UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
475 ALLENDALE ROAD
KING OF PRUSSIA, PA 19406

February 1, 2008

Mr. Kevin Bronson
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 05000293/2007005

Dear Mr. Bronson:

On December 31, 2007, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Pilgrim Nuclear Power Station (PNPS). The enclosed report documents the results, which were discussed on January 9, 2008, with you and members of your staff.

The 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 self-revealing finding of very low safety significance (Green) for which no violation of NRC requirements was identified.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosures, and your response (if any) will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of the NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/

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

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

Enclosure: Inspection Report 05000293/2007005
w/Attachment: Supplemental Information

<u>cc w/encl</u>:

see next page

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The Honorable Therese Murray
The Honorable Vincent deMacedo
Chairman, Plymouth Board of Selectmen
Chairman, Duxbury Board of Selectmen
Chairman, Nuclear Matters Committee
Plymouth Civil Defense Director
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J. Miller, Senior Issues Manager
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D. Katz, Citizens Awareness Network
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W. Meinert, Nuclear Engineer
J. Giarrusso, MEMA, SLO
Commonwealth of Massachusetts, Secretary of Public Safety

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U.S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket No:	50-293
License No:	DPR-35
Report No:	05000293/2007005
Licensee:	Entergy Nuclear Operations, Inc.
Facility:	Pilgrim Nuclear Power Station (PNPS)
Location:	600 Rocky Hill Road Plymouth, MA 02360
Inspection Period:	October 1, 2007 through December 31, 2007
Inspectors:	M. Schneider, Sr. Resident Inspector, Division of Reactor Projects (DRP) N. Sieller, Acting Resident Inspector, DRP T. Burns, Reactor Inspector, Division of Reactor Safety (DRS) T. Fish, Sr. Operations Engineer, DRS P. Frechette, Physical Security Inspector, DRS G. Newman, Reactor Engineer, DRP A. Patel, Reactor Inspector, DRS R. Rolph, Health Physicist, DRS D. Tifft, Reactor Inspector, DRS A. Ziedonis, Reactor Inspector, DRS
Approved By:	Raymond J. Powell, Chief Projects Branch 5 Division of Reactor Projects

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SUMMARY OF FINDINGS

IR 05000293/2007-005; 10/01/2007-12/31/2007; Pilgrim Nuclear Power Station; Event Follow-up.

The report covered a 13-week period of inspection by resident and region-based inspectors. One Green finding was identified. The significance of most findings is indicated by their color (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 4, dated December 2006.

A. NRC-Identified and Self-Revealing Findings

Cornerstone: Initiating Events

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

This finding is more than minor because it is associated with the human performance attribute of the Initiating Events Cornerstone and affects the cornerstone objective of limiting the likelihood of those events that upset plant stability during power operations. The finding is of very low safety significance (Green) because it did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment would be unavailable. This finding has a cross-cutting aspect in the area of Human Performance, Work Practices, because Entergy proceeded in the face of uncertainty or unexpected circumstances when the VTS-1 setpoint was found significantly outside of expected as-found values. [H.4(a)] (Section 4OA3)

B. Licensee-Identified Violations

None.

REPORT DETAILS

Summary of Plant Status

Pilgrim Nuclear Power Station (PNPS) operated at or near 100 percent power during the inspection period with the following exceptions: On October 30, 2007, Entergy reduced power to approximately 48 percent to perform a thermal backwash on the main condenser. Entergy resumed 100 percent power operation on October 31, 2007. On December 10, 2007, Entergy shut down and commenced a planned outage to repair leaking safety relief valve, RV-203-3B. Entergy restored the plant to 100 percent power on December 13, 2007. The plant remained at or near 100 percent for the remainder of the inspection period.

1. **REACTOR SAFETY**

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R01 Adverse Weather Protection (71111.01)

a. Inspection Scope (3 samples – 1 seasonal readiness, 2 impending adverse weather)

The inspectors performed a review of cold weather preparations during the onset of the cold weather season to evaluate the site's readiness for seasonal susceptibilities. The inspectors reviewed Entergy's preparations for cold weather and its impact on the protection of safety-related systems, structures and components (SSCs). The inspection focused on the intake structure, the station blackout diesel generator and the condensate storage and transfer system. The inspection was intended to ensure that Entergy's equipment, instrumentation, and supporting structures were configured in accordance with Entergy's procedures and that adequate controls were in place to ensure functionality of the systems in cold weather. The inspectors also conducted a site walkdown on November 1, 2007, to assess Entergy's readiness for the potential affects of hurricane Noel. The inspectors verified that all outside objects were properly anchored or tied down. In addition, the inspectors conducted a site walkdown on December 12, 2007, to evaluate site preparations for an approaching coastal storm with accompanying high winds.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment (71111.04)

.1 Partial System Walkdowns (71111.04Q)

a. Inspection Scope (4 samples)

The inspectors performed four partial system walkdowns during this inspection period. The inspectors reviewed the documents listed in the Attachment to determine the correct system alignment. The inspectors conducted a partial walkdown of each system to determine if the critical portions of the selected systems were correctly aligned in accordance with these procedures and to identify any discrepancies that may have had an effect on operability. The walkdowns included selected switch and valve position checks, and verification of electrical power to critical components. Finally, the inspectors evaluated other elements, such as material condition, housekeeping, and component labeling. The following systems were reviewed based on their risk significance for the given plant configuration:

- "B" Reactor Building Closed Cooling Water (RBCCW) system during degradation of the "A" RBCCW system;
- "B" Residual Heat Removal (RHR) system during "A" RHR surveillance;
- High Pressure Coolant Injection (HPCI) system while the Reactor Core Isolation Cooling (RCIC) system was out of service; and
- RBCCW system “B” loop, upon restoration of “E” RBCCW pump following completion of 3.M.3-47.2, “‘B’ Train Functional Test of Individual Load Shed Component.”

b. <u>Findings</u>

No findings of significance were identified.

.2 <u>Complete System Walkdown</u> (71111.04S)

a. <u>Inspection Scope</u> (1 sample)

The inspectors completed a detailed review of the standby gas treatment (SBGT) system to verify the functional capability of the system. The inspectors conducted a walkdown of the system to verify that the critical components such as valves, switches, and breakers were aligned in accordance with procedures and to identify any discrepancies that could have an effect on operability.

The inspectors discussed system health with the system engineer and conducted a review of outstanding maintenance work orders to verify that the deficiencies did not significantly affect the SBGT system function. The inspectors also reviewed the condition report (CR) database to verify that equipment problems were being identified and appropriately resolved. In addition, the inspectors reviewed recent test results to ensure the air system leakage and charcoal filter efficiency met the requirements of Technical Specifications (TS) and procedures. Documents reviewed during the inspection are listed in the Attachment.

b. <u>Findings</u>

No findings of significance were identified.

1R05 Fire Protection (71111.05)

Fire Protection - Tours (71111.05Q)

a. Inspection Scope (8 samples)

The inspectors performed walkdowns of eight fire protection areas during the inspection period. The inspectors reviewed Entergy's fire protection program to determine the required fire protection design features, fire area boundaries, and combustible loading requirements for the selected areas. The inspectors walked down these areas to assess Entergy's control of transient combustible material and ignition sources. In addition, the inspectors evaluated the material condition and operational status of fire detection and suppression capabilities, fire barriers, and any related compensatory measures. The inspectors then compared the existing conditions of the areas to the fire protection program requirements to ensure all program requirements were being met. Documents reviewed during the inspection are listed in the Attachment. The fire protection areas reviewed were:

- Fire Zone 5.2, "B" Train Salt Service Water Pump Room;
- Fire Zone 1.22, "B" Reactor Building Closed Cooling Water Pumps and Heat Exchanger Rooms;
- Fire Zone 4.2, "B" Emergency Diesel Day Tank Room;
- Fire Zone 4.4, "A" Emergency Diesel Day Tank Room;
- Fire Area 1.9, Fire Zone 2.2, "A" Switchgear and Load Center Room;
- Fire Area 1.9, Fire Zone 3.5, Vital Motor Generator Set Room;
- Fire Zone 1.3, High Pressure Coolant Injection Pump/Turbine Room; and
- Fire Zone 2.3, Battery Room “A.”

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures (71111.06)

Internal Flooding Inspection

a. Inspection Scope (1 sample)

The inspectors walked down selected areas of the plant including the cable spreading room, vital Motor Generator set, and HPCI pump room to assess the effectiveness of Entergy's internal flood control measures. The inspectors assessed the condition of watertight doors, floor sump systems, curbing, hatch and conduit seals, and floor drains. The inspectors reviewed CR-PNP-2007-1020, “Review of NRC IN-2007-01, Recent Operating Experience Covering Hydrostatic Barriers,” to determine whether Entergy was identifying internal flooding issues and taking appropriate corrective actions. The references used for this inspection are listed in the Attachment to this report.

b. Findings

No Findings of significance were identified.

1R11 Licensed Operator Requalification (71111.11)

.1 Resident Inspector Quarterly Review (71111.11Q)

a. Inspection Scope (1 sample)

The inspectors observed licensed operator requalification training on November 6, 2007. Specifically, the inspectors observed classroom Senior Reactor Operator (SRO) training on Emergency Planning, Emergency Action Level (EAL) Classification, and Protective Action Recommendation (PAR) procedures and processes. The inspectors assessed the training to determine if the training adequately prepared the SROs to determine EAL classification levels and to conduct PAR assessments. The inspectors reviewed the applicable training objectives to determine if they had been achieved. The inspectors verified that issues identified during the classroom session were entered into the corrective action program. Documents reviewed during the inspection are listed in the Attachment.

b. Findings

No findings of significance were identified.

.2 Licensed Operator Requalification (71111.11B)

a. Inspection Scope (1 sample)

The following inspection activities were performed using NUREG 1021, Revision 9, "Operator Licensing Examination Standards for Power Reactors," Inspection Procedure Attachment 7111111, "Licensed Operator Requalification Program," Appendix A, "Checklist for Evaluating Facility Testing Material" and Appendix B, "Suggested Interview Topics."

The inspectors reviewed documentation of operating history since the last requalification program inspection. Documents reviewed included NRC inspection reports and licensee CRs that involved human performance issues. The purpose of the review was to ensure operational events that occurred during the last two years were not indicative of possible training deficiencies. The inspectors also discussed facility operating events with the resident staff.

The inspectors reviewed comprehensive written exams (these exams were administered in the fall, 2006), and the scenarios and job performance measures administered during the weeks of September 10 and 17, 2007, to ensure the quality of these exams met or exceeded the criteria established in the Examination Standards and 10 CFR 55.59, “Requalification.” The inspectors observed the administration of the operating exams to two crews.

Conformance with simulator requirements specified in 10 CFR 55.46, "Simulation Facilities"

The inspectors observed simulator performance during the conduct of the examinations, and reviewed simulator discrepancy reports to determine whether facility staff was complying with the requirements of 10 CFR 55.46. The inspectors reviewed a sample of simulator tests including transients; normal and steady state; malfunctions; and core performance tests.

Conformance with operator license conditions

The inspectors determined whether the operators were complying with the conditions of their license by reviewing the following:

- five medical records (The records were complete; restrictions noted by the doctor were reflected on the individual's license; and physical exams were given within 24 months.);
- eight proficiency watch-standing records and one reactivation record (Records indicated the licensed operators conformed with proficiency and reactivation watch-standing requirements of 10 CFR 55.53, Conditions of Licenses.); and
- remediation training records for four licensed operators (These operators had failed either an annual operating test, a comprehensive written exam, or a requalification segment evaluation. The remediation records were acceptable.).

Licensee's feedback system

The inspectors interviewed operator requalification instructors, training and operations management, and two licensed operators for feedback regarding the implementation of the licensed operator requalification program to ensure the requalification program was meeting their needs and responsive to their recommended changes.

On October 29, 2007, the inspectors conducted an in-office review of licensee requalification exam results. These results reflected the operators' performance on the annual operating tests; the comprehensive written exams were administered in the fall, 2006, and therefore those test results were not part of this in-office review. The inspector assessed whether pass rates were consistent with the guidance of NRC IMC 0609, Appendix I, "Operator Requalification Human Performance SDP." The inspectors verified that:

- Crew failure rate on the dynamic simulator was less than 20 percent. (Failure rate was 0.0 percent)

- Individual failure rate on the dynamic simulator test was less than or equal to 20 percent. (Failure rate was 0.0 percent)

- Individual failure rate on the walkthrough test (job performance measures) was less than or equal to 20 percent. (Failure rate was 0.0 percent)

- Individual failure rate on the comprehensive written exam was less than or equal to 20 percent. (As noted above, the comprehensive written exams were administered in the fall, 2006. Test results were previously documented in NRC IR 50-293/2006-005.)

- More than 75 percent of the individuals passed all portions of the exam. (100% of the individuals passed all portions of the exam)

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12)

a. Inspection Scope (2 samples)

The inspectors reviewed action plans for two SSC issues and reviewed the performance history of these SSCs to assess the effectiveness of Entergy's maintenance activities. The inspectors reviewed Entergy's CRs, corrective actions, and functional failure determinations made in accordance with Entergy procedures and the requirements of 10 CFR 50.65(a)(1) and (a)(2), "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants." In addition, the inspectors reviewed selected SSC classification, goals, corrective actions, performance criteria and monitoring plans to return the (a)(1) systems to (a)(2) status. Also, the inspectors selected a sample of system health reports for review to evaluate the results of system performance monitoring, material condition, and operations impact, to determine if actions taken were reasonable and appropriate. The references used for this inspection are listed in the Attachment to this report. The following issues were reviewed:

- Turbine Controls Subsystem failure, failed maintenance rule performance criteria of one functional failure in two years (CR-PNP-2007-03673); and
- "B" Emergency Diesel Generator (EDG) exceeded maintenance rule performance criteria due to functional failures on October 25, 2006, and January 4, 2007 (CR-PNP-2007-0052).

b. Findings

No findings of significance were identified.

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

a. Inspection Scope (4 samples)

The inspectors evaluated online and shutdown risk management for emergent and planned activities. The inspectors reviewed maintenance risk evaluations, work schedules, and control room logs to determine if concurrent planned and emergent maintenance or surveillance activities adversely affected the plant risk already incurred with out-of-service components. The inspectors evaluated whether Entergy took the necessary steps to control work activities, minimize the probability of initiating events, and maintain the functional capability of mitigating systems. The inspectors assessed Entergy's risk management actions during plant walkdowns. Documents reviewed during the inspection are listed in the Attachment. The inspectors reviewed the conduct and adequacy of scheduled and emergent maintenance risk assessments for the following maintenance and testing activities:

- Yellow risk condition during emergent unavailability of the "A" EDG due to an engine coolant leak in the turbo charger casing;
- Vital Motor Generator Set maintenance;
- Yellow Risk Condition during scheduled maintenance resulting in the unavailability of the HPCI system; and
- Safety Relief Valve 3B pilot valve replacement outage shutdown risk assessment.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope (5 samples)

The inspectors reviewed five operability determinations associated with degraded or non-conforming conditions to determine if the operability determination was justified and if the mitigating systems or those affecting barrier integrity remained available such that no unrecognized increase in risk had occurred. The inspectors also reviewed compensatory measures to determine if the compensatory measures were in place and were appropriately controlled. The inspectors reviewed licensee performance against related TS and Updated Final Safety Analysis Report (UFSAR) requirements. The inspectors reviewed the following degraded or non-conforming conditions:

- CR-PNP-2007-03708, Mechanical Pressure Regulator (MPR) Setpoint Adjustment;
- CR-PNP-2006-01802, Minimum Condensate Storage Tank Level to prevent Vortex formation at the HPCI/RCIC suction;
- CR-PNP-2007-04172, EDG Fuel Oil Storage Volume;
- CR-PNP-2007-04724, During the quarterly HPCI pump surveillance, the HPCI system did not achieve rated flow of 4250 gpm; and
- CR-PNP-2007-04841, RHR pump P-203D revealed pump suction pressure drop outside acceptable range.

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing (71111.19)

a. Inspection Scope (8 samples)

The inspectors reviewed eight samples of post-maintenance tests (PMT) during this inspection period. The inspectors reviewed these activities to determine whether the PMT adequately demonstrated that the safety-related function of the equipment was satisfied, given the scope of the work performed, and that operability of the system was restored. In addition, the inspectors evaluated the applicable test acceptance criteria to verify consistency with the associated design and licensing bases, as well as TS requirements. The inspectors also evaluated whether conditions adverse to quality were entered into the corrective action program for resolution. Documents reviewed during the inspection are listed in the Attachment. The following maintenance activities and their post-maintenance tests were evaluated:

- ACB-102 12-year Periodic Inspection & Maintenance, WO 51536960;
- Salt Service Water Pump "D" Quarterly (TS/IST) Operability Test, WO 51535011;
- Replace Bladder in T-223A with New Butyl Rubber Bladder, WO 51532443;
- "A" EDG Turbocharger Replacement, WO 00129585;
- HPCI MO-6, MO-35, MO-3 and MO-14 hydraulic lock modifications per MRs 51534480, 51534482, 51534483 and 51534484;
- HPCI flow controller replacement per WO 0013195;
- Repair/replace pilot valve on main steam Safety Relief Valve RV-203-3B; and
- Source Range Monitor “B” replacement per WO 51530724.

b. Findings

No findings of significance were identified.

1R20 Refueling and Other Outage Activities (71111.20)

a. Inspection Scope (1 sample)

The inspectors reviewed shutdown and plant restart activities associated with a planned outage to replace the pilot on leaking Safety Relief Valve, RV-203-3B. The planned outage commenced on December 10, 2007, and was completed on December 12, 2007. The inspectors reviewed Entergy’s forced outage work schedule, risk evaluations, control room logs, and vessel cooldown and heatup rate data. The inspectors observed activities in the control room during the plant shutdown and startup. The inspectors conducted a walkdown of the primary containment to verify that there was no evidence of reactor coolant system leakage and that foreign material was being accounted for and controlled. Documents reviewed during the inspection are listed in the Attachment.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope (3 samples)

The inspectors reviewed three samples of surveillance activities to determine whether the testing adequately demonstrated equipment operational readiness and the ability to perform the intended safety-related functions. The inspectors reviewed selected prerequisites and precautions to determine if they were met and if the tests were performed in accordance with the procedural steps. Additionally, the inspectors evaluated the applicable test acceptance criteria for consistency with associated design bases, licensing bases, and TS requirements. The inspectors also evaluated whether conditions adverse to quality were entered into the corrective action program for resolution. Documents reviewed during the inspection are listed in the Attachment. The following surveillance tests were evaluated:

- RCIC pump quarterly in-service test;
- HPCI System Pump and Valve Quarterly and Biennial Comprehensive Operability; and
- Reactor Coolant System Leak Rate determination per TS 3/4.6.C, "Primary System Boundary Coolant Leakage."

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY

Cornerstone: Occupational Radiation Safety

2OS3 Radiation Monitoring Instrumentation and Protective Equipment (71121.03)

a. Inspection Scope (9 samples)

During the period October 15-18, 2007, the inspector conducted the following activities to evaluate the operability and accuracy of radiation monitoring instrumentation, and the adequacy of the respiratory protection program relative to maintaining and issuing self-contained breathing apparatus (SCBA). Implementation of these programs was reviewed against the criteria contained in 10 CFR 20, "Standards for Protection Against Radiation;" applicable industry standards; and Pilgrim procedures.

The inspector reviewed the UFSAR to identify area, process, and emergency monitors that are installed at Pilgrim for the protection of workers. The inspectors reviewed the current calibration records for selected instrumentation, including the Turbine Building Radwaste Sump Area monitor (1815-8C), the Reactor Building 23' South East Access Area monitor (1815-2D), and the Reactor Building Outside Traversing In-Core Probe Room monitor (1815-2B).

The inspector selected hand-held radiation instruments, air monitors, contamination monitors, and electronic dosimeters currently in use in the plant, and reviewed the calibration records for this instrumentation. Included in this review were the calibration records for selected electronic dosimeters (DMC-2000), radiation survey instruments (RO-2, RO-2A, RO-20, Wide Range Telepole), contamination survey instruments (RM-14, MD-12, SAM-9), count room scalers (BC-4, SAC-4), and air samplers (H809V, Victoreen Lapel Sampler).

The inspector reviewed the maintenance records, safety interlock checks, and current calibration source activity/dose rate determinations for the Shepard Model 78, Shepard Model 423, and Model 773 instrument calibrators.

The inspector evaluated the licensee's program for assuring quality in the radiation monitoring instrumentation and respiratory protection programs by reviewing 16 CRs related to radiation instrumentation, SCBA's, and the monitoring of plant radiation levels to determine if problems were identified in a timely manner and appropriate corrective actions were taken to resolve the related issues.

There were no incidents of personnel internal exposure resulting in a Committed Effective Dose Equivalent > 50 mrem that would require an in-depth evaluation of whole body counting instrumentation and bioassay techniques.

The inspector reviewed actions for radiation worker and radiation protection technician errors to determine whether the corrective actions were adequate to prevent recurrence.

The inspector verified calibration due dates and observed a technician performing source checks on a variety of instruments including portable radiation survey instruments (RO-2, Wide Range Telepole), contamination survey instruments (RM-14s, SAM 9), count room scalers (BC-4), and personal contamination monitors (PPM-1, PM-7).

The inspector reviewed surveillance records for ten SCBAs staged for use in the control room, Radiological Controlled Area access location, and the fire brigade equipment staging area in the fire service pump building. The inspector observed a technician perform an inspection of six of the ten units staged for use. The inspector observed a technician fill two SCBA air bottles from the air compressor unit. The sample results for breathing air, used to refill the SCBA tanks, were reviewed to confirm that air quality met CGA-G-7.1-2004 Grade D standards.

The inspector evaluated the adequacy of the respiratory protection program regarding the issuance of SCBAs to workers. Training and qualification records for licensed operators, radiation protection technicians, and fire brigade members required to wear SCBA's, in the event of an emergency, were reviewed.

b. Findings

No findings of significance were identified.

2PS3 Radiological Environmental Monitoring Program and Radioactive Material Control Program (71122.03)

a. Inspection Scope (1 sample)

During the period October 15-18, 2007, the inspector conducted the following activity to determine whether the licensee's surveys and controls are adequate to prevent the inadvertent release of licensed materials into the public domain. Implementation of these controls was reviewed against the criteria contained in 10 CFR 20, “Standards for Protection Against Radiation;” TS; and Entergy procedures. This inspection activity represents completion of one sample relative to this inspection area.

The inspector observed the radioactive material survey and release locations. The methods used for control, survey, and release were inspected and included observations of the performance of personnel surveying and releasing material for unrestricted use and verifying that the work is performed in accordance with plant procedures.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES [OA]

4OA1 Performance Indicator (PI) (71151)

.1 Mitigating System Cornerstone

a. Inspection Scope (2 samples)

The inspectors sampled data for the Mitigating System Performance Index PIs for the EDGs and cooling water systems (Salt Service Water and RBCCW) for the 4th quarter 2006 and 1st, 2nd and 3rd quarter 2007 to assess the completeness and accuracy of the reported information. The inspectors reviewed operator logs, CRs, maintenance rule documents, maintenance records, Licensee Event Reports (LERs), system health reports, and plant process computer information. The acceptance criteria used for the review were Nuclear Energy Institute (NEI) 99-02, Revision 5, "Regulatory Assessment Performance Indicator Guidelines."

b. Findings

No findings of significance were identified.

.2 Physical Protection Cornerstone

a. Inspection Scope (3 samples)

The inspectors performed a review of PI data submitted by the licensee for the Physical Protection Cornerstone. The review was conducted of the licensee’s programs for gathering, processing, evaluating, and submitting data for the Fitness-for-Duty, Personnel

Screening, and Protected Area Security Equipment PIs. The inspectors determined whether the PIs had been properly reported as specified in NEI 99-02. The review included the licensee's tracking and trending reports, personnel interviews, and security event reports for the PI data collected since the last security baseline inspection. The inspector noted from the licensee's submittal that there were no reported failures to properly implement the requirements of 10 CFR 73, "Physical Protection of Plants and Materials," and 10 CFR 26, "Fitness for Duty Programs," during the reporting period. This inspection activity represents the completion of three samples relative to this inspection area; completing the annual inspection requirement.

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems (71152)

.1 Review of Items Entered into the Corrective Action Program (CAP)

a. Inspection Scope

The inspectors performed a screening of each item entered into the licensee's CAP. 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 Semi-Annual Review to Identify Trends

a. Inspection Scope (1 sample)

As required by Inspection Procedure 71152, "Identification and Resolution of Problems," the inspectors performed a review of Entergy's CAP and associated documents to identify trends that could indicate the existence of a more significant safety issue. The inspectors review was focused on repetitive equipment and corrective maintenance issues but also considered the results of daily inspector CAP item screening discussed in Section 4OA2.1. The review also included issues documented in CAP trend reports and site CAP performance indicator data. The inspectors review considered the six month period of June through December, 2007, although the inspectors also evaluated the trend review results discussed in NRC IR 05000293/2007003, which reviewed CRs from October 2006 through May 2007. Documents reviewed during the inspection are listed in the Attachment.

b. Assessment and Observations

No findings of significance were identified. The inspectors noted a number of plant equipment configuration control issues discussed in the third quarter 2007 Pilgrim Station Quarterly Trend Report, including:

- CR-PNP-2007-00303, PS-CKVS-B (Crankcase Pressure Switch “B” Diesel) not valved in correctly;
- CR-PNP-2007-01446, RCIC check valve 1301-CK-50 initial position found open instead of closed;
- CR-PNP-2007-02383, Breaker B1446 (EDG “B” Diesel Oil Transfer Pump) found “OFF,” normal position is “ON;”
- CR-PNP-2007-02468, Isolation valve found closed on Reactor Pressure Transmitter;
- CR-PNP-2007-02476, Spare breaker found closed when it was expected to be open; and
- CR-PNP-2007-02651, EDG failed to start (likely due to fuel rack and governor left in full fuel position).

The report concluded that the number of issues “does not exhibit an adverse or emerging trend,” but that Operations Management considers the number of “mispositionings” to be at an unacceptable level. The inspectors also considered the number of issues discussed in the report to be at an unacceptable level, however, the inspectors also concluded that these issues represent a low level trend in the area of configuration control. The inspectors have discussed this trend with licensee management and will continue to monitor configuration control issues at Pilgrim during this assessment period.

.3 Annual Sample: Review of Outage CRs

a. Inspection Scope (1 sample)

The inspectors reviewed a sample of CRs from Pilgrim's 2007 refueling outage to determine whether CRs initiated during the outage were processed and closed in accordance with Pilgrim procedures. The inspectors reviewed two Apparent Cause Evaluations conducted by Pilgrim. The inspectors evaluated whether corrective actions taken by Pilgrim addressed each CR as well as the overall process. Documents reviewed are listed in the Attachment.

b. Assessment and Observations

No findings of significance were identified. The inspectors determined that there were many instances where the condition review group (CRG) closed a lower level (Category D) CR to "supervisory oversight." Managers would perform follow-up and close the CR with a general statement such as "Corrective actions for the CR were reviewed by the responsible manager. Upon the manager's recommendation, this CR is being closed." This practice resulted in a condition where corrective actions for a particular issue could not be tracked or demonstrated. Pilgrim has since discontinued this practice as an acceptable closure strategy for Category D CRs.

.4 Annual Sample: Review of Motor Operated Valve (MOV) Hydraulic Lock

a. Inspection Scope (1 sample)

The inspectors selected CR-PNP-2006-04328 for detailed review. The CR was written to determine the cause of a safety-related MOV failure in the RHR system during routine surveillance testing. The inspectors reviewed the licensee's root cause analysis, corrective actions, and the prioritization of the corrective actions.

b. Assessment and Observations

No findings of significance were identified. The inspectors determined that the licensee performed a thorough root cause analysis and took timely corrective actions to prevent recurrence. The root cause was determined to be hydraulic locking of the MOV actuator due to grease found inside of the spring package. The grease prevented the spring package from compressing which in turn prevented the thermal overloads from tripping. The tripping of the thermal overloads stops the motor and provides the indication that the valve is closed.

The root cause analysis determined that newer MOVs in the plant were not susceptible to hydraulic lock because the valves have an internal grease relief path from the spring package to the actuator housing. However, most MOVs at Pilgrim did not have the internal grease relief path. Immediate corrective actions included looking inside the spring package of all safety-related MOVs for grease. Long term corrective actions for this issue included a design modification to provide an external grease relief path from the spring package back to the actuator housing. All of the high priority valves have been modified. The last low priority valve to receive this modification is scheduled to be performed in the next refueling outage. The inspectors determined that the prioritization of the corrective actions was appropriate.

.5 Annual Sample: Follow-up Review of Component Design Bases Inspection (CDBI) Finding Regarding the Inadequate Operability Determination for the HPCI Turbine Trip Solenoid Failure

a. Inspection Scope (1 sample)

The inspectors reviewed the corrective actions for a finding identified during the CDBI and documented in inspection report number 05000293/2006006. The finding was associated with Entergy’s failure to declare the HPCI system inoperable due to a HPCI turbine trip solenoid failure. The inspectors reviewed CR-PNP-2006-01460 to determine whether the corrective actions were appropriate and completed. As part of this review, the inspectors examined various safety system operating procedure changes to assess their adequacy. The documents reviewed are listed in the Attachment to this report.

b. Assessment and Observations

No findings of significance were identified. Entergy’s initial failure to declare HPCI inoperable was due to licensing and operations department management focusing on the ability of the HPCI system to perform its accident analysis function versus a discussion of the HPCI system TS requirements. The focus did not address the ability of the HPCI system to automatically trip on high water level in the reactor vessel, as described in TS 3.2.B, “Protective Instrumentation Core and Containment Cooling Systems - Initiation and Control.” As a result, the HPCI system should have been considered inoperable regardless of the ability of the system to perform its accident analysis function.

The inspectors determined that the licensee’s corrective actions were appropriate. Entergy determined the failure to declare HPCI inoperable was due to a lack of independence of the operations department and licensing departments in reviewing operability determinations. The inspectors noted that Entergy immediately implemented operations department training regarding independent review of emerging TS issues. Also, Entergy revised safety system operating procedures to include a section on TS instrumentation requirements.

4OA3 Event Follow-up (71153)

.1 Infrequently Performed Evolution: MG Set Power Transfer

a. Inspection Scope (1 sample)

On October 3, 2007, Pilgrim operators performed a planned manual transfer of vital alternating current (AC) power from its normal power source, the vital MG set, to its alternate power source, bus B15, with the plant at power. This infrequently performed evolution was conducted to remove the vital MG set from service for repairs. The evolution posed several challenges to Pilgrim operators because the transfer of the vital AC power from its normal to its alternate source would cause a momentary interruption in vital AC power. Similar evolutions in the past had resulted in complications such as the receipt of reactor building isolation signals, feed regulating valve position lock ups, and recirculation pump scoop tube position lock ups. Entergy developed a new procedure for this evolution, Procedure 2.2.16, Attachment 8, “A Manual Transfer of Y2 to Motor Control Center (MCC) B15 with the Units On-line.” The procedure established several compensatory measures to mitigate the effects of a component malfunction or unexpected response. For instance, operators were briefed on Procedure 2.4.49, Section 4.4, “A Manual Lockup of Feed Regulating Valve(s) from the Condenser Bay,” and were stationed outside the condenser bay to take manual control of the valves if needed. Additionally, operators inserted a reactor building isolation signal before the vital power transfer, to prevent the signal from coming in during the transfer. The inspectors reviewed the procedure and observed the evolution from the control room to assess operator actions, command and control, and the adequacy of communications within the control room and between the control room and the field.

b. Findings

No findings of significance were identified.

.2 LER Review and Closeout (1 sample)

(Closed) LER 05000293/2007-005-00, Reactor Scram Resulting from Low Vacuum Turbine Trip

a. Inspection Scope

The inspectors reviewed Entergy's actions associated with LER 50-293/2007-05-00, which discussed the July 10, 2007, low vacuum turbine trip and automatic reactor scram event. The inspectors reviewed the licensee's LER and associated root cause evaluation. Additionally, the inspectors verified that follow-up actions, taken or planned, were appropriate to address the event. This LER is closed.

b. Findings

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

Description: On July 10, 2007, an unplanned automatic reactor scram occurred while performing condenser thermal backwashes at approximately 48 percent power. The reactor protection system (RPS) scram signal was initiated by the trip of the main turbine on low condenser vacuum. Pilgrim operators stabilized the plant in a shutdown condition and made a four-hour notification to the NRC. Post scram review of the as-found setpoint for vacuum trip switch, VTS-1, revealed that the trip setpoint was set to actuate at 24.35" Hg rather than the expected 21.95" – 22.45" Hg. Entergy recalibrated the vacuum switch and restored the plant to 100 percent power on July 16, 2007.

Entergy conducted a root cause evaluation of the unplanned scram and summarized their results in LER 2007-005-00, "Reactor Scram Resulting from Low Vacuum Turbine Trip." Entergy determined that the root cause of the event was that the technician who had calibrated the VTS-1 switch during RFO 16 had not properly implemented human performance tools (e.g., training) for this particular type of large volume instrument to ensure a proper calibration. Specifically, since the bellows for VTS-1 are very large, the vacuum must be decreased slowly during the calibration in order for an accurate setpoint to be obtained. While obtaining the as-found setpoint, the technician did not decrease the vacuum slowly which resulted in faulty as-found results. Additionally, when the as-found data suggested that the vacuum switch was considerably outside of historical results, the technician did not question the validity of the data nor did he obtain a peer check. The technician then made adjustments to the instrument using the incorrect as-found data.

Entergy's root cause report also discussed several weaknesses with Procedure 8.F.51, "Turbine Generator and Auxiliary Instruments Calibration." Specifically, the root cause report noted that "additional details in the procedure would provide an additional barrier to ensure the proper calibration technique is achieved." However, the inspectors noted that Entergy had not identified these procedural weaknesses as a contributing cause to this event. The inspectors concluded that the lack of procedural specificity and guidance contributed to the improper calibration of VTS-1. Entergy's corrective actions for this aspect included adding steps to the procedure to decrease the vacuum at a slower rate, to include detailed guidance on the adjustments of the trip and span of the vacuum trip assembly, and to require supervisory review of as-found data and testing techniques prior to performing adjustments.

Analysis: The performance deficiency associated with this finding is that Entergy did not ensure the proper verification and calibration of vacuum trip switch VTS-1 during RFO 16. The improper setpoint resulted in a low vacuum turbine trip and consequent automatic reactor scram on July 10, 2007. This finding is more than minor because it is associated with the human performance attribute of the Initiating Events Cornerstone and affects the cornerstone objective of limiting the likelihood of those events that upset plant stability during power operations. The inspectors conducted a Phase 1 screening in accordance with IMC 0609, "Significance Determination Process," Appendix A, "Reactor Inspection Findings for At-Power Situations." The finding was determined to be of very low safety significance (Green) because it did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment would be unavailable. This finding has a cross-cutting aspect in the area of Human Performance, Work Practices, because Entergy proceeded in the face of uncertainty or unexpected circumstances by continuing with the calibration procedure even though the vacuum trip switch setpoint was found significantly outside of historical as-found values. [H.4(a)]

Enforcement: Enforcement action does not apply because the performance deficiency did not involve a violation of a regulatory requirement in that the vacuum trip switch is not a safety-related component. Entergy has entered this issue into their corrective action program as CR-PNP-2007-3231. Corrective actions included recalibrating VTS-1 before the plant restart, providing remedial training for the technician who had conducted the improper calibration, and adding vacuum switch fundamentals as a continuing training topic for the instrumentation and controls (I&C) technicians. Additional corrective actions planned by Entergy include revising Procedure 8.F.51 to include more detailed guidance and to require a supervisory review of as-found data prior to performing adjustments; conducting just-in-time training prior to the RFO 17 vacuum trip switch setpoint verification and calibration; and identifying and revising other I&C procedures involving critical calibrations. Because this violation does not involve a violation of regulatory requirements and has a very low safety significance, it is identified as **FIN 05000293/2007005-01, Improper Calibration of Vacuum Trip Switch Results in an Automatic Reactor Scram.**

4OA6 Meetings, Including Exit

On October 18, 2007, an Occupational Radiation and Public Radiation Safety exit meeting was conducted. The preliminary inspection results were presented to Robert Smith, General Manager Pilgrim Operations, and other members of the Pilgrim staff. The licensee did not identify any material as proprietary during this inspection.

On October 18, 2007, the Security inspection results were presented to members of licensee management.

On January 9, 2008, the resident inspectors conducted an exit meeting and presented the preliminary inspection results to Mr. Kevin Bronson, Site Vice President, and other members of the Pilgrim staff. The inspectors confirmed that no proprietary information was provided or examined during the inspection.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee personnel:

S. Bethay	Nuclear Safety Assurance Director
K. Bronson	Site Vice President, Pilgrim
H. Bouska	Supervisor, Operations Training
D. Burke	Security Manager
L. Foreaker	Supervisor, Radiation Instrumentation
J. Henderson	Manager, Radiation Protection
M. Gakka	Licensing
T. Kelly	Technician, Radiation Protection
R. Larson	Technician, Radiation Protection
W. Lobo	Licensing Engineer
J. Lynch	Licensing Manager
F. Marcussen	Protective Services Department Manager
C. McMorrow	Senior Operations Instructor
D. Noyes	Operations Director
M. Santiago	Superintendent, Nuclear Training
L. Seehaus	Technician, Radiation Protection
R. Smith	Plant Operations General Manager
D. Towmey	Lead Technician, Radiation Protection

LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

Opened and Closed

05000293/2007005-01	FIN	Improper Calibration of Vacuum Trip Switch Results in an Automatic Reactor Scram

Closed

05000293/2007-005-00	LER	Reactor Scram Resulting from Low Vacuum Turbine Trip

LIST OF DOCUMENTS REVIEWED

Section 1R01
UFSAR Table 10.9-1, Design Temperatures
NRC IN 96-036, Degradation of Cooling Water Systems Due to Icing
NRC IN 98-002, Nuclear Power Plant Cold Weather Problems and Protective Measures
Procedure 8.C.40, Seasonal Weather Surveillance, Attachment 1, Cold Weather Preparations, Revision 19
Procedure 2.2.35, Condensate Storage and Transfer System, Revision 40

Section 1R04

Drawing M215 Sheet 2, Revision 48, P&ID Cooling Water System Reactor Building
Drawing M215 Sheet 5, Revision E8, Composite P&ID Cooling Water System Reactor Building
Procedure 2.2.30, Revision 65, RBCCW System
CR-PNP-2007-04299
Procedure 2.2.19, Residual Heat Removal System, Revision 95
M241, P21D, Residual Heat Removal System, Revision 47
PNPS Procedure 2.2.21, Revision 72, High Pressure Coolant Injection System
Procedure 7.1.44, "Sampling of Charcoal Cells in SBGT and Control Room Environmental Filters' Systems for Methyl Iodide Testing", completed on 11/28/06 for "B" SBGT
LO-NOE-2007-00092
PNPS Procedure 2.2.50, SBGT
PNPS Drawing M294, Heating Ventilation and Air Conditioning SBGT System Control Diagram, Revision 16
WO 05106023, Leak Rate Test of Air Supply for SBGT System Dampers, 10/2/07
PNPS Procedure 8.M.2-7.1.19, Revision 4, Attachment 4, "Allowable Daily Leakage Rate"
PNPS Final Safety Analysis Report, Revision 10, Chapter 5.3.3.4, SBGT System
PNPS Final Safety Analysis Report, Revision 10, Chapter 7.18, Reactor Building Isolation and Control System
CR-PNP-2007-03013
Pilgrim TS 3.7.B, SBGT System and Control Room High Efficiency Air Filtration System
Procedure 2.2.30, RBCCW System, Revision 65
Procedure 3.M.3-47.2, “B” Train Functional Test of Individual Load Shed Components, Revision 18

Section 1R05

Pre Fire Plan, Screenhouse Building EL. 23'
Pre Fire Plan, Reactor Building Quads, EL. 17'6"
89XM-1-ER-Q, Updated Fire Hazards Analysis, Revision E5
Procedure 5.5.2, Special Fire Procedure, Revisions 29 and 37
PNPS Procedure 8.B.17.2, Inspection of Fire Damper Assemblies, Attachment 1, Revision 9, completed 4/3/07
PNPS Procedure 8.B.17.2, Inspection of Fire Damper Assemblies, Attachment 11, Revision 9, completed 4/4/07

Section 1R06

PNPS-PSA, Revision 1, PNPS Probabilistic Safety Assessment IPE Update
NRC IN 2007-01, Recent Operating Experience Concerning Hydrostatic Barriers
Procedure 3.M.4-96, Floor Plug and Vault Hatch Seals
CR-PNP-2007-01020, CR-PNP-2006-03750, CR-PNP-04223, CR-PNP-00312, CR-PNP-01123, CR-PNP-02708, CR-PNP-03457

Section 1R11

Lesson Plan O-RO-07-02-01, Revision 4, Emergency Classification and Notification
NRC RIS 2007-02, Clarification of NRC Guidance for Emergency Notifications During Quickly Changing Events
EP-IP-100, Revision 26, Emergency Classification and Notification

EP-IP-300, Revision 6, Offsite Radiological Dose Assessment
EP-IP-400, Revision 11, PARs
Lesson Plan O-RO-07-03-03, Revision 0, PARs, EP-IP-400
CR-PNP-2007-4587, Control Room does not have the same weather assessment capability (160' Met Tower) for EAL assessment as the EOE
CR-PNP-2007-4591, EP-IP-400 states that core temperature >2400F is indication of substantial core damage, this temperature is not able to be obtained

Section 1R12
EN-DC-203 R0, MR Program
EN-DC-204 R0, MR Scope and Basis
EN-DC-205 R0, MR Monitoring
EN-DC-206 R0, MR (a)(1) Process
EN-LI-102 R9, CA Process
EN-LI-121 R6, Entergy Trending Process
CR-PNP-2007-00552 “B” EDG exceeded MR reliability performance criteria
CR-PNP-2007-03849 CA1 Functional Failure Determination Form (9/3/07)
CR-PNP-2007-03673 Turbine Controls System (a)(1) Action Plan
CR-PNP-2007-00552 “B” EDG (a)(1) Action Plan
Health Report, System 02, Reactor Recirculation 3rd Qtr 2007
Health Report, System 29, Salt Service Water 3rd Qtr 2007
Health Report, System 01, Main Steam, 3rd Qtr 2007
10/09/2007, MR Expert Panel Meeting Minutes

Section 1R13
Risk Management Actions
CR-PNP-2007-04579, Small leak observed at the base of the "A" EDG turbo charger gas inlet casing
Procedure 2.2.16, Revision 50, Attachment 8, Manual Transfer of Y2 to MCC B15 with the unit on-line
TS 3.5.C.2, HPCI System
Equipment out of service (EOOS) quantitative risk assessment tool
Procedure 3.M.1-45, Outage Shutdown Risk Assessment, Revision 6
Risk Assessment Review Checklist for 12/10 08:00 to 12/12 18:00
EOOS Scheduler’s Evaluation for PNPS for 12/10 0:00 to 12/13 12:00
Risk Assessment Review Checklist for 12/10 08:00 to 12/12 18:00, Revision A

Section 1R15
CR-PNP-2007-03708, Adjustments of the MPR Setpoint have been required.
ODMI Action Plan for MPR Setpoint Adjustments
Apparent Cause Evaluation for MPR Setpoint Drifting
CR-PNP-2006-01802
CR-PNP-2007-04172
Operability Determination for CR-PNP-2007-04172
Procedure 8.9.1, Revision107, Attachment 3, EDGs On-Site Fuel Oil Quantity
TS 3.9.A, Revision 212, Auxiliary Electrical Equipment
TS 3.5.C, HPCI System
TS 3.12, Fire Protection, Alternate Shutdown Panels

CR-PNP-2007-04724, HPCI did not achieve rated flow during operability testing
50.72 Notification for loss of HPCI Safety Function
Entergy procedure ENN-OP-104, “Operability Determinations”
CR-PNP-2007-04841, Initial operability review for pump P203D pump suction pressure drop value not acceptable
CR-PNP-2007-04871, LPCI system loop “B” pump and valve quarterly operability
Procedure 8.5.2.2.2, LPCI system loop “B” Operability-Pump Quarterly and Biennial (Comprehensive) Flow Rate Tests and Valve Tests
51535468 01, Work Order, LPCI system loop “B” PP V1v Quarterly Operability
P203D Test Date Sheet, RHR Inservice pump test data sheets for 11/26 and 12/3/2007

Section 1R19

Procedure 8.5.3.2.1, Revision 19, Attachment 1D, Quarterly and Biennial (Tech Spec/IST) Test Procedure for SSW pump D (P-208-D)
CR-PNP- 2007-04274, CR 2007-04251, CR 2007-04264
Apparent Cause Evaluation for CR 2007-4274
WO 51532443, Replace Bladder in T-223A with New Butyl Rubber Bladder, 10/11/07
WO 00129585, "A" EDG, Leakage Observed from Base of Turbocharger, CR 2007-04172
CR-PNP-2007-04724
M1J18-11, Elementary Diagram High Pressure Coolant Injection System
4533K40-800, page 43/44, Figure 24: Schematic Diagram of Type 540-01 and 540-51 controller (for HPCI flow controller)
MR 51534480 - Install Hydraulic Lock Modification for HPCI MO-6
MR 51534482 - Install Hydraulic Lock Modification for HPCI MO-35
MR 51534483 - Install Hydraulic Lock Modification for HPCI MO-3
MR 51534484 - Install Hydraulic Lock Modification for HPCI MO-14
Procedure 1.3.34, Operations Administrative Policies and Processes, Revision 113
Procedure 2.2.21.5, HPCI Injection and Pressure Control, Revision 13
Procedure 8.5.4.1, HPCI System Pump and Valve Quarterly and Biennial Comprehensive Operability, Revision 102
Procedure 8.5.4.4, HPCI Valve (Quarterly) Operability Test, Revision 48
Procedure 8.E.23, HPCI System Instrument Calibration, Revision 65
Procedure 8.M.2-2.5.7, Instrument Functional/Calibration Test For HPCI Suppression Chamber Water Level, Revision 49
WO 00131058, HPCI Injection Flow Controller
50.72 Event Report to USNRC: High Pressure Coolant Injection Inoperable, dated November 20, 2007
Control Room (day) Shift Narrative Logs, dated November 19, 2007
LER 2000-002-00, “High Pressure Coolant Injection System Inoperable due to Power Inverter Failure”
TS 3.12, Fire Protection, Alternate Shutdown Panels
WO 00125819, Source Range Monitor (SRM) Discriminator (SRM B)
WO 00133189, SRM B Neutron Flux Response Functional Test
CR-PNP-2007-04937, Air leakage identified at connection between the solenoid valve and the manifold
Procedure 3.M.4-6, Removal, installation, Test, Disassembly, Inspection, and Reassembly of Main Steam Relief Valves
3379-270-3 E5, Main Steam SRV Sheets 1, 2, 3 and 4

3379-271-1 E1, Main Steam SRV Parts List Sheets 1, 2, 3, and 4
WO 51535014, WO RV-203-3B Tailpipe temperature has trended up-pilot valve change out
WO 00133198, WO Automatic Depressurization System subsystem manual opening of relief valves
Procedure 2.1.19, Suppression chamber temperatures
Procedure 8.5.6.2, Special test for ADS system manual opening of relief valves

Section 1R20
PNP On-Line Master Schedule, dated 11/30/07, 12/10/07, and 12/11/07
Procedure 2.1.5, Controlled Shutdown from Power, Revision 103
Procedure 2.2.19.1, Residual Heat Removal System - Shutdown Cooling Mode of Operation, Revision 24
Procedure 2.1.1, Startup from Shutdown, Revision 162
Procedure, 2.1.7, Vessel Heatup and Cooldown, Revision 52, completed 12/12/2007

Section 1R22
Procedure 8.5.5.1, Revision 56, RCIC Pump Quarterly and Biennial Operability Flow rate and Valve Test at approximately 1000 psig
WO 51534877, RCIC Pump Operability and Flow Rate Test at 1000 psig, 10/10/07
CR-PNP-2007-04640; CR-PNP-2007-04816; CR-PNP-2007-04835
Procedure 6.1-220, Radiological Controls for High Risk Evolutions, Revision 2
Procedure 8.I.1.1, Inservice Pump and Valve Testing Program, Revision 21
Procedure 8.5.4.1, HPCI System Pump and Valve Quarterly and Biennial Comprehensive Operability, Revision 102
EN-RP-131, Attachment 9.2, Revision 3, Air Sampling results from November 11, 2007
EN-RP-131, Attachment 9.2, Revision 3, Air Sampling results from November 19, 2007
Control Room (day) Shift Narrative Logs, dated 11/20/2007
Technical Specification 3.5.C, High Pressure Coolant Injection
UFSAR Section 6.5.2.3, High Pressure Coolant Injection System
USNRC Letter to Entergy: PNPS - Entergy Relief Request PR-03 High Pressure Coolant Injection Pump, dated August 29, 2005
Procedure 2.1.15, Daily Surveillance Log, Revision
Procedure 8.M.2-5, Drywell Drain Sump Integrator, Revision 9, Attachment 1, completed 10/18/07
Procedure 8.M.2-5, Drywell Drain Sump Integrator, Revision 9, Attachment 2, completed 10/6/05
Drawing C-75, Reactor Building Foundations Drywell Concrete @ El. 9'-2, Revision 4
ER# 06110910, Attachment 9.1
Control Room Shift Narrative Logs, dated 12/5/2007 through 12/7/2007

Sections 2OS1/2OS2/20S3
6.5-003, Revision 8, Radiation Protection Instrumentation Calibration Frequency
6.5-160, Revision 31, Calibration of the Area Radiation Monitoring System
6.5-170, Revision 21, Calibration of Ventilation System Radiation Monitors Using ARM Type Sensor/Converters
6.5-307, Revision 16, Calibration of the Eberline RO-2/RO2A or RO-20 Ion Chamber
6.5-311, Revision 10, Calibration of the Eberline Model RO-7 Radiation Monitor
6.5-341, Revision 11, Calibration of the MDC 2000S Electronic Dosimeter
6.7.1-106, Revision 14, Inspection and Testing of Respiratory Protection Equipment
6.7.1-201, Revision 8, Operation of the SCBA Air Compressor

EN-RP-121, Revision 1, Radioactive Material Control
EN-RP-301, Revision 0, Radiation Protection Instrument Control
EN-RP-303, Revision 0, Source Checking of Radiation Protection Instrumentation
EN-RP-502, Revision 1, Inspection and Maintenance of Respiratory Protection Equipment
Calibration Records:
Electronic Dosimeter Calibration (Serial Nos. 176631, 219267, 178032, 177025, 170628)
E-520 (Serial No. 722)
SAC-4 (Serial No. 1402)
BC-4 (Serial No. 484)
Victoreen Lapel Sampler (Serial No. c1138)
H809V (Serial No. 6168)
PM-7(Serial No. 600, 392)
Wide Range Telepole (Serial No. 6603-027)
RO-2 (Serial No. 3410)
RO-2A (Serial No. 3295)
RO-20 (Serial No. 325, 285)
RO-7 (Serial No. 1030)
RM-14 (Serial No. 8565)
SAM-9 (Serial No. 308)
MD-12 (Serial No. 135005)
CR-PNP-2007-00078, 00426, 01012, 01077
CR-PNP-2006-00844, 01290, 01792
CR-PNP-2007-00341, 01372, 03317
CR-PNP-2006-00620, 00843, 01432, 03085, 03922, 03935
SCBA Numbers :1, 2, 3, 4, 5, 10, 11, 12, 13, 14
Miscellaneous Records & Reports:
Mask Qualification List
Root Cause Analysis Report for CR-PNP-07-3880
Instructional Module C-FB-02-02-01, Revision 7 Self-Contained Breathing Apparatus

Section 4OA2

Limitorque Maintenance Update 90-1
Limitorque Maintenance Update 88-2
ER 07101434, Revision 0, Installation of External Grease Relief Bypass on Limitorque Actuators
ER 07112191, Revision 0, Revision to VM-0390 to Provide Additional Instructions for Installation of MOV External Grease Relief Modifications
DRN 07-01007, Limitorque Valve Controls
Third quarter 2007 Pilgrim Station Quarterly Trend Report
NRC IR 2007-003
CR-PNP-2007-03925, Potential Adverse Trend in Station Mispositioning errors
CR-PNP-2007-00303, PS-CKVS-B (crankcase pressure switch “B” diesel) not valved in correctly
CR-PNP-2007-01446, RCIC check valve 1301-CK-50 initial position found open instead of closed
CR-PNP-2007-2383, Breaker B1446 (EDG “B” Diesel Oil Transfer Pump) found “OFF”, normal position is “ON”
CR-PNP-2007-02468, Isolation valve found closed on Reactor Pressure Transmitter
CR-PNP-2007-02476, Spare breaker found closed when it was expected to be open
CR-PNP-2007-02651, EDG failed to start (likely due to fuel rack and governor left in full fuel position)

Procedure 2.2.21, High Pressure Coolant Injection System, Revision 72
Procedure 2.2.19, Residual Heat Removal System, Revision 95
Procedure 2.2.3, Automatic Depressurization System, Revision 23
Procedure 2.2.8, Emergency Diesel Generator, Revision 90

LIST OF ACRONYMS

AC	alternating current
ADAMS	Agencywide Documents Access and Management System
CAP	corrective action program
CDBI	component design bases inspection
CFR	Code of Federal Regulations
CR	condition report
CRG	Condition Review Group
DRP	Division of Reactor Projects
DRS	Division of Reactor Safety
EAL	emergency action level
EDG	emergency diesel generator
gpm	gallon per minute
Hg	mercury
HPCI	high pressure coolant injection
I&C	instrumentation and controls
IMC	Inspection Manual Chapter
IR	Inspection Report
LER	Licensee Event Report
MCC	motor control center
MG	motor generator
MO	motor-operated
MOV	motor-operated valve
MPR	mechanical pressure regulator
mrem	millirem
NEI	Nuclear Energy Institute
NRC	Nuclear Regulatory Commission
PAR	Protective Action Recommendation
PARS	Publicly Available Records
PI	Performance Indicator
PMT	post-maintenance test
PNPS	Pilgrim Nuclear Power Station
RBCCW	reactor building closed cooling water
RCIC	reactor core isolation cooling
RCS	reactor coolant system
RFO	refueling outage
RHR	residual heat removal
RV	relief valve
RPS	reactor protection system
SBGT	stand by gas treatment
SCBA	self-contained breathing apparatus

SDP	Significance Determination Process
SRM	source range monitor
SRO	senior reactor operator
SRV	safety relief valve
SSC	system, structure, or component
SSW	salt service water
TS	Technical Specifications
UFSAR	Updated Final Safety Analysis Report
URI	unresolved item
VTS	vacuum trip switch
WO	work order