November 2, 2005

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 05000293/2005004

Dear Mr. Balduzzi:

On September 30, 2005, the US Nuclear Regulatory Commission (NRC) completed an inspection at your Pilgrim reactor facility. The enclosed integrated inspection report documents the inspection findings, which were discussed on October 11, 2005, with Mr. Dietrich and other 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.

The report documents one finding of very low safety significance (Green), which involved a violation of NRC requirements. However, because of the very low safety significance and because the issue has been entered into your corrective action program, the NRC is treating the issue as a non-cited violation (NCV), in accordance with Section VI.A.1 of the NRC's Enforcement Policy. Additionally, one licensee-identified violation which was determined to be of very low safety significance is listed in Section 4OA7 of this report. If you contest any NCV in this report, you should provide a response with the basis for your denial, within 30 days of the date of this inspection report, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, D.C. 20555-0001; with copies to the Regional Administrator, Region I; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555-0001; and the NRC Resident Inspector at Pilgrim.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosures 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/

Clifford Anderson, Chief
Projects Branch 5
Division of Reactor Projects

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

Enclosure: Inspection Report 50-293/05-04
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:	05000293/2005004
Licensee:	Entergy Nuclear Operations, Inc.
Facility:	Pilgrim Nuclear Power Station
Location:	600 Rocky Hill Road Plymouth, MA 02360
Inspection Period:	July 1, 2005 through September 30, 2005
Inspectors:	W. Raymond, Senior Resident Inspector C. Welch, Resident Inspector D. Szwarc, Reactor Engineer Intern A. Cerne, NRC Contractor B. Bickett, Reactor Inspector G. Johnson, Operations Reactor Engineer J. McFadden, Health Physicists M. Davis, Reactor Inspector J. Caruso, Senior Operations Engineer
Approved By:	Clifford Anderson, Chief Projects Branch 5 Division of Reactor Projects

Enclosure

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SUMMARY OF FINDINGS

IR 05000293/2005004; 07/01-09/30/2005; Pilgrim Nuclear Power Station, Surveillance Testing.

The report covered a 13 week period of inspection by resident inspectors and regional specialists in Maintenance Rule, Operator Licensing, Engineering, and Health Physics. One finding of very low safety significance that constituted a violation of NRC requirements was identified. Additionally, a licensee identified violation is also documented in the report. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using IMC 0609, "Significance Determination Process" (SDP). The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 3, July 2000.

A. Inspector Identified and Self-Revealing Findings

Cornerstone: Mitigating Systems

Green. A finding of very low safety significance which constituted a non-cited violation (NCV) of NRC requirements was identified by the inspector. Entergy personnel did not ensure that the temperature of nitrogen gas added (makeup) to the drywell/torus was not less than 70 degrees Fahrenheit, as required by procedure 8.A.1.

The finding is more than minor because it could be reasonably viewed as a precursor to a significant event and if left uncorrected the finding could become a more significant safety concern. The finding impacted both the reactor safety mitigating system and barrier integrity cornerstones and adversely effects the cornerstones' attributes of human performance, procedure quality, and design control. The finding, evaluated using the Significance Determination Process (MC-0609), was determined to be of very low safety significance based on engineering judgement that the torus and/or drywell structure was not degraded or in a failed condition.

Causes contributing to the finding relate to the cross-cutting areas of human performance and problem identification and resolution. Specifically, personnel did not follow procedure requirements to ensure nitrogen temperature was at least 70EF nor did personnel identify procedure deficiencies via the corrective action process.

B. Licensee Identified Violations

A violation of very low safety significance, which was identified by the licensee, has been reviewed by the inspector. Corrective actions taken or planned by the licensee have been entered into the licensee's corrective action program. The violation and corrective action tracking number is 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.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R01 Adverse Weather Protection (71111.01)

a. Inspection Scope

High Temperatures (1 sample)

The inspector reviewed the licensee's actions to protect risk significant systems from high ambient temperatures during the period of June - July 2005. The inspector reviewed licensee methods to protect essential equipment in the emergency diesel generator rooms, the main steam tunnel, the switchgear rooms, vital motor generator sets room, and the salt service water pump rooms. The inspector reviewed licensee actions to implement compensatory measures and verified that the emergency diesel generators (EDG) were in the proper summer mode alignment for high temperature conditions. The inspector toured the intake structure, turbine building switchgear rooms, and emergency diesel generator areas to verify adequate protection for excessive temperatures.

The inspector reviewed the procedures and design basis documents listed in the attachment to this report to verify that licensee controls were appropriate to protect essential equipment. The inspector reviewed the Operability Evaluation for Condition Report 200503151 which provided the bases for declaring the diesel generators operable for ambient temperatures up to 102 degrees Fahrenheit. The inspector verified the licensee addressed adverse weather issues in the corrective action program.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment (71111.04)

a. Inspection Scope (2 samples)

The inspector completed a partial system review of the below-listed risk significant systems during periods when its redundant train or system was out-of-service for maintenance and/or testing or following restoration of the train from maintenance. The position of key valves, breakers, and control switches; required for system operability; were verified by field walkdown and/or review of the main control board indicators. To ascertain the required system configuration, the inspectors reviewed plant procedures,

system drawings, the Updated Final Safety Analysis Report, and the Technical Specifications. The references used for this review are described in the attachment to this report. This inspection activity represented two samples.

- B EDG during trouble shooting of the A EDG on August 10, 2005.
- RCIC system during trouble shooting of the HPCI system on August 26, 2005.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05)

.1 Quarterly Fire Protection Inspection

a. Inspection Scope (12 samples)

The inspector toured selective areas of the plant to observe conditions related to: (1) transient combustibles and ignition sources; (2) fire detection systems; (3) manual firefighting equipment and capability; and (4) passive fire protection features. The inspector verified adequate material condition of active and passive fire protection systems features and their operational lineup and readiness. The inspector also reviewed the applicable fire hazard analysis fire zone data sheets and selective surveillance procedures to ensure that the specified fire suppression systems surveillance criteria were met. This inspection activity represented 12 samples.

- Fire Zone 1.2 'B' RHR and Core Spray Pumps Quad
- Fire Zone 1.6 CRD Pump Quad
- Fire Zone 1.8 CRD Quad Mezzanine
- Fire Zone 2.1 'B' Switchgear and Load Center Room
- Fire Zone 2.2 'A' Switchgear and Load Center Room
- Fire Zone 2.3 Battery Room 'A'
- Fire Zone 2.4 Battery Room 'B'
- Fire Zone 3.5 Vital Motor Generator Set Room
- Fire Zone 5.1 'A' Train Service Water Pump Room
- Fire Zone 5.2 'B' Train Service Water Pump Room
- Fire Zone 5.3 'X' Train (Swing) Service Water Pump Room
- Emergency lighting for 10CFR50 Appendix R requirements

b. Findings

No findings of significance were identified.

.2 Annual Fire Protection Inspection

a. Inspection Scope (1 sample)

The inspector monitored performance of the fire brigade training drill conducted on August 18, 2005. The drill involved a simulated fire in the Auxiliary Bay (Water Treatment Area, 23' elevation). The inspector observed fire brigade personnel performance, and reviewed whether the licensee's fire fighting pre-plan strategies were utilized, the pre-planned drill scenario was followed, and that the drill objectives were met. The inspector reviewed whether the proper protective clothing and breathing apparatus were donned; that sufficient fire fighting equipment was brought to the scene; the fire brigade leader's fire fighting directions were thorough, clear, and effective; and communications with the plant operators and between fire brigade members were efficient and effective. This activity represented one inspection sample.

The inspector reviewed the licensee actions to address fire protection program deficiencies in the corrective actions program, and reviewed whether corrective actions were effective to address past deficiencies identified in Condition Reports 200403870, 200503512, 200503674, and 2005038270.

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures (71111.06)

.1 External Flooding

a. Inspection Scope (1 sample)

The inspector reviewed applicable sections of the UFSAR and the Individual Plant Examination for External Events (IPEEE) report to assess the site's drainage capabilities and to identify potential flooding pathways into the process buildings. Procedures used to prepare for and mitigate the consequences of external flooding were reviewed to ensure they addressed design basis flooding scenarios. Select procedures were walked down with an operator to verify that the preparatory and mitigating strategies could reasonably be implemented. A tour of potential flooding areas was conducted and the installed flood-mitigating features (such as storm drains and scupper drains) were inspected to confirm they were free of obstructions and appeared functional. Commitments made in 1981 (following significant storm damage to the breakwater) to inspect and maintain this structure were reviewed and ongoing repairs to the breakwater (integral component for protection against storm surge) were observed. The procedure used to inspect and maintain this structure was also reviewed. The inspector reviewed the process for integrating Operating Experience and Problem Identification into the overall flood protection program. References used for this inspection are listed in the attachment to this report.

b. Findings

No findings of significance were identified.

.2 Internal Flooding

a. Inspection Scope (1 sample)

The inspector conducted an inspection-tour of five flood zones (as defined in the Pilgrim Probabilistic Safety Assessment [PSA]) within the reactor building. Flood barriers, drains, floor compartment level switches, equipment sills, and other flood controls were examined to confirm the effectiveness of the field equipment in mitigating flood damage and to check the consistency of the assumptions in both the Probabilistic Safety Analysis, Appendix E for "Internal Flood Analysis" and the applicable UFSAR safety evaluation sections. The inspector also reviewed alarm response and barrier control surveillance procedures, instrument testing and calibration controls, and the risk assessment process which considers the impact of potential flood damage of risk significant equipment. System engineering, electrical maintenance, risk assessment, and operations personnel were interviewed to determine the level of cognizance and adequacy of flood protection measures established for the areas selected for sample inspection.

In addition to inspecting the flood control equipment, the inspector examined various safety-related components in the area to check for protection measures commensurate with the assumed flood potential and to verify isolation of redundant train components from common mode damage. In particular, a postulated rupture of the reactor building closed cooling water (RBCCW) system in flood zone RB91F was evaluated with regard to potential impact upon both trains of standby liquid control (SLC) equipment. The following reactor building flood zones, all containing RBCCW or support components, were inspected: RB3A, RB3B, RB3C, RB91A & RB91F.

b. Findings

No findings of significance were identified.

1R07 Heat Sink Performance (71111.07)

a. Inspection Scope (1 sample)

The inspector reviewed performance testing for the A residual heat removal (RHR) and the A reactor building closed cooling water (RBCCW) heat exchangers to verify that the performance monitoring techniques used ensured heat removal capabilities were acceptable. The inspector reviewed the testing to verify that Entergy compared the inspection results against established acceptance criteria; the performance monitoring considered the differences between plant conditions and design conditions; and the frequency of testing and inspections was sufficient. The inspector also determined

whether Entergy evaluated the results to ensure proper heat exchanger operation, and evaluated and corrected discrepancies.

The inspector also reviewed a sample of corrective action condition reports related to the selected equipment to verify that identified problems were appropriately resolved. The inspector reviewed Entergy's actions in response to Condition Reports 200501902 and 200501910 and the actions to verify erosion and corrosion did not impact the plant safety related heat exchangers. The inspector conducted a walkdown of the selected heat exchangers to assess material conditions.

The documents listed in the attachment were used for this inspection. This review covered one inspection sample.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification (71111.11)

.1 Licensed Operator Simulator Training

a. Inspection Scope (1 sample)

The inspector observed the performance of an operator crew during a simulator training session on August 11, 2005. The training was conducted per scenario SES-136 as part of licensed operator requalification program. The simulator scenarios involved operational transients and design basis events. The inspector evaluated whether the crew met the training scenario objectives, performed the critical tasks, and properly used abnormal operating procedures and emergency operating procedures. The inspector observed the licensee actions to implement the emergency plan and to make event classifications and notifications. The inspector also verified that the post-scenario critique discussed lessons learned and that items for improvement were discussed with the crew to enhance future performance. The references used for this review are listed in the attachment to this report.

The inspector reviewed training program issues that were entered into the corrective action program to verify that identified problems were appropriately resolved. The inspector reviewed Entergy's actions in response to Condition Reports 200403994 and 200503446. The inspector observed implementation of training for shift manager overview of plant conditions, critical parameter control, and control of operator actions during EOP implementation. The inspector discussed the status of corrective actions for CR 200403994 with training program representatives. This inspection activity represented one sample.

b. Findings

No findings of significance were identified.

.2 Biennial Licensed Operator Requalification Training

a. Inspection Scope

The following inspection activities were performed using NUREG-1021, Rev. 9, "Operator Licensing Examination Standards for Power Reactors," Inspection Procedure Attachment 71111.11, "Licensed Operator Requalification Program," and NRC Manual Chapter 0609, Appendix I, "Operator Requalification Human Performance Significance Determination Process (SDP)," 10 CFR 55.46 Simulator Rule (sampling basis) as acceptance criteria.

The inspectors reviewed documentation of operating history since the last requalification program inspection. The inspectors also discussed facility operating events with the resident staff. Documents reviewed included NRC inspection reports, Plant Performance Insights, licensee event reports (LERs), and licensee condition reports (CRs) that involved human performance issues for licensed operators to ensure that operational events were not indicative of possible training deficiencies (see document list attached).

The inspectors reviewed three exam sets (i.e., weeks 2, 3, and 4) for both the comprehensive RO and SRO biennial written exams administered during the 2004 exam cycle, as well as scenarios and job performance measures (JPMs) administered during this current exam cycle to ensure the quality of these exams met or exceeded the criteria established in the Examination Standards and 10 CFR 55.59.

During the two weeks of this inspection, the inspectors observed the administration of operating examinations to two operating crews (i.e., Alpha, and Foxtrot). The operating examinations consisted of two simulator scenarios for each crew and one set of five JPMs administered to each individual.

Conformance with Simulator Requirements Specified in 10 CFR 55.46

For the site specific simulator, the inspectors observed simulator performance during the conduct of the examinations, and discrepancy reports to verify compliance with the requirements of 10 CFR 55.46. The following areas were reviewed:

Reviewed the entire listing of open and closed Deficiency Reports (approximately 100 items) and selected 10 for a detailed review to determine if deficiencies are being adequately prioritized and are being corrected in a timely manner.

Reviewed three controlling documents to ensure simulator capability, configuration control, and testing meet the guidance in ANSI/ANS 3.5 1985. It was noted that Pilgrim does not use the simulator for reactivity manipulations, therefore, no core performance testing on the simulator needed to be reviewed.

Reviewed twelve individual simulator tests performed over the last four years and confirmed that they were being performed at the appropriate frequency. In addition

confirmed that the tests compared the simulator data to actual plant data or best estimate data as appropriate. When best estimate data was used, it was determined that the process of estimating was rigorous and reasonable.

Reviewed four verification and validation packages for changes made to the simulator in the last two years. Confirmed that the incorporation of these changes was adequately tested to ensure the overall fidelity of the simulator was not negatively impacted.

Conformance with operator license conditions was verified by reviewing the following records:

- Six medical records and confirmed all records were complete, that restrictions noted by the doctor were reflected on the individual's license, and that the exams were given within 24 months.

- Remediation training records for seven individual and one crew remediations were reviewed for the past two-year training cycle. These records covered both cyclic quiz failures and annual operating exam failures.

- Proficiency watch-standing and reactivation records. A sample of licensed operator reactivation records were reviewed as well as a random sample watch-standing documentation (i.e., four staff license individuals) for time on shift to verify currency and conformance with the requirements of 10 CFR 55.

Licensee's Feedback System. The inspectors interviewed Instructors, training/operations management personnel, and licensed operators (i.e., Assistant Operation's Manager, the Operation's Training Superintendent, three evaluators, the simulator lead, and licensed operators 3 ROs and 2 SROs) for feedback regarding the implementation of the licensed operator requalification program to ensure the requalification program was meeting their needs and responsive to their noted deficiencies/recommended changes.

On October 20, 2005, the inspectors conducted an in-office review of licensee requalification exam results. These results included the annual operating tests administered this year. The inspection assessed whether pass rates were consistent with the guidance of NRC Manual Chapter 0609, Appendix I, "Operator Requalification Human Performance Significance Determination Process (SDP)." The inspectors verified that:

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

- Individual failure rate on the dynamic simulator test was less than or equal to 20%. (Failure rate was ***2.2%**)

- Individual failure rate on the walkthrough test (JPMs) was less than or equal to 20%. (Failure rate was ***0.0%**)

- Individual failure rate on the comprehensive biennial written exam was less than or equal to 20%. (Not applicable - biennial written exams were conducted in 2004)

- More than 75% of the individuals passed all portions of the exam (***97.8%** of the individuals passed all portions of the exam).

*Note: One operator remains to be examined who just returned from disability.

b. Findings and Observations

The inspectors identified an unresolved issue (URI). Entergy's practice to count time on shift (56 or 60 hours/quarter stood in the Assistant Control Room Supervisor (ACRS) position) for the purposes of maintaining an active license does not appear to satisfy NRR Program Office guidance established in NUREG 1021 and may not be in compliance with the requirements of 10 CFR 55. The issue is more than minor and will remain unresolved pending further evaluation by NRC regional management in consultation with the NRR Program Office for Operator Licensing.

10 CFR 55.53(e) requires "...To maintain an active status, the licensee shall actively perform the functions of an operator or senior operator on a minimum of seven 8-hour or five 12 hour shifts per calender quarter..." DEFINITIONS in 10 CFR 55.4 specify that to "Actively perform the function of an operator or senior operator means that an individual has a position on the shift crew that requires the individual to be licensed as defined in the facility's technical specifications..." In addition, historically the NRC has not allowed licensees to take credit for time on shift for non-technical specification positions for the purposes of maintaining an operator's license active (see NUREG 1021, ES 605, section C.2.a, ... These requirements may be completed with a combination of complete 8-hour or 12-hour shifts in a position required by the plant's technical specifications...). That is, if the TS requires two SROs then only two SROs on a shift can "claim" a proficiency watch.

Pilgrim Station Technical Specifications requires two SROs on watch while the reactor is operating. An additional individual qualified for Shift Technical Advisor (STA) duties (implemented at Pilgrim as the Licensed Shift Control Room Engineer (SCRE)) is also required with the reactor operating and that function may be combined with one of the SRO positions. At Pilgrim, the SCRE is normally (though not required to be) a licensed SRO. Shifts at Pilgrim are 12-hours in duration.

The Conduct of Operations procedure 1.3.34, Revision 95, section 5.7, defines the role and responsibilities of the Alternate Control Room Supervisor (ACRS) position on shift when supervising the balance of plant activities in the control room during CRS supervision of reactivity manipulations. Pilgrim assigns this third SRO so that the CRS

can direct his (her) focus on the At-the-Controls operator. While functioning as "ACRS" the licensee considers this "position" as satisfying one of the five 12-hour watches; this credit is permitted in section 6.4 of Procedure 1.3.34. It is not clear, however, if this third SRO is also filling the STA requirements concurrently with overseeing balance of plant activities. The possibility of ACRS performing STA duties is very likely per shift manning requirements of the TS during reactivity transition period. Also, the ACRS is not a TS required position. Any time spent performing STA function may detract from time spent performing SRO function in the interest of a complete proficiency watch. Entergy's position on this matter is to accept the practice since the individual is performing SRO functions; however, licensee controls do not address how much time the ACRS would spent or be controlled in performing SCRE/STA functions such that SRO functions and proficiency would be maintained or fulfilled as a complete shift.

This item has been entered into Entergy's corrective action program (CR-2005-04169), dated September 16, 2005) and the issue is pending further evaluation by the region and NRR program office for Operator Licensing. **((URI(05000293/2005004-01, ACRS Position Tracking Credit for Time on Shift for Maintaining an Active License)**

1R12 Maintenance Rule (71111.12)

.1 Maintenance Rule

a. Inspection Scope (1 sample)

The inspector reviewed follow-up actions for issues relating to the selected system and reviewed the performance history of this system to assess the effectiveness of Entergy's maintenance activities. The inspector reviewed Entergy's problem identification and resolution actions for these issues in accordance with procedures and the requirements of 10 CFR 50.65(a)(1) and (a)(2), "Requirements for Monitoring the Effectiveness of Maintenance." In addition, the inspector reviewed system classification, performance criteria and goals, system health reports, and corrective actions that were taken or planned to verify whether the actions were reasonable and appropriate. These inspection activities represented one sample:

- Proper classification of equipment issues for the Main Steam System (01). The inspector reviewed the main steam system health report for the fourth quarter, 2004, and the current maintenance rule (a)(1) status (CR 200502559 & 200502908). The inspector also reviewed the (a)(1) Action Plan for the main steam relief valves for planned goals, monitoring actions, and corrective measures to restore the system to (a)(2) status.

b. Findings

No findings of significance were identified.

.2 Maintenance Rule Implementation (71111.12B)

a. Inspection Scope (5 samples)

The inspectors conducted a review of Pilgrim's periodic evaluation of Maintenance Rule activities as required by 10 CFR 50.65(a)(3). The evaluation covered a period from May 2003 to May 2005. The purpose of this review was to ensure that Entergy effectively assessed Pilgrim's (a)(1) goals and corrective actions, (a)(2) performance criteria, system monitoring, and preventive maintenance activities. The inspectors verified that the assessment was completed within the required time period and that industry operating experience was utilized, where applicable. Additionally, the inspector verified that Entergy appropriately balanced equipment reliability and availability and made adjustments when appropriate.

The inspectors selected a sample of five risk-significant systems to verify that: (1) the structures, systems, and components were properly characterized, (2) goals and performance criteria were appropriate, (3) corrective action plans were adequate, and (4) system performance was being effectively monitored in accordance with station procedure ENN-DC-121, "Maintenance Rule." The following systems were selected for this detailed review:

- Residual Heat Removal System (RHR)
- Station Blackout Emergency Diesel Generator (SBO EDG)
- Safety Relief Valves (SRV)
- High Pressure Coolant Injection System (HPCI)
- Standby Gas Treatment System (SGTS)

These systems were either in (a)(1) status at some time during the assessment period or experienced degraded performance. The inspectors reviewed corrective action documents for malfunctions and failures of these systems to determine: (1) system failures had been correctly categorized as maintenance preventable functional failures, and (2) system performance was adequately monitored to determine if classifying a system as (a)(1) was appropriate.

The inspectors interviewed the maintenance rule coordinator and system engineers, reviewed documentation for applicable systems, and reviewed a sample of condition and system health reports. The documents that were reviewed are listed in the attachment to this report.

b. Findings

No findings of significance were identified.

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

a. Inspection Scope (6 samples)

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

- MR 05102962, RBCCW MOV4010A Fuse Replacement, 8/3/05 (CR200503643)
- MR 05114393, CRHEAFs Fuse Replacement
- MR 05114318, Emergent work to Trouble Shoot A EDG Load Swings on 8/10/05 (CR200503725) Yellow risk condition.
- MR 05112841, Emergent Work to Trouble Shoot HPCI Pump/turbine Oscillations on 8/12/05 (CR200503933) Yellow risk condition.
- 3.M.3-47, Load Shed Relay Operational/Functional Test (Attachment 1) on 9/12/05 Yellow risk condition.
- MR 05116889 and 05116891, Emergent Work to Replace Bussman KWN fuses on the A and B Emergency Diesel Generators on 9/30/05 Yellow risk condition.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope (4 samples)

The inspector reviewed selected operability determinations to assess the adequacy of the evaluations, the use and control of compensatory measures, compliance with the technical specifications, and the risk significance of the issues. The inspector used the technical specifications, Final Safety Analysis Report, associated Design Basis Documents, Procedure ENN-OP-104 "Operability Determinations," and the additional references listed in the attachment to this report for Section 1R15. This review covered four inspection samples.

- CR 200503151, Emergency Diesel Generators Inoperable due to High Ambient Temperatures (EN 41799)
- CR 200503643, RBCCW MO-4010A Inoperable

- CR 200503313, B salt service water pump total dynamic head low out-of-spec.
- CR 200502935, Main Steam Tunnel High Temperature

The inspector reviewed the licensee actions resulting in declaring the emergency diesel generators inoperable for a brief period on June 26 when ambient air temperatures went above a procedure limit (Event Notification EN 41799). The inspector reviewed the licensee's subsequent determinations resulting in the retraction of EN 41799 on August 12, 2005, and the bases for the conclusion that the EDGs remained operable for the site extreme maximum temperatures as described in FSAR Section 2.3. The inspector reviewed the licensee's methods for measuring local air temperatures and the actions to monitor diesel conditions relative to the limits. The inspector reviewed the diesel licensing and design bases and the engineering evaluations supporting the operability decisions. The references used in this review are listed in the attachment to this report.

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing (71111.19)

a. Inspection Scope (5 samples)

The inspector reviewed post-maintenance test activities on risk significant systems to verify that the effect of the test 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 verified that systems were properly restored following testing and that discrepancies were appropriately documented in the corrective action process. The inspection activity represented five samples:

- Procedure 8.5.3.2.1, "Salt Service Water Pump Quarterly and Biennial (Comprehensive) Operability and Valve Operability Tests"
- MR 05114394, CRHEAFs B Fuse Replacement
- MR P9701195, AO-7017B Actuator rebuild.
- MR 05114318, trouble shoot A EDG load swings.
- MR 05112841, trouble shoot HPCI speed oscillations.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope (5 samples)

The inspector observed and/or reviewed surveillance testing results to determine whether the test acceptance criteria was consistent with Technical Specifications and related Performance Indicators, 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 five samples:

- 2.1.15, RCS Leakage Rate Measurements for July 2005
- 9.16.1, In-sequence Critical for Shutdown Margin Determination
- 8.A.1, Dry Well Vacuum Breaker Surveillance Test.
- 9.9, Control Rod Scram Insertion Time Evaluation.
- 8.5.4.1, High Pressure Coolant Injection (HPCI) System Pump and Valve Quarterly Operability.

b. Findings

Introduction:

Green. A finding of very low safety significance (Green) and which constituted a non-cited violation (NCV) of NRC requirements was identified by the inspector. Operations personnel did not ensure that the temperature of nitrogen gas added to the drywell/torus was not less than 70 degrees Fahrenheit, as required by procedure 8.A.1.

Description:

On August 2, 2005, during performance of surveillance procedure 8.A.1, “Drywell to Torus Vacuum Breaker Monthly/Quarterly Operability;” the inspector identified nitrogen gas temperature supplied to the drywell/torus was not being monitored to ensure that nitrogen injected into the drywell/torus was not less than 70EF (CR200503615). The addition of nitrogen gas below 70EF is prohibited by station procedures to avoid the potential adverse effects of low temperature gas on containment, as detailed in NRC Bulletin 84-01, “Cracks in Boiling Water Reactor Mark I Containment Vent Headers” and NRC Information Notices 84-17, “Problems with Liquid Nitrogen Cooling Components Below the NIL Ductility Temperature” and 85-99, “Cracking in Boiling-Water-Reactor Mark I and Mark II Containments Caused by the Failure of the Inerting System.”

After the inspector identified that monitoring nitrogen temperature was required and that the installed system had no means to do so via the established flow path, the evolution was stopped, a surface pyrometer obtained, and nitrogen temperature verified greater than 70EF (actual 83EF) prior to resuming the evolution. A standing order was subsequently established to provide direction for monitoring nitrogen gas temperature pending the necessary procedural changes. Nitrogen addition to the drywell/torus is

periodically required to maintain technical specification requirements associated with drywell/torus differential pressure.

In response to the above finding, the inspector reviewed on a sampling basis the liquid nitrogen and containment purge/make-up systems and operating procedure 2.2.70, "Primary Containment Atmospheric Control System." The following deficiencies were identified by the inspector.

- Procedure 2.2.70, Attachment 8, "Drywell and Torus Inerting," directs operators to manually position the pressure/temperature control valve TPV-5013 using the valve's manual handwheel. This action defeats the automatic protective features provided by the liquid nitrogen's control system to isolate the liquid nitrogen system on low nitrogen temperature (< 70EF) and/or high pressure (> 100psig) at the outlet of the nitrogen purge vaporizer. Manual operation of TPV-5013 was implemented in May 1994 (Revision 50) as a workaround to an equipment deficiency (CR200503818).

- The containment purge and nitrogen make-up isolation valves, PCV-5030B and SV-5030A respectively, are identified as run-to-failure components and are not periodically calibrated and/or tested to verify their automatic protective feature, to automatically close on high pressure (1.76 psig) and/or low temperature (< 40EF for valve 5030B and <50EF for 5030A)) functions properly (CR200503615).

Analysis:

The finding represented a number of performance deficiencies, two of which included failure to follow procedures and inadequate procedure guidance. The finding was determined to be more than minor based upon the questions in MC-0612, Appendix B. Specifically, the finding could be reasonably viewed as a precursor to a significant event and secondly, if left uncorrected the finding would become a more significant safety concern. The finding impacted both the reactor safety mitigating system and barrier integrity cornerstones and adversely effects the cornerstones' attributes of human performance, procedure quality, and design control. The finding, evaluated with respect to MC-0609, Appendices Alpha (A), "Determining the Significance of Reactor Inspection Findings for At-Power Situations," and Hotel (H), "Containment Integrity Significance Determination Process," screened Green based on engineering judgement that the finding had not resulted in a degraded or failed condition to the torus and/or drywell structure as indicated by the following: the lack of an adverse trend in nitrogen makeup to the drywell or torus; the ability to maintain a differential pressure between the drywell and torus without the need for frequent nitrogen makeup; the presence of a 9 foot off-set between the point of entry of the nitrogen gas from the purge line and the torus vent header; prior satisfactory visual inspections of the structural components of concern; and, procedural requirements/cautions within the inerting procedure prohibiting nitrogen addition at temperatures below 70EF. Inerting via the four-inch line occurs at flow rates and volumes considerably greater than those acquired during nitrogen makeup via the one-inch makeup lines and is more apt to lead to a component failure.

The finding relates to the cross-cutting areas of human performance and problem identification and resolution. Personnel repeatedly did not follow the procedure nor did they identify the deficient condition via the corrective action process.

Enforcement:

Technical Specification 5.4.1 and Regulatory Guide1.33, Revision 2, Appendix A, requires, in part, that Entergy develop, implement, and maintain procedures for operating and testing containment inerting systems. Contrary to the above, on August 2, 2005; operators did not implement surveillance procedure 8.A.1, "Drywell to Torus Vacuum Breaker Monthly/Quarterly Operability," as written. They did not ensure the temperature of nitrogen supplied to the torus was not less than 70EF. Additionally, procedure 2.2.70, "Primary Containment Atmospheric Control System," was found to be deficient in that the procedure intentionally defeated protective features in the system designed to automatically isolate the liquid nitrogen supply upon detection of an adverse condition. Further, Entergy did not provide the necessary instructions to assure that all of the protective features, to prevent the injection of cold gaseous or liquid nitrogen into the torus or drywell, remained operational.

Because the finding is of very low safety significance and has been entered into Entergy's Corrective Action Program (CR 200503615 and 20053818), this violation is being treated as a Non-Cited Violation (NCV), consistent with Section VI.A of the NRC Enforcement Policy. (**NCV 0500293/2005004-002, Failure to maintain and observe controls to prevent injection of cold gaseous or liquid nitrogen into containment)** .

1R23 Temporary Plant Modifications (71111.23)

a. Inspection Scope (1 sample)

The inspector reviewed a temporary modification to verify that the licensing bases and performance capability of the associated risk significant system had not been degraded through the modification. The temporary modification reviewed was:

- Temporary Alteration 05-1-045 to install a jumper to bypass the travel override switch on the Refuel Platform. With an existing problem with a design interlock preventing the refuel platform from traveling over its normal range, spent fuel movement related to the planned spent fuel pool configuration for RFO 15 recovery has not been possible. This Temporary Alteration is needed to override the permissive boundary zone interlock problem so that bridge and trolley operation is available in the spent fuel pool. The inspector also reviewed and discussed with cognizant licensee engineering personnel the related temporary changes to drawing M1MA2, Revision E4, "Elementary Diagram - Refuel Bridge, System Control" and approved and planned revisions to Procedure 2.2.75, "Fuel handling and Servicing Equipment".

b. Findings

No findings of significance were identified

1EP6 Drill Evaluation (71114.06)

1. Event Classification During Operator Simulator Training

a. Inspection Scope (1 sample)

The inspector observed training of licensed operators on August 11, 2005 to evaluate the operators' ability to properly classify plant events in accordance with the Emergency Action Levels and complete the required notifications for plant events. This inspection activity represented one sample.

b. Findings

No findings of significance were identified.

2. Combined Functional Drill

a. Inspection Scope (1 sample)

The inspectors reviewed the drill scenario for the July 2005, combined functional drill and observed portions of the drill at technical support center (TSC), the emergency operation facility (EOF), and the simulator control room. The inspection focused on the ability of Entergy personnel to properly conduct classification, notification, and protective action recommendation (PAR) activities and on the evaluators ability to identify observed weaknesses and/or deficiencies within these areas. The inspectors attended the players and senior evaluators post drill critiques to compare identified weaknesses and deficiencies against the licensee's identified findings to determine whether Entergy was properly identifying failures in these areas.

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY

2PS3 Radiological Environmental Monitoring Program (REMP) And Radioactive Material Control Program (71121.03)

a. Inspection Scope (10 samples)

The inspector reviewed radiological environmental monitoring work activities, radioactive material control activities, and practices and procedural implementation during observations and tours of the facilities and inspected procedures, records, and other

program documents to evaluate the effectiveness of Pilgrim's controls relative to these inspection areas. This inspection activity represents the completion of ten (10) samples relative to this inspection area (i.e., inspection procedure sections 02.01 thru 02.04) in complete fulfillment of the annual inspection requirements.

Inspection Planning and In-Office Inspection (02.01.a thru d) (1 sample)

The inspector reviewed the 2004 Annual Environmental Monitoring Report and licensee assessment results to verify that the REMP was implemented as required by Technical Specifications (TSs) and the Offsite Dose Calculation Manual (ODCM). The inspector examined the report for changes to the ODCM with respect to environmental monitoring, commitments in terms of sampling locations, monitoring and measurement frequencies, land use census, interlaboratory comparison program, and analysis of data. The inspector also reviewed the ODCM to identify environmental monitoring stations, licensee self-assessments, audits, and interlaboratory comparison program results. In addition, the inspector examined the Updated Final Safety Analysis Report (UFSAR) for information regarding the environmental monitoring program and meteorological monitoring instrumentation.

Onsite Inspection (02.02.a thru l) (6 samples)

The inspector walked down all eleven of the air sampling stations and between five and ten percent of the thermoluminescence dosimeter (TLD) monitoring stations to determine whether they were located as described in the ODCM and to determine the equipment material condition. The inspector also observed the exchange of air particulate and air iodine filters at the air sampling stations and the collection of surface water samples (i.e., a continuous composite sample at the discharge canal and two grab samples at other locations). Based on the licensee's sampling schedule, there was no opportunity to observe the collection and preparation of other environmental samples (i.e., green leafy vegetables, cranberries, sediment, Irish Moss (algae), shellfish (mussels and clams), lobster, and fishes). The inspector selectively verified that environmental sampling was representative of the release pathways as specified in the ODCM and that selected sampling techniques were in accordance with procedures. The review of meteorological instrumentation is covered in Section 4OA2.

The inspector reviewed each event documented in the Annual Environmental Monitoring Report which involved a missed sample, inoperable sampler, lost TLD, or anomalous measurement for the cause and corrective actions. The inspector conducted a review of the licensee's assessment of any positive sample results (i.e., licensed radioactive material detected above the lower limits of detection (LLDs)). There were no significant changes made by the licensee to the ODCM as a result of changes to the land use census or sampler station modifications since the last inspection. The inspector reviewed the calibration documentation for the standard test meter used to calibrate the air samplers.

This licensee used the services of the JAF Environmental Laboratory for the measurement of all of their environmental samples. During the conduct of other REMP

inspections in 2005 (i.e., integrated inspection reports 05000220 and 05000410/2005003 (NMP1 & 2) and 05000333/2005004 (JAF)), inspectors reviewed calibration records for the environmental sample radiation measurement instrumentation (i.e., count room); also, inspectors verified that the appropriate detection sensitivities with respect to TS/ODCM were utilized for counting samples (i.e., the samples met the TS/ODCM required LLDs); also, inspectors reviewed the quality control charts for maintaining radiation measurement instrument status and actions taken for degrading detector performance; also, inspectors reviewed the results of the laboratory's quality control program including the interlaboratory comparison program to verify the adequacy of the program. The inspector reviewed the results of the interlaboratory comparison program to verify the adequacy of environmental sample analyses. The inspector examined the licensee's quality control evaluation of the interlaboratory comparison program and the corrective actions for any deficiencies. Also, the inspector evaluated a draft of a recent Quality Assurance audit of the program and its results to determine whether the licensee met the TS/ODCM requirements.

Unrestricted release of material from the Radiologically Controlled Area (RCA)(02.03.a thru e) (2 samples)

The inspector observed the principal location, where the licensee monitored potentially contaminated material leaving the RCA, and inspected the methods used for control, survey, and release from these areas. The inspector observed the performance of personnel surveying and releasing material for unrestricted use to verify that the work was performed in accordance with plant procedures. The inspector also verified that the radiation monitoring instrumentation was appropriate for the radiation types present (based on dry active waste radiochemical analysis results) and was calibrated with appropriate radiation sources. The inspector reviewed the licensee's criteria for the survey and release of potentially contaminated material and verified that there was guidance on how to respond to an alarm which indicated the presence of licensed radioactive material.

The inspector evaluated the licensee's equipment to ensure that the radiation detection sensitivities were consistent with the NRC guidance contained in IE Circular 81-07 and IE Information Notice 85-92 for surface contamination and HPPOS-221 for volumetrically contaminated material. The inspector also examined the licensee's procedures and records to verify that the radiation detection instrumentation was used at its typical sensitivity level based on appropriate counting parameters (i.e., counting times and background radiation levels). The inspector verified that the licensee had not established a "release limit" by altering the instrument's typical sensitivity through such methods as raising the energy discriminator level or locating the instrument in a high radiation background area.

Identification and Resolution of Problems (02.04.a thru c) (1sample)

The inspector reviewed the licensee's draft audit and self-assessments related to the radiological environmental monitoring program (excluding meteorological monitoring instrumentation which is covered in Section 4OA2) performed since the last inspection

and determined that identified problems were entered into the corrective action program for resolution. The inspector examined corrective action reports affecting environmental sampling and sample analysis. The inspector interviewed staff and reviewed documents to determine if the problem identification and resolution activities were being conducted in an effective and timely manner commensurate with their importance to safety and risk. For repetitive deficiencies or significant individual deficiencies in problem identification and resolution identified above, the inspector determined that the licensee's self-assessment activities were also identifying and addressing these deficiencies.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES [OA]

40A2 Identification and Resolution of Problems (71152)

.1 Routine Review of Corrective Action Program Issues

c. 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.

d. Findings

No findings of significance were identified.

.2 Bussmann Fuse Failures in Safety Systems

Effectiveness of Corrective Actions

a. Inspection Scope (1 PI&R sample)

The inspector reviewed the licensee corrective actions for NCV 20040401 associated with Bussmann fuses. The inspector reviewed further licensee actions and condition reports (CRs) regarding failures of Bussmann fuses in control power circuits for plant safety systems that occurred in the years 2002 - 2005. The plant system failures were documented in CRs 20040624, 20050514, and 20050517, and in NRC inspection reports 2004-04, 2005-02, and 2005-06 (Finding 20050601).

In February 2004, the High Pressure Coolant Injection (HPCI) system was inoperable due to a faulty fuse in a valve control power circuit. The NRC issued finding NCV 20040401 because Entergy had not promptly identified a condition adverse to quality. The fuses were susceptible to failure due to a manufacturing defect. Actions were initiated to replace fuses in the warehouse and in the plant with new fuses. Despite these actions, on February 13, 2005, the HPCI system was declared inoperable due to loss of the injection valve control power, again due to the mechanical failure of a Bussmann fuse. NRC reviewed the actions associated with the HPCI fuse failure during inspection 2005-06, and issued a finding (NCV 2005-06-01) because corrective actions, although planned, were not initiated and thus were not timely and did not prevent recurrence.

The inspector reviewed additional licensee actions initiated on August 3, 2005, when the control power for the reactor building closed cooling water (RBCCW) valve MO-4010A was lost during surveillance testing due to a Bussmann fuses that failed mechanically (Condition Report 200503643). The inspector conducted this review to ensure that the licensee properly identified and evaluated the problems associated with the events described in CR 200503643, and implemented appropriate corrective actions. The inspector reviewed the performance of plant safety systems and assessed the effectiveness of licensee corrective actions.

b. Findings

No findings of significance were identified. The licensee conducted a thorough cause evaluation, classified the defects appropriately and assured the deficiency was appropriately reported, and, developed appropriate corrective actions to address the adverse condition.

The licensee root cause analysis was documented in Component Engineering Root Cause Analysis Report for CR 05-03643, Loss of Control Power to MO-4010A due to Bussmann Fuse Failure dated 9/6/2005. The RBCCW system was degraded but remained operable. The replacement fuses used for the corrective actions implemented in 2005 were again found to be susceptible to mechanical failure due to a manufacturing defect. The fuse vendor in conjunction with Wyle Laboratories determined a problem in the manufacturing process resulted in a poor solder connection internal to the fuse, and that the defect applied to KWN-R fuses. Wyle Laboratories reported this issue pursuant to 10 CFR Part 21 on September 27, 2005. A second failure analysis completed by a laboratory independent of the fuse vendor confirmed the root cause conclusions. A contributing cause was a weakness in the fuse dedication process.

Additional licensee corrective actions included reviews to identify and locate susceptible fuses; replacement of fuses based on an engineering evaluation that considered system safety function and detectability of faulty fuses; establishing interim compensatory measures; and, the establishing criteria to “proof test” replacement fuses. Licensee corrective actions continued to replace fuses, improve the fuse dedication process and evaluate alternate fuse suppliers. The corrective actions were appropriate to address the root and contributing causes. No licensee performance issues were identified.

.3 Meteorological Tower Data Recovery Reliability

Effectiveness of Corrective Actions

a. Inspection Scope (1 PI&R sample)

The inspectors reviewed the annual percent data recovery for onsite meteorological tower data from 1996 to the present. The inspectors discussed the issue with the cognizant effluent engineer, the cognizant maintenance supervisor and maintenance technician, and licensing personnel. The inspectors observed the current material condition of the primary and backup meteorological towers and reviewed selected applicable procedures, documents, and condition reports (as listed in the List of Documents Reviewed section).

b. Findings

No significant findings were identified. The requirement for annual percent meteorological data recovery, as specified in the industry standard, ANSI/ANS-3.11-2000, is that meteorological data recovery shall be at least 90% annually; and the same is reflected in NRC Safety Guide 23 (Onsite meteorological programs). However, for the period between 2002 and September 2005, it was observed that the primary meteorological tower was not providing this level performance due to various equipment issues. NRC identified green non-cited violations related to meteorological data recovery in two separate inspection reports: IR 05000293/2003011, and IR 05000293/2004005. In both cases the licensee generated condition reports intended to effect resolution. However, effective corrective actions were not implemented until a major engineering modification on the primary tower to replace defective equipment was completed on September 16, 2005.

Recent analysis, prompted by an NRC inspector inquiry, revealed that when the performance of the secondary meteorological tower was taken into consideration, at least 90% data recovery could have been achieved. As a result, there is no current finding or violation identified in this area. Notwithstanding, for this 4-year period, the licensee failed to classify or prioritize this matter in an manner sufficient to cause timely and effective resolution.

.4 Salt Service Water (SSW) Design Basis Minimum Water Level

Effectiveness of Corrective Actions

a. Inspection Scope (1 PI&R sample)

The inspector reviewed the effectiveness of Entergy's corrective actions for a non-cited violation (NCV) 05000293/2004008-01 identified during a NRC Safety System Design & Performance Capability (SSDPC) Inspection. Specifically, Entergy did not translate the Salt Service Water (SSW) system design basis minimum water level into the SSW

system Operating Procedures or Technical Specifications (TS). Entergy had issued condition reports CR-2004-03832 and CR-2004-3707 to document their corrective actions for resolving the issues associated with the NCV. The inspector reviewed Entergy's corrective actions documented in these condition reports to verify that: (1) the issue was accurately identified; (2) the root cause, apparent cause, and contributing causes were adequately justified; (3) the extent of condition and generic implications were addressed; and (4) the corrective actions were appropriately focused to address the problem and were implemented commensurate with the safety significance of the issue.

The inspector performed this review through evaluating calculations, safety evaluations, drawings, procedures, and the Pilgrim Nuclear Power Station (PNPS) current licensing basis (CLB). The inspector also conducted interviews with plant personnel and performed a walkdown of the SSW system and intake structure.

b. Findings

No findings of significance were identified. The inspector observed that the safety evaluation (SE) written to address portions of the corrective actions focused primarily on the TS, UFSAR, and procedural changes needed to describe and implement the design basis requirements for SSW Pump intake water level. However, the SE did not adequately document the Intake Bay dewatering events that could draw the mean seawater level (msl) below the SSW Pump design basis limit of -7.1 feet. The SSW Pump design basis limit of -7.1 ft is required to remove the maximum containment heat following a design basis accident (DBA) with one train available. The inspector requested that Entergy provide additional information that was applicable to previous Intake Bay dewatering events while the circulating water pumps were in operation. Entergy provided this information and determined that when the prevailing tide in previous years dropped below the design basis mean seawater level, it was primarily caused by the combination of debris accumulation on the traveling screens and the operation of the circulating water pumps. Entergy presented the historical data that indicated that when these events happened the pump bay water reflooded to the prevailing tide level within one minute of securing the circulating water pump. The inspector reviewed this information and had no additional concerns with the issue.

.5 Identification and Resolution of Problems - Public Radiation Safety (71122.03)

a. Inspection Scope

The inspector selected three issues/condition reports (CRs) identified in the Corrective Action Program (CAP) for review under this scope (i.e., CR-PNP-2004-02917and -03579 and CR-PNP-2005-03800). The issues were associated with the following: the removal of power to an environmental air sampler, several marine samples not collected per the surveillance schedule, and exclusion of radioactivity via the sole application of full-width-half-maximum criteria which did not have a sound technical basis. The documented reports for the issues were reviewed to determine whether the full extents

of the issues were identified, appropriate evaluations were performed, and appropriate corrective actions were specified and prioritized.

b. Findings

No findings of significance were identified.

.6 Cross-References to PI&R Findings Documented in the Report

The NRC finding described in Section 1R22 of this report had a causal factor related to the cross-cutting areas of problem identification and resolution. Licensee personnel did not identify the deficient condition in the nitrogen addition process and procedures via the corrective action process.

4OA6 Meetings, Including Exit

On September 15, 2005, the inspector presented the inspection results to Mr. P. Dietrich, General Manager-Plant Operations, and other members of his staff who acknowledged the inspection results.

The inspector presented the inspection results to Mr. Brian Ford, Licensing Manager, and other members of the PNPS staff at the conclusion of the inspection on September 2, 2005. The licensee acknowledged the conclusions and observations presented. The inspector verified that no proprietary information was included in this inspection report.

The inspectors presented inspection results to members of licensee management at the conclusion of the inspections at interim exits on September 15, 2005 and again on September 22, 2005 held at the site. In addition, on October 20, 2005, the licensee was contacted via telecom and a final summary exit was conducted.

4OA7 Licensee-Identified Violations

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

1. Technical Specification 5.4.1 and Regulatory Guide 1.33, Revision 2, Appendix A, requires in part the licensee implement adequate procedures to perform tests and maintenance on systems important to safety. Entergy developed procedure 8.5.4.3, "HPCI Operability and Flow Rate Test at 150 PSIG," to perform the periodic Technical Specification required test of the high pressure coolant injection (HPCI) system at 150 psig. Contrary to the above, procedure 8.5.4.3 did not provide instructions adequate to restore the test line's drag valve (23-HO-320), an adjustable flow restricting orifice, to its required position. As a result, on August 25, 2005, the HPCI system was declared inoperable due to unacceptable oscillations at 3000 gpm, during surveillance testing per

8.5.4.1, “High Pressure Coolant Injection (HPCI) System Pump and Valve Quarterly Operability.” Safety system unavailability was unnecessarily incurred for the HPCI system to trouble shoot and correct the condition on August 26 - 28, 2005.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee personnel:

Jeffrey Burns, SBO System Engineer
Thomas Collis, SBO System Engineer
John Cunningham, Maintenance I&C Supervisor
Peter Dietrich, General Manager Plant Operations
Patrick Doody, Engineering, External Flooding
Vincent Fallacara, Training Manager
Bryan Ford, Licensing Manager
Louis Foreaker, Radiological Instruments Supervisor
Joseph Gaedtke, SSW System Engineer
Mary Gatslick, Licensing Engineer
Philip Harizi, Sr. Design Engineer - Mechanical
Steve Hudson, Maintenance Rule Coordinator
Walter Lobo, Licensing
Jim Manning, Project Engineer, Breakwater Repair
John McClellan, Quality Specialist-Quality Assessment
John McDonald, Operations SRO
Francis McGinnis, Sr. Licensing Engineer
Paul McNulty, Radiation Protection Manager
Frank Mulcahey, HPCI System Engineer
David Noyes, Assistant Operations Manager
Eric Olson, Operations Manager
John Pasik, Purchasing
Francesco Pasquale, Nuclear Superintendent
Douglas Perry, Corrective Action and Review Manager
Robert Reilly, Field Chemistry Supervisor
Dave Rydman, RHR System Engineer
Nancy Santiago, Nuclear Training Superintendent
Richard Scannel, QA Supervisor
Kenneth Sejkora, Effluent Engineer
Thomas Sowdon, Emergency Preparedness Manager
Arnold Stearns, Chemistry Technician
Daniel Twomey, Lead Radiation Protection Technician
J. Wheeler, Manager, Training Standards
Gerard Zavaski, ALARA Coordinator

NRC personnel:

W. Raymond, Senior Resident Inspector
C. Welch, Resident Inspector

LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

Opened

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

Open and Closed

NCV 0500293/2005004-001	Failure to maintain and observe controls to prevent injection of cold gaseous or liquid nitrogen into containment.

LIST OF DOCUMENTS REVIEWED

References for Section 1R01

2.1.35, “Control Room Readings” Revision 35
2.4.153, “Loss of Turbine Building/Aux Bay Area Ventilation”, Revision 15
2.2.8, “Standby AC Power Systems,” Revision 83
2.2.45, “Screen House Heating and Ventilation Systems,” Revision 17
2.2.108, “Diesel Generator Cooling and Ventilation System” Revision 35
ARP C904L-A6, Steam Leak Area Temperature High
Final Safety Analysis Report (FSAR) Sections 10.9
Condition Reports 200502844, 200502873, 200502915, 200502935, 200502984, 200502995, 200503014, 200503030,

References for Section 1R04

Procedure 2.2.8, Standby AC Power System (Diesel Generators)

References for Section 1R06

UFSAR Sections 1.5, 2.3, 2.4, 10.13, 12.2 and Appendix C
2.1.4.2 “Operation During Severe Weather” Rev 4
2.1.37 “Costal Storms-Preparations and Actions”, Rev 21
5.2.2 “High Winds (Hurricane)” Rev 27
2.4.154 “Intake Structure Fouling” Rev 17
NE 8.01 “Main Breakwater Monitoring and Repair Procedure” Rev 1
BECO Letter 81-67, A.V. Morisi to Thomas Ippolito, Dated March 30, 1981 regarding commitments to inspect/repair Breakwater Structure
CR-PNP-2002-12858 regarding SOER 02-1 “Severe Weather”
Pilgrim Nuclear Power Station Probabilistic Safety Assessment, PNPS-PSA, Revision 1, Appendix E, “Internal Flood Analysis”
PNPS Procedures:1.5.22, Revision 7, “Risk Assessment Process”

8.C.42, Revision 15, “Subcompartment Barrier Control Surveillance”
8.E.30.1, Revision 15, “Closed Cooling Water System (CCWS) Instrumentation Calibration and Functional Test”
Vendor Manual (V-0076), Revision 22, “Robertshaw Instrumentation”
Annunciator Response Procedure (ARP) - C904L,F6, Revision 10 for “Excessive leakage in RBCCW pump area”
Maintenance Requests (MR) 19700513 & 19902592 for level switches LS-9026 and LS-9028, respectively

References for Section 1R07

8.5.3.14.1, RBCCW Heat Exchanger Thermal Performance Test
8.5.3.14.2, RHR Heat Exchange Thermal Performance Test
8.E.30, RBCCW System Instrumentation Calibration

References for Section 1R11

Simulator Exam Scenario SES-136
Procedures 5.2.1, 2.4.49, 2.1.6, EOP-1, EOP-3, EOP-17
Condition Reports 200403994, 200503446
EPIP-100, Emergency Classification and Notification

Requalification Program Procedures
5.3.35, “Operations Management Emergency and Transient Response Expectations for Operating Crews,” Revision 8
1.3.34, “Conduct of Operations”
TRNA.25, “Configuration Management Procedure,” Revision 9
EN-TQ-201, “Systematic Approach to Training Process,” Revision 0
OT-8, “Simulator Evaluation Guidelines,” Revision 7
Operations Standards, Revision 6
OT-10, “Exam Security,” Revision 12
NTM 3.5, “Licensed Operator Requalification Training (LORT),” Revision 31
Simulator Procedures/Documents:
EN-TQ-202, “Simulator Configuration Control,” Revision 0
Memo NTM 05-020, Franco Pasquale 8/31/2005, “ANSI/ANS 3.5 1985 Appendix B Transient Testing Documentstion”
Simulator Test Documentation:
Transients
Test #1, “Reactor Scram”
Test #3, “Simultaneous Closure of MSIVs”
Test #4, “Main Turbine Trip without Reactor Scram”
Test #9, “TCV Fast Closure via Manual Opening of 4&5"
“Loss of Feedwater Heating”
“All BPVs Fail Open at 100% Power”
Steady State
4.3.1, “Core Criticality Comparison at BOL/MOL/EOL

9.3, “Core Thermal Power Evaluation at 100%”
“Normal Operations”
Malfunction Tests
“Recirc MG Set Function Generator Failure
“Reactor Level Transmitter Fails Upscale”
“CRD Control Rod Stuck”
Condition Reports
New CRs generated as a result of inspection activities
CR-PNP-2005-04169, (use of ACRS for proficiency watches)
CR-PNP-2005-04207, (Differences between LORT and ES-600 series)
CR-PNP-2005-04556, (Use of Memory and Direct Lookup questions on Requal Written exam)
Biennial Written Exams 2005
Week 1 Crew B and OPS 2, CRO and SRO
Week 2 Crew E and OPS 3, CRO and SRO
Week 3 Crew A and OPS 1, CRO and SRO

Reviewed the following 2004 Biennial Written Exams
RO and SRO Exams for Weeks #2, 3, and 4
Reviewed Scenarios and JPMs - 2005 Annual Operating Exams
Exams for Weeks #2, 3, and 4

References for Section 1R12

UFSAR Section 4.4, “Nuclear System Pressure Relief System”
Licensee Event Reports (LER) 2004-001-00 & 2004-003-00, both titled “Target Rock Relief Valves’ Test pressures Exceed Technical Specification Tolerance Limit”
Piping and Instrumentation Drawing (P&ID) M252, SH 1, Revision E61, “Nuclear Boiler”
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LIST OF ACRONYMS

ACRS	Assistant Control Room Supervisor
ALARA	As Low As Reasonable Achievable
ANS	American Nuclear Society
ANSI	American National Standards Institute
ARP	Annunciator Response Procedure
BOP	Balance of Plant
CAP	Corrective Action Program
CCWS	Closed Cooling Water System
CFR	Code of Federal Regulations
CR	Condition Report
CRSs	Control Room Supervisors
EDG	Emergency Diesel Generators
EOP	Emergency Operating Procedure
FSAR	Final Safety Analysis Report
HPCI	High Pressure Coolant Injection
HPPOS	Health Physics Position
IE	Inspection and Enforcement
IPEEE	Individual Plant Examination for External Events
IR	Inspection Report
JAF	James A. Fitzpatrick
LER	Licensee Event Reports
LLD	Lower Limit of Detection
MR	Maintenance Requests
NCV	Non-Cited Violation
NMP	Nine Mile Point
NRC	Nuclear Regulatory Commission
NWS	National Weather Service
OA	Other Activities
ODCM	Offsite Dose Calculation Manual
PARS	Publicly Available Records
PD	Performance Deficiency
P&ID	Piping and Instrumentation Drawing
PI&R	Problem Identification and Resolution
PNP	Pilgrim Nuclear Plant
PNPS	Pilgrim Nuclear Power Station
PS	Public Radiation Safety
PSA	Probabilistic Safety Assessment
QASR	Quality Assurance Surveillance Report
RBCCW	Reactor Building Closed Cooling Water
RCA	Radiologically-Controlled Area
RCIC	Reactor Core Isolation Cooling
RCS	Reactor Coolant System
REMP	Radiological Environmental Monitoring Program
RFO	Refueling Outage
RHR	Residual Heat Removal

RWP	Radiation Work Permit
SCRE	Shrift Control Room Engineer
SDBD	System Design Basis Document
SDP	Significant Determination Process
SEE	Substitution Equivalency Evaluation
SLC	Standby Liquid Control
SSW	Salt Service Water
STA	Shift Technical Advisor
TLD	Thermo Luminescent Dosimeter
TS	Technical Specification
UFSAR	Updated Final Safety Analysis Report
URI	Unresolved Item