



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

October 31, 2007

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

**SUBJECT: PILGRIM NUCLEAR POWER STATION - NRC INTEGRATED INSPECTION
REPORT 05000293/2007004**

Dear Mr. Bronson:

On September 30, 2007, the US Nuclear Regulatory Commission (NRC) completed an inspection at your Pilgrim Nuclear Power Station (PNPS). The enclosed report documents the results, which were discussed on October 16, 2007, with you and members of your staff.

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

This report documents two NRC-identified findings of very low safety significance (Green). The findings were determined to involve violations of NRC requirements. However, because of the very low safety significance and because they were entered into your corrective action program, the NRC is treating these findings as non-cited violations (NCVs), in accordance with Section VI.A.1 of the NRC's Enforcement Policy. If you contest any NCV in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN.: Document Control Desk, Washington DC 20555-0001; with copies to the Regional Administrator, Region I; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at the Pilgrim Nuclear Power Station.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosures, and your response (if any) will be available electronically for public inspection in the

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Sincerely,

/RA/

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

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

Enclosure: Inspection Report 05000293/2007004
w/Attachment: Supplemental Information

cc w/encl:

G. Taylor, Group President, Entergy Nuclear Operations/CNO
M. Kansler, President, Entergy Nuclear Operations, Inc.
J. Wayne Leonard, Chairman and CEO, Entergy Operations
J. Herron, Senior Vice President, Engineering Nuclear Operations
M. Balduzzi, Senior Vice President, Northeastern Regional Operations
S. Bethay, Director, Nuclear Safety Assurance
O. Limpas, Vice President, Engineering
J. DeRoy, Vice President, Operations Support
J. McCann, Director, Nuclear Safety & Licensing
J. Ventosa, General Manager, Engineering
E. Harkness, Director of Oversight, Entergy Nuclear Operations, Inc.
B. Ford, Manager, Licensing, Entergy Nuclear Operations, Inc.
D. Burke, Manager, Security, Entergy Nuclear Operations, Inc.
R. Smith, Manager, Plant Operations
W. Dennis, Assistant General Counsel
S. Lousteau, Treasury Department, Entergy Services, Inc.
Director, Radiation Control Program, Commonwealth of Massachusetts
W. Irwin, Chief, CHP, Radiological Health, Vermont Department of Health
The Honorable Therese Murray
The Honorable Vincent deMacedo
Chairman, Plymouth Board of Selectmen
Chairman, Duxbury Board of Selectmen
Chairman, Nuclear Matters Committee
Plymouth Civil Defense Director
D. O'Connor, Massachusetts Secretary of Energy Resources
J. Miller, Senior Issues Manager

cc w/encl:

Office of the Commissioner, Massachusetts Department of Environmental Protection

Office of the Attorney General, Commonwealth of Massachusetts

Electric Power Division, Commonwealth of Massachusetts

R. Shadis, New England Coalition Staff

D. Katz, Citizens Awareness Network

Chairman, Citizens Urging Responsible Energy

J. Sniezek, PWR SRC Consultant

M. Lyster, PWR SRC Consultant

J. Doering, PWR SRC Consultant

W. Meinert, Nuclear Engineer

J. Giarrusso, MEMA, SLO

Commonwealth of Massachusetts, Secretary of Public Safety

cc w/encl:

Office of the Commissioner, Massachusetts Department of Environmental Protection
 Office of the Attorney General, Commonwealth of Massachusetts
 Electric Power Division, Commonwealth of Massachusetts
 R. Shadis, New England Coalition Staff
 D. Katz, Citizens Awareness Network
 Chairman, Citizens Urging Responsible Energy
 J. Sniezek, PWR SRC Consultant
 M. Lyster, PWR SRC Consultant
 J. Doering, PWR SRC Consultant
 W. Meinert, Nuclear Engineer
 J. Giarrusso, MEMA, SLO
 Commonwealth of Massachusetts, Secretary of Public Safety

Distribution w/encl:

S. Collins, RA
 M. Dapas, DRA
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 M. Kowal, NRR
 J. Kim, PM, NRR
 J. Boska, NRR
 J. Lubinski, NRR
 M. Schneider, DRP, Senior Resident Inspector
 A. Ford, DRP, Resident OA
ROPreports@nrc.gov

SUNSI Review Complete: RJP (Reviewer's Initials)

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U.S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket No: 50-293

License No: DPR-35

Report No: 05000293/2007004

Licensee: Entergy Nuclear Operations, Inc.

Facility: Pilgrim Nuclear Power Station

Location: 600 Rocky Hill Road
Plymouth, MA 02360

Inspection Period: July 1, 2007 through September 30, 2007

Inspectors: M. Schneider, Senior Resident Inspector, Division of Reactor Projects (DRP)
C. Welch, Resident Inspector, DRP
S. Barr, Senior Emergency Preparedness Inspector, Division of Reactor Safety (DRS)
K. Diederich, Reactor Inspector, DRS
J. Krafty, Reactor Inspector, DRS
J. Kulp, Reactor Inspector, DRS
G. Newman, Reactor Engineer, DRP
J. Noggle, Senior Health Physicist, DRS
S. Pindale, Senior Reactor Inspector, DRS
R. Rolph, Health Physicist, DRS

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

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SUMMARY OF FINDINGS

IR 05000293/2007-004; 07/01/2007-09/30/2007; Pilgrim Nuclear Power Station; Maintenance Effectiveness; Public Radiation Safety.

The report covered a 13-week period of inspection by resident and region-based inspectors. Two Green findings, which were non-cited violations (NCVs), were identified. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process" (SDP). Findings for which the SDP does not apply may be Green or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4, dated December 2006.

A. NRC-Identified and Self-Revealing Findings

Cornerstone: Mitigating Systems

Green. The inspector identified a NCV of 10 CFR 50.65, "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," for Entergy's failure to establish goals or monitor the performance of the safety-related heating, ventilation and air conditioning (HVAC) system per 10 CFR 50.65(a)(1). The system was placed in (a)(1) status due to repetitive fan belt failures. The system was returned to (a)(2) status before the corrective actions had been monitored to determine if they were effective. The system subsequently experienced another fan belt failure during the period that normally would have been monitored.

The performance deficiency was Entergy's failure to set goals and to monitor system performance to provide reasonable assurance that the HVAC system was capable of fulfilling its intended function prior to returning it to an (a)(2) status. The finding is more than minor because it is associated with the equipment performance attribute of the Mitigating Systems Cornerstone and affects the cornerstone objective of ensuring the availability, reliability, and capability of systems that responds to initiating events to prevent undesired consequences. The finding is of very low safety significance because it did not result in the loss of system safety function; did not represent the actual loss of safety function of a single train for greater than its Technical Specification (TS) allowed outage time; and was not risk significant due to seismic, flooding, or severe weather initiating events. (Section 1R12.2)

Cornerstone: Public Radiation Safety

Green. The inspector identified a NCV of TS 5.5.4.c, "Radioactive Effluent Controls Program," for Entergy's failure to obtain representative effluent samples. Specifically, the sample flow rate through the isokinetic nozzles for the reactor building vent was too high to allow for representative samples. Entergy evaluated the impact of nonrepresentative (anisokinetic) sampling and determined the impact on the calculated doses to be minimal and within the uncertainties of typical sampling methodology.

Summary of Findings (cont'd)

The performance deficiency is that Entergy failed to obtain representative effluent samples of the reactor building vent, as required by the TS and the Offsite Dose Calculation Manual (ODCM). The finding is greater than minor because it is associated with the plant equipment and instrumentation attribute of the Public Radiation Safety Cornerstone and affects the cornerstone objective of ensuring adequate protection of public health and safety from exposure to radioactive materials released into the public domain as a result of routine plant operation. The finding was determined to be of very low safety significance because it impaired Entergy's ability to assess dose, although Entergy was able to assess dose, and dose to the public did not exceed the limits of 10 CFR 50, Appendix I, or 10 CFR 20.1301(d). (Section 4OA5)

B. Licensee-Identified Violations

None.

REPORT DETAILS

Summary of Plant Status

Pilgrim Nuclear Power Station (PNPS) operated at 100 percent during the inspection period with the following exceptions: On July 2, 2007, Entergy conducted a rapid down power to approximately 60 percent power due to a loss of the "A" recirculation pump resulting in single loop operation. Entergy completed troubleshooting and repair activities, recovered the loop, and restored reactor power to 100 percent on July 3, 2007. On July 10, 2007, the turbine generator tripped on low vacuum, due to an incorrect low vacuum trip setpoint, resulting in a reactor trip. Entergy recalibrated the trip setpoint, brought the turbine online on July 13, 2007, and restored power to 100 percent on July 16, 2007. On September 14, 2007, Entergy conducted a rapid down power to 50 percent due to a significant fish impingement on the intake traveling screens. Entergy recovered the traveling screens, conducted backwashes, and restored the plant to 100 percent later that same day. The plant remained at essentially 100 percent for the remainder of the inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R01 Adverse Weather Protection (71111.01)

a. Inspection Scope (1 system sample)

The inspectors performed a review of severe weather preparations to evaluate the site's readiness for the hurricane season, including the readiness of several safety systems. The inspection examined selected equipment, instrumentation, and supporting structures to determine if they were configured in accordance with Entergy procedures and if adequate controls were in place to ensure functionality of the systems. The inspectors reviewed the Updated Final Safety Analysis Report (UFSAR) and Technical Specifications (TS), and compared the UFSAR with procedure requirements to ascertain if procedures were consistent with the UFSAR. The inspectors performed partial walkdowns of the intake structure, salt service water system, offsite power, and emergency diesel generators (EDGs) to determine the adequacy of equipment protection from the effects of hurricanes. Documents reviewed during the inspection are listed in the Attachment to this report.

b. Findings

No findings of significance were identified.

1R02 Evaluations of Changes, Tests, or Experiments (71111.02)a. Inspection Scope (5 evaluation and 12 screening samples)

The inspectors reviewed five safety evaluations in the Initiating Event, Mitigating Systems, and Barrier Integrity cornerstones. The selected safety evaluations were reviewed to determine if the changes to the facility or procedures, as described in the UFSAR, were reviewed and documented in accordance with 10 CFR 50.59, "Changes, Tests, and Experiments," and if the safety issues pertinent to the changes were properly resolved or adequately addressed. The inspectors assessed the adequacy of the safety evaluations through interviews with the plant staff and review of supporting information, such as calculations and analyses, design change documentation, procedures, the UFSAR, TS, and plant drawings. The inspectors also reviewed Entergy's conclusions that the changes and tests could be accomplished without obtaining license amendments. The inspectors also reviewed 12 screened-out evaluations for changes, tests, and experiments for which Entergy had decided that safety evaluations were not required. This review was performed to determine if Entergy's threshold for performing safety evaluations was consistent with 10 CFR 50.59. A listing of the safety evaluations and screened-out evaluations reviewed is provided in the Attachment.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment (71111.04Q)a. Inspection Scope (3 partial system samples)

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

- Standby Liquid Control System following quarterly surveillance testing;
- Startup Transformer, Shutdown Transformer, Line 355, and "B" EDG when Line 342 was out of service; and
- "A" EDG alignment following surveillance testing.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05Q)a. Inspection Scope (6 samples)

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

- Fire Zone 1.9, Reactor Building 23 ft., Control Rod Drive (CRD) Hydraulic Control Unit (HCU) East Side;
- Fire Zone 1.10, Reactor Building 23 ft., CRD HCU West Side;
- Fire Zone 1.10, Reactor Building 23 ft., "B" Residual Heat Removal (RHR) and High Pressure Coolant Injection (HPCI) Room;
- Fire Zone 2.4, Battery Room "B";
- Fire Zone 4.1, "B" EDG Room; and
- Fire Zone 4.3 and Fire Zone 4.4, "A" EDG Room.

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures (71111.06)a. Inspection Scope (external flooding - 1 sample)

The inspectors evaluated Entergy's preparation for, and protection from, the effects of external flooding conditions. The inspectors reviewed the UFSAR, applicable procedures, and flood analysis documents to identify areas affected by external flooding and to determine the readiness of protection for applicable safety-related structures, systems, and components (SSCs). The inspectors walked down the intake structure and inventoried the Coastal Storm Preparation tool box, including the necessary keys and the field procedure. Documents reviewed during the inspection are listed in the Attachment.

b. Findings

No Findings of significance were identified.

1R11 Licensed Operator Requalification Program (71111.11Q)

a. Inspection Scope (1 sample)

The inspectors observed licensed operator simulator training on July 23, 2007. Specifically, the inspectors observed crew response to a loss of feedwater heating, recirculation pump high vibration, core oscillations, and Anticipated Transient Without Scram events. The inspectors assessed the licensed operators performance to determine if the training evaluators adequately addressed observed deficiencies. The inspectors reviewed the applicable training objectives to determine if they had been achieved. The inspectors also conducted a review of simulator physical fidelity to determine if the arrangement of the simulator instrumentation and controls closely paralleled that of the control room. Documents reviewed during the inspection are listed in the Attachment.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12)

.1 Routine Maintenance Effectiveness Inspection (71111.12Q - 3 samples)

a. Inspection Scope

The inspectors reviewed three samples of Entergy's evaluation of degraded conditions, involving safety-related SSCs, for maintenance effectiveness during this inspection period. The inspectors reviewed Entergy's implementation of the Maintenance Rule, 10 CFR 50.65, to determine if the conditions associated with the referenced condition reports (CRs) were appropriately evaluated against applicable Maintenance Rule functional failure criteria, as found in Entergy scoping documents and procedures. The inspectors discussed these issues with the system engineers and Maintenance Rule coordinators to determine if they were appropriately tracked against each system's performance criteria and that the systems were appropriately classified in accordance with Maintenance Rule implementation guidance. Documents reviewed during the inspection are listed in the Attachment.

The following issues and/or systems were reviewed:

- Electrical Protection Assembly breaker failures, CRs 2006-03694, 2007-00591 and 2007-00864;
- Neutron Monitoring Average Power Range Monitor (APRM) Quad Trip Card Failures, CRs 2007-03335, 2007-03224, and 2007-03002; and
- 23KV System Unavailability, CRs 2007-02892, 2007-03407, and 2007-03601.

b. Findings

No findings of significance were identified.

.2 Triennial Periodic Evaluation Inspection (71111.12T - 5 samples)

a. Inspection Scope

The inspector reviewed and assessed the effectiveness of Entergy's 10 CFR 50.65(a)(3) periodic evaluation, and the resulting adjustments or corrective actions performed since the last inspection. Entergy's most recent periodic evaluation covered the period from May 2003 to May 2005. The inspector reviewed the evaluation to determine if it met the periodicity requirements and adequately evaluated performance monitoring activities, associated goals, and preventive maintenance activities.

To determine the effectiveness of Entergy's 50.65(a)(3) activities, five Maintenance Rule in-scope SSCs were reviewed. The selection was based on SSC performance or condition, plant specific risk assessment, past inspection results, and operating experience. The SSCs selected were:

- Heating, Ventilation, and Air Conditioning (HVAC) (Sys 24);
- Reactor Building Closed Cooling Water (Sys 30);
- Rod Block Monitor (Sys 45);
- Standby Gas Treatment (Sys 48); and
- Station Black Out Diesel Generator (Sys 61).

The inspector conducted the review to determine if: required SSCs were included in the scope of the program; performance of the SSCs was being effectively monitored against Entergy's established goals, taking into account industry operating experience where practical; goals and performance criteria were appropriate; balancing of reliability and availability was given adequate consideration; corrective action plans were adjusted appropriately when performance of SSCs did not meet established goals; the monitoring was sufficient to provide reasonable assurance that SSCs are capable of fulfilling their intended functions; monitoring plans were appropriately closed; performance of SSCs was being effectively controlled through the performance of appropriate preventive maintenance; and problem identification and resolution of Maintenance Rule-related issues were addressed.

The inspector walked down accessible portions of the selected SSCs, interviewed the Maintenance Rule coordinator and system engineers, and reviewed documentation for applicable systems. The documents reviewed are listed in the Attachment.

The inspector reviewed a sample of CRs related to maintenance effectiveness and the selected SSCs to ensure that problems were identified at an appropriate threshold and that adequate corrective actions were implemented.

b. Findings

Introduction: The inspector identified a Non-Cited Violation (NCV) of 10 CFR 50.65, "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," for Entergy's failure to establish goals or monitor the performance of the safety-

related HVAC system per 10 CFR 50.65(a)(1). The system was placed in 50.65(a)(1) status due to repetitive fan belt failures. The system was returned to 50.65(a)(2) status before the corrective actions had been monitored to determine if they were effective. The system subsequently experienced another fan belt failure during the period that normally would have been monitored.

Description: The inspector reviewed the performance of the portions of the HVAC system that are safety-related and included in the Maintenance Rule, specifically the performance of in-scope belt-driven fan units. On March 25, 2005, the turbine building ventilation exhaust fan (VEX-101B) experienced a belt failure, and on July 25, 2005, the reactor building containment ventilation exhaust fan (VEX-203A) also experienced a belt failure. Entergy evaluated this as demonstrating that maintenance was not effective, and classified the system as 50.65(a)(1) on August 11, 2005. Corrective actions included replacement of the fan belts and re-institution of routine planned maintenance to inspect the belts. Entergy did not establish a performance monitoring plan, including established goals, that would provide reasonable assurance that the system would perform its intended safety function, prior to returning the HVAC system to a 50.65(a)(2) status.

On July 14, 2006, the system was returned to 50.65(a)(2) status, without completing the inspection of all the safety-related HVAC fan belts. Subsequently, on August 25, 2006, a fan belt failed on the salt service water ventilation exhaust fan (VEX-104A). Entergy evaluated this occurrence as a repeat maintenance preventable functional failure. The system was again placed in a 50.65(a)(1) status on February 13, 2007.

The performance deficiency was Entergy's failure to set goals and to monitor system performance to provide reasonable assurance that the HVAC system was capable of fulfilling its intended function prior to returning it to a 50.65(a)(2) status.

Analysis: The finding is more than minor because it is associated with the equipment performance attribute of the Mitigating Systems Cornerstone and affects the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. In addition, the finding is similar to NRC Inspection Manual Chapter (IMC) 0612, Appendix E, Example 7.a, for the failure to set goals and monitor; per the example, this is not minor because there were already significant equipment problems. In accordance with IMC 0609, Appendix A, "Determining the Significance of Reactor Inspection Findings for At-Power Situations," the inspectors conducted a Phase I Significance Determination Process (SDP) screening and determined that the finding is of very low safety significance (Green) because it did not result in the loss of system safety function; did not represent the actual loss of safety function of a single train for greater than its TS allowed outage time; and was not risk significant due to seismic, flooding, or severe weather initiating events.

Enforcement: 10 CFR 50.65, "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," Paragraph (a)(1), states that "each holder of a license to operate a nuclear power plant ... shall monitor the performance or condition of structures, systems, or components, against established goals, in a manner sufficient to provide reasonable assurance that such structures, systems, or components ... are

capable of fulfilling their intended functions. ... when the performance or condition of a structure, system, or component does not meet established goals, appropriate corrective action shall be taken.”

Contrary to the above, during the period from July 14, 2006, to February 13, 2007, Entergy did not establish goals and monitor the performance of the HVAC system in a manner sufficient to provide reasonable assurance that it was capable of fulfilling its intended function. Because the issue is of very low safety significance (Green) and has been entered into Entergy’s corrective action program (CR-PNP-2007-03443), this violation is being treated as an NCV, consistent with Section VI.A.1 of the NRC Enforcement Policy. **NCV 05000293/2007004-01, Failure to Establish Goals and Monitor the HVAC System per 10 CFR 50.65 (a)(1)**

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

a. Inspection Scope (3 samples)

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

- Yellow risk condition on July 24, 2007, due to logic system functional testing of the “B” EDG;
- Emergent work on breaker A-601 on July 25, 2007; and
- Yellow risk condition on August 20, 2007, due to HPCI out of service for maintenance and testing.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope (5 samples)

The inspectors reviewed five operability evaluations associated with the following degraded or non-conforming conditions to ensure that operability and functionality were justified. The inspectors evaluated the operability evaluations against the guidance

contained in NRC Regulatory Issue Summary 2005-20, Revision to Guidance Formerly Contained in NRC Generic Letter 91-18, "Information to Licensees Regarding Two NRC Inspection Manual Sections on Resolution of Degraded and Nonconforming Conditions and on Operability," as well as Entergy procedure ENN-OP-104, "Operability Determinations." The inspectors also discussed the conditions with operators and system and design engineers, as necessary. The documents reviewed are listed in the Attachment. The inspectors reviewed the following degraded or non-conforming conditions:

- CR-PNP-2007-01446, Reactor Core Isolation Cooling Check Valve CK-1301-50 Disc Was Stuck in the Open Position;
- CR-PNP-2007-01783, HPCI Check Valve CK-2301-7 Disc Was Stuck in the Open Position;
- CR-PNP-2007-02601, Main Breakwater Inspection Results;
- CR-PNP-2007-03332, Seismic Qualification of Westinghouse Type A200 Size 1 and 2 Motor Starters; and
- CR-PNP-2007-03432, Safety Relief Valve (SRV) 3B Tailpipe Leakage.

b. Findings

No findings of significance were identified.

1R17 Permanent Plant Modifications (71111.17B)

a. Inspection Scope (6 samples)

The inspectors reviewed six risk-significant plant modification packages. The review was performed to determine if the design bases, licensing bases, and performance capability of risk significant SSCs had not been degraded by the modifications.

The selected plant modifications were distributed among the Initiating Event, Mitigating Systems, and Barrier Integrity cornerstones. For the accessible components associated with the modifications, the inspectors walked down the systems to detect possible abnormal installation conditions. The inspectors reviewed selected attributes to determine if they were consistent with the design and licensing bases. These attributes included component safety classification, energy requirements supplied by supporting systems, instrument setpoints, and supporting electrical and mechanical calculations and analyses. Design assumptions were reviewed to determine if they were technically appropriate and consistent with the UFSAR. For selected permanent plant changes, the 10 CFR 50.59 screens or evaluations were reviewed (see Section 1R02). The inspectors reviewed procedures, calculations, and the UFSAR to determine if they were properly updated with revised design information and operating guidance. The inspectors also reviewed the post-modification testing to determine if it was adequate to ensure the SSC would function in accordance with its design assumptions.

The inspectors reviewed a sample of CRs associated with 10 CFR 50.59 issues and plant modification issues to ensure that Entergy was identifying, evaluating, and

correcting problems associated with these areas and that the planned or completed corrective actions were appropriate. The documents reviewed are listed in the Attachment.

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing (71111.19)

a. Inspection Scope (5 samples)

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

- RHR system maintenance MR P0000784 (MO-1001-18A breaker 52M-1754 maintenance), and MRs 07110236 and 07110234 (MO-1001-16A and MO-1001-18A modification of actuator housing);
- MR 01108514, 52M-1423 HPCI Turbine Exhaust Vacuum Breaker MO-2301-34 maintenance;
- MR 071113653, During "B" EDG IAW 8.9.1 Relay 159-609/1 failed to operate;
- APRM "D" Quad Trip Card Replacement; and
- Startup Transformer Undervoltage Relay Replacement.

b. Findings

No findings of significance were identified.

1R20 Refueling and Other Outage Activities (71111.20)

a. Inspection Scope (1 forced outage sample)

The inspectors reviewed shutdown and plant restart activities associated with a forced outage following a turbine trip on low vacuum and the subsequent automatic reactor trip, on July 10, 2007. The inspectors reviewed Entergy risk evaluations, forced outage work schedules, plant parameter traces, control room logs, and plant startup schedules and procedures. The inspectors attended forced outage meetings and observed control room activities following the plant trip and during the subsequent plant startup. See Section 4OA3.2 for further discussion on the plant trip and operator response.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22)a. Inspection Scope (1 sample)

The inspectors reviewed the quarterly in-service test of the “A” and “C” RHR pumps to determine whether the testing adequately demonstrated equipment operational readiness and the ability to perform the intended safety-related function. The inspectors reviewed selected tests to determine if the prerequisites and precautions met, and if the tests were performed in accordance with the procedure. Additionally, the inspectors evaluated the applicable test acceptance criteria for consistency with associated design bases, licensing bases, and TS requirements. The inspectors also evaluated whether conditions adverse to quality were entered into the corrective action program for resolution. Documents reviewed during the inspection are listed in the Attachment.

b. Findings

No findings of significance were identified.

Cornerstone: Emergency Preparedness1EP2 Alert and Notification System Evaluation (71114.02)a. Inspection Scope (1 sample)

The inspector performed an onsite review to assess the maintenance and testing of Entergy’s Alert and Notification System (ANS). During this inspection, the inspector interviewed site Emergency Preparedness (EP) staff responsible for implementation of the ANS testing and maintenance. CRs pertaining to the ANS were reviewed for causes, trends, and corrective actions. The inspector reviewed Entergy’s original ANS design report to determine compliance with those commitments for system maintenance and testing. Planning standard 10 CFR 50.47(b)(5) and the related requirements of 10 CFR 50, Appendix E, were used as reference criteria. Documents reviewed during the inspection are listed in the Attachment.

b. Findings

No findings of significance were identified.

1EP3 Emergency Response Organization Staffing and Augmentation System (71114.03)a. Inspection Scope (1 sample)

A review of Entergy's Emergency Response Organization (ERO) augmentation staffing requirements and the process for notifying the ERO was conducted to determine the readiness of key staff for responding to an event and for timely facility activation. The inspector reviewed procedures, CRs, and call-in drills associated with the ERO notification system and drills, and the inspector interviewed personnel responsible for testing the ERO augmentation process. The inspector compared qualification requirements to the training records for a sample of ERO members. The inspector also evaluated the EP department staff required training, as specified in the emergency plan. Planning standard 10 CFR 50.47(b)(2) and related requirements of 10 CFR 50, Appendix E, were used as reference criteria. Documents reviewed during the inspection are listed in the Attachment.

b. Findings

No findings of significance were identified.

1EP4 Emergency Action Level and Emergency Plan Changes (71114.04)

a. Inspection Scope (1 sample)

Since the last NRC inspection of this program area, Revisions 30, 31, and 32 to the Emergency Plan were implemented based on Entergy's determination, in accordance with 10 CFR 50.54(q), that the changes resulted in no decrease in effectiveness of the Emergency Plan, and that the revised Emergency Plan continued to meet the requirements of 10 CFR 50.47(b) and Appendix E to 10 CFR 50. The inspector conducted a sampling review of the Emergency Plan changes, and changes to other lower-tier emergency plan implementing procedures, to evaluate for potential decreases in effectiveness of the Emergency Plan. However, this review was not documented in a Safety Evaluation Report and does not constitute formal NRC approval of the changes. Therefore, these changes remain subject to future NRC inspection in their entirety. Documents reviewed during the inspection are listed in the Attachment.

b. Findings

No findings of significance were identified.

1EP5 Correction of Emergency Preparedness Weaknesses (71114.05)

a. Inspection Scope (1 sample)

The inspector reviewed self-assessments and audit reports to assess Entergy's ability to evaluate their EP program and its performance. The inspectors reviewed EP related CRs initiated from January 2006 to July 2007, and the planned and implemented corrective actions. The inspector also reviewed EP drill reports, self-assessments, Quality Assurance surveillance reports, and the required 10 CFR 50.54(t) audits, for 2006 and 2007. Planning standard 10 CFR 50.47(b)(14), and the related requirements of 10 CFR 50, Appendix E, were used as reference criteria.

b. Findings

No findings of significance were identified.

1EP6 Drill Evaluation (71114.06)a. Inspection Scope (1 drill sample and 1 training exercise)

The inspectors observed an evaluated licensed operator simulator training exercise on July 23, 2007. The inspectors evaluated the operating crew activities related to evaluating the scenario and making proper notifications and classification determinations. Additionally, the inspectors assessed the ability of training evaluators to adequately address operator performance deficiencies identified during the exercise. The inspectors also observed an evaluated emergency preparedness drill on September 6, 2007. The inspectors assessed the Technical Support Center, Operations Support Center, and Emergency Operations Facility activities including response, classification determinations, notifications, and protective action recommendations. Finally the inspectors assessed the exercise participant and evaluator ability to adequately address performance deficiencies identified during the exercise. Documents reviewed during the inspection are listed in the Attachment.

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY**Cornerstone: Occupational Radiation Safety**2OS1 Access Control to Radiologically Significant Areas (71121.01)a. Inspection Scope (12 samples)

During the period August 13-16, 2007, the inspector conducted the following activities to determine if Entergy was properly implementing physical, administrative, and engineering controls for access to locked high radiation areas and other radiologically controlled areas during power operations. Implementation of these controls was reviewed against the criteria contained in 10 CFR 20, TS, and procedures. This inspection activity represents the completion of 12 samples relative to this inspection area.

The inspector reviewed all PNPS Performance Indicators (PIs) for the Occupational Radiation Safety Cornerstone.

The inspector identified exposure significant work areas and reviewed associated Entergy controls, radiation work permits (RWP), surveys, postings, and barricades for acceptability. The inspector toured accessible radiologically controlled areas and

performed independent radiation surveys of selected areas to confirm the accuracy of survey data and the adequacy of postings. The inspector examined controls for irradiated reactor components in the spent fuel pool for adequacy.

The inspector reviewed Entergy's self-assessments, audits, and special reports related to the access control program since the last inspection to determine if identified problems are entered into the corrective action program. The inspector reviewed eight CRs related to access control to ensure followup actions were conducted in a timely and effective manner. The inspector reviewed self-assessments and corrective action program reports to determine if repetitive deficiencies were being captured in the corrective action program. The inspector reviewed Entergy's PI data for events that involved dose rates greater than 25 Rem per hour at 30 centimeters or greater than 500 Rad per hour at one meter.

Changes made to high radiation area and very high radiation area procedures were reviewed and the management of the changes was discussed with the Radiation Protection Manager. The inspector discussed, with radiation protection supervision, the controls in place for special areas that have the potential to become very high radiation areas during certain plant operations. The inspector also discussed the communication required with radiation protection prior to these operations to allow appropriate actions to properly post and control the radiation hazards.

Several radiologically related CRs were reviewed to evaluate if the incidents were caused by repetitive radiation worker errors and to determine if an observable pattern traceable to a similar cause was evident. Radiation protection technicians were questioned regarding their knowledge of plant radiological conditions and associated controls.

b. Findings

No findings of significance were identified.

20S2 ALARA Planning and Controls (71121.02)

a. Inspection Scope (5 samples)

During the period August 13-16, 2007, the inspector conducted the following activities to determine if Entergy was properly implementing operational, engineering, and administrative controls to maintain personnel exposure as low as is reasonably achievable (ALARA) for activities performed during the recent refueling outage (RFO-16). The inspector also reviewed the dose controls for current activities. Implementation of these controls was reviewed against the criteria contained in 10 CFR 20, applicable industry standards, and Entergy procedures. This inspection activity represents the completion of five samples relative to this inspection area.

The inspector reviewed pertinent information regarding cumulative exposure history, current exposure trends, and ongoing activities to assess RFO-16 site ALARA performance and current (2007) exposure trends. The inspector reviewed the exposure

status for tasks performed during RFO-16 and compared actual exposure with forecasted estimates contained in ALARA reviews. Outage jobs reviewed included the 'B' recirculation pump replacement (RWP 07-0066), the 'N2K' recirculation discharge nozzle weld overlay (RWP 07-0157), CRD work (RWP 07-0116), and refueling activities (RWP 07-0081, 07-0080, 07-0079, 07-0078, 07-0076). The inspector compared the actual exposures achieved with the intended dose exposure estimates to determine if Entergy's post job evaluations adequately addressed the reasons for dose over-runs.

The inspector reviewed self-assessments for the ALARA program since January 2006 and the 2006 annual radiation protection program report. The inspector reviewed elements of Entergy's corrective action program related to implementing the ALARA program to determine if problems were being entered into the program for timely resolution. Eighteen CRs related to dose/dose rate alarms, programmatic dose challenges, and the effectiveness in predicting and controlling worker dose were reviewed.

b. Findings

No Findings of significance were identified.

Cornerstone: Public Radiation Safety

2PS3 Radiological Environmental Monitoring Program (71122.03)

a. Inspection Scope (9 samples)

The inspector reviewed the current Annual Radiological Environmental Operating Report, and Entergy assessment results, to verify that the Radiological Environmental Monitoring Program (REMP) was implemented as required by TS and the Offsite Dose Calculation manual (ODCM). The review included 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. In addition, the inspector reviewed the following: self-assessments and audits, event reports, interlaboratory comparison program results, the UFSAR for information regarding the environmental monitoring program and meteorological monitoring instrumentation, and the scope of the audit program to verify that it met the requirements of 10 CFR 20.1101.

The inspector walked down 11 air particulate and iodine sampling stations; one control and two indicator water sampling locations; two locations for possible milk sample collection; and, 25 thermoluminescent dosimeter (TLD) monitoring locations and determined that they were located as described in the ODCM and determined that any applicable equipment material condition to be acceptable.

The inspector observed the collection and preparation of a variety of environmental samples and verified that environmental sampling was representative of the release

pathways as specified in the ODCM and that sampling techniques were in accordance with procedures.

Based on direct observation and review of records, the inspector verified that the primary meteorological tower instruments were operable, calibrated, and maintained in accordance with guidance contained in the UFSAR, NRC Safety Guide 23, and Entergy procedures. The inspector verified that the meteorological data readout and recording instruments in the control room were operable.

The inspector reviewed each event documented in the Annual REMP 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 Entergy's assessment of any positive sample results.

The inspector reviewed any significant changes made by Entergy to the ODCM as the result of changes to the land census or sampler station modifications since the last inspection. The inspector also reviewed technical justifications for any changed sampling locations and verified that Entergy performed the reviews required to ensure that the changes did not affect its ability to monitor the impacts of radioactive effluent releases on the environment.

The inspector reviewed the calibration and maintenance records for air samplers. The inspector reviewed the following: the results of the interlaboratory comparison program to verify the adequacy of environmental sample analyses performed by Entergy, the quality control evaluation of the program, and the corrective actions for any deficiencies. The inspector also reviewed Entergy's determination of any bias to the data and the overall effect on the REMP, and Quality Assurance audit results of the program to determine whether Entergy met the TS/ODCM requirements. The inspector verified that the appropriate detection sensitivities were utilized for counting samples, and reviewed the results of the quality control program.

The inspector verified that the radiation monitoring instrumentation used for the release of material from the radiological controlled area was appropriate for the radiation types present and was calibrated with appropriate radiation sources. The inspector reviewed Entergy's equipment to ensure the radiation detectors were consistent with the guidance contained in NRC Circular 81-07 and Information Notice 85-92 for surface contamination, and with Health Physics Position Statement for volumetrically contaminated material (HPPOS-221).

The inspector reviewed Entergy's audits and self-assessments related to the radiological environmental monitoring program since the last inspection to determine if identified problems were entered into the corrective action program, as appropriate. Selected corrective action reports were reviewed since the last inspection to determine if identified problems accurately characterized the causes and corrective actions were assigned to each commensurate with their safety significance. Any repetitive deficiencies were assessed to ensure that Entergy's self-assessment activities were identifying and addressing these deficiencies.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification (71151)

.1 Mitigating System Cornerstone (3 samples)

a. Inspection Scope

The inspectors sampled data for the Mitigating System Performance Index PIs for the HPCI System, RHR System, and the Heat Removal System for the third quarter 2006 through the second quarter 2007 to assess the completeness and accuracy of the reported information. The inspector reviewed operator logs, condition reports, maintenance rule documents, maintenance records, event reports, system health reports and plant process computer information. The acceptance criteria used for the review were Nuclear Energy Institute (NEI) 99-02, Revision 5, "Regulatory Assessment Performance Indicator Guidelines."

b. Findings

No findings of significance were identified.

.2 Emergency Planning Cornerstone (3 samples)

a. Inspection Scope

The inspector reviewed data for the three EP PIs: Drill and Exercise Performance (DEP), ERO Drill Participation, and ANS Reliability. The inspectors reviewed supporting documentation from drills and tests from the fourth quarter 2006 through the second quarter 2007 to verify the accuracy of the reported data. The acceptance criteria used for the review were NEI 99-02.

b. Findings

No findings of significance were identified.

.3 Occupational Exposure Control Effectiveness (1 sample)

a. Inspection Scope

The inspector reviewed implementation of PNPS's Occupational Exposure Control Effectiveness PI Program. Specifically, the inspector reviewed CRs and radiological controlled area dosimeter exit logs for the past four calendar quarters. These records were reviewed for occurrences involving locked high radiation areas, very high radiation

areas, and unplanned exposures against the criteria specified in NEI 99-02 to verify that all occurrences that met the NEI criteria were identified and reported.

b. Findings

No findings of significance were identified.

.4 RETS/ODCM Radiological Effluent Occurrences (1 sample)

a. Inspection Scope

The inspector reviewed a listing of relevant effluent release reports for the past four calendar quarters, related to the public radiation safety performance indicator, which measures radiological effluent release occurrences that exceed established criteria. The acceptance criteria used for the review were NEI 99-02. This inspection activity represents the completion of one sample relative to this inspection area, completing the annual inspection requirement.

The inspector reviewed the following documents to ensure Entergy met all requirements of the performance indicator:

- monthly projected dose assessment results due to radioactive liquid and gaseous effluent releases;
- quarterly projected dose assessment results due to radioactive liquid and gaseous effluent releases; and
- dose assessment procedures.

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems (71152)

.1 Review of Items Entered into the Corrective Action Program

a. Inspection Scope

As required by Inspection Procedure 71152, "Identification and Resolution of Problems," the inspectors performed a screening of each item entered into Entergy's corrective action program. This review was accomplished by reviewing printouts of each CR, attending daily screening meetings, and/or accessing Entergy'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 Problem Identification and Resolution Sample

a. Inspection Scope (1 operator workarounds sample)

In accordance with the requirements of Inspection Procedure 71152, the inspectors performed the annual review of operator workarounds to verify Entergy was identifying operator workaround problems at an appropriate threshold and entering them into the corrective action program. The inspectors reviewed identified workarounds to determine whether the mitigating system function was affected and/or the operator's ability to implement abnormal and emergency operating procedures was affected. The inspection was accomplished through personnel interviews, plant tours, and review of station documents.

b. Assessment and Observations

No findings of significance were identified. Operator workarounds are identified and entered into the corrective action program for resolution. No unrecognized impacts to operator or system performance were identified, and corrective actions have been implemented or are proposed to restore the affected systems.

4OA3 Event Follow-up (71153)

Follow-up of Events and Notices of Enforcement Discretion (3 samples)

Licensee Event Report (LER) Review and Closeout (2 samples)

.1 Loss of "A" Recirculation Pump

a. Inspection Scope

On July 2, 2007, the "A" recirculation pump tripped resulting in single loop operation. Operators responded by commencing a rapid power reduction in accordance with Entergy procedures. Operators entered TS 3.6.F.2, "Single Recirculation Loop Operation," and took action to verify that the Average Planar Linear Heat Generation Rate (APLHGR) and Minimum Critical Power Ratio (MCPR) limits were met, and to reset the APRM high flux trip set points for single loop operation. Entergy conducted an investigation and identified a loose wire on the ground differential over current relay. The loose wire was repaired. During the plant restart, the "A" recirculation pump motor generator set field breaker did not close as expected. Entergy investigated and determined that a limit switch on a scoop tube positioner had not made up as required to allow the breaker to close. The limit switch was repaired and the "A" recirculation pump was started successfully. On July 3, 2007, Entergy returned the plant to two-loop operation. The inspectors responded to the control room to evaluate the adequacy of operator actions with respect to applicable response and single loop operating procedures.

b. Findings

No findings of significance were identified.

.2 Reactor Plant Trip Due to Turbine Trip

a. Inspection Scope

On July 10, 2007, Entergy was conducting a thermal backwash of the condenser with the plant at approximately 47 percent power when the turbine tripped on a low condenser vacuum signal. The turbine trip caused a reactor trip, as expected. Operators responded to the trip and stabilized the plant in a shutdown condition. A four-hour notification was made to the NRC. Entergy's investigation identified that the low condenser vacuum trip instrument was set higher than expected (approximately 24.8 inches mercury (in Hg) versus the 22 in Hg nominal setpoint). In addition, Entergy determined that General Electric (GE) had recommended a setpoint of 20 in Hg for this design of turbine rotor.

Entergy established the low condenser vacuum trip setpoint at 20 in Hg. Additionally, following the reactor trip, operators noted that the #1 bypass valve was oscillating. Entergy's investigation determined that the mechanical pressure regulator (MPR) showed signs of wear in a rotating bushing. The MPR was repaired and retested. On July 12, 2007, Entergy commenced a reactor startup. During the reactor startup, additional problems with the MPR controls were identified. Entergy adjusted the MPR high and low end stops, retested the MPR, continued the plant start-up, and brought the turbine on line at 2:35 p.m. on July 13, 2007. The plant was restored to 100 percent power on July 16, 2007. The inspectors responded to the site and control room, reviewed applicable response and reactor trip procedures, control room logs, TS, turbine and auxiliary instrument calibration surveillances, and startup schedules. The inspectors also attended forced outage meetings, and interviewed operations, engineering and management personnel.

b. Findings

No findings of significance were identified.

.3 Rapid Downpower Resulting from Low Intake Level

a. Inspection Scope

On September 14, 2007, the control room received a high differential pressure alarm on the traveling screens due to significant fish impingement. Operations entered Abnormal Operating Procedure 2.4.154, "Intake Structure Fouling," and performed a rapid power reduction to 50 percent power. Operators started the four traveling screens; "C" and "D" started, but the shear pins broke on "A" and "B." When intake level continued to decrease, operations secured the "B" seawater pump, which enabled intake level to recover. The plant stabilized at 50 percent reactor power. The salt service water pumps, which share the same intake, remained operable because the lowest intake level observed was -13 feet. The TS limit is -13.75 feet. Operators recovered the "A" and "B" traveling screens by replacing the shear pins with non-notched pins. Operators backwashed the "B" seawater pump and observed little debris carryover. Power level

was increased and the plant returned to 100 percent power later that same day. The inspectors responded to the control room, reviewed the applicable operating procedures and TS, and evaluated the adequacy of operator actions.

b. Findings

No findings of significance were identified.

- .4 (Closed) LER 05000293/2007-002-00, Emergency Diesel Generator (EDG) Kilowatt Power Oscillations. The inspectors reviewed Entergy's actions associated with the LER, which were addressed in the corrective action program as CR-PNP-2007-00703. The event was discussed in NRC Inspection Report 05000293/2007002, which documented a Green NCV (NCV 05000293/2007002-01). 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.
- .5 (Closed) LER 05000293/2007-004-00, Target Rock Relief Valves' Test Pressures Exceed Technical Specification Tolerance Limit. On June 13, 2007, Entergy was notified by Wyle Laboratories that three of four Target Rock SRV pilot assemblies had exceeded the TS tolerance limit. The cause were determined to be setpoint variance and corrosion bonding. The inspectors had previously reviewed the long-standing issue of TS tolerance exceedances during SRV testing as part of the biennial Problem Identification and Resolution inspection, documented in Inspection Report 05000293/2007006. NCV 05000293/2007006-02 documented the failure to take effective corrective action to correct recurring SRV TS surveillance failures. The corrective actions discussed in the LER include plans to install an independent lift system, during the next refueling outage, which will sense plant pressure and use the Automatic Depressurization System to lift SRVs at their required setpoints. No new or additional findings were identified during this review. This issue is documented in CR-PNP-2007-02920. This LER is closed.

4OA5 Other Activities

(Closed) URI 05000293/2006003-02, Anisokinetic Sampling of Reactor Building Vent and Main Stack Gaseous Effluents

a. Inspection Scope (1 sample - 71122.01)

During the period August 13-16, 2007, the inspector reviewed documentation and interviewed chemistry staff for an Unresolved Item (URI) 05000293/2006003-02, identified during a June 2006 inspection. The URI identified that the calculated flow rates through the isokinetic probes in the reactor building vent were not correct and therefore the sampling may not be representative.

At the time of the previous inspection, Entergy initiated CR-PNP-2006-02282. In that CR, Entergy intended to verify the diameter of the installed isokinetic probes and verify they are as listed in the vendor manual; determine if the calculation for the sample flow rate through the installed isokinetic probes was in error; and perform an evaluation of the

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impact of non-representative (anisokinetic) sampling of past releases and assess the impact on the calculated doses from affected effluent release points.

b. Findings

Non-Representative Sampling for the Reactor Building Exhaust Vent Monitoring System

Introduction: The inspector identified a NCV for Entergy's failure to obtain representative effluent samples, as required by TS 5.5.4.c, "Radioactive Effluent Controls Program." Specifically, the sample flow rate through the isokinetic nozzles for the reactor building vent was too high to allow for representative samples.

Description: In order to obtain a representative sample through an isokinetic probe, Entergy had to calculate a sample flow rate through the isokinetic probe based on the flow rate through the vent and isokinetic probe diameter. Entergy's evaluation for the basis of the sample flow rate range, discussed in CR-PNP-2006-02282, confirmed that the original basis specified in procedure PNPS 7.3.37 (1.6 to 1.8 cubic feet per minute (cfm)) for the reactor building vent was in error. The evaluation determined that the flow rate should be 0.66 cfm for the reactor building vent. The main stack sample flow rate basis was determined to be correct.

Entergy evaluated the impact of nonrepresentative (anisokinetic) sampling and determined the impact on the calculated doses to be minimal and within the uncertainties of typical sampling methodology. Entergy verified the diameter of the opening to the isokinetic probe, recalculated the sample flow rate based on the current information, and performed an evaluation of previous annual public doses. The evaluation concluded that no doses in excess of 10 CFR 50, Appendix I, had occurred. Entergy's evaluation indicated that using the most conservative particle size assumptions, correction factors, and data from 1992 (a year with higher-than-typical releases of particulate and iodine due to fuel defects) the total site boundary dose would increase from 4.95 to 5.45 millirem for the year. Accordingly, the radiological impact of this condition was minimal.

However, Entergy was unable to adjust the sample flow rate, due to equipment limitations, to be in accordance with the TS. The flow controller lower limit of operation is 0.7 cfm; therefore, the calculated target flow rate value of 0.66 cfm could not be met. Entergy is evaluating which action is best to ensure the flow rate is consistent with the TS. Entergy is tracking the issue in their corrective action program as CR-PNP-2006-02282 and CR-PNP-2007-03685.

The performance deficiency is that Entergy failed to obtain representative effluent samples of the reactor building vent, as required by the TS and the ODCM.

Analysis: The finding is greater than minor because it is associated with the plant equipment and instrumentation attribute of the Public Radiation Safety Cornerstone and affects the cornerstone objective of ensuring adequate protection of public health and safety from exposure to radioactive materials released into the public domain as a result of routine plant operation. Using NRC IMC 0609, Appendix D, "Public Radiation Safety

Significance Determination Process,” this finding is determined to be of very low safety significance (Green) because it impaired Entergy’s ability to assess dose, although Entergy was able to assess dose, and dose to the public did not exceed the limits of 10 CFR 50, Appendix I, or 10 CFR 20.1301(d).

Enforcement: TS 5.5.4.c requires Entergy to monitor, sample, and analyze radioactive effluents in accordance with the methodology and parameters in the ODCM. The ODCM, Section 7.2.3, “Reactor Building Exhaust Vent Monitoring System,” specifies that samples are drawn through an isokinetic probe which is located to assure representative sampling.

Contrary to this requirement, since initial operation, Entergy has not obtained representative effluent samples from the reactor building vent. Because the finding is of very low safety significance (Green) and Entergy entered this problem into their corrective action program (CR-PNP-2006-02282 and CR-PNP-2007-03685), this violation is being treated as a Non-Cited Violation (NCV) consistent with Section VI.A.1 of the NRC Enforcement Policy. This URI is closed. **(NCV 05000293/2007004-02, Non-Representative Sampling of the Reactor Building Exhaust Vent)**

4OA6 Meetings, Including Exit

On July 19, 2007, the emergency planning inspector conducted an exit meeting and presented the preliminary inspection results to Mr. Stephen Bethay, Station Nuclear Safety Assurance (NSA) Director, and other members of the PNPS staff. The inspector confirmed that no proprietary information was provided or examined during the inspection.

On July 27, 2007, the maintenance rule inspector presented the inspection results to Mr. Stephen Bethay, Station NSA Director, and other members of the PNPS staff. The inspector confirmed that no proprietary information was provided or examined during the inspection.

On August 16, 2007, the radiation protection inspector presented the inspection results to Mr. Stephen Bethay, Station NSA Director, and other members of the PNPS staff. The inspector confirmed that no proprietary information was provided or examined during the inspection.

On August 24, 2007, the permanent plant modifications inspectors presented the inspection results to Mr. Kevin Bronson, Site Vice President, and other members of the PNPS staff. The inspectors confirmed that no proprietary information was provided or examined during the inspection.

On August 30, 2007, the radiation protection inspector presented the inspection results to Mr. Stephen Bethay, Station NSA Director, and other members of the PNPS staff. The inspector confirmed that no proprietary information was provided or examined during the inspection.

On October 16, 2007, the resident inspectors conducted an exit meeting and presented the preliminary inspection results to Mr. Kevin Bronson, Site Vice President, and other members of the PNPS staff. The inspectors confirmed that no proprietary information was provided or examined during the inspection.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION**KEY POINTS OF CONTACT**Licensee personnel:

B. Ahern	System Engineer
E. Andre	Senior Electrical Design Engineer
S. Bethay	Station Nuclear Safety Assurance Director
R. Blagbrough	Senior Engineer
K. Bronson	Site Vice President
W. Coady	ALARA Coordinator
T. Collis	System Engineer
G. Choquette	System Engineer
S. Das	Senior Lead Electrical Design Engineer
D. Dean	Senior I&C Design Engineer
P. Doody	Senior Mechanical Design Engineer
E. Eldrige	Radiation Protection Technician
J. Henderson	Site, Radiation Protection Manager
S. Hudson	Maintenance Rule Coordinator
J. Kalb	System Engineer
K. Kampschneider	System Engineer
J. Keene	System Engineer
J. Lamoureux	Supervisor
W. Lobo	Licensing
F. Marcussen	Security Manager
F. McGinnis	Licensing Engineer
C. Mongelli	Mechanical Engineer
F. Mulcahy	System Engineer
M. Neuman	System Engineer
A. Niederberger	System Engineer
J. Norris	ALARA Coordinator
D. Noyes	Operations Manager
K. Sejkora	Sr. HP/Chemical Specialist
D. Sitkowski	Senior Engineer
D. Smith	System Engineer
R. Smith	Manager, Plant Operations
T. Sowdon	Emergency Preparedness Manager
B. Sullivan	Director of Engineering
T. Tetzlaff	Radiation Protection Supervisor
S. Velez	Sr. Engineer

LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

Opened and Closed

- 05000293/2007004-01 NCV Failure to Establish Goals and Monitor the Performance of the HVAC System per 10 CFR 50.65(a)(1) (Section 1R12.2)
- 05000293/2007004-02 NCV Non-Representative Sampling of the Reactor Building Exhaust Vent (Section 4OA5)

Closed

- 05000293/2007-02-00 LER Emergency Diesel Generator Kilowatt Power Oscillations (Section 4OA3)
- 05000293/2007-04-00 LER Target Rock Relief Valves' Test Pressures Exceed Technical Specification Tolerance Limit (Section 4OA3)
- 05000293/2006003-02 URI Anisokinetic Sampling of Reactor Building Vent and Main Stack Gaseous Effluents (Section 4OA5)

LIST OF DOCUMENTS REVIEWED

Section 1R01

CR-PNP-2007-01795, Breakwater Damaged During Storm
 CR-PNP-2007-02691, Main Breakwater Inspection Performed on 5/22/07
 CR-PNP-2007-03609, Incorrect Revision of Seawater System Procedure
 FSAR Chapter 10.7, Salt Service Water System
 FSAR Chapter 2.4.4 - Storm Flooding Protection
 PNPS Individual Plant Examination for External Events, Section 5.2, Floods
 Procedure 2.1.37, Revision 23, Coastal Storm - Preparations and Actions
 Procedure 2.1.42, Revision 5, Operation During Severe Weather
 Procedure 3.M-5-3, Revision 1, Main Breakwater Monitoring and Repair Procedure
 Procedure 5.2.2, Revision 27, High Winds (Hurricane)
 Procedure 5.2.3, Revision 18, Tornado

Section 1R02

COLR, Core Operating Limits Report, Revision 15B
 SE3399, Permanent Removal of Drywell Biological Shield Blocks, Revision 0
 SE3400, New APRM FCTR Setpoints for Stability Option 1-D and Single Loop Operation, Revision 1
 SE3401, Identify the Design Basis for SSW Pump Intake Water Level Requirements, Revision 0
 SE3403, Plant Configuration & Operation after Noble Metals Application, Revision 0

10 CFR 50.59 Screened-out Evaluations

LI-100 8.5.5.8, RCIC Overspeed Trip Test, dated 04/30/07
 LI-100 8.9.8.2, Procedure 8.9.8.2, 'B' 125V DC Battery Acceptance, Performance, or Service Test, dated 04/26/07

A-3

LI-100 EM05121476, EDG Outside Air Temperature Instrumentation Uncertainty Analysis, dated 04/26/07
LI-100 ER05109141, Interim Operation with PSV-3419 gagged closed, dated 05/12/05
LI-100 ER06114792, EDG 'A' Air Start Motor Replacement, dated 05/29/07
LI-101 2006-01802, HPCI, RCIC Minimum Submergence Value, dated 05/18/06
LI-101 EOP-1 Emergency Operation - RPV Control, dated 05/03/05
LI-101 ER041005099, Remove internals from check valve 1001-130, dated 06/21/06
LI-101 ER04110790, Reactor Vents - Drains & Reactor Water Cleanup, dated 06/27/06
LI-101 ER04118433, Elevated Temperature in Main Steam Duct, dated 08/01/06
LI-101 ER06109710, Increase Time Delay for the Moisture Separator Drain Tank Low Level Alarm, dated 12/16/06
LI-101 TA 06-1-016, Drywell Cooler VAC-206A2 - Increase overload relay setting B1835, dated 03/15/2006

Calculations

M-1276, EDG X-107A/B Design Basis Thermal Operating Limits, Revision 0
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PS-79, Emergency Diesel Generator Loading, Revision 5
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3.M.3-25.3, Resistance Testing and Torquing of Station Batteries, performed on 12/06/05
3.M.3-25.8, A8 Control Power Battery Quarterly Inspection, performed on 12/06/05 and 01/17/06
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8.M.2-2.10.8.5, Diesel Generator 'A' Initiation by Loss of Offsite Power Logic, performed on 04/30/05
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Fire Protection Engineering Evaluation 80, Air Compressor Diesel Engine Exhaust Pipes
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Procedure 8.B.17.1, Revision 18, Inspection of Fire Door Assemblies,
Procedure 8.B.17.2, Revision 11, Inspection of Fire Damper Assemblies
Procedure 8.B.29, Revision 9, Inspection of Fire Barriers

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CR-PNP-2007-02691, Main Breakwater Inspection Performed on 5/22/07
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FSAR Chapter 2.4.4 - Storm Flooding Protection
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Procedure 2.1.42, Revision 5, Operation During Severe Weather
Procedure 3.M-5-3, Revision 1, Main Breakwater Monitoring and Repair Procedure

Procedure 5.2.2, Revision 27, High Winds (Hurricane)
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46B - 23 KV System Health Report 2nd Quarter 2007
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CR03-00486 RBM System (a)(1) Action Plan, 3/8/03
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EN-DC-206, Maintenance Rule (a)(1) Process, Revision 0, 1/30/07
EN-DC-204, Maintenance Rule Scope and Basis, Revision 0
ENN-DC-121, Maintenance Rule, Revision 3, 2/28/06
ENN-DC-171, Maintenance Rule Monitoring, Revision 2, 5/24/04
ENN-MS-S-008, Action Plans, Revision 2, 12/22/06
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load onto the A5 bus, Revision 1, 9/10/05
MR 05119634, Perform Troubleshooting on the SBO D/G A801 Output Breaker Closing Circuit
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Maintenance Rule Action Plan, (a)(1) Action Plan for HVAC Tracking Number CR-PNP-06-4122,
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Tracking Number CR-PNP-2005-03751, Revision 0

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 Maintenance Rule Basis Document, Neutron Monitoring (SRMs, IRMs, LPRMs, APRMs, & RBMs) (45a), Revision 1
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2005-3063	2005-5192	2006-2616	2007-0769	2007-2512	2007-3404
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 Scheduler's Evaluation for PNPS for 8/18/2007 through 8/24/2007

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 PS147, Degraded voltage Trip Relays - Revised Voltage Setpoint, Revision 1
 CR-PNP-2007-02691, Main Breakwater Inspection Results
 CR-PNP-2007-03416, During a control room board walkdown, an operator noted SRV-3B tailpipe temperature had trended up from 119 degrees to 176 degrees F over a period of 1.5 hours

CR-PNP-2007-03946; CR-PNP-2007-03999; CR-PNP-2007-04000
CR-PNP-2007-3432, SRV-RV-203-3B Tailpipe Temperature is >212 degrees F
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Procedure 3.M.5-3, Revision 1, Main Breakwater Monitoring and Repair Procedure
Procedure 8.M.2-2.10.8.5, Diesel Generator "A" Initiation by Loss of Offsite Power Logic,
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Procedure 8.M.2-2.10.8.6, Diesel Generator "B" Initiation by Loss of Offsite Power Logic,
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ER 04100787, Replace Undervoltage Relays in 250VDC Motor Control Center D9, Revision 0
ER 04112155, Replace 124VDC A8 Nickel Cadmium Batteries, Revision 0
ER 05104863, Replace EDG "A" M2 Air Start Train Pressure Regulator (PCV-4592A),
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EN-MA-125, Trouble shooting Control of Maintenance Activities - TS plan for "B" EDG 8/22 and
8/23/2007
ER 07101434, Revision 0, Installation of External Grease Relief Bypass on Limitorque Actuators
MR 07112588, Replace Startup Transformer Undervoltage Relay 127A-504
MR 07114186, APRM "D" quad trip card replacement
Procedure 3.M.2-5.4, APRM Calibration Instructions, Revision 51, performed 9/6/07 and 9/7/07
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TS 4.5.A.3, LPCI System Testing
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Nuclear Organization Procedure 88 A4, Revision 11, Assignment Of Responsibilities In Support Of The PNPS Emergency Preparedness Program

Nuclear Training Manual, Section 5.5, Revision 32, EP Training

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EN-EP-305, Revision 1, Emergency Planning 10CFR50.54(q) Review Process

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CR-PNP-2007-03390, Discrepancy Between Procedure No. 5.3.7 and Procedure No. 2.4.150

CR-PNP-2007-03901, CR-PNP-2007-03902; CR-PNP-2007-03903; CR-PNP-2007-02152

Emergency Preparedness Combined Functional Drill (07-04) Binder

EOP-2, RPV Control, Failure to Scram

EOP-3, Primary Containment Control

EP-IP-100, Revision 26, Emergency Classification and Notification

EP-IP-100.1, Revision 3, EALs

LORT/NRC Simulator Exam Scenario SES057B, Revision 1

Procedure 2.4.150, Revision 20, Loss of Feedwater Heating

Procedure 2.4.165, Revision 2, Reactor Core Instability

Procedure 2.4.17, Revision 38, Recirculation Pump Trip

Procedure 5.3.23, Revision 27, Alternate Rod Insertion

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 TSC Objective Checklists

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 6.1-009, Radiological Controls for Handling Highly Radioactive Objects and Refuel Floor
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 6.1-220, Radiological Controls for High Risk Evolutions, Revision 1
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2007-0549	2007-1076	2007-1712	2007-1944	2007-2518	2007-2685
2007-0584	2007-1346	2007-1897	2007-2089	2007-2529	2007-3083
2007-0897	2007-1416	2007-1903	2007-2324	2007-2536	2007-3103
2007-0914	2007-1430				

Post-Job / Work-in-Progress ALARA Reviews:

B Recirculation Pump Replacement
 Control Rod Drives
 N2K Recirculation Discharge Nozzle Weld Overlay
 Refueling Activities

ALARA Managers and Sub-Committee Meeting Minutes:

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Annual Radiological Effluent Release Reports - 2005 and 2006
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PNPS Emergency Preparedness Performance Indicator Records, 1st Quarter 2007 Data
PNPS Emergency Preparedness Performance Indicator Records, 2nd Quarter 2007 Data

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Disabled Annunciator Log as of July 23, 2007
Compensatory Actions/Measures Log
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Control Room Deficiencies, Control Room Annunciators, Operator Compensatory Measures,
Operability Evaluations, Tagouts > 90 days, and Reactivity Management Index .
Operations Standing Orders as of July 23, 2007

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CR-PNP-2007-03231, Turbine and Reactor Trip During Condenser Thermal Backwash
CR-PNP-2007-03233, Bypass Valve Oscillation following Reactor Trip
CR-PNP-2007-03978; CR-PNP-2007-04002
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Plant Pressure Traces following Reactor Trip
Post Trip Report
Power Ascension Schedule
Procedure 2.1.14, Single Loop Operation
Procedure 2.1.6, Reactor Scram
Procedure 2.4.154, Intake Structure Fouling, Revision 10
Procedure 2.4.17, Recirculation Pump Trip
Procedure 8.C.34, Single Recirculation Loop Operation
Procedure 8.F.51, Turbine Generator and Auxiliary Instruments Calibration
Reactor Plant Event Notification Worksheet
Startup Schedule
TS 3.6.F.2, Single Recirculation Loop Operation

LIST OF ACRONYMS

ADAMS	Agencywide Documents Access and Management System
ALARA	As Low As Reasonable Achievable
ANS	Alert and Notification System
APRM	Average Power Range Monitor
cfm	cubic feet per minute
CFR	Code of Federal Regulations
CR	Condition Report
CRD	Control Rod Drive
DRP	Division of Reactor Projects
DRS	Division of Reactor Safety
EDG	Emergency Diesel Generator
EP	Emergency Preparedness
ERO	Emergency Response Organization
GE	General Electric
HCU	Hydraulic Control Unit
HPCI	High Pressure Coolant Injection
HVAC	Heating, Ventilation, and Air Conditioning
IMC	Inspection Manual Chapter
in Hg	Inches Mercury
LER	Licensee Event Report
MPR	Mechanical Pressure Regulator
MR	Maintenance Request
NCV	Non-Cited Violation
NEI	Nuclear Energy Institute
NRC	Nuclear Regulatory Commission
NSA	Nuclear Safety Assurance
ODCM	Offsite Dose Calculation Manual
PI	Performance Indicator
PMT	Post-Maintenance Tests
PNPS	Pilgrim Nuclear Power Station
REMP	Radiological Environmental Monitoring Program
RETS	Radiological Effluents Technical Specifications
RFO	Refueling Outage
RHR	Residual Heat Removal
RWP	Radiation Work Permit
SDP	Significance Determination Process
SRV	Safety Relief Valve
SSC	System, Structure or Component
TLD	Thermoluminescent Dosimeter
TS	Technical Specifications
UFSAR	Updated Final Safety Analysis Report
URI	Unresolved Item