

November 7, 2006

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

SUBJECT: PILGRIM NUCLEAR POWER STATION - NRC INTEGRATED INSPECTION  
REPORT 05000293/2006004

Dear Mr. Balduzzi:

On September 30, 2006, the US Nuclear Regulatory Commission (NRC) completed an inspection at your Pilgrim Nuclear Power Station. The enclosed integrated inspection report documents the inspection findings, which were discussed on October 4, 2006, with Mr. Robert Smith 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.

Based on the results of this inspection, no findings of significance were identified. However, a licensee-identified violation which was determined to be of very low safety significance is listed in this report. The NRC is treating the violation as a non-cited violation (NCV) consistent with Section VI.A. of the NRC Enforcement Policy because of the very low safety significance of the violation and because it is entered into your corrective action program. If you contest the NCV in this report, you should provide a response with the basis for your denial, within 30 days of the date of this inspection report, to the U.S. Nuclear Regulatory Commission, ATTN.: Document Control Desk, Washington, D.C. 20555-0001; with copies to the Regional Administrator, Region I; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555-0001; and the NRC Resident Inspector at Pilgrim.

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Sincerely,

**/RA by Tracy Walker Acting for Raymond J. Powell/**

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

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

Enclosure: Inspection Report 50-293/06-04  
w/Attachment: Supplemental Information

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U.S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket No: 50-293

License No: DPR-35

Report No: 05000293/2006004

Licensee: Entergy Nuclear Operations, Inc.

Facility: Pilgrim Nuclear Power Station (PNPS)

Location: Plymouth, MA 02360

Inspection Period: July 1, 2006 through September 30, 2006

Inspectors: W. Raymond, Senior Resident Inspector  
C. Welch, Resident Inspector  
J. Benjamin, Resident Inspector  
N. Sieller, Project Engineer  
T. Burns, Reactor Inspector  
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Approved By: Raymond J. Powell, Chief  
Projects Branch 5  
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## SUMMARY OF FINDINGS

IR 05000293/2006-004; 07/01/2006-09/30/2006; Pilgrim Nuclear Power Station, Routine Integrated Report.

This report covered a 13-week period of inspection by resident inspectors and announced inspections by regional specialists in health physics. A Green licensee-identified finding, which was a non-cited violation (NCV), is listed in section 4OA7. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using IMC 0609, "Significance Determination Process" (SDP). Findings for which the SDP does not apply may be Green or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 3, dated July 2000.

A. NRC-Identified and Self-Revealing Findings

No findings of significance were identified.

B. Licensee-Identified Violations

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

## REPORT DETAILS

### Summary of Plant Status

Pilgrim Nuclear Power Station operated during the period at 100 percent (%) core thermal power, except for short periods of planned operation at reduced power for routine testing and maintenance and for a planned power reduction to 50% on August 15 for a main condenser thermal backwash.

#### 1. REACTOR SAFETY

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

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

##### Site Specific Weather Events

##### a. Inspection Scope (2 samples)

The inspector reviewed the licensee's preparations to protect the site from adverse weather conditions when Tropical Storm Beryl was projected to impact the Pilgrim site during the period of July 20-21, 2006. A second review was conducted when high ambient temperatures were experienced onsite during the period August 1-3, 2006; during which time, the load dispatcher reported he could not maintain 342 KV at the Pilgrim switchyard under certain contingency conditions.

The inspector reviewed the licensee's actions to implement procedure 2.1.37, "Coastal Storms;" toured various plant and site areas to monitor protective actions for excessive temperature, wind, and wave action; and monitored plant operational parameters and site meteorological conditions to verify that licensee controls were appropriate to protect risk significant systems and essential equipment. Specifically, for the storm conditions, the plant systems reviewed included the emergency diesel generators, the 345 KV system, the 23 KV system and the station blackout diesel generator. The plant systems reviewed during the high temperature conditions included the switchgear rooms, the station 125 vdc and 250 vdc batteries, the emergency diesel generators, and the 345 KV system. The inspector also reviewed the compensatory measures established in response to the load dispatcher's inability to maintain 342 KV at the switchyard and verified plant power supplies were operable in the event of the loss of offsite power (see 4OA3). The references used for this review are listed in the attachment to this report. This inspection activity represented two samples.

##### b. Findings

No findings of significance were identified.

1R04 Equipment Alignment (71111.04).1 Partial System Walkdownsa. Inspection Scope (3 samples)

The inspector completed a partial system review of the risk significant systems listed below to determine whether the systems were correctly aligned to perform their designated safety function. The position of key valves, breakers, and control switches required for system operability were verified by field walkdown and/or review of the main control board indicators. To ascertain the required system configuration, the inspector reviewed plant procedures, system drawings, the USFAR, and the Technical Specifications. The references used for this review are described in the attachment to this report. This inspection activity represented three samples.

- 345 KV, 23 KV and 4 KV electrical distribution on August 1-3;
- Standby Gas Treatment (SBGT) system alignment on August 8-10; and
- Reactor Core Isolation Cooling (RCIC) system on July 14 following restoration from maintenance.

b. Findings

No findings of significance were identified.

.2 Full System Walkdowna. Inspection Scope (1 sample)

The inspector performed a full system review of the RCIC system to verify the system was properly aligned and capable of performing its safety function. To ascertain the required system configuration, the inspector reviewed plant procedures, system drawings, the UFSAR, and the Technical Specifications. The inspector reviewed condition reports from January through July 2006 and walked down the accessible portions of the system to assess the system's material condition and the following attributes:

- valves were correctly positioned and did not exhibit leakage that would impact the function(s) of any given valve;
- electrical power was available and properly aligned;
- major system components were properly labeled;
- hangers and supports were installed and functional;
- ancillary equipment or debris did not interfere with system performance; and
- valves were locked as required by the locked valve program.

This inspection activity represented one sample.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05)

Quarterly Fire Protection Inspection

a. Inspection Scope (12 samples)

The inspector toured selected areas of the plant to observe conditions related to: (1) transient combustibles and ignition sources; (2) fire detection systems; (3) manual firefighting equipment and capability; and (4) passive fire protection features. The inspector confirmed adequate material condition of active and passive fire protection system features and the operational lineup and readiness. The inspector also reviewed the applicable fire hazard analysis fire zone data sheets and selected surveillance procedures to ensure that the specified fire suppression system surveillance criteria were met. The inspection activity represented twelve samples.

- Fire Zone 1.5, RCIC Pump Quad;
- Fire Zone 1.7, RCIC Quad Mezzanine;
- Fire Zone 4.1, 'B' Emergency Diesel Generator Room;
- Fire Zone 4.3, 'A' Emergency Diesel Generator Room;
- Fire Zone 4.2, 'B' Emergency Diesel Day Tank Room;
- Fire Zone 4.4, 'A' Emergency Diesel Day Tank Room;
- Fire Zone 2.3, Battery Room 'A';
- Fire Zone 2.2, 'A' Switchgear and Load Center Room;
- Fire Zone 5.2, 'B' Train Service Water Pump Room;
- Fire Zone 1.1, 'A' RHR (residual heat removal) and Core Spray Pump Quadrant;
- Fire Zone 3.5, Vital Motor Generator Set Room; and
- Fire Zone 1.22, 'B' RBCCW (reactor building closed cooling water) Pumps/HX (heat exchanger) Room.

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures (71111.06)

External Flooding

a. Inspection Scope (1 sample)

The inspector reviewed the UFSAR and the Individual Plant Examination for External Events (IPEEE) report to assess the site's protection against external flooding conditions. The inspector interviewed licensee engineers and other licensee personnel to verify the appropriateness of design assumptions in the IPEEE.

Relevant procedures and maintenance records were also reviewed to ensure they supported IPEEE design assumptions. The inspector performed a site walkdown to assess the intake structure roof drains, the site's drainage capabilities and to identify potential flooding pathways into the process buildings. The inspector also performed a walkdown of select rooms in the reactor building to ensure that penetrations from the outside were adequately sealed. The inspector reviewed surveillance test results, condition reports, and corrective actions pertaining to submerged cables in flooded safety related manholes (Condition Report 200603159). The inspector reviewed preventive maintenance activities to verify roof drains remained free flowing as credited in the analyses for the probable maximum precipitation events (Condition Report 200603090). This inspection activity represented one sample.

b. Findings

No findings of significance were identified.

1R07 Heat Sink Performance (71111.07A)

a. Inspection Scope (1 sample)

The inspector reviewed the licensee's heat exchanger testing, data evaluation, and performance trending for the 'A' and 'B' RBCCW heat exchangers to determine if the licensee was effectively monitoring the RBCCW heat exchangers' heat removal capacity and capability to fulfill the required safety function. The inspector's review included calculation M710, "Heat Exchanger Performance Testing;" and test results from procedures 8.5.3.14.1, "B RBCCW Heat Exchanger Thermal Performance Test;" 8.5.3.14, "Salt Service Water Flow Rate Operability Test;" and the weekly differential pressure performance test results for the 'A' and 'B' RBCCW heat exchangers obtained on July 04 and August 02, 2006, per procedure 2.2.32, "Salt Service Water System."

During the review the inspector assessed whether test results were compared against established acceptance criteria; if differences between plant conditions and design conditions were accounted for; the adequacy of the frequency of testing and inspections; and if test results met the acceptance criteria and demonstrated the required salt service water flow could be achieved without exceeding the design basis pressure drop across the heat exchangers. The inspector also reviewed the licensee's program for bio-fouling control. Procedure 2.2.95, "Chlorination System," was used as a reference for the evaluation of the salt service water (SSW) bio-fouling program. The inspector walked down the RBCCW 'A' and 'B' heat exchangers to assess material conditions and verified that discrepancies were evaluated and entered into the corrective action program. This inspection activity represented one sample.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification (71111.11)Resident Inspector Quarterly Reviewa. Inspection Scope (2 samples)

- .1 The inspector observed an evaluated licensed operator simulator training exercise on August 21, 2006. The training was performed using scenario SES-094 and involved both operational transients and design basis events. The inspector evaluated both the crew's performance and evaluators' assessments. Specifically, the inspector evaluated whether the crew met the scenario objectives, accomplished the critical tasks, demonstrated proper use of abnormal and emergency operating procedures, demonstrated proper command and control, communicated effectively, and implemented the emergency plan in terms of event classification and notification. The inspector reviewed the post-scenario critique and confirmed lessons learned and items for improvement were discussed with the crew to enhance future performance.
- .2 The inspector observed a licensed operator simulator annual exam given on September 26, 2006. The exam was administered using scenarios SES-017 and SES-162 and involved both operational transients and design basis events. The inspector evaluated both the crew's performance and evaluators' assessments. Specifically, the inspector evaluated whether the crew met the scenario objectives, accomplished the critical tasks, demonstrated proper use of abnormal and emergency operating procedures, demonstrated proper command and control, communicated effectively, and implemented the emergency plan in-terms of event classification and notification. The inspector observed the evaluators' post-scenario critique and confirmed items for improvement were identified to further enhance future performance.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12)a. Inspection Scope (1 sample)

The inspector reviewed the 345 KV distribution system for proper classification of issues, to assess the effectiveness of PNPS's maintenance activities, and PNPS's problem identification and resolution actions for system performance issues in accordance with PNPS's procedures and the requirements of 10 CFR 50.65, "Requirements for Monitoring the Effectiveness of Maintenance." In addition, the inspector reviewed system performance criteria and goals, system health reports, and corrective actions that were taken or planned to verify whether the actions were reasonable and appropriate. The inspector also reviewed Entergy's actions and evaluations regarding the unit auxiliary and startup transformers. The inspector reviewed Entergy's basis for placing the 345 KV system in maintenance rule (a)(2)

status. The references used during this review are listed in the attachment to this report. This inspection activity represented one sample.

b. Findings

No findings of significance were identified.

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

a. Inspection Scope (4 samples)

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

- the elevated risk condition (Yellow) on August 21 during high pressure coolant injection (HPCI) system maintenance;
- the Green risk condition on August 28 for planned maintenance on the RHR system, RCIC alternate shutdown panel, SGBT system, and primary containment isolation system;
- the Green risk condition for planned maintenance on August 30, for Vital Motor-Generator Set brush replacement; and
- the elevated risk condition (Yellow) on September 7, for planned maintenance and safety system logic testing.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope (7 samples)

The inspector reviewed selected operability determinations to assess the adequacy of the evaluations, the use and control of compensatory measures, compliance with the Technical Specifications, and the risk significance of the issues. The inspector used the Technical Specifications, UFSAR, associated design basis documents (DBD), and the additional references listed in the attachment to this report. This inspection activity represented seven samples.

- CR 200602853, Containment Isolation Valve AO-7011A Stroke Time;
- CR 200602874, Scram Discharge Volume Not Drained (C905R-G1);
- CR 200662657, B Flow Converter Power Supply Beyond Drop Dead Date;
- CR 200602235, Panel C103A, A EDG, Fuse 5FU3 Intermittent;
- CR 200603349 & 3365, SLC (standby liquid control) SQUIBB Valve Continuity (MR 06113835);
- CR 200603392, Undersized Motor For MO-4084 RBCCW HX Bypass; and
- CR 200602362, RHR FT-1049 Threads Not Properly Sealed For EQ (environmental qualification).

b. Findings

No findings of significance were identified.

1R17 Permanent Plant Modifications (71111.17A)

a. Inspection Scope (1 sample)

The inspector reviewed permanent plant modification ER 04103507 to verify that the licensing bases and performance capability of the associated risk significant SSW system had not been degraded by the modification. The modification was a design change to the SSW pump bearing retainers intended to reduce pump shaft flexure and eliminate the resultant degradation of pump performance. The modification has been completed on four of the five SSW pumps.

The inspector reviewed the design inputs and assumptions and portions of the design calculation to determine the design adequacy. In addition, the inspector reviewed applicable fabrication drawings, post-modification testing and functional testing to determine readiness for operation. Also, the inspector conducted a walkdown of the SSW pumps to assess component condition. The inspector reviewed the affected procedures, drawings and design basis documents to verify that the affected documents were appropriately updated upon completion of the modification. The references used for this review are listed in the attachment to this report. This inspection activity represented one sample.

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing (71111.19)

a. Inspection Scope (7 samples)

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

following testing and that discrepancies were appropriately documented in the corrective action process. This inspection activity represented seven samples:

- 'A' SBT system testing per procedure 7.1.30 following charcoal filter replacement;
- RCIC system control power fuse replacements per MRs 05119865, 05120311, 05119866, 05119864, 05119862, 05119868, 05119845;
- RCIC signal converter terminal board replacement per MRs 05100673, 06107593;
- testing of MSIV 2A following maintenance;
- RCIC system testing following maintenance per MR P9404167, relay 13A-K37 coil replacement; MR 05112996, Panama jack installation; and MR 06110387 temperature switch TS-SW-1360-15B replacement;
- MR 06110333, SBT heater circuit and/or monitoring circuit failure; and
- MR P9900989, RHR MOV 1001-28B Breaker (52M-2093A) PM per 8.Q.3-3.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope (7 samples)

The inspector observed surveillance test and/or reviewed testing results to determine whether the test acceptance criteria was consistent with Technical Specifications, that the test was performed in accordance with the written procedure, the test data was complete and met procedural requirements, and the components were capable of performing their intended safety functions. The inspection activity represented seven samples:

- 8.7.2.1, Standby Gas Treatment System Flow Capacity Test, 'A' Train;
- 8.5.5.1, RCIC Pump Quarterly and Biennial Operability Flow Rate and Valve Test at approximately 1000 psig;
- 8.5.5.4, RCIC Motor Operated Valve Quarterly Operability Test;
- 8.M.2-2.10.7, RCIC Auto-Isolation Logic Test;
- 8.M.2-2.6.3, RCIC Steam Line High Temperature;
- 8.5.4.1-1, HPCI Simulated Automatic Actuation, Flow Rate and Cold Quick Start Test; and
- 8.M.2-2.10.2-8, LPCI System Jet Pump Riser Differential Pressure Trip System Logic.

b. Findings

No Findings of significance were identified.

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

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

- Temporary alteration 06-1-007, Temporary Power to EPIC Modules from Panel Y2 rather than Panel 48L; and
- Temporary alteration 06-1-049, CRD-30-39 Position Indication.

b. Findings

No findings of significance were identified.

2. **RADIATION SAFETY****Cornerstones: Occupational Radiation Safety (OS), Public Radiation Safety (PS)**20S1 Access Control to Radiologically Significant Areas (71121.01)a. Inspection Scope (14 samples)

During the period August 14 -17, 2006, the inspector conducted the following activities to verify that the licensee was properly implementing physical, administrative, and engineering controls for access to locked high radiation areas and other radiologically controlled areas during routine power operations, and during a period of reduced power on August 15 -16, 2006. Implementation of these controls was reviewed against the criteria contained in 10 CFR 20, relevant Technical Specifications, and the licensee's procedures. This inspection activity represents completion of fourteen (14) samples relative to this inspection area, completing the annual inspection requirement of twenty-one samples.

Plant Walkdown and RWP Reviews

The inspector identified exposure significant work areas in the plant, including the refuel floor, turbine building, radwaste building, and the reactor building. The inspector reviewed radiation survey maps and radiation work permits (RWP) for these areas to determine if the associated controls were acceptable.

The inspector 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 maps, and the adequacy of postings.

In evaluating RWPs, the inspector reviewed electronic dosimeter dose/dose rate alarm set points to determine if the set points were consistent with the survey indications and plant policy. The inspector verified that workers were knowledgeable of the actions to be taken when the electronic dosimeter alarms or malfunctions for tasks being conducted under selected RWPs. Work activities reviewed included removal of radwaste from the spent fuel pool (RWP 06-0072), repair of a pipe patch in the 'A' recombiner room (RWP 06-0080, Task 5), moving a lifting fixture from a locked high radiation area (RWP 06-0080, Task 4), conducting air in-leakage testing in the condenser bay (RWP 06-0080, Task 3), and adjusting the stroke time for a main steam isolation valve, MSIV 203-2A, (RWP 06-0080, Task 2).

The inspector examined airborne monitoring instrumentation, air sampling results, respiratory protection evaluations, and engineering controls for potential airborne radioactivity areas. Through review of relevant documentation and discussions with licensee representatives, the inspector confirmed that no worker received an internal dose in excess of 50 mrem due to airborne radioactive material during the current calendar year.

#### Problem Identification and Resolution

The inspector reviewed elements of the licensee's corrective action program related to controlling access to radiologically controlled areas and evaluating dose and dose rate alarms, completed since the last inspection of this area, to determine if problems were being entered into the program for resolution. Details of this review are contained in Section 4OA2 of this report.

#### Jobs-In-Progress Review

The inspector observed aspects of various maintenance activities being performed during the inspection period to verify that radiological controls, such as required surveys, area postings, job coverage, locked high radiation area controls, and pre-job RWP briefings were implemented. Additionally, the inspector determined if personnel dosimetry was properly worn, and if workers were knowledgeable of work area radiological conditions. Tasks observed included transferring a shipping cask from the spent fuel pool, condenser bay air in-leakage testing, 'A' recombiner pipe patch repair, and asbestos removal from the condenser bay.

The inspector attended pre-job briefings for tasks to be performed during a power reduction, conducted on August 15 -16, 2006, and for transferring a shipping cask containing highly radioactive materials from the spent fuel pool to the truck bay, conducted on August 17, 2006.

#### High Risk Significant, High Dose Rate, HRA, VHRA Controls

The inspector discussed with the Radiation Protection Department management the controls and procedures applied to High Dose Rate (HDR) areas and Very High

Radiation Areas (VHRA). The inspector verified that any changes made to relevant licensee procedures did not substantially reduce the effectiveness and level of worker protection. Significant high risk areas reviewed included the Drywell, Sludge Receiving Tank & Pump Room, and the Traversing Incore Probe (TIP) room.

Keys to locked high radiation areas (LHRA) and VHRA were inventoried at the Health Physics control point and in the control room and selected LHRAs/VHRAs were verified to be properly secured and posted during plant tours.

The inspector reviewed the RWPs and ALARA requirements applied to spent fuel pool cleanup activities to determine if appropriate controls were implemented for removal of highly activated radioactive materials from the spent fuel pool, in preparation for shipment to an offsite burial site. The inspector evaluated the effectiveness of temporary shielding, contamination control measures, underwater tool design, and departmental coordination in removing a shipping cask from the spent fuel pool.

#### Radiation Worker/Radiation Protection Technician Performance

The inspector assessed radiation worker and radiation protection technician performance by attending pre-job briefings for tasks performed in LHRAs and observing control point practices. Through interviews and task observations, the inspector evaluated job preparations, the degree of technician coverage for work performed in LHRAs, and the knowledge level of technicians for specific tasks.

The inspector reviewed condition reports related to radiation worker and radiation protection technician errors to determine if an observable pattern traceable to a similar cause was evident.

b. Findings

No findings of significance were identified.

20S2 ALARA Planning and Controls (71121.02)

a. Inspection Scope (4 samples)

During the period, August 14 - 17, 2006, the inspector conducted the following activities to verify that the licensee was properly implementing operational, engineering, and administrative controls to maintain personnel exposure as low as is reasonably achievable (ALARA) for tasks conducted during routine plant operations and a period of reduced power, August 15 - 16, 2006.

The inspection represents the completion of four samples for 71121.02; partially completing the biennial inspection requirement of fifteen samples.

### Radiological Work Planning

The inspector reviewed pertinent information regarding cumulative exposure history, current exposure trends, and ongoing activities to assess current performance and exposure challenges. The inspector determined the site's 3-year rolling collective average exposure.

The inspector reviewed the tasks scheduled to be performed during the power reduction, conducted on August 15 - 16, 2006, and the associated work activity dose estimates. Scheduled work included pipe patch on the 'A' recombiner, investigating an air leak in the condenser bay, removing a turbine lifting rig from a LHRA, and adjusting a stroke time on MSIV 203-2A. The inspector compared the person-hour estimates (used in forecasting personnel dose) with the actual work activity time requirements and evaluated the accuracy of the original time/dose estimates.

The inspector reviewed ALARA Requirements specified for spent fuel pool clean up tasks (RWP 06-0072), and for re-lining the 'E' Condensate Demineralizer Tank (RWP 06-0079) and evaluated the effectiveness of these requirements against the In-Progress ALARA reviews to determine the adequacy of pre-job planning.

The inspector evaluated the departmental interfaces between radiation protection, engineering, maintenance crafts, and operations to identify missing ALARA program elements and interface problems. The evaluation was accomplished by interviewing the ALARA Manager and an ALARA coordinator, reviewing minutes from ALARA Managers Meetings, and attending pre-job briefings for jobs-in-progress.

### Verification of Dose Estimates and Exposure Tracking Systems

The inspector reviewed the assumptions and basis for the annual site collective exposure estimate. The inspector reviewed personnel contamination reports and evaluated the need for internal dose assessments.

The inspector reviewed the licensee's method for adjusting exposure estimates, and re-planning work, when emergent work was encountered. The inspector reviewed RWP ALARA Requirements, In-Progress ALARA Reviews, Post-Job ALARA reviews, and actions of the station ALARA committee in monitoring and controlling dose allocations.

The inspector reviewed the licensee's exposure tracking system to determine whether the level of detail, exposure report timeliness, and dissemination was sufficient to support the control of collective exposures.

### Source Term Reduction and Control

Through data review and discussions with the ALARA Manager, the inspector evaluated the status and historical trends for the site's source term. The inspector also reviewed the licensee's Five Year ALARA Plan, that details future actions designed to reduce personnel exposures.

### Declared Pregnant Workers

The inspector reviewed the radiological controls and dosimetry record for one (1) declared pregnant radiation worker to determine if regulatory requirements were met in controlling her exposure.

### Problem Identification and Resolution (PI&R)

The inspector reviewed elements of the licensee's corrective action program related to implementing radiological controls to determine if problems were being entered into the program for resolution. Details of this review are contained in section 4OA2 of this report.

#### b. Findings

No Findings of significance were identified.

### 2PS2 Radioactive Materials Processing and Shipping (7112202)

#### a. Inspection Scope (6 Samples)

During the period September 25 through September, 28, 2006, the inspector conducted the following activities to verify that the licensee's radioactive material processing and transportation programs complied with the requirements of 10 CFR 20, 61, and 71; and Department of Transportation (DOT) regulations 49 CFR 170-189.

- (1) The inspector reviewed the descriptions of the solid and liquid radioactive waste systems described in the UFSAR and the 2005 radiological effluent release report for information on the types and amounts of radioactive waste disposed. The inspector also reviewed the scope of the licensee's most recent audit of the radioactive materials processing and transportation programs to verify that it meets the requirements of 10 CFR 20.1101.
- (2) The inspector walked-down selected accessible portions of the liquid and solid radioactive waste collection, processing, and storage systems/locations to verify that the current system configuration and operation agree with the descriptions contained in the UFSAR and in the Process Control Program (PCP); reviewed the status of any radioactive waste process equipment that is not operational and/or is abandoned in place; and verified that the changes were reviewed and documented in accordance with 10 CFR 50.59, as appropriate.
- (3) The inspector reviewed the radio-chemical sample analysis results for each of the licensee's radioactive waste streams (powdered resin, bead resin, dry active waste, and filters); reviewed the licensee's use of scaling factors and calculations with respect to these radioactive waste streams to account for difficult-to-measure radionuclides; verified that the licensee's program assures compliance with 10 CFR 61.55 and

10 CFR 61.56 as required by Appendix G of 10 CFR Part 20; and, reviewed the licensee's program to ensure that the waste stream composition data accounts for changing operational parameters.

- (4) The inspector observed shipment packaging, surveying, labeling, marking, placarding, vehicle checks, emergency instructions, disposal manifests, shipping papers provided to the driver, and licensee verification of shipment readiness; and verified that the receiving licensee is authorized to receive the shipment packages. The inspector determined that the shipper was knowledgeable of the shipping regulations and that shipping personnel demonstrate adequate skills to accomplish the package preparation requirements for public transport with respect to NRC Bulletin 79-19 and 49 CFR Part 172 Subpart H, and verified that the licensee's training program provides training to personnel responsible for the conduct of radioactive waste processing and radioactive material shipment preparation activities.
- (5) The inspector sampled the following non-excepted package shipment records and reviewed these records for compliance with NRC and DOT requirements.
  - 05-04L, filters shipped to Studsvik on June 9, 2005;
  - 05-10, bead resin shipment to Studsvik on October 6, 2005;
  - 05-12, bead resins and sludge shipped to Studsvik on December 8, 2005;
  - 05-109, surface contaminated objects (nozzle blocks) and dry active waste shipped to Duratek on August 18, 2005;
  - 06-08, bead resin shipment to Studsvik on June 6, 2006;
  - 06-11, irradiated hardware shipped to Barnwell on August 11, 2006; and
  - 06-17, bead resin shipment to Studsvik on September 18, 2006.
- (6) The inspector reviewed the licensee's audits, surveillance reports, and self-assessments related to the radioactive material processing and transportation programs performed since the last inspection and determined that identified problems are entered into the corrective action program for resolution. The inspector also reviewed corrective action reports written against the radioactive material processing and shipping programs since the previous inspection.

b. Findings

No significant findings or observations were identified.

#### 4. OTHER ACTIVITIES [OA]

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

###### Reactor Safety Cornerstone

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

###### a. Inspection Scope

As required by Inspection Procedure 71152, "Identification and Resolution of Problems", the inspector performed a screening of each item entered into the licensee's corrective action program. This review was accomplished by reviewing printouts of each condition report, 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 - Reactivity Control

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

The inspector reviewed the corrective actions to address a reactivity control issue entered in the corrective action program as condition report 20030736. A short reactor period occurred following the single notch withdrawal of rod 22-35 during a reactor startup in February 2003. The control rod in adjacent core cell 26-35 had a high nodal exposure. The licensee determined that D230 control rods with high exposures were subject to boron carbide (B4C) boron loss and could contribute to high notch worth while withdrawing control rods during reactor startups. The NRC previously reviewed the immediate operator actions taken and evaluations to assure continued safe operation of the reactor (reference NRC Inspection Report 2003006). During this inspection the inspector reviewed the licensee's long term corrective actions.

###### b. Findings and Observations

No findings of significance were identified. Entergy actions were thorough to investigate and evaluate the event, and to minimize the impact of control rods with potential boron depletion on plant operation. The licensee evaluated the potential impact of control blade B4C depletion on reactor shutdown margin and the rod drop analyses and found that design margins were maintained. The core model used at Pilgrim was benchmarked against other models and previous reactor startups to validate the model for predicting criticality. During refueling outage RFO 14, the licensee discharged from the reactor four control blades with high nodal depletion and substituted either new control rods or rods with lower exposure. The licensee

shuffled eleven blades with high nodal exposures to locations that placed the rods at position 48 during subsequent operation (to thereby reduce boron loss). Plant procedure 9.27, Control Blade Lifetime, was revised to enhance guidelines for blade management, establish limits for nodal depletion and discharge/shuffle rods with high exposures. The control rod discharged from core location 26-35 during 2003 was examined for signs of gross boron loss and none was found (MR03109055). Plant procedure 9.29 was changed to avoid notch withdrawals near high exposure D230 rods in control rod sequences during reactor startup when those notches occur near criticality. The operating experience learned from the event was shared with the industry and included in the training programs for operators and engineering personnel. The enhanced controls were effective to prevent short reactor periods during subsequent reactor startups. The corrective actions were appropriate to address the root and contributing causes.

#### Radiation Safety Cornerstone

### 3. Access Control to Radiologically Significant Areas & ALARA

#### a. Inspection Scope (71121.01/02)

The inspector reviewed seventeen (17) Condition Reports, recent ALARA Managers Committee meeting minutes, and fourteen (14) Nuclear Oversight Observation Checklists, relating to controlling work activities in radiologically controlled areas, to evaluate the licensee's threshold for identifying, evaluating, and resolving occupational radiation safety issues. This review included a check for possible repetitive problems such as radiation worker or radiation protection technician errors.

The review was conducted against the criteria contained in 10 CFR 20, Technical Specifications, and the licensee's procedures.

#### b. Findings

No findings of significance were identified.

#### Public Radiation Safety Cornerstone

### 4. Radioactive Materials Processing and Shipping

#### a. Inspection Scope (7112201)

The inspector reviewed eight condition reports that were initiated between January 2005 and October 2006 and were associated with the radwaste transportation program. The inspector verified that problems identified by these condition reports were properly characterized in the licensee's event reporting system, and that applicable causes and corrective actions were identified commensurate with the safety significance of the radiological occurrences.

b. Findings

No significant findings or observations were identified.

4OA3 Event Follow-up (71153)

1. Degraded Grid Conditions

a. Inspection Scope (1 sample)

The inspector assessed the plant and operator response to degraded grid and high temperature conditions on August 2 and 3, 2006. The inspector reviewed operator actions and licensee compensatory measures in accordance with procedures 2.4.144 and 2.4.153. The actions included a small power reduction to 98% of full power on August 2 to implement portions of 2.4.144. The inspector evaluated personnel performance during the power maneuvers against the requirements contained in station procedures. The inspector evaluated personnel performance based on observations, reviews of operator logs, alarm response procedures, operating procedures, and interviews. The inspector collected data regarding the event details and observed plant parameters.

The inspector evaluated performance of mitigating systems and licensee actions. The inspector reviewed licensee action to address issues in the corrective action program in the following condition reports: 200602879, 200602880, and 200602953. The inspector reviewed licensee practices to operate the emergency diesel generators under degraded grid conditions (reference procedure 2.4.144, Revisions 35 and 37). The inspector confirmed that the licensee properly classified the event in accordance with emergency action level procedures and reviewed the event for notification to the NRC as required by 10 CFR Part 50.72. This review represented one inspection sample.

b. Findings

No findings of significance were identified.

2. Licensee Event Report (LER) Review (1 sample)

(Closed) LER 05000293/2006-002-00. Small Quantities of Unaccountable Licensed Material. The inspector reviewed Entergy's actions associated with LER 50-293/2006-002. Entergy's actions were addressed in the corrective action program as CR 200601967, 200601974, 200602023 and 200602177. The event was also described in NRC report 2006201, which documented a violation of NRC requirements (NOV 05000293/2006201-01). The LER provided an accurate description of the event and follow-up actions, taken or planned, were appropriate to address the event. This LER is closed.

#### 4OA6 Meetings, Including Exit

On October 4, 2006, the resident inspector presented the inspection results to Mr. R. Smith and other members of his staff. The inspector asked the licensee whether any of the material examined during the inspection should be considered proprietary. No proprietary information was identified.

#### 4OA7 Licensee-Identified Violations

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

10 CFR 50.47(b)(4) requires that emergency response plans implement a standard emergency classification and action level scheme. This scheme was established in Section D of the PNPS Emergency Response Plan and Emergency Plan Implementing Procedure EP-IP-100, Emergency Classification and Notification. Updated Final Safety Analysis Report Section 12.2.3.5.2 describes the seismic monitoring system (SMS) used at Pilgrim to sense, annunciate and record the building responses to seismic events. The SMS is used in conjunction with emergency procedure 5.2.1, "Earthquake," to assess the impact of an earthquake and determine whether the plant should be shut down for further inspections and evaluations. Procedure 5.2.1 is used to make classifications per EP-IP-100 emergency action levels (EALs) 7.4.3.1, 7.4.1.2, 7.4.2.2, 7.4.1.3 and 7.4.2.3.

Contrary to the above, the SMS was unreliable for its intended functions in that it was not adequately tested or maintained and was only partially functional during periods of plant operation in 2005-2006. During past actions to optimize preventive maintenance (PM) schedules and due to a lack of understanding of the licensing basis, the licensee had stopped performing maintenance and functional testing of the SMS, and deleted these activities from the master surveillance plan (Condition Reports CR 20050720 and 200504278). The SMS was partially functional during a minor seismic event on November 17, 2005 (CR 200504998), but was sufficient to help the operators assess the impact of the event. The seismic monitoring instruments were restored to a fully operable status following repairs and calibrations on March 30, 2006.

Emergency procedure 5.2.1 required updates to meet regulatory commitments and refine criteria to evaluate seismic events (CR 20043582). The licensee further revised 5.2.1 (revision 23 in October 2005, and revision 24 in February 2006) to assure the operators could assess an earthquake severity without the SMS being functional (CR 20055008). Following an emergency drill on July 20, 2006, the licensee identified the need to further revise 5.2.1 to simplify SMS data retrieval, and train site staff to use the SMS to make timely classifications (CR 20062723).

The issue is more than minor because the primary onsite equipment and methods used to timely classify a defined EAL for an Operating Basis Earthquake and a Safe Shutdown Earthquake were degraded, but not compromised. Although assessments could be made with alternative methods, the results would be delayed,

potentially delaying a Site Area Emergency (SAE) or Alert declaration. The issue is not more than green using the criteria IMC 0609 App B, because the degraded SMS did not create a condition which would have prevented the declaration of an EAL for an SAE, Alert or NOUE. Although degraded, the SMS was sufficiently operable to activate at the NOUE level (EAL 7.4.3.1), and to perform its intended function (in part) for more severe events. Procedure 5.2.1 provided sufficient guidance to allow the operator to declare an Alert or SAE based on offsite sources of seismic information (EALs 7.4.2.2 and 7.4.2.3), or based on station damage (EALs 7.4.1.2 or 7.4.1.3). In addition to the actions noted above to enter the issue in the corrective action program, the licensee completed extent-of-condition reviews to determine whether other PMs had been inappropriately de-activated. The licensee initiated plans to upgrade the SMS (ER 05105841, dated July 1, 2005).

ATTACHMENT: SUPPLEMENTAL INFORMATION

**SUPPLEMENTAL INFORMATION**

**KEY POINTS OF CONTACT**

Licensee personnel:

S. Bethay	Director, Nuclear Assessment
S. Brewer	Radiation Protection Technician
K. Bronson	General Manager Plant Operations
M. Christopher	Supervisor, Health Physics
W. Coady	Coordinator ALARA
D. Eldridge	Radiation Protection Technician
B. Ford	Licensing Manager
B. Grieves	Quality Assurance Manager
W. Hollenbeck	Radiation Protection Technician
W. Mauro	Supervisor, Radiation Control
B. McDonald	Radwaste Specialist
P. McNulty	Superintendent, Radiation Protection
J. Norris	Coordinator, ALARA
D. Noyes	Assistant Operations Manager
E. Olson	Operations Manager
R. Smith	Director, Engineering
D. Sukanek	Radwaste Supervisor
G. Zavaski	Coordinator, ALARA

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

Closed

05000293/2006-002 LER Small Quantities of Unaccountable Licensed Material (Section 40A3.2)

**LIST OF DOCUMENTS REVIEWED**

**References for Section 1R01**

2.1.37, Costal Storms-Preparations and Actions  
2.1.42, Operation During Severe Weather  
5.2.2, High Winds (Hurricane)  
2.4.154, Intake Structure Fouling  
National Weather Service Tropical Prediction Center  
ISONE Center for Power System conditions  
EOP 4, Secondary Containment Control  
Condition Reports 200602917, 200602931, 200602933, 200602936,

**References for Section 1R04**

Procedure 2.2.22, Reactor Core Isolation Cooling System (RCIC) Rev 63  
Procedure 5.3.26, RPV Injection During Emergencies, Rev 19  
Procedure 8.7.2.1, Measurement of Standby Gas Treatment Capacity

P&ID M245, RCIC System, Rev E35  
P&ID M294, Standby Gas Treatment System  
CDCN Log No 01-551, RCIC System Hydraulic Analysis  
CR 200601802

**References for Section 1R05**

89XM-1-ER-Q-E5, Fire Hazards Analysis  
CR 200602714  
PI&D M212, Service Water System, Rev 88

**References for Section 1R06**

Condition Reports CR-PNP-200603090, 200603159  
Maintenance Request 03108283, Clean Building Roof Drains During RFO  
Individual Plant Examination for External Events (IPEEE), Chapter 5  
Updated Final Safety Analysis Report (UFSAR), Chapter 2.3  
Master Surveillance Tracking System Node P537104  
Procedure 3.M.5-1, Roof and Exhaust fan Inspection and Maintenance Program, Revision 8  
Procedure 3.M.5-1, "Roof and Exhaust Fan Inspection and Maintenance Program", Rev. 8  
Select Maintenance Records resulting from Repetitive Task P537104, "Clean Building Roof Drains (Cold S/D)"

**References for Section 1R07**

2.2.32 R74 Salt Service Water System (SSW)  
8.5.3.14.1 R4 BBCCW Heat Exchanger Thermal Performance Test  
8.5.3.14 R26 Salt Service Water Flow Rate Operability Test  
7.8.1 R41 Chemistry Sample and Analysis Program  
7.3.41 R20 Salt Service Water Discharge Header Sampling and Analysis  
2.2.95 R52 Chlorination System 710 R0 Calculation - Heat Exchanger Performance Testing  
RBCCW Heat Exchanger A and B Differential Pressure Evaluation 07-04-2006  
RBCCW Heat Exchanger A and B Differential Pressure Evaluation 08-02-2006

**References for Section 1R12**

Condition Report 200602929, 200602932, 200603259, 20062476, 200601850, 200601416,  
200500342, 20050672, 200501700, 200501852, 200505178, 200602597, 200602726  
Maintenance Requests for System 46A - 345 KV for the period of 01/01/05 to  
09/26/06  
System 46A Condition Reports for period 1/1/05 to 9/26/06  
System Health Report 2<sup>nd</sup> Quarter 2006 - System 46A - 345 KV  
Maintenance Requests 01110945, 02117922, 04108183, 04118111, 06111062, 06112629,  
06112626, 06112625, 06112627, 06112628, 05119509, 05119510, 06111044,  
06104751, 05114873, 04105551, 05118878, 06109873

**References for Section 1R13**

MR06112337, Vital MG Set Brush Replacement  
TP06-025, Administrative Controls for Vital MG Set DC Motor Brush Replacement  
CR 200603035

**References for Section 1R15**

Procedure ENN-OP-104 "Operability Determinations"

Condition Reports 200602853, 200602873, 200602868 and 200602811  
MR 06109362, 06111491

**References for Section 1R17**

M8-39 R1 Salt Service Water Pump Bearing Retainer for Bronze-Backed Cutless Rubber Standard and Oversized O. D.  
M8-4 R27 Assembly Drawing, Service Water Pump P208A, B, C D and E  
M11-26-2 RE8 RBCCW E209A Tube Layout as of April 2003  
M11-26-2 RE8 RBCCW E209B Tube Layout  
M8DS1-1 P208A Pump Data Sheet  
M8DS1-2 P208B Pump Data Sheet  
M8DS1-3 P208C Pump Data Sheet  
M8DS1-4 P208D Pump Data Sheet  
M8DS1-5 P208E Pump Data Sheet  
CR 2002-12941 Corrective Action CA-00001, Equipment Failure Analysis - Excessive Pitting in the Shaft Packing Contact Area  
CR 2004-00247 Equipment Failure Analysis - P208D Missing Dowel Pin on Shaft Bearing Retainer  
ER 04103507 R0 Salt Service Water Pump Bearing Retainer Upgrade  
ER 04101393 R0 RBCCW Heat Exchanger Study to Reclaim Plugged Tubes

**References for Section 1R19**

Main Steam Isolation Valve Preventative Maintenance, Procedure No. 3.M.4-8-1, and Main Steam Isolation Valve Operability, 60% Power, Procedure No. 8.7.4.4  
MR P9900989, RHR28B Breaker PM, 52M-2093A  
8.Q.3-3, Breaker Testing  
8.5.2.6, RHR Motor Operated Valve Operability From Alternate Shutdown Panel  
Drawings M1H41, E9, E8-19-09

**Reference for Section 1R22**

7.1.44, Sampling of Charcoal Cells in Standby Gas Treatment and Control Room Environmental Filter System for methyl Iodide testing  
NCS Corporation Test Report 20302 - OSC/TSC Filter Methyl Iodide Efficiency  
NCS Corporation Test Report 20317 - SGBT-A Downstream Filter Methyl Iodide Efficiency  
NCS Corporation Test Report 20316 - SGBT-A Upstream Filter Methyl Iodide Efficiency  
NCS Corporation Test Report 20314 - CRHEAFS-A Filter Methyl Iodide Efficiency

**References for Section 1R23**

Temporary Alternation 06-01-007  
Tagout List Associated with Temporary Alternation 06-01-007  
Temporary Alternation 06-01-0049  
Tagout List Associated with Temporary Alternation 06-01-049  
Control Room Drawings E14, E203  
Condition report 200602903, Loss of full out position for control rod 30-39

**References for Section 20S1**

EN-RP-101, Rev 1 Access Control for Radiological Controlled Areas  
EN-RP-104, Rev 1 Personnel Contamination Events  
EN-RP-105, Rev 0 Radiation Work Permits

EN-RP-108, Rev 2 Radiation Protection Posting  
EN-RP-110, Rev 2 ALARA Program  
RWP 06-0079 Relining of the E-Condensate Demineralizer Tank  
RWP 06-0003 Spent Fuel Pool Cleanup  
RWP 06-0066 Preparations for Spent Fuel Pool cleanup  
RWP 06-0080 Condenser Bay, Turbine Deck, & Recombiner Tasks during Reduced Power  
RWP 06-0072 Fill 3-55 Liners with Spent Fuel Pool radwaste & Transfer to Truck Bay  
RWP 06-0001 Dryer/Separator Pit Drain Down & Decon  
RWP 06-0002 Replace E-Condensate Demineralizer Tank Lining  
CR-PNP-2006:00078, 00428, 01144, 01187, 01352, 01972, 00109, 00134, 00269, 00290, 00307, 00391, 00441, 00694, 01363, 01974, 02545  
Nuclear Oversight Observation Checklists: O2C-PNPS-2006:0153, 0136, 0135, 0128, 0125, 0172, 0173, 0174, 0179, 0200, 0201, 0207, 0212, 0224,  
ALARA Managers Committee Meeting Minutes:  
Meetings conducted on: 8/1/06, 7/10/06, 6/19/06, 5/15/06, 4/20/06, 3/16/06, 2/13/06  
Miscellaneous Documents: Pilgrim Station Five Year ALARA Plan 2006-2011  
Daily Dose Reports

**References for Section 2PS2**

Shipping Records: 2005-04L, 2005-10, 2005-12, 2005-109, 2006-08, 2006-11, 20065-17  
Quality Assurance Audit Report - Radioactive Waste Audit No. QA-15-2005-PNP-02  
Procedures: Process Control Program, 1.15.3, Rev. 6; Radioactive Shipping Procedure, EN-RW-102, Rev. 3  
Condition Reports: CR-PNP-2005-05054, CR-PNP-2005-03367, CR-PNP-2005-03728, CR-PNP-2005-04758, CR-PNP-2006-01267, CR-PNP-2006-01352, CR-PNP-2006-01898, CR-PNP-2006-03120  
Pilgrim Nuclear Power Station Radiological Effluent and Waste Disposal Report, January 1 through December 31, 2005

**References for Section 4OA2**

Condition Report 20030736, High Period During Reactor Startup  
Fact Finding Report for CR 20030736  
Reactor Engineering Memorandum dated 4/2/03, RFO14 Control Rod Replacement/Shuffle Procedure 9.29, Programming of the Rod Worth Minimizer, Revision 23  
Procedure 9.27, Control Blade Lifetime, Revision 10  
MR03109055, examination of control blade D279 from control cell 26-35  
GE Service Information Letter 637  
Benchmark Criticals versus SRM readings spreadsheets for startups on 5/12/03 and 5/20/03  
NTS-01-03-01, Reactor Physics Training Plan  
Training Module O-RQ-04-01-23, Operator Continuing Training

**References for Section 4OA3**

ISONE Center for Power System conditions  
Master/Local Control Center #2, Abnormal Conditions Alert  
ISONE Operating Procedure #4, Action During A Capacity Deficiency  
Abnormal Procedure 2.4.144, Degraded Voltage, Revision 35 and 37  
Abnormal Procedure 2.4.153, loss of turbine Building /Aux Bay Area Ventilation

Technical Specification LCO-ACT-1-06-0096, Startup Transformer Inoperable  
EOP 4, Secondary Containment Control  
Condition Reports 200602870, 200602880, 200602884

**References for Section 4OA7**

MR05117438, Seismic Monitor Event Indicator and Recorder Did Not Function When Tested  
UFSAR Section 12.2.3.5.2, Seismic Instrumentation  
Kinometrics Inc Form #343083, Channel Calibration of Strong Motion Time History Acceleration Recorder SMA-3/SMP-1, 3/30/06  
Bechtel Design Specification C-114-ER-Q-E0 Appendix A  
License Amendment 20 dated 2/11/71  
Safety guide 12, Instrumentation for Earthquakes  
Design Basis Document TDBD-11, Seismic Design  
PDCR 78-24, Seismic Monitoring Instrumentation  
Emergency Procedure 5.2.1, Earthquakes, Revisions 19, 20, 21, 23, 24  
EP-IP-100, EALs 7.4.3.1, 7.4.1.2, 7.4.2.2, 7.4.1.3 and 7.4.2.3  
Alarm Response Procedure ARP-C903R-B1  
Condition Reports 20012428, 200403582, 20050720, 200504278, 200504998, 20055008, 20062723  
Specification E576, PNPS Seismic Instrumentation  
Vendor Manual for Kinometrics SMA-3 Strong Motion Accelerometer

**LIST OF ACRONYMS**

ADAMS	Agencywide Documents Access and Management System
ALARA	As Low As Reasonable Achievable
CFR	Code of Federal Regulations
DBD	Design Basis Documents
DOT	U. S. Department of Transportation
EALs	Emergency Action Levels
EQ	Environmental Qualification
FSAR	Final Safety Analysis Report
HDR	High Dose Rate
HPCI	High Pressure Coolant Injection
HX	Heat Exchanger
IPEEE	Individual Plant Examination for External Events
IR	Inspection Report
LER	Licensee Event Report
LHRA	Locked High Radiation Areas
NRC	Nuclear Regulatory Commission
NCV	Non-Cited Violation
OA	Other Activities
ORS	Occupational Radiation Safety
PARS	Publicly Available Records
PCP	Process Control Program
PI&R	Problem Identification and Resolution
PM	Preventive Maintenance
PNPS	Pilgrim Nuclear Power Station
PS	Public Radiation Safety
RBCCW	Reactor Building Closed Cooling Water
RCIC	Reactor Core Isolation Cooling
RHR	Residual Heat Removal
RWP	Radiation Work Permits
SAE	Site Area Emergency
SBGT	Standby Gas Treatment
SDP	Significant Determination Process
SLC	Standby Liquid Control
SMS	Seismic Monitoring System
SSW	Salt Service Water
TIP	Traversing Incore Probe
TS	Technical Specification
UFSAR	Updated Final Safety Analysis Report
VHRA	Very High Radiation Areas