UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
475 ALLENDALE ROAD
KING OF PRUSSIA, PA 19406-1415

April 24, 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 05000293/2008002

Dear Mr. Bronson:

On March 31, 2008, 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 April 8, 2008, with Mr. Robert Smith, General Manager Pilgrim Operations, 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 NRC-identified finding of very low safety significance (Green). The finding was determined to involve a violation of NRC requirements. However, because of the very low safety significance and because it was entered into your corrective action program, the NRC is treating this finding as a non-cited violation (NCV), in accordance with Section VI.A.1 of the NRC's Enforcement Policy. If you contest the NCV in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN.: Document Control Desk, Washington DC 20555-0001; with copies to the Regional Administrator, Region I; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at the Pilgrim Nuclear Power Station.

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 05000293/2008002
w/Attachment: Supplemental Information

cc w/encl:
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Senior Vice President, Entergy Nuclear Operations
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Senior Manager, Nuclear Safety & Licensing, Entergy Nuclear Operations
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U.S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket No:	50-293
License No:	DPR-35
Report No:	05000293/2008002
Licensee:	Entergy Nuclear Operations, Inc.
Facility:	Pilgrim Nuclear Power Station (PNPS)
Location:	600 Rocky Hill Road Plymouth, MA 02360
Inspection Period:	January 1, 2008 through March 31, 2008
Inspectors:	M. Schneider, Sr. Resident Inspector, Division of Reactor Projects (DRP) G. Johnson, Operations Engineer, Division of Reactor Safety (DRS) G. Newman, Reactor Engineer, DRP B. Norris, Senior Project Engineer, DRP R. Rolph, Health Physicist, DRS T. Burns, Reactor Engineer, DRP J. Schoppy, Sr. Reactor Inspector, DRS N. Sieller, Project Engineer, DRP
Approved By:	Raymond J. Powell, Chief Projects Branch 5 Division of Reactor Projects

Enclosure

TABLE OF CONTENTS

SUMMARY OF FINDINGS

IR 05000293/2008-002; 01/01/2008-03/31/2008; Pilgrim Nuclear Power Station; Maintenance Risk Assessments and Emergent Work Control.

The report covered a 13-week period of inspection by resident and region-based inspectors. One Green finding, which was a non-cited violation (NCV), 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: Mitigating Systems

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

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

  This finding has a cross-cutting aspect in the area of Human Performance, Decision Making, because Entergy did not use a systematic process to make a risk-significant decision, when faced with an unexpected plant condition. [H.1(a)] (Section 1R13)

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.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R01 Adverse Weather Protection (71111.01)

a. Inspection Scope (1 System Seasonal susceptibility sample including review of two risk significant systems)

The inspectors reviewed actions taken by the licensee for extreme cold weather during the week of January 20, 2008. The site experienced several days of below normal temperatures and Entergy implemented the "Severe Cold Weather Actions" specified in Procedure 8.C.40, "Seasonal Weather Surveillance." The inspectors conducted the inspection on the night of January 20, 2008, and walked down selected areas addressed in the procedure to determine if cold weather damage had occurred. The inspectors also walked down exterior portions of the Fire Protection system, the Emergency Diesel Generator (EDG) rooms, the Diesel Fire Pump room and the Fire Equipment storage area. Documents reviewed during the inspection are listed in the Attachment.

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:

- Station Blackout Diesel Generator;
- ”B” EDG Starting and Turbo-Boost Air following work on air compressors;
- Reactor Core Isolation Cooling system just prior to a High Pressure Coolant Injection system outage; and
- High Pressure Coolant Injection system while the “A” EDG was out-of-service for maintenance.

b. Findings

No findings of significance were identified.

.2 Complete System Walkdown (71111.04S)

a. Inspection Scope (1 sample)

The inspectors completed a detailed review of the “A” EDG system to assess the functional capability of the system. The inspectors conducted a walkdown of the system to determine whether the critical components, such as valves and switches, were aligned in accordance with operating 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 determine whether the deficiencies significantly affected the “A” EDG system function. The inspectors also reviewed recent condition reports (CRs) to determine whether EDG equipment problems were being identified and appropriately resolved. Documents reviewed during the inspection are listed in the Attachment.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05)

.1 Fire Protection - Tours (71111.05Q)

a. Inspection Scope (6 samples)

The inspectors performed walkdowns of six 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 condition of the areas to the fire protection program requirements to determine whether all program requirements were met. In addition, the inspectors reviewed the technical basis for a functionality assessment of the electric fire pump, following the failure to meet surveillance procedure acceptance criteria. Documents reviewed during the inspection are listed in the Attachment. The fire protection areas and capabilities reviewed were:

- Reactor Core Isolation Cooling - Fire Zone 1.5;
- Diesel Driven Fire Pump Room - Fire Zone 5.4;
- "A" Residual Heat Removal/Core Spray Quadrant - Fire Zone 1.1;
- Standby Gas Treatment System - Fire Zone 1.23;
- Spent Fuel Pool Cooling Pumps/Heat Exchanger Area - Fire Zone 1.13; and
- Electric Fire Pump Operational Status Review and Pump Room Walkdown.

b. Findings

No findings of significance were identified.

.2 Annual Fire Drill Observation (71111.05A)

a. Inspection Scope (1 sample)

The inspectors observed an announced fire drill in the tool crib in the Operations and Maintenance Building. The fire drill was conducted in accordance with plant procedure ENN-DC-189, "Fire Drills." The inspectors observed performance of the fire brigade personnel to determine whether the licensee's fire fighting pre-plan strategies were utilized, the pre-planned drill scenario was followed, and the drill objectives were met. The inspectors confirmed that, as appropriate, 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 inspectors observed the drill critique to determine whether areas to improve fire brigade performance were identified. The inspectors verified that the licensee identified appropriate corrective actions for identified deficiencies and entered the issues into the corrective action program.

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 the Reactor Core Isolation Cooling pump room, Flood Zone RB-17C, and associated flood propagation pathways, to assess the effectiveness of Entergy's internal flood control measures. The inspectors assessed the condition of curbing, hatch and conduit seals, floor drains, and floor sump systems. The inspectors also evaluated whether potential sources of internal flooding were analyzed. Documents reviewed during the inspection are listed in the Attachment.

b. Findings

No Findings of significance were identified.

1R07 Heat Sink Performance (71111.07)

a. Inspection Scope (1 sample)

The inspectors reviewed the licensee's program for maintenance, testing, and monitoring of risk significant heat exchangers (HXs) to assess the capability of the HXs to perform their design functions. The inspectors assessed whether the HX program conformed to Pilgrim's commitments to NRC Generic Letter 89-13, "Service Water System Problems Affecting Safety-Related Equipment." In addition, the inspectors evaluated whether any potential common cause heat sink performance problems could affect multiple HXs in mitigating systems or result in an initiating event. Based on risk significance and prior inspection history, the Reactor Building Closed Cooling Water system HXs were selected for review. Documents reviewed during the inspection are listed in the Attachment.

b. Findings

No Findings of significance were identified.

1R11 Licensed Operator Requalification Program (71111.11)

.1 Resident Inspector Quarterly Review (71111.11Q)

a. Inspection Scope (1 sample)

The inspectors observed licensed operator requalification training on February 4, 2008. Specifically, the inspectors observed simulator training on the Emergency Operating Procedures (EOPs) and Emergency Action Level (EAL) Classification and Notification. The inspectors assessed the training to determine if the training adequately prepared the crew to determine EOP entry conditions and EAL classification levels. The inspectors reviewed the applicable training objectives to determine if they had been achieved. The inspectors also conducted a simulator fidelity review and comparison to the control room.

The inspectors verified that issues identified during the simulator session, and as part of the simulator fidelity review, 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.

1R12 Maintenance Effectiveness (71111.12)

a. Inspection Scope (1 sample)

The inspectors reviewed Entergy's functional failure determination associated with CR-PNP-2008-00258, "Unexpected APRM-D Half-Scram During Logic Test," conducted 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." The inspectors reviewed the Average Power Range Monitoring system maintenance rule functions, the basis for the conclusion that the issue was not considered a functional failure, and the potential for common cause and extent of condition. Documents reviewed during the inspection are listed in the Attachment.

b. Findings

No findings of significance were identified.

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

a. Inspection Scope (6 samples)

The inspectors evaluated online maintenance risk assessments and licensee management of 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 due to out-of-service components. The inspectors verified the appropriate use of the licensee's risk assessment tool, Equipment Out of Service (EOOS), and entry into appropriate risk categories. 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:

- Emergent work on A5 emergency bus voltage relays (Red);
- Halon testing in Cable Spreading Room (Yellow);
- Reactor Core Isolation Cooling system surveillance and P-140 surveillance (Yellow);
- High Pressure Coolant Injection system outage (Yellow);

- Station Blackout Diesel Generator and Shutdown Transformer unavailable for planned maintenance (Green); and
- Logic System Functional Testing of the “A” EDG with the Startup Transformer unavailable (Yellow).

b. Findings

Introduction. The inspectors identified a Green non-cited violation (NCV) of 10 CFR 50.65(a)(4) for Entergy's failure to conduct an adequate risk assessment for emergent maintenance on the A5 Emergency Bus undervoltage (UV) relays. Specifically, the inspectors noted that Entergy had downgraded an on-line risk assessment from Red to Green, without a valid technical basis.

Description. On January 11, 2008, Entergy discovered that the as-found set points on the 127-A5/1 and 127-A5/2 UV relays (which were in service on Emergency Bus A5 from May 2, 2005, to June 11, 2007), were out of the acceptable calibration range. Entergy subsequently determined the apparent cause to be an improper calibration method. Entergy has submitted Licensee Event Report (LER)-08-002-00, “Failure to Meet Technical Specification Requirement for Undervoltage Relay Trip Setting,” to document the as-found condition.

Due to uncertainty regarding the calibration of the installed UV relays, on February 6, 2008, Entergy declared the A5 bus inoperable and unavailable. As a result, Entergy entered the Limiting Condition for Operation (LCO) for Technical Specification (TS) 3.2.B, “Core and Containment Cooling Systems - Initiation & Control,” which required that the system be repaired or the plant be placed in Cold Shutdown within 24 hours.

Entergy performed an emergent risk assessment and determined that the on-line risk condition was Red, the highest of four risk management categories (i.e., Green, Yellow, Orange, Red). Entergy initiated actions to remove and calibrate the UV relays using the correct calibration method. Upon removal of the UV relays and prior to recalibration and reinstallation, Entergy reassessed the risk condition of the plant to be Green. This assessment equated the condition to a monthly functional test conducted in accordance with PNPS Procedure 8.M.2-2.1.10, "4160 Volt Emergency Buses A5 and A6 Loss of Voltage and Degraded Voltage Relays," Attachment 1, Revision 34. Entergy subsequently found the relay set points to be within the acceptable range, reinstalled the relays, and exited the LCO.

The inspectors noted that the assessed configuration (i.e., comparison to the monthly surveillance) did not match the actual plant configuration. Specifically, during the surveillance, the UV relays remain installed and fuses are removed to simulate a UV condition on the bus, thereby initiating the protective function (i.e., tripping and blocking large motor loads, and allowing the EDG output breaker to close onto the A5 bus). Under the actual plant condition with the relays removed, this protective function is unavailable. In addition, the ability to automatically close the EDG output breaker onto the bus is lost. Entergy did not recognize that the EDG output breaker would not close with the relays removed, did not assess the EOOS risk of an unavailable EDG (Yellow), and, as a result, did not specify any risk management actions. The inspectors determined that, while the

condition may not have warranted a Red risk condition, Entergy downgraded the risk assessment to Green without a thorough understanding of the plant condition and without an adequate technical basis.

Analysis. The performance deficiency associated with this finding is that Entergy downgraded an emergent risk assessment from Red to Green without an adequate technical basis. In addition, Entergy did not recognize the loss of the EDG automatic function and did not specify any risk management actions. This finding is associated with the Mitigating Systems cornerstone and is more than minor because the risk assessment had incorrect assumptions that changed the outcome of the assessment. The inspectors conducted a screening in accordance with IMC 0609, "Significance Determination Process," Appendix K, "Maintenance Risk Assessment and Risk Management Significance Determination Process." The finding was determined to be of very low safety significance (Green) because the Incremental Core Damage Probability Deficit for the timeframe that the relays were removed from service was significantly less than 1E-6. This finding has a cross-cutting aspect in the area of Human Performance, Decision Making, because Entergy did not use a systematic process to make a risk-significant decision, when faced with an unexpected plant condition. [H.1(a)]

Enforcement. 10 CFR 50.65(a)(4), "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," states, in part, that "...the licensee shall assess and manage the increase in risk that may result from the proposed maintenance activities." Contrary to the above, on February 6, 2008, Entergy failed to adequately assess the risk that resulted from removing A5 Emergency Bus UV relays. Specifically, Entergy downgraded an on-line risk assessment from Red to Green without a valid technical basis, did not recognize that the automatic EDG function would be lost, and did not specify risk management actions. Corrective actions taken for this violation included removing, calibrating, and reinstalling the affected relays; and subsequently determining the risk impact from the actual plant conditions with the subject relays removed. Additionally, Entergy will conduct briefings on the lessons learned from this issue, evaluate training needs, review the need to revise EOOS to include the UV relays, and evaluate changes to the risk assessment procedure. Because this violation was of very low safety significance and was entered into the licensee's corrective action program (CR-PNP-2008-00946), this violation is being treated as an NCV, consistent with Section VI.A.1 of the NRC Enforcement Policy. **(NCV 05000293/2008002-01, Inadequate Risk Assessment for Emergent Maintenance on A5 Emergency Bus Undervoltage Relays)**

1R15 Operability Evaluations (71111.15)

a. Inspection Scope (6 samples)

The inspectors reviewed six 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 also

reviewed CRs to determine whether Entergy was identifying and correcting deficiencies associated with operability evaluations. The inspectors reviewed the following degraded or non-conforming conditions:

- CR-PNP-2007-05089, Safety Relief Valve 3C;
- CR-PNP-2008-00187, Reactor Core Isolation Cooling system lube oil sample;
- CR-PNP-2008-00155, License Power Limit;
- CR-PNP-2008-00479, Salt Service Water Pump "B" blackened lugs on breaker;
- CR-PNP-2008-00595, Reactor Core Isolation Cooling system flow indicator moving during High Pressure Coolant Injection system operability flow test; and
- CR-PNP-2008-00617, Step jump in total core flow of approximately 1M lbm/hr on recorder DPR/FR-262-110.

b. Findings

No findings of significance were identified.

1R18 Plant Modifications (71111.18)

a. Inspection Scope (1 sample)

The inspectors reviewed Temporary Modification EC0000004613, "Raise Alarm Setting For SRV 203-3C from 200 DEG F to 230 DEG F on Tailpipe Temperature Recorder," and the associated 10 CFR 50.59 screening, to determine whether the licensing bases and performance capability of the associated risk significant system had been degraded through the modification. A walkdown was performed to determine whether equipment was installed in accordance with instructions. The inspectors reviewed applicable drawings and procedures to determine whether they properly reflected the temporary modifications. Documents reviewed during the inspection are listed in the Attachment.

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing (71111.19)

a. Inspection Scope (4 samples)

The inspectors reviewed four 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 assess 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:

- Control Rod Drive Pump "B" maintenance;
- "A" Salt Service Water Pump packing replacement;
- High Pressure Coolant Injection system maintenance outage; and
- "A" EDG Agastat replacement.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope (7 samples)

The inspectors reviewed seven 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:

- Reactor Core Isolation Cooling system surveillance (IST);
- "A" EDG surveillance;
- "A" Residual Heat Removal Pump (IST);
- "B" Core Spray Pump (IST);
- Reactor Building Closed Cooling Water HX backwash;
- Reactor Coolant System (RCS) leakage detection surveillance; and
- "B" EDG surveillance.

b. Findings

No findings of significance were identified.

Cornerstone: Emergency Preparedness

1EP6 Drill Evaluation (71114.06)

a. Inspection Scope (1 simulator training sample and 1 drill observation sample)

The inspectors observed an evaluated licensed operator requalification simulator training exercise on February 4, 2008. The inspectors evaluated the operating crew activities relating to simulated activation of the emergency response organization, and accurate and timely classifications and notifications of EAL declarations. Additionally, the inspectors assessed the ability of training evaluators to adequately address operator performance deficiencies identified during the exercise. The inspectors also observed an emergency planning drill on March 6, 2008. The inspectors evaluated the emergency response organization performance in the simulator, the Technical Support Center, and the Emergency Operations Facility. The inspectors assessed the implementation of EAL classification and notification decisions. The inspectors also reviewed Pilgrim's summary of drill observations and findings.

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY

Cornerstone: Occupational Radiation Safety

2OS1 Access Control to Radiologically Significant Areas (71121.01)

a. Inspection Scope (10 samples)

During the period January 7-10, 2008, the inspectors conducted the following activities to determine whether the licensee was properly implementing physical, administrative, and engineering controls for access to locked high radiation areas, and other radiologically controlled areas during power operations. Implementation of these controls was reviewed against the criteria contained in 10 CFR 20, TS, and licensee procedures. This inspection activity represents the completion of ten samples relative to this inspection area.

Inspection Planning

The inspectors reviewed all licensee Performance Indicators (PIs) for the Occupational Radiation Safety Cornerstone for follow-up.

Plant Walkdown and Radiation Work Permits Reviews

The inspectors identified exposure significant work areas and reviewed associated licensee controls, surveys, postings, and barricades for acceptability.

The inspectors toured accessible radiologically controlled areas and, with the assistance of a radiation protection technician, performed independent radiation surveys of selected areas to confirm the accuracy of survey data and the adequacy of postings.

Problem Identification and Resolution

The inspectors reviewed the licensee's self-assessments, audits, and Special Reports related to the access control program since the last inspection to determine if identified problems were entered into the corrective action program.

The inspectors reviewed six CRs related to access control to ensure follow-up actions were conducted in a timely and effective manner.

High Radiation Area and Very High Radiation Area Controls

The inspectors discussed, with radiation protection technicians, supervision, and the radiation protection manager, the controls in place for areas that are or have the potential to become very high radiation areas during certain plant operations. The inspectors also discussed, with radiation protection supervision, the communication required with radiation protection prior to these operations to allow appropriate actions to properly post and control the radiation hazards.

The inspectors verified key controls and the integrity of several locked high radiation areas.

Radiation Worker and Radiation Protection Technician Performance

Several radiologically related CRs were reviewed to evaluate if the incidents were caused by repetitive radiation worker errors and to determine if an observable pattern traceable to a similar cause was evident.

The inspectors observed radiation protection technician performance and questioned the technician regarding knowledge of plant radiological conditions and associated controls.

b. Findings

No findings of significance were identified.

2OS2 ALARA Planning and Controls (71121.02)

a. Inspection Scope (8 samples)

During the period January 7-10, 2008, the inspectors conducted the following activities to determine whether the licensee was properly implementing operational, engineering, and

administrative controls to maintain personnel exposure ALARA for past activities performed in refueling outage (RFO)-16 and during routine plant operation. Implementation of these controls was reviewed against the criteria contained in 10 CFR 20, applicable industry standards, and licensee procedures. This inspection activity represents the completion of eight samples relative to this inspection area.

Inspection Planning

The inspectors reviewed pertinent information regarding cumulative exposure history, current exposure trends, and ongoing activities to assess RFO-16 site ALARA performance and current exposure trends.

The inspectors reviewed the site's 3-year rolling average dose and compared the site's average with industry's average.

The inspectors verified that the licensee's ALARA program procedure and the Radiation Work Permit procedure include job estimating and tracking.

Radiological Work Planning

The inspectors evaluated departmental interfaces for any problems or missing program elements.

The inspectors reviewed several post job reviews to ensure lessons learned were entered into the corrective action program.

Source Term Reduction and Control

The inspectors determined the status and historical trends of source terms. The addition of Noble Metals has decreased the amount of hydrogen injection. During the December, 2007, down-power to repair SRV-3B, the site experienced lower dose rates in the Drywell. A new procedure is in progress to reduce the amount of cobalt in the reactor coolant system.

Radworker Performance

The inspectors verified through discussions with radworkers that they demonstrate an ALARA philosophy.

Problem Identification and Resolution

The inspectors reviewed audits and self-assessments for the ALARA program since January 2007, to determine whether identified problems were put in the corrective action program.

The inspectors reviewed elements of the licensee's corrective action program related to implementing the ALARA program to determine if problems were being entered into the program for timely resolution. Ten condition reports related to dose/dose rate alarms,

programmatic dose challenges, and the effectiveness in predicting and controlling worker dose were reviewed.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES [OA]

4OA1 Performance Indicator (PI) Verification (71151)

Barrier Integrity and Mitigating System Cornerstones

a. Inspection Scope (3 samples)

The inspectors reviewed PI data to determine the accuracy and completeness of the reported data. The review was accomplished by comparing reported PI data to confirmatory plant records and data available in plant logs, the chemistry data base, LERs, CRs, and NRC inspection reports. The acceptance criteria used for the review were Nuclear Energy Institute (NEI) 99-02, Revision 5, "Regulatory Assessment Performance Indicator Guidelines," and Pilgrim TS 3.6, “Primary System Boundary.” Documents reviewed during the inspection are listed in the Attachment. The following performance indicators were reviewed:

- Barrier Integrity Cornerstone, RCS Unidentified Leakage from the second quarter of 2007 through the fourth quarter of 2007;
- Barrier Integrity Cornerstone, RCS Activity from the second quarter of 2007 through the first quarter 2008; and
- Mitigating System Cornerstone, Safety System Functional Failures from the first quarter of 2007 through the fourth quarter 2007.

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

a. Inspection Scope

The inspectors performed a screening of each item entered into the licensee's corrective action program. This review was accomplished by reviewing the descriptions 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 of Valve Packing Failure

a. Inspection Scope (1 sample)

The inspectors selected CR-PNP-2007-00949 for detailed review. The CR was written to determine the cause of a Reactor Water Cleanup valve packing failure that resulted in a plant shutdown. The inspectors reviewed the licensee's root cause analysis, corrective actions, prioritization of corrective actions, and completion and effectiveness of corrective actions.

b. Findings and Observations

No findings of significance were identified. The inspectors determined that the licensee performed a thorough root cause analysis and developed and implemented timely corrective actions to prevent recurrence. The cause identified was the "failure to provide specific procedural requirements for packing adjustments." Valve packing adjustments had been conducted using a "skill-of-the-craft" approach. Also, operating experience at other plants had been screened out, which was identified as a contributing cause. The immediate corrective action was to inspect, repack, or adjust the majority of valves in the drywell during RFO-16. A long term corrective action was established to develop a valve packing program using Entergy-wide and industry-wide experience and guidance. Lessons learned from RFO-16 will be incorporated into this program. The inspectors determined that the causes and corrective actions were appropriate.

.3 Annual Sample: Mechanical Pressure Regulator (MPR) Reliability Concern

a. Inspection Scope (1 sample)

The inspectors reviewed Entergy's evaluation of performance issues associated with the main turbine Mechanical Pressure Regulator (MPR). Following the reactor trip on July 10, 2007, a MPR issue resulted in reactor pressure oscillations (approximately 10 psig swings) while operating on the bypass valves. Entergy performed troubleshooting, replaced a worn MPR pilot valve and bushing, and satisfactorily retested the MPR prior to plant restart in July 2007. Subsequently, in August 2007, operators identified that they had to perform more frequent MPR adjustments to compensate for an apparent MPR setpoint drift.

The inspectors reviewed Entergy's associated MPR troubleshooting, apparent cause evaluation (ACE), extent of condition review, and short and long-term corrective actions. The inspectors conducted several walkdowns of the MPR and the electrohydraulic pressure regulator controls and indications in the control room to assess material condition, operator awareness, and configuration control. The inspectors also interviewed plant personnel; inspected the worn MPR pilot valve and bushing; and reviewed procedures, related industry operating experience, and the vendor manual. In addition, the inspectors reviewed the Pilgrim TS and UFSAR to ensure that Entergy operated and maintained the MPR as required.

Documents reviewed are listed in the Attachment.

b. Findings and Observations

No findings of significance were identified.

Entergy developed and implemented a detailed MPR setpoint drift monitoring plan using their Operational Decision Making Issue (ODMI) process. Engineering adequately evaluated the degraded condition and identified appropriate trigger points, compensatory measures, and corrective actions. Engineering ensured that the associated ODMI plan was properly communicated to plant operators and maintained the guidance up to date.

The inspectors concluded that Entergy had taken timely and appropriate action in accordance with Pilgrim procedures, NRC Maintenance Rule requirements, and their corrective action program. The inspectors determined that engineering's associated ACE was sufficiently thorough and based on the best available information, troubleshooting, sound engineering judgment, and relevant industry operating experience. In general, Entergy's assigned corrective actions were aligned with the apparent causal factors, adequately tracked, appropriately documented, and completed as scheduled.

4OA3 Followup of Events and Notices of Enforcement Discretion (71153)

.1 Loss of 23kv line (1 sample)

a. Inspection Scope

At approximately 10:20 a.m., on January 9, 2008, the 23 kilo-Volt (kV) feeder line to the Shutdown Transformer was lost. The operators responded by implementing procedure 2.4.A.23, "Loss/Degradation of 23 kV Line," Revision 10. Power was restored to the 23 kV line in approximately 30 minutes. The cause of the loss of the line was determined to be a branch contacting the line due to high winds in the area. The inspectors responded to the control room and confirmed that the control room was implementing actions to address the power loss. The inspectors also reviewed control room logs and operators compliance with applicable procedures.

b. Findings

No findings of significance were identified.

.2 Hydrogen Water Chemistry Transient

a. Inspection Scope (1 sample)

On January 12, 2008, the in-service Hydrogen (H2) injection extended test system (ETS) flow controller failed resulting in an increased H2 injection into the feedwater system. The high H2 concentration caused Main Steam Line Radiation and Augmented Off Gas system alarms. Operators responded by checking local indications on the ETS and by securing the ETS per Procedure 10.2.4, "Extended Test System Operating Procedure," Revision 39,

and conducting troubleshooting to determine the cause of the failure. The operators responded to the Main Steam Line Radiation and Augmented Off Gas system alarms by implementing procedures 2.4.40, "Rapid Increase in Main Steam Line or Off gas Activity" and 2.4.141, "Abnormal Recombiner Operation," respectively. The control room prepared for a power reduction (as specified in Procedure 2.4.141) with H2 concentrations exceeding 5 percent, but the H2 concentrations decreased below 5 percent (from actions taken to isolate ETS) before the power reduction was implemented. The inspectors subsequently reviewed operator logs, troubleshooting records and procedures implemented during this event.

b. Findings

No findings of significance were identified.

.3 Unplanned 24 Hour LCO Entry for Potential Loss of the A5 Emergency Bus UV Relays

a. Inspection Scope (1 sample)

On February 6, 2008, operators declared the A5 emergency bus UV relays inoperable when they were unable to verify that the relays were properly calibrated prior to installation in June 2007. The previously installed relays, removed in June 2007, were found to be out of specification due to an improper calibration technique used prior to their installation in May 2005. The Operators entered TS 3.2.B, "Core and Containment Cooling - Initiation and Control;" TS 3.9.B, "Auxiliary Electrical System," and TS 3.5.A, "Core Spray and LPCI Systems." The most limiting of which, TS 3.2.B, required that the system be repaired or the plant placed in cold shutdown within 24 hours. Entergy subsequently removed the installed relays, verified that they were within the specified calibration range, reinstalled the relays, and performed functional testing satisfactorily; exiting the LCO. The inspectors reviewed control room logs and conducted interviews of operations staff to evaluate the adequacy of operator response to the emergent condition.

b. Findings

This issue was dispositioned in Section 1R13.

.4 Infrequently Performed Evolution: Vital Motor Generator (MG) Set Direct Current (DC) Motor Shutdown for DC Motor Brush Replacement

a. Inspection Scope (1 sample)

On February 27, 2008, Pilgrim operators performed a planned shutdown of the DC motor on the Vital MG set, with the plant at power. This infrequently performed evolution was conducted to permit replacement of the DC Motor Brushes. Although the deenergization of the DC motor was believed to be "bumpless" with the AC motor continuing to drive the AC generator, the evolution posed several potential challenges to Pilgrim operators because a perturbation in 4160 voltage could cause the transfer of the vital AC power from its normal to its alternate source which 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 revised an existing temporary procedure, TP06-025, "Administrative Controls for Vital MG Set DC Motor Brush Replacement," for this evolution. The procedure established several compensatory measures to mitigate the effects of a component malfunction or unexpected response. For instance, operators were briefed on Procedures 2.4.49, "Feedwater Malfunctions," and 5.3.6 "Loss of Vital AC (Y2)." In preparation for the evolution, operators placed one feedwater flow control valve in manual. Additionally, operators reduced power by approximately 25 MWt and locked the Recirculation MG set scoop tubes to preclude flow perturbations before the DC motor breaker was opened. 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.

.5 Operator Response to An Inoperable Start-Up Transformer Relay

a. Inspection Scope (1 sample)

On March 10, 2008, operators determined that one of the start-up transformer degraded voltage relays was inoperable. Engineering and operations personnel met to discuss whether this affected the TS 3.2.B, "Protective Instrumentation, Core and Containment Cooling Systems – Initiation and Control," Table 3.2.B, "Start-Up Transformer Degraded Voltage," requirement of at least 2 operable channels. Operations initially declared the trip system inoperable and entered the 24 hour shutdown action statement. Subsequently, engineering provided operations with information that showed the subject trip system remained operable with only one relay (out of four) inoperable. Operations declared the system operable and exited TS 3.2.B. The inspectors attended meetings between Operations and Engineering, reviewed TS, system drawings, and control room logs to assess Entergy's response.

b. Findings

No findings of significance were identified.

4OA6 Meetings, Including Exit

On January 10, 2008, the radiation protection inspector presented the preliminary inspection results for the Access Control and ALARA Planning and Controls inspections to Mr. Kevin Bronson, Site Vice President, and other members of the Pilgrim staff. The inspector confirmed that no proprietary information was provided or examined during the inspection.

On April 8, 2008, the resident inspectors presented the preliminary inspection results to Mr. Robert Smith, General Manager Pilgrim Operations, 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	Director, Nuclear Safety and Licensing
K. Bronson	Site Vice President, Pilgrim
W. Coady	ALARA Coordinator
W. Grieves	QA Manager
J. Keyes	Corrective Action & Assessment Manager
R. Larson	Radiation Protection Technician
W. Lobo	Licensing Engineer
J. Lynch	Licensing Manager
W. Mauro	Site, Radiation Protection Manager (Acting)
S. McAllister	System Engineering Manager
A. Niederberger	System Engineer (Turbine)
J. Norris	ALARA Coordinator
D. Noyes	Operations Manager
R. Smith	General Manager Pilgrim Operations
J. Taormina	Maintenance Manager

LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

Opened and Closed

05000293/2008002-01	NCV	Inadequate Risk Assessment for Emergent Maintenance on A5 Emergency Bus Undervoltage Relays

LIST OF DOCUMENTS REVIEWED

Section 1R01
Procedure 8.C.4D, Seasonal Weather Surveillance

Section 1R04
Procedure 2.1.12.2, Station Blackout Diesel Generator Surveillance
Drawing M219, Revision 22, P&ID Diesel Generator Air Start System
Drawing M259, Revision E10, P&ID Diesel Generator Turbo Air Assist System
Procedure 2.2.8, Revision 92, Standby AC Power System (Diesel Generators)
Procedure 2.2.22, Revision 68, Reactor Core Isolation Cooling
Procedure 2.2.19, Revision 97, Residual Heat Removal
Procedure 2.2.20, Revision 60, Core Spray
Procedure 2.2.23, Revision 32, Automatic Depressurization System
CR-PNP-2006-01802, Available Capacity for HPCI in the CST

P&ID M243, Revision 51, HPCI System
P&ID M244, Sheet 1, Revision E30, HPCI System
Procedure 1.17.1, Revision 9, Potential Seismic Interaction Hazards
Procedure 2.2.21, Revision 72, HPCI System
Procedure 2.2.21.5, Revision 14, HPCI Injection and Pressure Control
Procedure EN-MA-101, Revision, Conduct of Maintenance
System Engineering Walkdown Inspection Checklists for HPCI, dated 01/30/08, 02/25/08, and 03/10/08
PNPS Procedure 2.2.8, Standby AC Power System (Diesel Generators), Revision 93
PNPS Procedure 2.2.108, Diesel Generator Cooling and Ventilation System, Revision 42
PNPS Procedure 8.9.1, Emergency Diesel Generator and Associated Emergency Bus Surveillance, Revision 108
System 61 – EDG and Fuel Storage Health Reports, 1Q07-4Q07
CR-PNP-2008-00421, Lack of analytical limit for EDG of frequency variation criteria

Section 1R05

Fire Hazards Analysis (Fire Zone 1.5)
Procedure 5.5.2, Revision 37, Special Fire Procedure (Reactor Building Quads)
Procedure 8.B.15, Functional Tests of Fire Pumps – P-135, P-140, and P-181
Fire Hazards Analysis (Fire Zone 1.1)
Procedure 8.B.4.10, Revision 5, "Fire Panel C224, Access Control Point Functional Test"
CR-PNP-2008-0616, Fire Drill Deficiencies
CR-PNP-2008-0627, Fire Drill Control Room Activities

Section 1R06

PNPS-Probabilistic Safety Assessment, Appendix E, Internal Flood Analysis, Revision 1
M-164, Sleeves & Seal Details, Revision 6

Section 1R07

Procedure 8.5.3.14.1, Revision 4, RBCCW Heat Exchanger Thermal Performance Test
Procedure 2.2.32, Revision 78, SSW, attachment 7
Procedure 2.2.32, Revision 78, SSW, attachment 5
Procedure 8.5.3.14.2, Revision 2, RHR Heat Exchanger Thermal Performance Test
Specification RTYPE B5.21, Revision 16, SSW and RBCCW Safety Related Piping & Heat Exchanger Inspection, Maintenance & Test Requirements in Response to Generic letter 89-13
Procedure 3.M.4-98, Revision 18, RBCCW Heat Exchanger Tube, Channel Cover, Channel Shell and Partition Plate Repair
Maintenance Request (MR) 01108097, RBCCW Heat Exchanger Inspection and Repair
Maintenance Request (MR) 03107775, RBCCW Heat Exchanger Inspection and Repair
Procedure 8.5.3.14, Revision 26, SSW Flow Rate Operability Test
Engineering Request (ER) 05110671, TBCCW and RBCCW Heat Exchanger partition/Channel Body/Channel Cover Weld/Balzona Repair, Dated 01/16/07

Section 1R11

LORT/NRC Simulator Exam Scenario SES-173, Revision 0
EP-IP-100.1, Revision 3, Emergency Action Levels (EALs)
PNPS Night & Standing Orders Log, Monday, February 4, 2008

CR-PNP-2008-00803, Simulator Fidelity Issues

Section 1R12

CR-PNP-2007-03354, Potential Adverse Trend in APRM performance
CR-PNP-2008-00258, Several Unexpected Alarms during RPS test
CR-PNP-2008-00258, Functional Failure Determination Form

Section 1R13

Procedure 8.B.14 Revision 39, Fire Protection Technical Requirements
Procedure 8.B.22, Revision 29, Halon 1301 System-Cable Spreading Room
Procedure 1.5.22, Revision 11, Risk Assessment Process
Equipment Out-Of-Service Quantitative Risk Assessment Tool
Maintenance Schedule for the week of 3/10/08
CR-PNP-2008-00117, Relays 127-A5 1 and 2 as found dropout values outside no adjust limits
CR-PNP-2008-00454, Data and test method used to install current 127-A5/1 & 2 relays cannot be determined
CR-PNP-2008-00946, Station risk was inaccurately assessed on February 6, 2008
PNPS Procedure 8.M.2-2.1.10, 4160 Volt Emergency Busses A5 and A6 Loss of Voltage and Degraded Voltage Relays
Drawing E35, Schematic Diagram 4160 V System Auxiliary Relays & Misc. Schemes, Revision 11
CEO2008-00069, Removal/Replacement of A5 Undervoltage Relays (127-A5/1 & 127-A5/2) on 2/6/08 (CR-PNP-2008-0117 & CR-PNP-2008-0454) – Supersedes CEO2008-00057
LER 05000293/2008-002-00, Failure to Meet Technical Specification Requirements for Undervoltage Relay Trip Setting
PNPS Control Room Log dated 2/6/08

Section 1R15

CR-PNP-2007-05089, Initial operability review for safety relief valve 3C is operable in its present condition
CR-PNP-2007-05089, SRV-3C tail pipe temperature indicates a rising trend
Drawing 3379-270-3, Revision E5, Main Steam Safety Relief Valve, Sheets 1, 2, 3 & 4
EN-OP-104, Revision 2, Operability Determinations
M246, Sheet 2, RCIC System Turbine Oil Flow, Revision 2
CR-PNP-2008-0099, Recirculation Pump Mega Watt Transducers Wired Incorrectly
CR-PNP-2008-00155, Non-Conservation Pump Power Values May Exist
Procedure EM-LI-119, Revision 7, ACE Process
Daily Logs 2/4/08
Facility Operating License, Section 3.A, Maximum Power Level
CR-PNP-2008-00479, “B” SSW Pump Lugs Blackened
Procedure 8.0.3-3, Revision 52, 480 VAC Motor Control Center Testing and Maintenance
Thermography results; 2/8/08, 2/11/08, 2/21/08
ODMI Action Plan for CR-PNP-2008-00617, Step Jump in Total Core Flow
P&ID M253, Sheet 2, Revision E28, Nuclear Boiler Vessel Instrumentation
Procedure EN-OP-111, Revision 3, ODMI Process

Section 1R18

EC0000004613, Temporary modification to raise setting for SRV 203-3C from 200 deg F to 230 deg F on tailpipe temperature recorder.

3.M.2-7.2, Revision 19, Calibration of Miscellaneous Plant Instrumentation
WO 00134251 01, SRV 3C tailpipe temperature indicates a rising trend. Install TMOD EC4613 for SRV-3C tail pipe temperature
8.M.3-12, Safety and Relief Valves Acoustic Monitoring and Tailpipe Temperature

Section 1R19

WD 3.M.4-14, CHR PP CPLMG
WD 51530095 02, Post Maintenance Test
WO 132530, PM-043, Pump Record of Corrective Action/Evaluation
WO 51546802, P-220, Replace Motor Brushes, HPCI Gland Seal Hotwell PP
WO 51546803, P-223, Replace Motor Brushes, HPCI Gland Seal Condenser Blower
WO 51546846, CAT 2A AOV VIPER Diagnostics Test AO-2301-64
WO 51528757, CR-06-4280 HPCI Condensate Pump Seals Leaking Excessively
PNPS Procedure 8.5.4.1, HPCI System Pump and Valve Quarterly and Biennial Comprehensive Operability, Revision 102
PNPS Procedure 8.5.4.10, Supplemental HPCI GSC Hotwell Pump and Discharge Check Valve Test for Post-Maintenance Activities, Revision 3
Commercial Grade Item Evaluation No. 369, Revision 3
CR-PNP-2008-00580, HPCI Condensate Pump Gland Follower cracked
CR-PNP-2008-00813, Found Agastat Relay 127AX-504/4 Failed During Performance of WO 51530534
Procedure 3.M.3-51, Revision 26, Electrical Termination Procedure
Procedure 8.M.2-2.10.8.5, Revision 41, Diesel Generator “A” Initiation by Loss of Offsite Power Logic
Substitution Equivalency Evaluation No. 524, Agastat Relay 127AX-504/4
WO 51530534-01, Logic System Functional Test of EDG “A” Initiation Associated with SUT Breaker Under Voltage and Degraded Voltage Relays, performed 03/10-12/08
WO 51530534-02, Replacement of Failed Relay 127AX-504/4, performed on 03/10/08

Section 1R22

UFSAR Section 4.7.5
ASME OMb Code – 2006
Procedure 8.5.5.1, Revision 56, RCIC Pump quarterly and biennial operability flow rate and valve test at approximately 1000 psig
Procedure 8.9.1, Revision 107, EDG and Associated Emergency Bus Surveillance
Procedure 8.5.2.2.1, Revision 54, LPCI System Loop “A” Operability – Pump Quarterly and biennial (comprehensive) flow rate tests and valve tests
Drawing CIA363, RHR/CS Suction, Strainer Branch Pipe Design, Revision E0
Drawing CIA300, RHR/CS Strainer Assembly Drawing, Revision E1
Drawing CIA366, RHR/CS Strainer Assembly Drawing Bay Number 4, Revision E1
UFSAR Section 4.8.5, Description RHR
RG DG-1038, Revision 2, Water sources for long term recirculation cooling following a loss-of-coolant accident
CR-PNP-2007-04871, RHR Suction Pressure Drop
NRC Inspection Manual, Part 9900 Technical Guidance
Procedure 8.5.1.1, Revision 43, Core Spray System Operability – Pump quarterly and biennial comprehensive flow rate tests and valve tests
WO 5001976, Backwashing RBCCW HX Loop “B”

Procedure 2.2.32, Revision 78, SSW
WO 51571773, 7.4.17 Rx Pres Bndry Lk Detec Mntr Filt & Func (C-19B East)
PNPS Control Room Logs dated 2/25/08 through 2/27/08
WO 50079238, Emergency Diesel Generator & Associated Emergency Bus Surveillance Train B

Section 1EP6
LORT/NRC Simulator Exam Scenario SES-172, Revision 0
EP-IP-100.1, Revision 3, Emergency Action Levels (EALs)
EP Performance Indicator Reporting and Information Form, Revision 2
PNPS Controller Manual Dry Run, March 6, 2008
March 6th 2008 Dry Run Drill (08-01) Summary of Drill Observations and Findings

Sections 2OS1/2OS2/20S3
Procedures:
Access Control to Radiologically Significant Areas/ALARA Planning & Controls (71121.01/02)
EN-RP-104, Revision 2, Personnel Contamination Events
EN-RP-108, Revision 5, Radiation Protection Postings
EN-RP-110, Revision 4, ALARA Program
EN-RP-105, Revision 3, Radiation Work Permits
6.1-220, Revision 2, Radiological Controls for High Risk Evolutions
Condition Reports:
71121.01 Related: CR-PNP-2007-03693, CR-PNP-2007-03989, CR-PNP-2007-04510, CR-PNP-2007-04676, CR-PNP-2007-04839, CR-PNP-2008-00072
71121.02 Related: CR-PNP-2007-03242, CR-PNP-2007-03364, CR-PNP-2007-03372, CR-PNP-2007-04059, CR-PNP-2007-04151, CR-PNP-2007-04303, CR-PNP-2007-04451, CR-PNP-2007-04771, CR-PNP-2007-04772, CR-PNP-2007-04799
Audits and Assessments:
LO-PNPLO-2007-0046, Radiological Worker Practices at Pilgrim Station
QA-14/15-2007-PNP-01, Radiological Protection and Radwaste Programs
Radiation Protection Corporate Assessment
ALARA Managers and Sub-Committee Meeting Minutes:
Meeting Nos. RP07-01, RP07-09, RP07-10, RP07-11, RP07-13, RP07-14, RP07-15, RP07-18, RP07-21, RP07-22, RP07-23, RP07-24, RP07-25, RP07-26, RP07-27, RP07-28, RP07-29, RP07-30, RP07-32, RP07-33, RP07-34, RP07-38, RP07-58, RP07-62

Section 4OA1
PNPS Procedure 1.3.34.7, Attachment 2, Data Sheet for RCS Leakage Data, Revision 17
PNPS Control Room Logs dates 4/1/07 through 12/13/07
Monthly Sample Results of Isotopic Analysis of Reactor Coolant Samples, first quarter 2007 through first quarter 2008
RCS Specific Activity Performance Indicator
TS 3.6.B, Coolant Chemistry
NEI 99-02, Revision 5, Regulatory Assessment Performance Indicator Guideline
LERs from first quarter 2007 through first quarter 2008
Pilgrim Safety System Functional Failures (BWR) Performance Indicator
NUREG 1022, Revision 2, Event Reporting Guidelines 10 CFR 50.72 and 50.73

Section 4OA2

CR-PNP-2007-00949, Loose Metal Clip Inside Seawater Level Indication
RFO-16 Inspection and Adjustment Plan
CR-PNP-2007-03231, Turbine Trip and RX Scram
CR-PNP-2007-03233, RX Pressure Oscillations following 1X Trip
CR-PNP-2007-03479, Turbine Malfunctions Procedure Issues
CR-PNP-2007-03673, Turbine Controls System Maintenance Rule (a)(1) Action Plan, dated 11/13/07
CR-PNP-2007-03708, MPR Setpoint Adjustment Required
CR-PNP-2008-00948, Fire Door Not Closing Properly
CR-PNP-2007-03231, Maintenance Rule Functional Failure Determination, dated 8/16/07
CR-PNP-2007-03231, Low Vacuum Turbine Trip and Scram Root Cause Analysis Report, dated 7/31/07
CR-PNP-2007-03233, Maintenance Rule Functional Failure Determination, dated 8/13/07
CR-PNP-2007-03233, Reactor Pressure Oscillation Apparent Cause Evaluation (ACE), dated 10/11/07
Amendment No. 219 to Facility Operating License No. DPR-35 for the Pilgrim Nuclear Power Station,
"Single Recirculation Loop Operation (TAC No. MC4333)", dated 4/12/06
Certificate of Analysis Lab No. 524378, Main Turbine Generator Lube oil, dated 8/10/06
Certificate of Analysis Lab No. 526463, Main Turbine Generator Lube oil, dated 11/20/07
Main Turbine Generator Lube oil Sample Analysis, dated 5/11/07, 8/3/07, 10/11/07, and 1/31/08
MPR Setpoint Adjustment Tracking Form, dated 8/10/07 – 10/28/07
Pilgrim Cycle 17 3DM/P11 Periodic Log, dated 3/18/08
Pilgrim Nuclear Power Station Core Operating Limits Report (Cycle 17), Revision 26
Turbine System Health Report, 4th Qtr 2007
Vendor Manual V-0461, General Electric Turbine Generator Volume 1 - Turbine, Revision 24
GE Nuclear Engineering SIL No. 614 Revision 1, Backup Pressure Regulator, dated 3/15/99
Procedure 2.2.99, Main Turbine Generator, Revision 45
Procedure 2.4.37, Turbine Control System Malfunctions, Revision 21
Procedure 8.F.51.1, Forced Restored Pressure Regulator (MPR) Setting Instruction, Revision 6
ARP-C2L-C5, EPR Power Failure, Revision 22
Work Order MR # 07111415

Section 40A3

Procedure 2.4.A.23, Loss/Degradation of 23 kv line
Procedure 10.2.4, Revision 39, Extended Test System Operating Procedure
Procedure 2.4.141, Revision 22, Abnormal Recombiner Operation
Procedure 2.4.40, Revision 24, Rapid Increase in Main Steam Line or Off Gas Activity
TS 3.2.B, Protective Instrumentation Core and Containment Cooling Systems – Initiation and Control, Table 3.2.B
4160 V Emergency Bus A-5 Undervoltage Protection Scheme Diagram
CR-PNP-2008-00815, A5 Trip System Startup Transformer Degraded Voltage Relays Inoperable, TS LCO requirements
BECo. Ltr. #29-185, dated 9/27/79, Response to Request for Additional Information on Pilgrim Unit #1 Degraded Grid Voltage
BECo. Ltr. #80-49, dated 3/28/80, Conference Call Review on PNPS Electrical Power Systems
USNRC Ltr., dated 10/28/82, Safety Evaluation Degraded Grid Protection for Class 1E Power Systems Pilgrim Nuclear Power Station

E38, Schematic diagram 4160V System Breakers152-504& 152-604, Revision 15

LIST OF ACRONYMS

ACE	Apparent Cause Evaluation
ADAMS	Agencywide Documents Access and Management System
CR	Condition Report
DC	Direct Current
DRP	Division of Reactor Projects
DRS	Division of Reactor Safety
EAL	Emergency Action Level
EDG	Emergency Diesel Generator
EOOS	Equipment Out of Service
EOP	Emergency Operating Procedure
ETS	Extended Test System
H2	Hydrogen
HX	Heat Exchanger
IMC	Inspection Manual Chapter
IR	Inspection Report
kV	Kilovolt
LCO	Limiting Condition for Operation
LER	Licensee Event Report
MG	Motor Generator
MPR	Mechanical Pressure Regulator
NCV	Non-Cited Violation
NEI	Nuclear Energy Institute
NRC	Nuclear Regulatory Commission
ODMI	Operational Decision Making Issue
PARS	Publicly Available Records
PI	Performance Indicator
PMT	Post-Maintenance Tests
PNPS	Pilgrim Nuclear Power Station
RCS	Reactor Coolant System
RFO	Refueling Outage
SDP	Significance Determination Process
TS	Technical Specifications
UFSAR	Updated Final Safety Analysis Report
UV	undervoltage