplished the critical tasks, demonstrated proper use of abnormal and emergency operating procedures, demonstrated proper command and control, communicated effectively, and implemented the emergency plan in terms of event classification and notification. The inspector observed the evaluators' post-scenario critique and confirmed items for improvement were identified and discussed with the operators to further enhance performance.

The inspector reviewed licensee actions to address training deficiencies in the corrective action program. The issues reviewed included those involving the 2006 licensed operator requalification program comprehensive written exams addressed in CRs 200603518, 200603720, 200603721 and 200603978. This activity represented one inspection sample.

b. Findings

No findings of significance were identified.

.2 Licensed Operator Annual Exams

a. Inspection Scope

On October 31, 2006, the inspector conducted an in-office review of licensee annual operating tests and the comprehensive written exam results for 2006. The inspection assessed whether pass rates were consistent with the guidance of NRC Manual Chapter 0609, Appendix I, Operator Requalification Human Performance SDP. The inspector verified that:

- Crew failure rate was less than 20 percent. (Crew failure rate was 0 percent)
- Individual failure rate on the dynamic simulator test was less than or equal to 20 percent. (Individual failure rate was 0 percent)
- Individual failure rate on the walk-through test was less than or equal to 20 percent. (Individual failure rate was 0 percent)
- Individual failure rate on the comprehensive written exam was less than or equal to 20 percent. (Individual failure rate was 11.4 percent)
- Overall pass rate among individuals for all portions of the exam was greater than or equal to 75 percent. (Overall pass rate was 88.6 percent)

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12)

a. Inspection Scope (3 samples)

The inspector reviewed the performance history, maintenance activities, and follow-up actions for selected risk significant systems, structures, and components (SSCs) to assess the effectiveness of PNPS's maintenance activities. The inspector reviewed PNPS's problem identification and resolution actions for these issues in accordance with PNPS's procedures and the requirements of 10 CFR 50.65(a)(1) and (a)(2), Requirements for Monitoring the Effectiveness of Maintenance. In addition, the inspector reviewed selected SSC classification, performance criteria and goals, the system health reports, and the completed or planned corrective actions to verify whether

the actions were reasonable and appropriate. The inspector attended licensee meetings and reviewed licensee plans to address the systems in maintenance rule a(1) status. The following issues were reviewed:

- Proper classification of equipment failures for System 12, the reactor core isolation cooling (RCIC) system. The inspector reviewed licensee actions for the controller failures described in CRs 200603214 and 200402267. The inspector reviewed the licensee's basis for placing the system in maintenance rule a(2) status.
- Proper classification of equipment failures for System 30, RBCCW system. The inspector reviewed CRs 200604005 and 200604110 for the selected system unavailability during maintenance on the 'D' RBCCW pump. The inspector reviewed the licensee's basis for placing the system in maintenance rule a(2) status.
- Proper classification of equipment failures for System 61, EDG and fuel storage system. The inspector reviewed CRs 200603905 and 200603726 for the selected system. The inspector reviewed the licensee's basis for placing the system in maintenance rule a(2) status.

Additional references used in this review are listed in Attachment 1 to this report. This inspection activity represented three samples.

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13)

a. Inspection Scope (6 samples)

The inspector evaluated on-line risk management for planned and emergent work. The inspector reviewed maintenance risk evaluations, work schedules, recent corrective actions, and control room logs to verify that other concurrent planned and emergent maintenance or surveillance activities did not adversely affect the plant risk already incurred with the out-of-service components. The inspector evaluated whether Entergy took the necessary steps to control work activities, took actions to minimize the probability of initiating events and maintained the functional capability of mitigating systems. The inspector assessed the station's risk management actions during plant walkdowns. The inspector also discussed the risk management with maintenance, engineering and operations personnel as applicable for the activities. References used for the inspection are identified in Attachment 1 to this report. The inspection represented six samples.

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- The elevated (YELLOW ) risk condition in support of surveillance testing and maintenance on RCIC, SLC, Reactor Protection System (RPS), and SSW systems;
- The elevated (YELLOW ) risk condition in support of logic testing of the 'A' train RHR system per 8.M.2-2.10.3-1;
- The manual upgrade to an elevated (YELLOW) risk condition in support of calibrating transformer metering circuits per 3.M.3-74;
- The elevated (YELLOW ) risk condition due to unexpected fuel oil leakage on the 'B' EDG (CR 200603905) which resulted in the 'B' EDG being declared inoperable;
- The elevated (YELLOW ) risk condition in support of surveillance testing and planned maintenance on the high pressure coolant injection (HPCI) system; and
- The emergent maintenance on containment spray valve, MOV-1001-37B, due to hydraulic lockup in the motor-operator spring pack per MR 06117665 (CR 200604328).

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope (4 samples)

The inspector reviewed selected operability determinations to assess the adequacy of the evaluations, the use and control of compensatory measures, compliance with the TS, and the risk significance of the issues. The inspector used the TS, UFSAR, associated design basis documents, and the additional references listed in Attachment 1 to this report. This review represented four inspection samples.

- CR 200603712, OTEK RHR flow meter failure mode (Part 21 Report);
- CR 200505317, SC05-10 Mark I containment vacuum breaker requirements;
- CR 200603919, 'B' EDG fuel oil injector pumps show signs of leakage; and
- CR 200604328, MOV-1001-37B over thrust due to hydraulic lock.

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing (71111.19)

a. Inspection Scope (5 samples)

The inspector reviewed post-maintenance test activities on risk significant systems to verify that the effect of the test had been evaluated adequately, the test was properly performed in accordance with procedures, the test data met the required acceptance criteria, and the test activity was adequate to verify system operability and functional

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capability following maintenance. The inspector confirmed that systems were properly restored following testing and that discrepancies were appropriately documented in the corrective action process. The inspection activity represented five samples.

- MR 06111491, replacement of drywell sump valve AO-7011A;
- MR 06112314, Hydraulic Control Unit (HCU) 18-27 directional control valve (SV-305-121) replacement;
- MR 06105978, HCU 14-23 replacement of accumulator 125;
- MR 06114227, Electrical Protection Assembly (EPA)-4 breaker replacement and MR 06114907 troubleshoot EPA-4; and
- MR 06117693, RHR MOV-37B repair due to hydraulic lock (8.5.2.3 retest).

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope (6 samples)

The inspector observed and/or reviewed surveillance testing results to determine whether the test acceptance criteria were consistent with TS and related Performance Indicators (PI), that the test was performed in accordance the written procedures that the test data was complete and met procedural requirements, and that the components were capable of performing their intended safety functions. The inspection activity represented six samples.

- 8.5.5.1 (Revision 56), RCIC Pump Quarterly and Biennial Operability Flow Rate and Valve Test at Approximately 1000 psig;
- 8.4.1 (Revision 63), Standby Liquid Control Pump Quarterly and Biennial Capacity and Flow Rate Test, quarterly test performed;
- 8.7.4.4 (Revision 24), Main Steam Isolation Valve Operability, 60 percent Power performed;
- 8.M.3-19.1 (Revision 8), Functional Test of the Reactor Protection System Electrical Protection Assemblies Once Every 6 Months for EPAs 3 & 4;
- 9.9 (Revision 56), Control Rod Scram Insertion Time Evaluation; and
- 8.M.3-10 (Revision 13), Strong Motion Accelerograph Functional Test.

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications (71111.23)a. Inspection Scope (2 samples)

The inspector reviewed the temporary modifications listed below to verify that the licensing bases and performance capability of the associated system had not been degraded by the implementation of the modification. A walkdown was performed to determine whether temporary equipment was installed in accordance with work instructions. The inspector reviewed applicable drawings and procedures to determine whether they were up-to-date with the temporary modifications. This inspection activity represented two samples.

- Temporary Alteration 06-1-072, temporary spool piece during RBCCW pump 'D' overhaul to support a cooling header per 3.M.4-14.3; and
- Temporary Alteration 06-1-079, temporary grease relief for MOV-1001-29B (CR 200604328).

b. Findings

No findings of significance were identified.

**4. OTHER ACTIVITIES**4OA1 Performance Indicator Verification (71151)a. Inspection Scope (1 sample)Occupational Exposure Control Effectiveness (OECE)(02.01)

The inspector selectively examined records used by the licensee to identify occurrences involving high radiation areas, very high radiation areas, and unplanned personnel exposures for the time period from October 2005 through November 2006. The reviewed records included selected corrective action program records and the periodic PI data records for this PI. This review was conducted using the criteria specified in Nuclear Energy Institute's (NEI) Regulatory Assessment Performance Indicator Guideline No. 99-02 (Revision 4).

b. Findings

No findings of significance were identified.

#### 4OA2 Identification and Resolution of Problems (71152)

##### .1 Routine Review of Corrective Action Program Issues

###### a. Inspection Scope

As required by Inspection Procedure 71152, Identification and Resolution of Problems, the inspector performed a screening of each item entered into the licensee's corrective action program. This review was accomplished by reviewing printouts of each CR, attending daily screening meetings and/or accessing the licensee's database. The purpose of this review was to identify conditions such as repetitive equipment failures or human performance issues that might warrant additional follow-up.

###### b. Findings

No findings of significance were identified.

##### .2 Annual Sample Review - Spent Fuel Pool (SFP) Reactivity Control

###### a. Inspection Scope (1 sample)

The inspector reviewed Entergy's corrective actions to address reactivity control issues identified during past operations. In January 2004, a licensee self-assessment of the commitments for the SFP storage racks identified that Entergy had not performed the tests identified in licensing correspondence related to Generic Letter 96-04 for boraflex and License Amendment 155 for boral. This issue was entered into the corrective action program as CR 20040285 and was reviewed in NRC Inspection Report 05000293/2004002. The licensee operability determination showed that the SFP criticality margin remained below the UFSAR criterion ( $K_{eff}$  less than 0.95) with consideration given for additional boron degradation. The NRC previously reviewed the immediate evaluations to assure continued safe storage of fuel in the spent fuel pool. The inspector reviewed the licensee's long term corrective actions during this inspection.

###### b. Findings and Observations

No findings of significance were identified. Entergy's actions were thorough, and included an investigation into the cause for the missed boraflex and boral surveillances, the conduct of an interim operability determination, and the development of action plans to provide continued assurance that the licensing bases were met. Using both Entergy and contracted resources, the licensee developed a RACKLIFE model for the Pilgrim SFP storage racks which accounted for bundle discharge exposure, power history, pool silica data, and location each bundle occupied in the pool. The RACKLIFE model was used to predict spent fuel pool rack integrated exposure and to select panels for Boron-10 Areal Density Gage for Evaluating Racks (BADGER) testing. The RACKLIFE results predicted higher boron depletion in racks with a higher exposure history. The inspector observed BADGER tests conducted in October 2006 to benchmark the RACKLIFE model for Pilgrim and confirm the status of the boraflex panels. The

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preliminary BADGER results showed boraflex degradation that was consistent with industry experiences and less than predicted in the highest exposure rack. The final BADGER results were scheduled to be available in January 2007. The licensee will use the BADGER results to evaluate the adequacy of the margins assumed in the SFP criticality analysis. The boral coupons were also scheduled for removal in January 2007 for offsite analysis. The licensee action plans were effective to assure the SFP criticality margin met the UFSAR criterion with consideration given for boron degradation. The corrective actions were appropriate to address the root and contributing causes.

### .3 Annual Sample Review - Bussman Fuse Failures in Safety Systems

#### a. Inspection Scope (1 sample)

The inspector reviewed licensee corrective actions associated with Bussman fuse failures. From July 2002 to August 2005, there were six Bussman fuse failures that resulted in safety-related equipment inoperability. The failures resulted in the licensee issuance of two Licensee Event Reports (LERs 2002-01 and 2004-02) and two NCVs (NCV 20040401, inadequate corrective actions for fuses affecting HPCI, and NCV 20050601, untimely corrective actions for Bussman fuses). The fuse failures and their effect on safety systems were discussed in NRC inspection reports (IR) 2004004, IR 2005002, IR 2005004, and IR 2005006 and were documented in licensee's CRs 20040624, 20050514, 20050517, and 20053643. The inspector reviewed the CRs and the associated root cause analysis reports to determine their adequacies.

The licensee initiated a major fuse replacement program starting in November 2005. The licensee's evaluation determined the Ferraz-Shawmut type A2K fuse to be a suitable replacement of the Bussman FWN-R fuse. The licensee contracted Spectrum Technologies of Schenectady, New York for testing and qualifying the selected Ferraz-Shawmut fuses seismically and environmentally. The inspector reviewed the Spectrum test procedures and test reports to verify that the tests were conducted in accordance with the regulatory requirements and industry standards (such as 10 CFR 50.49, Institute of Electrical and Electronic Engineer (IEEE) Standard-323 and IEEE Standard-344) and that all test anomalies were resolved.

The licensee identified all potential Bussman KWN-R fuses and categorized them into nine priorities that considered affects on safety-related and power generation functions. The licensee issued administrative procedure EN-EE-S-012-P, Pilgrim Station Bussman Fuse Replacement, to control the fuse replacement activities. The inspector reviewed the administrative procedure to determine its adequacy, and reviewed two completed maintenance work orders (05104902 and 05116864) to verify that the replacement activities were performed in accordance with the procedure. The inspector also walked down several Bussman fuses that had not been replaced and some that had been replaced with Ferraz-Shawmut fuses (mounted on Bussman fuse-holders) in the main control room to observe their installed conditions.

b. Findings

No findings of significance were identified. The licensee had initiated a comprehensive program to replace potentially defective Bussman FWN-R fuses with Ferraz-Shawmut type A2K fuses. The progress of replacement was reasonable and activities were accomplished in accordance with the procedure. The new type of fuses were appropriately tested and qualified seismically and environmentally.

.4 Corrective Action Program Semi-annual Trend Reviewa. Inspection Scope (1 sample)

As required by Inspection Procedure 71152, Identification and Resolution of Problems, the inspector performed the semi-annual review to identify trends, either Entergy or NRC-identified, that might indicate the existence of a more significant safety issue. Included within the scope of this review were condition reports from May 2006 through November 2006, the 1<sup>st</sup> and 2<sup>nd</sup> quarter 2006 corrective action trend reports, system health reports, assessment reports, work order listings for rework and corrective maintenance for 2006, and the daily plant status report listings of operations equipment problems, operability evaluations, equipment reliability issues, temporary alterations and outstanding maintenance backlogs.

b. Findings

No findings of significance were identified.

4OA3 Event Follow-up (71153)a. Inspection Scope (1 sample)

The inspector observed control room operator performance on October 11, 2006, during the infrequently performed evolutions associated with scram time testing and power maneuvers for the condenser backwash. The inspection focused on procedure usage and adherence, command and control, communications, and alarm response activities.

b. Findings

No findings of significance were identified.

4OA5 Other.1 Temporary Instruction (TI) 2515/169, Mitigating System Performance Index Verificationa. Inspection Scope (1 sample)

The inspector performed the review required by TI 2515/169. The objective of the review was to verify Entergy correctly implemented the mitigating system performance

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index (MSPI) guidance for reporting unavailability and unreliability of the monitored safety systems. The monitored safety systems at Pilgrim included the EDGs, HPCI, RCIC, RHR, RBCCW, and SSW systems.

The inspector reviewed the list of activities for which unavailability was excluded from the MSPI due to either the short duration of the activity (i.e., < 15 minutes) or credit for operator recovery activities. For each MSPI system, the inspector independently determined the baseline planned unavailability hours (2002-2004) and whether these hours were correctly translated into the licensee's basis document. On a sampling basis, for each MSPI system, the inspector validated that actual planned and unplanned unavailability data was accurately accounted for, for the period July 2003 to June 2006. The accuracy of failure data for each MSPI monitored component (i.e., demand failures, run/load failures, and failure to meet the risk-significant run time, as applicable) for the period July 2003 - June 2006, was also confirmed on a sampling basis. The references used for this review are listed in Attachment 1 to this report.

b. Findings

No findings of significance were identified.

Per TI 2515/169-05 reporting requirements, Attachment 2 to this report documents additional information pertaining to the inspector's review.

.2 URI 05000293/2005004-01: ACRS Position Taking Credit of Time on Shift for Maintaining an Active License

Background

This issue addressed the use of a non-TS position, Assistant Control Room Supervisor (ACRS), for satisfying proficiency watches as required in 10 CFR 55.53(e). This regulation requires each licensed reactor operator (RO) and senior reactor operator (SRO) to fill a minimum of five 12-hour watches per quarter. Prior guidance from the NRR had specified that only positions required to fill minimum TS requirements could be used to satisfy these watch standing requirements. Since one of the Pilgrim SROs needed to take credit for at least one ACRS watch to fulfill 10 CFR 55.53(e), and had, subsequently, filled the TS-required position of Control Room Supervisor (CRS), there was a question of compliance with NRC regulations identified during the 2005 Licensed Operator Requalification inspection. URI 2005/004-01 was developed to resolve this question of compliance. This issue was also identified in the licensee's corrective action program as CR 200504169.

Current NRR Guidance

Facility licensees can take credit for more than minimum number of watchstanders required by TS provided there are administrative controls which assure that functions and duties are divided and rotated in a manner which provides each watchstander

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meaningful and significant opportunity to maintain proficiency in the performance of the functions of an operator and/or senior operator as appropriate.

This position is further clarified by the following:

If a facility operates ABOVE TS shift staffing levels then the facility licensee should have in place the following procedural administrative controls that:

(A) Define what positions are the minimum required TS positions.

AND

(B) Describe how the excess licensed SROs and/or ROs fill a position(s) that qualifies for engaging meaningfully and fully in the functions and duties of the analogous minimum position(s) required by TS.

#### Pilgrim's Specific use of ACRS

Entergy Procedure EN-OP-115, Conduct of Operations, provides the guidance for minimum shift manning to satisfy TS.

PNPS Procedure 1.3.34, Operations Administrative Policies and Processes, provides the following administrative controls for the use of the ACRS position:

Section 3.0 defines the ACRS and requires the ACRS to meet the qualifications of a CRS. The CRS position is also described in Section 3.0. The CRS is a TS-required position on every shift during power operation.

Section 5.7 Reactivity Management specifies when the ACRS is used (during major plant reactivity evolutions such as startups and shutdowns to allow the CRS to focus on Reactivity Management) and his responsibilities (to direct the Balance of Plant Operator, which is a licensed RO).

Section 6.4 Maintaining a Valid, Active NRC License describes what watches must be filled by ROs and SROs.

PNPS ceased using the ACRS position for proficiency watches following the development of this URI.

#### Conclusions

Although the PNPS Administrative Controls currently do not require the SROs to rotate to the CRS, Refueling SRO or Shift Manager positions, the nature of plant operation is such that the ACRS would only be used during a startup and/or shutdown. The rest of the five watches, in a given quarter, would either be as a Shift Manager, CRS or Refueling SRO, all of which are TS-required positions. This observation is substantiated by a review of shift manning records for the SRO in question that indicates the

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maximum number of ACRS watches he stood in any quarter (between February and December 2005) was two. The remaining watches were all as CRS.

In addition, the licensee revised PNPS Procedure 1.3.34 (Revision 11) to limit future use of the ACRS (for proficiency watch purposes) to no more than two watches per quarter. This practice would satisfy NRR guidance for this issue.

The staff considers the use of the ACRS position at Pilgrim for SRO proficiency watches (past and future) to be consistent with NRR guidance on shift manning for the purpose of fulfilling 10 CFR 55.53(e) and that there is no finding or violation associated with this issue. **URI 2005/004-01 is closed.**

#### 4OA6 Meetings, Including Exit

On January 11, 2007, the resident inspector presented the inspection results to Mr. M. Balduzzi and other members of his staff. The inspector asked the licensee whether any of the material examined during the inspection should be considered proprietary. No proprietary information was identified.

#### 4OA7 Licensee-Identified Violations

The following violation of very low safety significance (Green) was identified by Entergy and is a violation of NRC requirements which meets the criteria of Section VI of the NRC Enforcement Policy, NUREG-1600, for being dispositioned as a Non-Cited Violation.

- TS 5.4.1 requires that appropriate written procedures, as referenced in Regulatory Guide 1.33, shall be established, implemented and maintained. Contrary to this, maintenance procedure 3.M.3-61.2 provided insufficient written guidance for maintenance performed on the 'A' and 'B' EDGs. Specifically, the torque values for the banjo fittings were not adequately specified in the procedure, which resulted in an incorrect torque being applied to the cap screws. The licensee identified and addressed this issue in their corrective action program through issuance of CRs 200603726 and 200603905. The finding was of very low safety significance because the fuel oil leaks did not result in an actual loss of EDG safety functions.

Attachment 1: Supplemental Information

Attachment 2: Mitigating System Performance  
Index Verification

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**ATTACHMENT 1**

**SUPPLEMENTAL INFORMATION**

**KEY POINTS OF CONTACT**

Licensee personnel:

M. Balduzzi	Site Vice President
S. Bethay	Director, Nuclear Assessment
K. Bronson	General Manager Plant Operations
W. Cook	Supervisor, System Engineering
R. Daverio	Supervisor, Design Engineering
B. Ford	Licensing Manager
B. Grieves	Quality Assurance Manager
R. Ho	EQ Engineer
K. Kamschneider	System Engineer
W. Lobo	Licensing Specialist
P. McNulty	Radiation Protection Manager
D. Noyes	Assistant Operations Manager
E. Olson	Operations Manager
E. Sanchez	Senior Licensing Project Manager
M. Santiago	Operations Training Supervisor
J. Taormina	Supervisor, Planning and Scheduling

**LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED**

Opened and Closed

05000293/2006005-01	NCV	Failure to perform an adequate 50.59 evaluation for a change to a surveillance test required by TS 4.9.A.1.
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Closed

05000293/2005003-01	URI	Adequacy of Entergy's Change to LOOP/LOCA Testing Without Seeking a TS Amendment
05000293/2005004-01	URI	ACRS Position Taking Credit of Time on Shift for Maintaining an Active License

**LIST OF DOCUMENTS REVIEWED**

**References for Section 1R01**

UFSAR Section 10.9.3, Heating, Ventilation and Air Conditioning Systems  
 UFSAR Table 10.9-1, Design Temperatures (Winter)  
 8.C.40, Seasonal Weather Surveillance (Revision 18)  
 8.C.40, Attachment 1, Cold Weather Preparations, October 17, 2006

2.2.146, Station Blackout Diesel Generator (Revision 38)  
2.2.108, Diesel Generator Cooling and Ventilation System (Revision 40)  
MR05118359, Cold Weather Surveillance  
WRT099813, Temperature Indication TI-69 Erratic Indication  
Maintenance Work History for 2005-2006

**References for Section 1R02**

Task Interface Agreement TIA 2006-01  
Entergy Engineering Evaluation NEA-06-081 dated October 25, 2006  
TSTF-IG-06-01, Implementation Guidance for TSTF-358, Revision 6, Missed Surveillance requirements

**10 CFR 50.59 Screened-out Evaluations**

8.M.3-1, Special Test for Automatic ECCS Load Sequencing of Diesels and Shutdown Transformer with Simulated Loss of Offsite Power and Special Shutdown Transformer Load Test, dated 3/10/05

**Completed Surveillances**

Procedure No. 8.M.3-1, Special Test for Automatic ECCS Load Sequencing of Diesels and Shutdown Transformer with Simulated Loss of Offsite Power and Special Shutdown Transformer Load Test, dated 5/9/03 & 4/28/05

**References for Section 1R04**

Procedure 2.2.24, Standby Liquid Control System (Revision 45)  
Procedure 2.2.19, Residual Heat Removal (Revision 93)  
P&ID M249, Standby Liquid Control System (Revision 29)  
P&ID M241, Residual Heat Removal System (Revision 83)  
Procedure 2.2.20, Core Spray System (Revision 67)  
P&ID M242, Core Spray System (Revision 50)

**References for Section 1R05**

Condition Reports 200603979, 200604618, 200604619  
Procedure ENN-DC-189, Fire Drills (Revision 0)  
Procedure 5.5.2, Special Fire Procedure (Revision 36)  
Fire drill critique dated December 21, 2006

**References for Section 1R06**

Maintenance Request MR05112179, 'D' RBCCW Pump Seal / Rebuild  
Maintenance Request MR06115282, 120 DPM rain water leak into 'B' Auxiliary Bay West Wall  
Maintenance Requests MR01107674, Closed Cooling Water Instrument Calibrations  
Maintenance Request MR 06115653, Investigate Auxiliary Bay Spurious Alarms  
Temporary Modification 06-1-072, Reactor Building Pump Temporary Support  
Procedure 3.M.4-14.3, Reactor Building closed Cooling Water Pump Maintenance (Revision 4)  
P&ID M215, Cooling Water System Reactor Building (Revision 48)  
LCO-ACT-1-06-0135, Removal and Re-installation of Pump P-202D  
Surveillance 8.E.30.1, Closed Cooling Water System (CCWS) Instrumentation Calibration and Functional Test, (Revision 24) completed on 11/15/05 and 12/4/05.

#### A-1-4

Condition Reports 200604099, 200604110, 200604107, 200604101, 200603750, 200603749, 200604005, 200603839, 200603957

#### **References for Section 1R12**

System Health Report for System 30 - RBCCW, 2<sup>nd</sup> Quarter 2006  
System Health Report for System 13 - RCIC, 2<sup>nd</sup> Quarter 2006  
System Health Report for System 61 - EDG and Fuel Storage, 3<sup>rd</sup> Quarter 2006  
Operator's Daily Log  
Technical Specification LCO Log  
Condition Reports for RCIC System in 2005 and 2006  
Condition Reports for RBCCW System in 2005 and 2006  
Completed 2006 Maintenance Requests for System 13 and System 30  
Problem Report PR98.9463  
Engineering Memo dated 3/10/04 for PR98.9463  
Condition Reports 200604098, 200604110, 200604103, 200604005, 200603214, 200401593, 200302782, 200109963, 200109469, 200503983, 200402267, 200302782, 200109469, 200109963, 200402267, 200603214  
Maintenance Requests 03113587, 06112980, 04111480, 01104302, 05115286, 05115765  
Engineering Request 02113855

#### **References for Section 1R13**

Procedure 1.3.34.15, Protected Area Postings (Revision 1)  
Procedure 1.5.22, Risk Assessment Process (Revision 8)  
Procedure 8.M.2-2.10.3-1, RHR LPCI Containment Spray Subsystem "A" Logic Test (Revision 21)  
EOOS Risk Report and Scheduler's Evaluation for 10/10/06  
EOOS Risk Report and Scheduler's Evaluation for 10/17/06  
EOOS Risk Report and Scheduler's Evaluation for 10/23/06  
EOOS Risk Report and Scheduler's Evaluation for 10/25/06  
EOOS Risk Report and Scheduler's Evaluation for 11/20/06  
Maintenance Requests MR06117665, MR06117693  
Condition Report 200604328  
Operability Evaluation dated December 6, 2006 for MOV-1001-37B per CR 200604328  
Root Cause Evaluation for CR 200604328, Suppression Chamber Spray valve Overload  
Limiter Maintenance Update No. 88-2  
Temporary Modification TA-06-1-079, grease relief for MOV-1001-29B

#### **References for Section 1R15**

Condition Reports 200603979, 200603985, 200603989, 200604047, 20063795, 200603712, 200603763, 200505317  
Event Notification 42877  
Part 21 Report, OTEK Panel Meters dated 10/6/06  
GE Safety Communication SC05-10, Correction to Mark I Vacuum Breaker Methodology, NEDE 24802, dated 12/12/06  
Standing Order 06-08

**References for Section 1R19**

Procedure 8.7.1.5, Local Leak Rate Testing of Primary Containment Penetrations, Isolation Valves, and Inspection of Containment Structure (Revision 48)  
Procedure 8.7.4.3, Miscellaneous Containment Isolation Valve Quarterly Operability (Revision 36)  
Procedure 3.M.2-23, HCU Solenoid Replacement (Revision 5)  
Procedure 2.2.87.3, Control Rod Drive Venting, Timing, Flushing, and Adjustment (Revision 25)  
Procedure 3.M.4-5, CRD Hydraulic Control Unit Maintenance (Revision 15)  
Procedure 3.M.1-34, Generic Troubleshooting and Maintenance Procedure MR 06117693 (Revision 30)  
Procedure 8.5.2.3, LPCI and Containment Cooling MOV Operability Test (Revision 47)  
Tagout 10-0069-MO1001-37B  
Procedure 8.Q.3-8.1, Limitorque Type HBC, SB/SMB-00, and Type SMB-000 Valve Operator Maintenance (Revision 11)  
Procedure 9.9, Control Rod Scram Insertion Time Evaluation (Revision 56)  
V-0276, Hydraulic Control Unit Part 729E950G1-G6 (Revision 21)  
Procedure 8.M.3-19, Testing and Calibration of Reactor Protection System Electrical Protection Assemblies (Revision 12)  
Procedure 8.M.3-19.1, Functional Test of the Reactor Protection System Electrical Protection Assemblies Once Every 6 Months (Revision 8)  
V-0366, Electrical Protection Assembly 91E175G001 with Logic Card 148C6118G002 (Revision 5)  
Maintenance Update 88-2, Hydraulic Lock of Limitorque Valve Actuators  
Drawing MMOV1, Motor Operated Valve Information Table (Revision 54)

**References for Section 1R22**

P&ID M245, Reactor Core Isolation Cooling System (Revision E35)  
P&ID M246, Reactor Core Isolation Cooling System (Revision 32)  
P&ID M243, High Pressure Coolant Injection System (Revision 51)  
8.5.5.1, RCIC Pump Quarterly and Biennial Operability Flow Rate and Valve Test at Approximately 1000 psig (Revision 56)  
Calculation M670, RCIC system Hydraulic Analysis (Revision 2)  
Procedure 2.1.19, Suppression Chamber Temperatures (Revision 16)  
Technical Specification 4.5.D.1.b, RCIC Flow Rate

**References for Section 1R23**

Temporary Modification 06-1-072, Spool Piece Installation IAW 3.M.4-14.3, Att 6  
Temporary Modification 06-1-078, Grease Relief for MOV-1001-29B  
Drawing M215, Cooling Water System Reactor Building (Revision E22)  
Procedure 3.M.4-14.4 Reactor Building Closed Cooling Water Pump maintenance (Revision 4)  
Condition Reports 200604469 and 200604328

**References for Section 4OA1**

Performance Indicator (PI) for Occupational Exposure Control Effectiveness (OECE) April 2005 through September 2006  
PI Data for OECE April 2005 through September 2006  
ENN-LI-114, Performance Indicator Technique Sheet (Revision 1)

EN-RP-105, Radiation Work Permits (Revision 0)  
Radiation Work Permit (RWP) #06-0087, AO-7011A Rebuild/Replace Bettis Actuator & LLRT  
Condition Reports for Radiation Exposure Control Effectiveness in 2005 and 2006  
Condition Reports 200504635, 200504998, 200601352, 200603152, 200603673, 200604194,  
200604195  
Temporary Instruction 2515/169, Mitigating System Performance Index Verification, 7/25/06  
NEI 99-02, Regulatory Assessment Performance Indicator Guideline (Revision 4)

**References for Section 4OA2**

EN-LI-102, Corrective Action Process (Revision 7)  
En-LI-121, Entergy Trending Process (Revision 3)  
Pilgrim CA&A Trend Reports for First and Second Quarter 2006  
Condition Reports 200604133, 20040285, 200603562, 200403712, 200403713, 200503983,  
200503933, 200302782, 200109469, 200109963, 200402267, 200603214,  
System Health Reports  
Maintenance Rule System Status  
Operational Focus Meeting Notes  
Management Review Meeting Performance Indicators  
Outstanding Temporary Modifications and Alterations  
Top Ten Equipment Reliability Issues  
Operator's Daily Log  
Technical Specification LCO Log  
Outstanding Safety and Corrective Maintenance Requests  
P&ID M247, Reactor Water Cleanup system (Revision 51)  
NRC Generic Letter 96-02, Boraflex Degradation in Spent fuel Pool Storage Racks  
Special Engineering Procedure SEP-255-01, Procedure for Measuring the Boron-10 Areal  
Density of Boraflex in the Pilgrim Nuclear Station Spent nuclear fuel Storage Racks (Revision 0)  
Special Engineering Procedure SEP-255-02, Procedure for the Assembly of the Pilgrim Nuclear  
Station Boron-10 Areal Density Meter (Revision 0)  
NETCO Project Overview for Spent fuel Pool RACKLIFE analysis, BADGER testing and  
BORAL coupon testing  
Reactor Engineering Memorandum dated 8/22/06 Providing the Preliminary RACKLIFE Results  
and BADGER Panel Selection for the Pilgrim SFP Storage Racks  
RACKLIFE Analysis Results for PNPS Boraflex Calculated Absorbed Gamma Dose 08-2006  
RACKLIFE Analysis Results for PNPS Boraflex Projected Boron Carbide Loss 09-2006  
Radiological Survey Results for Cf-252 neutron source and Established Radiological Controls

**References for Section 4OA3**

Condition Report 200604042

**References for Sections 4OA5**

Procedure 1.3.34, Operations Administrative Policies and Procedures (Revision 111)

**LIST OF ACRONYMS**

ACRS	Assistant Control Room Supervisor
ADAMS	Agencywide Documents Access and Management System
ALARA	As Low As Reasonable Achievable
BADGER	Boron-10 Areal Density Gage for Evaluating Racks
CCWS	Closed Cooling Water System
CDP	Core Damage Probability
CFR	Code of Federal Regulations
CR	Condition Report
CRS	Control Room Supervisor
ECCS	Emergency Core Cooling System
EDG	Emergency Diesel Generator
EPA	Electrical Protection Assembly
EQ	Environmental Qualification
FAQ	Frequently Asked Questions
FB	Fire Brigade
HCU	Hydraulic Control Unit
HPCI	High Pressure Coolant Injection
IEEE	Institute of Electrical and Electronic Engineer
IMC	Inspection Manual Chapter
IR	Inspection Report
kV	Kilovolt
LER	Licensee Event Report
LERF	Large Early Release Fraction
LOCA	Loss of Coolant Accident
LOOP	Loss of Offsite Power
LPCI	Low Pressure Coolant Injection
MOV	Motor Operated Valve
MSPI	Mitigating System Performance Index
NCV	Non-Cited Violation
NEI	Nuclear Energy Institute
NRC	Nuclear Regulatory Commission
NRR	Nuclear Reactor Regulation
PAR	Protective Action Recommendation
PARS	Publicly Available Records
PFD	Plymouth Fire Department
PI	Performance Indicator
PI&R	Problem Identification and Resolution
PNPS	Pilgrim Nuclear Power Station
QASR	Quality Assurance Surveillance Report
RBCCW	Reactor Building Closed Cooling Water
RCIC	Reactor Core Isolation Cooling
RHR	Residual Heat Removal
RO	Reactor Operator
RPS	Reactor Protection System
RWP	Radiation Work Permit
SDP	Significant Determination Process

SDT	Shutdown Transformer
SE	Safety Evaluation
SER	Safety Evaluation Report
SFP	Spent Fuel Pool
SLC	Standby Liquid Control
SR	Surveillance Requirement
SRO	Senior Reactor Operator
SSC	System, Structure or Component
SSW	Salt Service Water
TI	Temporary Instruction
TIA	Task Interface Agreement
TS	Technical Specifications
TSC	Technical Support Center
UFSAR	Updated Final Safety Analysis Report
URI	Unresolved Item

**ATTACHMENT 2**

**SUPPLEMENTAL INFORMATION**

**MITIGATING SYSTEM PERFORMANCE INDEX VERIFICATION**

Per TI 2515/169-05 reporting requirements, this Attachment 2 documents additional information pertaining to the inspector's review.

Question 1: For the sample selected, did the licensee accurately document the baseline planned unavailability hours for the MSPI systems?

Answer: No. The inspector identified minor discrepancies in the licensee's baseline unavailability data for the EAC, HPCI, and RHR systems. The discrepancies result from licensee not following the prescribed method for determining the baseline unavailability as described in NEI 99-02, Revision 4, Section F1.2.2. (e.g. the unavailability hours reported to the NRC via the PI process for safety system unavailability do not agree with the planned and unplanned availability hours used in the baseline unavailability calculation). The licensee has agreed to correct the basis document and resolve any discrepancies.

Question 2: For the sample selected, did the licensee accurately document the actual unavailability hours for the MSPI systems?

Answer: No. The inspector identified minor discrepancies in the actual MSPI unavailability data reported for the 2<sup>nd</sup> quarter 2006. The errors noted were for the HPCI, RHR, and EAC systems and for the calculated critical hours. The licensee intends to correct any errors which have not dropped from the rolling 12-quarter window in the next quarterly report.

Question 3: For the sample selected, did the licensee accurately document the actual unreliability information for each MSPI monitored component?

Answer: No. The inspector identified Entergy had not included the HPCI system's failure to meet the risk-significant run time due to a blown fuse for the gland exhaust blower (LER 2004-002). The licensee is re-evaluating the basis for not including the failure.

Question 4: Did the inspector identify significant errors in the reported data, which resulted in a change to the indicated index color? Describe the actual condition and corrective actions taken by the licensee, including the date when the revised PI information was submitted to the NRC.



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Answer: No. The inspector did not identify any significant errors which would result in change to the MSPI color.

Question 5: Did the inspector identify significant discrepancies in the basis document which resulted in (1) a change to system boundary; (2) an addition of a monitored component; or (3) a change in the reported index color? Describe the actual condition and corrective actions taken by the licensee, including the date of when the bases document was revised.

Answer: Yes. (1) The inspector identified errors in the system boundary diagrams for the HPCI, RCIC, and EAC systems. Entergy has agreed with the inspector's findings and plans to update the boundary drawings. A completion date for the update has not been established. (2) The inspector identified that the air operated valves in the fuel oil transfer lines (AO-4521 and AO-4522), which must open to re-fill the emergency diesel generator day tanks, were not listed as monitored components in the EAC system, as required by NEI 99-02, Revision 4, Section F2.1.2. Entergy does not agree that the valves are required to be monitored on the basis that they have an approved procedure with an alternate means to fill the day tank by manual operator action. Entergy is evaluating their position and consulting with industry peers. If necessary, a feedback form will be submitted to resolve the item via the frequently asked question (FAQ) process.