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

February 14, 2008

Mr. Charles G. Pardee
Chief Nuclear Officer and Senior Vice President
Exelon Generation Company, LLC
200 Exelon Way
Kennett Square, PA 19348

SUBJECT: PEACH BOTTOM ATOMIC POWER STATION - NRC INTEGRATED INSPECTION REPORT 05000277/2007005 and 05000278/2007005

Dear Mr. Pardee:

On December 31, 2007, the United States Nuclear Regulatory Commission (NRC) completed an inspection at your Peach Bottom Atomic Power Station (PBAPS), Units 2 and 3. The enclosed integrated inspection report documents the inspection results, which were discussed on January 18, 2008, with Mr. J. Grimes 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 NRC-identified finding of very low safety significance (Green). This finding was determined to involve a violation of NRC requirements. However, because of the very low safety significance and because it is entered into your corrective action program (CAP), the NRC is treating the finding as a non-cited violation (NCV) consistent with Section VI.A.1 of the NRC Enforcement Policy. If you contest the NCV in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the NRC, 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 PBAPS.

In accordance with Title 10 of the Code of Federal Regulations (CFR), Part 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosures, and your response (if any) will be available electronically for public inspection in the NRC Public Document Room or from the

Publicly Available Records (PARS) component of the NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/

Paul G. Krohn, Chief
Reactor Projects Branch 4
Division of Reactor Projects

Docket Nos.: 50-277, 50-278
License Nos.: DPR-44, DPR-56

Enclosures: Inspection Report 05000277/2007005 AND 0500278/2007005
w/Attachment: Supplemental Information

cc w/encl:
C. Crane, Executive Vice President, Exelon, Chief Operating Officer, Exelon Generation
J. Grimes, Site Vice President, Peach Bottom Atomic Power Station
M. Pacilio, Chief Operating Officer, Exelon
M. Massaro, Plant Manager, Peach Bottom Atomic Power Station
J. Armstrong, Regulatory Assurance Manager - Peach Bottom
J. Bardurski, Manager, Financial Control & Co-Owner Affairs
R. DeGregorio, Senior Vice President, Mid-Atlantic
P. Cowan, Director, Licensing and Regulatory Affairs
J. Bradley Fewell, Assistant General Counsel, Exelon Nuclear
Manager Licensing, PBAPS
Director, Training
Correspondence Control Desk
D. Allard, Bureau of Radiation Protection, Department of Environmental Protection
R. McLean, Power Plant and Environmental Review Division (MD)
S. Pattison, MD Department of Environment
A. Lauland, MD Department of Environment
T. Snyder, MD Department of Environment
Public Service Commission of Maryland, Engineering Division
Board of Supervisors, Peach Bottom Township
B. Ruth, Council Administrator of Harford County
R. Ayers, Deputy Manager, Harford County Div of Emergency Operations
E. Crist, Harford County Emergency Management
L. Ploener, Emergency Planner, Harford County Div of Emergency Operations
R. Brooks, Cecil County Dept. of Emergency Services
Mr. & Mrs. Dennis Hiebert, Peach Bottom Alliance
E. Epstein, TMI - Alert
J. Johnsrud, National Energy Committee, Sierra Club
Mr. & Mrs. Kip Adams
R. Fletcher, Department of Environment, Radiological Health Program
J. Powers, Director, PA Office of Homeland Security
R. French, Dir, PA Emergency Management Agency
D. Lockbaum, Union of Concerned Scientists

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/
Paul G. Krohn, Chief
Reactor Projects Branch 4
Division of Reactor Projects

Docket Nos.: 50-277, 50-278
License Nos.: DPR-44, DPR-56

Distribution w/encl: **(via E-mail)**
S. Collins, RA
M. Dapas, DRA
D. Lew, DRP
J. Clifford, DRP
P. Krohn, DRP
R. Fuhrmeister, DRP
T. Setzer, DRP
F. Bower, DRP - Sr. Resident Inspector
M. Brown, DRP - Resident Inspector
S. Schmitt - Resident OA
G. West, RI OEDO
H. Chernoff, NRR
J. Lubinski, NRR
J. Hughey PM NRR
P. Bamford, Backup NRR
mailto: ROPreports@nrc.gov(All IRs)
Region I Docket Room (with concurrences)

SUNSI Review Complete: pgk (Reviewer's Initials)

DOCUMENT NAME: G:\DRP\BRANCH4\DRAFT INSPECTION REPORTS FOR DRP BR 4 FOR 2007\DRAFT BR 4 IRS 4TH QTR 2007\PB IR2007005.DOC

After declaring this document "An Official Agency Record" it **will** be released to the Public.

To receive a copy of this document, indicate in the box: "**C**" = Copy without attachment/enclosure "**E**" = Copy with attachment/enclosure "**N**" = No copy

ML080450571

OFFICE	RI/DRP		RI/DRP					
NAME	FBower/pgk for		PKrohn/PGK for					
DATE	02/14 /08		02 /14/08					

OFFICIAL RECORD COPY

U.S NUCLEAR REGULATORY COMMISSION

REGION I

Docket Nos.:	50-277, 50-278
License Nos.:	DPR-44, DPR-56
Report No.:	05000277/2007005 and 05000278/2007005
Licensee:	Exelon Generation Company, LLC
Facility:	Peach Bottom Atomic Power Station (PBAPS), Units 2 and 3
Location:	Delta, Pennsylvania
Dates:	October 1, 2007 through December 31, 2007
Inspectors:	F. Bower, Senior Resident Inspector M. Brown, Resident Inspector T. Burns, Reactor Inspector P. Frechette, Physical Security Inspector R. Nimitz, Senior Health Physicist J. Schoppy, Senior Reactor Inspector G. Johnson, Operations Inspector
Approved by:	Paul G. Krohn, Chief Reactor Projects Branch 4 Division of Reactor Projects

TABLE OF CONTENTS

SUMMARY OF FINDINGS

IR 05000277/2007-005, 05000278/2007-005; 10/01//2007 - 12/31/2007; Peach Bottom Atomic Power Station (PBAPS), Units 2 and 3; Maintenance Effectiveness.

The report covered a 3-month period of inspection by resident inspectors and announced inspections by a senior health physicist and three regional specialist inspectors. One Green NCV was identified. The significance of most findings is indicated by their color (Green, White, Yellow, or 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 commercial 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. A Green non-cited violation (NCV) of 10 CFR 50.65, "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," was identified for PBAPS's failure to include the reactor building equipment and floor drain plugs in the scope of the Maintenance Rule (MR) program and, therefore, the station did not recognize that appropriate preventative maintenance was not being performed. PBAPS entered this issue into the corrective action program and took action to assess the scoping of the reactor building floor and equipment drain systems into the preventive maintenance program.

The inspectors determined that this finding was more than minor because it was associated with the Mitigating Systems Cornerstone attribute of protection against external factors, and impacted the cornerstone objective of ensuring the availability of systems that respond to initiating events to prevent undesirable consequences. The inspectors determined that this finding is of very low safety significance because the condition was not a design or qualification deficiency confirmed not to result in a loss of operability, did not represent a loss of system safety function, did not represent an actual loss of safety function of a single train for greater than its TS allowed outage time, did not represent an actual loss of one or more risk-significant non-TS trains of equipment for greater than 24 hours, and did not screen as potentially risk-significant due to seismic, flooding, or severe weather. The inspectors also determined that this finding had a cross-cutting aspect in the area of problem identification and resolution (PI&R) because the licensee's procedure did not appropriately contain lessons learned from a similar event that had occurred in February 2007 (IMC 0305, P.2(b)) (Section 1R12).

B. Licensee Identified Violations

None.

REPORT DETAILS

Summary of Plant Status

Unit 2 began the inspection period at 100 percent rated thermal power where it remained until the end of the inspection period, except for brief periods to support planned testing and rod pattern adjustments.

Unit 3 began the inspection period shutdown for the P3R16 refueling outage. On October 13, 2007, the reactor was restarted and the unit was synchronized to the grid on October 16, 2007. During the period between October 18 and 20, 2007, operators performed unplanned reductions in the recirculation pump speed four times due to high temperatures in the 'A' and 'B' reactor recirculation pump seals. Each power reduction was less than three percent. On October 20, 2007, the unit was returned to full power where it remained until the end of the inspection period, except for brief periods to support planned testing and rod pattern adjustments.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R01 Adverse Weather Protection (71111.01 – 1 System Sample)

Evaluate Readiness for Winter Seasonal Susceptibilities

The inspectors performed a detailed review of PBAPS's and Exelon's written procedures for winter readiness and low temperatures to evaluate PBAPS's implementation of the adverse weather preparation procedures, and compensatory measures for the affected conditions before the onset of adverse weather conditions. The inspectors selected, for inspection, the intake structure and low voltage switchyard supporting both Units 2 and 3, which constituted one sample that included the following three systems:

- Heat Trace System;
- Emergency Service Water (ESW); and
- Unit Auxiliary and Main Transformers.

Documents reviewed to verify that the selected systems would remain functional when challenged by adverse weather included the Updated Final Safety Analysis Report (UFSAR), Technical Specifications (TSs), and selected plant documents. The review also verified plant features and procedures for the operation and continued availability of the ultimate heat sink (Conowingo Pond). The three plant systems listed above were walked down to verify the physical condition of the cold weather protection features and to verify that they are monitored sufficiently to ensure they support operability of the system, structure, or component (SSC) they protect. The inspectors also reviewed adverse weather procedures to ensure they are adequate to maintain readiness of essential systems. Documents, procedures and drawings reviewed during the inspection are listed in the Attachment.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment (71111.04Q – 3 Partial Walkdown Samples)

Partial Walkdown

a. Inspection Scope

The inspectors performed a partial walkdown of three systems to verify the operability of redundant or diverse trains and components when safety-related equipment was inoperable. The inspectors performed walkdowns to identify any discrepancies that could impact the function of the system and potentially increase risk. The inspectors reviewed applicable operating procedures, walked down system components, and verified that selected breakers, valves, and support equipment were in the correct position to support system operation. The three systems reviewed were:

- Motor-Driven Fire Pump with the Diesel-Driven Fire Pump Out-of-Service;
- 2 'B' Control Rod Drive (CRD) Pump with the 2 'A' CRD Pump Out-of-Service; and
- Reactor Core Isolation Cooling (RCIC) System with High Pressure Coolant Injection (HPCI) System Out-of-Service.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05 – 9 Samples)

Fire Protection – Tours

a. Inspection Scope

The inspectors reviewed PBAPS's Fire Protection Plan, Technical Requirements Manual (TRM), and the respective pre-fire action plan procedures to determine the required fire protection design features, fire area boundaries, and combustible loading requirements for the areas examined during this inspection. The fire risk analysis was reviewed to gain risk insights regarding the areas selected for inspection. The inspectors performed walkdowns of nine areas to assess the material condition of active and passive fire protection systems and features. The inspection was also performed to verify the adequacy of the control of transient combustible material and ignition sources, the condition of manual firefighting equipment, fire barriers, and the status of any related compensatory measures. The following nine fire areas were reviewed for impaired fire protection features:

- Recombiner Building, 135' Elevation (Fire Zone 158);
- 343 Startup Switchgear Building (Fire Zone 163);
- Unit 2 Reactor Building, Reactor Sump Pump Room, 88' Elevation (Fire Zone 61);
- 2 'B' & 2 'D' Residual Heat Removal (RHR) Pump and Heat Exchanger (HX) Room, 91'6" and 116' Elevation (Fire Zone 3);

- Unit 3 Reactor Building and Refuel Floor Ventilation Equipment, 195' and 214' Elevation (Fire Zone 49);
- 3 'B' & 3 'D' Core Spray (CS) Rooms, 91'6" Elevation (Fire Zone 13A & 13B);
- Unit 2 Reactor Building, 135' Elevation North (Fire Zone 5H);
- Unit 3 Reactor Building, HPCI Room, 88' Elevation (Fire Zone 62); and
- Unit 2 Turbine Building, Lube Oil Tank Room, 116' Elevation (Fire Zone 88).

b. Findings

No findings of significance were identified.

1R08 Inservice Inspection (ISI) (71111.08 – 6 Samples)

a. Inspection Scope

The purpose of this inspection was to assess the effectiveness of the licensee's ISI program for monitoring degradation of reactor pressure vessel internals, the reactor coolant system boundary, risk significant piping system boundaries, and the containment boundary. In addition, the inspectors reviewed the results of similar and dissimilar weld examination activities specific to the attachment of nozzles to the reactor pressure vessel (RPV). The inspector assessed the ISI activities using requirements and acceptance criteria specified in the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section XI and applicable NRC Regulatory Requirements.

The inspectors selected a sample of nondestructive examination (NDE) activities for observation and also performed a documentation review of additional NDE activities for compliance with the requirements of ASME Section XI. The sample selection was based on the inspection procedure objectives, sample availability, and risk priority of those components and systems where degradation could result in a significant increase in risk of core damage. The inspectors reviewed documentation to ensure that test examiner's qualifications were current and in accordance with the ASME Code requirements. Also, the inspectors reviewed examiner qualifications for use of the performance demonstration initiative (PDI) ultrasonic test procedures to examine nozzle to vessel welds, including the inner radius of selected samples. The inspectors selected a sample of CAP documents to evaluate the licensee's effectiveness in resolving relevant indications identified during the observed ISI activities. The inspectors' observation and documentation review of non-destructive testing included the following samples:

- Ultrasonic Testing (UT) (Manual) of Pipe to Elbow Weld 1-2MSD14-2, Main Steam System, Carbon Steel, 14" diameter, 0.750" Wall Thickness;
- Magnetic Particle Test (MT) of Integral Attachment Welds of Support to Pipe, 10HB-S10(IA) and 10GB-H50(IA), RHR System;
- Visual Examination (Visual Test-1 (VT) and Liquid Penetrant (PT) Test of RPV Stabilizer Support Bars 1(IA) and 2(IA); and
- PT of Field Welds 4, 7, 13 and 1401 Made for Installation of Replacement of Carbon Steel Valve HV-3-23C-31158 in the HPCI System.

The inspectors selected portions of the remote visual test (VT-1) of the steam dryer for review of the in-vessel visual inspection (IVVI) activity to evaluate the effectiveness of

the vessel internals inspection program. The inspectors selected structural and piping welds and component base metal to evaluate examiner skill, test equipment performance, examination technique, and inspection environment (water clarity). The inspectors viewed a relevant indication identified during the inspection, which was documented by initiation of indication notification report (INR) P3R16-07-01, R0.

The inspectors selected two ASME Section XI repair/replacement plans for review where welding on a pressure boundary was performed. The review was performed to evaluate control of the welding process, to determine that qualified weld procedures and welders were used for the welding and that completed weld examinations were performed in accordance with the ASME code requirements. The two ASME Section XI repair/replacement work orders (WOs) reviewed were:

- WO C0219214, Engineering Change Request (ECR) 05-00204, Add (20) Isolation Valves to the Scram Discharge Volume Header (SDVH) Piping. Includes Cutting and Re-welding of 8" Carbon Steel Scram Discharge Piping; and
- WO C0220043, Remove and Replace Carbon Steel Valve HV-3-23C-31158 and 2" Carbon Steel Pipe Assembly in System 23 (HPCI). Includes Welds W4-7, 13-17 and 1401.

The inspectors performed a walkdown in the primary containment to assess the condition of the liner coating. The inspectors performed this visual examination to determine the extent of any peeling, blistering or other damage or loss of coating as a result of corrosion, foreign material impact or lack of maintenance.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification Program (71111.11 - 2 samples)

.1 Biennial Requalification Review - Limited Senior Reactor Operator (LSRO) – (71111.11B – 1 sample)

a. Inspection Scope

On December 5, 2007, the inspectors conducted an in-office review of licensee annual operating tests for Limited Senior Reactor Operator (LSRO) licenses in 2007. 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 was less than 20 percent (crew failure rate was 0 percent);
- Individual failure rate on the dynamic simulator test was less than or equal to
- 20 percent (individual failure rate was 0 percent);
- Individual failure rate on the walk-through test was less than or equal to 20 percent. (individual failure rate was 0 percent); and
- Overall pass rate among individuals for all portions of the exam was greater than or equal to 75 percent. (overall pass rate was 100 percent).

b. Findings

No findings of significance were identified.

.2 Resident Inspector Quarterly Review (71111.11Q – 1 sample)

a. Inspection Scope

On November 15, 2007, the inspectors observed operators in PBAPS's simulator during licensed operator requalification training to verify that operator performance was adequate and that evaluators were identifying and documenting crew performance issues. The inspectors verified that performance issues were discussed in the crew's post-scenario critiques. The inspectors also reviewed the written examination and ensured that the questions being asked were testing at the appropriate level. The inspectors discussed the training, simulator scenarios, and critiques with the operators, shift supervision, and the training instructors. The evaluated scenario observed for this one sample involved the events listed below:

- Peach Bottom Simulator Evaluation Guide (PSEG) 0318R, T-116 "RPV Flooding" With an Anticipated Transient Without Scram (ATWS); and
- Peach Bottom Licensed Operator Requalification Training (PLORT) Examination 06-10 S5.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12 - 2 Samples)

a. Inspection Scope

The inspectors reviewed two samples of PBAPS's evaluation of degraded conditions involving safety-related SSCs for maintenance effectiveness during this inspection period. The inspectors reviewed PBAPS's implementation of the Maintenance Rule (MR), and verified that the conditions associated with the referenced condition reports were evaluated against applicable MR functional failure criteria as found in the licensee's scoping documents and procedures. The inspectors also discussed these issues with PBAPS personnel to verify that they were tracked against performance criteria, and that the systems were classified in accordance with MR implementation guidance. Documents reviewed during the inspection are listed in the Attachment. The following conditions were reviewed:

- 3 'A' Vent Stack Radiation Monitor Indicates a Loss of Communication (WO M1600597); and
- Water Found in the 2 'B' CS Room (IR 670208).

b. Findings

Introduction: A Green non-cited violation (NCV) of 10 CFR 50.65, "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," was identified for PBAPS's failure to include the reactor building equipment and floor drain plugs in the

scope of the MR program and, therefore, the station did not recognize that appropriate preventative maintenance was not being performed.

Description: On September 11, 2007, a troubleshooting, rework and testing (TRT) procedure (TRT 07-44) was performed to reduce activity in the 2 'D' RHR HX by flushing the HX with demineralized water from the condensate transfer system. To flush the 2 'D' RHR HX, the TRT pressurized the 2 'D' RHR HX to greater than 100 psig with demineralized water from the condensate transfer system via the RHR keep fill piping. A 50 gpm flow rate was established through a HX drain that is hard piped to the reactor building equipment drain system.

Subsequent to establishing the flushing rate on the 2 'D' RHR HX, approximately 1" of water was discovered on the floor in the separate 2 'B' Core Spray (CS) pump room. PBAPS determined that the flush water from the 2 'D' RHR HX entered the 2 'B' CS pump room from a degraded drain plug (DRN-2-20B-2006) in the reactor building equipment drain system. Although the plug was designed to seal the system and prevent the flow of drain water into the pump room, the plug's threads were corroded and damaged, which allowed the leak to occur.

The reactor building equipment and floor drain systems are designed to be sealed systems. The inspectors noted that while the drain systems, including the associated valves, piping and plugs, are nonsafety-related, they are credited in the UFSAR, Section J.3.4.2, with maintaining all emergency core cooling system (ECCS) pump rooms leak tight. Specifically, the torus cavity and ECCS pump rooms were designed to be leak tight up to at least 1 foot above the water level in the torus so that any postulated leakage in one room would not affect any other ECCS equipment rooms. Therefore, the inspectors concluded that the reactor building equipment and floor drain systems and associated drain plugs were nonsafety-related systems and components whose failure could prevent safety-related systems and components from fulfilling their safety-related function.

The inspectors reviewed the routine test (RT) procedure RT-W-020-930-2, "Survey for Flood Barriers in Reactor Building Drainage System," which is performed to ensure adequate flood and backflow protection of the reactor building drain systems. The RT had been performed on August 20, 2007, and no problems were noted. The inspectors determined that the procedure was inadequate because it did not verify that the plugs would perform their design function to be leaktight. The procedure was limited to verifying that the plug was installed. Additionally, through interviews of PBAPS personnel and review of plant records, the inspectors determined that, except for the system sumps and pumps, both the reactor building equipment drain system and the reactor building floor drain system were not included within the scope of PBAPS's program for monitoring the effectiveness of maintenance as required by 10 CFR 50.65(a)(1).

The inspectors noted that 10 CFR 50.65(a)(2), states, in part, that monitoring per 50.65(a)(1) is not required where it has been demonstrated that the performance or condition of a system or component is being effectively controlled through the performance of appropriate preventive maintenance, such that the system or component remains capable of performing its intended function. Through interviews of PBAPS personnel and reviews of plant records, the inspectors determined that preventive maintenance had not been performed on drain plugs and check valves in the reactor

building drain systems. The inspectors concluded that water was allowed to leak into the 2 'B' CS pump room as a result of the failure to perform preventive maintenance on drain plug, DRN-2-20B-2006.

The inspectors noted that a similar event occurred in February 2007. In that instance, when draining the 2 'C' RHR HX in preparation for maintenance, water leaked into the 2 'A' RHR HX room through a hole that had corroded through the reactor building drain piping (IR 592993). The inspectors concluded that PBAPS did not appropriately incorporate the lessons learned from that event to prevent another internal flooding analysis challenge.

The inspectors determined that PBAPS's failure to include the reactor building floor and equipment drains within the scope of their preventative maintenance program was a performance deficiency. This issue was reasonably within PBAPS's ability to foresee and correct, given that a similar event occurred in February 2007.

Analysis: Traditional enforcement does not apply since there were no actual safety consequences or potential for impacting the NRC's regulatory function, and the finding was not the result of any willful violation of NRC requirements or PBAPS's procedures.

The inspectors determined that this finding was more than minor because it was associated with the Mitigating Systems Cornerstone attribute of protection against external factors, and impacted the cornerstone objective of ensuring the availability of systems that respond to initiating events to prevent undesirable consequences. Specifically, a pipe break in one ECCS pump room could cause flooding in another ECCS pump room.

The inspectors evaluated the significance of this finding using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process," Phase 1 Worksheet. The inspectors determined that this finding is of very low safety significance because the condition was not a design or qualification deficiency confirmed not to result in a loss of operability, did not represent a loss of system safety function, did not represent an actual loss of safety function of a single train for greater than its TS allowed outage time, did not represent an actual loss of one or more risk-significant non-TS trains of equipment for greater than 24 hours, and did not screen as potentially risk-significant due to seismic, flooding, or severe weather. The finding was not potentially risk significant because it involved the 2 'D' RHR and 2 'B' CS trains and did not degrade two trains in one multi-train system.

The inspectors determined that this finding had a cross-cutting aspect in the area of problem identification and resolution (PI&R) because the licensee's procedure did not appropriately contain lessons learned from a similar event that had occurred in February 2007. (IMC 0305 P.2 (b))

Enforcement: Title 10 of the Code of Federal Regulations (CFR) Part 50.65(b) states, in part, that the scope of the monitoring program specified in 50.65(a)(1) shall include nonsafety-related systems and components whose failure could prevent safety-related systems and components from fulfilling their safety-related function. 10 CFR Part 50.65(a)(2), states, in part, that monitoring per 50.65(a)(1) is not required where it has been demonstrated that the performance or condition of a system or component is being effectively controlled through the performance of appropriate preventive maintenance, such that the system or component remains capable of performing its intended function.

Contrary to the above, on November 20, 2007, the inspectors determined that PBAPS failed to include the reactor building floor and equipment drain systems within the scope of its MR program as required by 10 CFR 50.65(b)(2) and therefore did not recognize that appropriate preventive maintenance was not being performed. Failure to perform preventive maintenance on drain plugs in the reactor building drain system resulted in water from the 2 'D' RHR pump room leaking into the 2 'B' CS pump room. Specifically, on September 11, 2007, while flushing the 2 'D' RHR HX, water leaked through a degraded drain plug in the reactor building equipment drain system located in the 2 'B' CS pump room and resulted in an accumulation of approximately 1" of water in the room. PBAPS has taken action to assess the scoping of the reactor building floor and equipment drain systems into the preventive maintenance program. Because the finding is of very low safety significance and has been entered into PBAPS's CAP (IR 715173), this violation is being treated as a NCV, consistent with Section VI.A.1 of the Enforcement Policy, **NCV 05000277/2007005-01; 05000278/2007005-01, "Failure to Include Reactor Building Drain System Into the Scope of the MR Program."**

1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13 – 4 Samples)

a. Inspection Scope

The inspectors evaluated PBAPS's implementation of their maintenance risk program with respect to the effectiveness of risk assessments performed for maintenance activities that were conducted on SSCs and verified that the licensee managed the risk in accordance with 10 CFR Part 50.65(a)(4) and procedure WC-AA-101, "On-line Work Control Process." The inspectors evaluated whether PBAPS had taken the necessary steps to plan and control emergent work activities and to manage overall plant risk. The activities selected were based on plant maintenance schedules and systems that contributed to risk. The inspectors also verified that an issue (IR 703991) was initiated in the CAP to address the accounting of unavailability hours during instances when dedicated operators were not in local constant attendance of the valves and equipment requiring restoration. The inspectors completed four evaluations of maintenance activities on the following:

- WO C0223075, Inspect/Repair MO-3-10-039B, RHR Loop 'B' Outer Block Valve for Torus Cooling Spray;
- WO C0223137, E-2 Emergency Diesel Generator (EDG) Would not Shutdown from Main Control Room, Replace Relay;
- WO C0223338, 3 Startup Auxiliary Breaker 252-0906 Did Not Trip When Required; and
- TRT 07-44, Flushing the 2 'D' RHR HX with Condensate Transfer.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15 - 5 Samples)

a. Inspection Scope

The inspectors reviewed five issues to assess the technical adequacy of the evaluations, the use and control of compensatory measures, and compliance with the licensing and

design bases. Associated adverse condition monitoring plans, engineering technical evaluations, and operational and technical decision making documents were also reviewed. The inspectors used TS, TRM, the UFSAR, and associated Design Basis Documents (DBDs) as references during these reviews. The issues reviewed included:

- Extend Containment Inservice Inspection (CISI) Interval to Accommodate Torus Inspections (IR 681244);
- Received 3 'B' Recirculation Pump Motor High Temperature Alarm (IR 686165);
- Unit 3 Torus Corrosion Rate Higher than Expected;
- 3 'B' RHR Suction Strainer Has Loose Nuts (IR 677586); and
- MO-3-10-025A, RHR Inner Injection Valve to Recirculation Loop 'A' Pressure Seal Leakage (IR 689486).

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing (71111.19 – 4 Samples)

a. Inspection Scope

The inspectors observed selected portions of post-maintenance testing (PMT) activities and reviewed completed test records. The inspectors observed whether the tests were performed in accordance with the approved procedures and assessed the adequacy of the test methodology based on the scope of maintenance work performed. In addition, the inspectors assessed the test acceptance criteria to evaluate whether the test demonstrated that the tested components satisfied the applicable design and licensing bases and the TS requirements. The inspectors reviewed the recorded test data to verify that the acceptance criteria were satisfied. The inspectors reviewed four PMTs performed in conjunction with the following maintenance activities:

- WO C0220342, CHK-3-06-96B, Inspect/Rework as Required;
- WO C0220385, CHK-3-06-96A, Inspect/Rework as Required;
- WO C0223137, E-2 EDG Would not Shutdown from Main Control Room, Replace Relay; and
- WO C0220964, HV-3-32-32223C, 3 'C' High Pressure Service Water (HPSW) Pump Cooling Water Isolation Valve (Replace Downstream Pipe/Fittings).

b. Findings

No findings of significance were identified.

1R20 Refueling and Outage Activities (71111.20 - 1 Sample)

Unit 3 Refueling Outage (RFO) 16

a. Inspection Scope

The Unit 3 refueling outage (P3R16) was conducted from September 23, 2007 through October 16, 2007. The inspectors performed the activities below to verify PBAPS controls over the outage activities:

- Refueling Activities - verified that PBAPS was using controls to ensure the location of the fuel assemblies were properly tracked and verified that procedures for foreign material control and retrieval were implemented on the refueling floor;
- Decay Heat Removal – observed the transfer of shutdown cooling from the 'B' loop to the 'A' loop and the timely return to the 'B' loop following a loss of shutdown cooling (IR 678935);
- Drywell Closure - conducted a thorough inspection and walkdown of containment prior to reactor startup to identify remaining debris, tools, and equipment for removal;
- Torus Closure - conducted a thorough walkdown of accessible torus areas above the suppression pool prior to reactor startup to verify that all debris, tools, and diving gear were removed (IR 683125 and 683154);
- Safety Relief Valves (SRVs) - reviewed the results of the post-removal lift test results and verified that the loss of system operability was documented in the CAP (IR 680967);
- Startup Requirements - observed selected portions of the start-up review meetings conducted by the plant operations review committee; and
- Licensee Identification and Resolution of Problems - reviewed corrective action reports related to refueling outage activities to verify that PBAPS was identifying issues at the appropriate level and taking adequate corrective action.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22 - 4 Samples)

a. Inspection Scope

The inspectors reviewed and observed portions of selected surveillance tests (STs), and compared test data with established acceptance criteria to verify the systems demonstrated the capability of performing the intended safety functions. The inspectors also verified that the systems and components maintained operational readiness, met applicable TS requirements, and were capable of performing the design basis functions. The four STs reviewed and observed included:

- ST-O-052-413-2, E-3 Diesel Generator Fast Start and Full Load Test;
- ST-O-003-560-2, Control Rod Exercise - Fully Withdrawn;
- ST-O-011-301-2, Standby Liquid Control Pump Functional Test for Inservice Testing (IST) [IST Sample]; and
- ST-O-020-560-2, Reactor Coolant Leakage Test [Leakage Sample].

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY

Cornerstone: Occupational Radiation Safety

2OS1 Access Control to Radiologically Significant Areas (71121.01 - 18 Samples)

a. Inspection Scope

The inspectors reviewed selected activities and associated documentation in the areas listed below. The evaluation of Exelon's performance in these areas was against criteria contained in 10 CFR 20, applicable TSs, and applicable Exelon procedures.

Inspection Planning - Performance Indicators

The inspectors reviewed performance indicators (PIs) for the Occupational Exposure Cornerstone. The inspectors also discussed and reviewed current performance, relative to the indicators, with cognizant Exelon personnel. (See Section 4OA1)

Plant Walkdowns, Radiation Work Permit (RWP) Reviews, and Jobs-in-Progress Reviews

The inspectors walked down selected radiological controlled areas and reviewed housekeeping, material conditions, posting, barricading, and access controls to radiological areas. The inspectors made selective independent ambient radiation level measurements to verify radiological conditions. The inspectors observed and selectively reviewed ongoing outage work activities.

During the Unit 3 RFO, the inspectors toured the drywell; entered the torus to observe diving activities; observed ongoing refueling and in-vessel work activities; observed main steam isolation valve work activities; observed ISI; observed worker entries into a contaminated tank for cleaning; observed reactor recirculation pump work activities; reviewed control rod drive work activities, and reviewed spent fuel pool work. The inspectors also observed ongoing turbine and condenser work. The inspectors reviewed radiation protection job coverage and radiation work permit implementation. The inspectors verified adequacy of radiological controls including use of multiple dosimetry and repositioning of dosimetry for work in radiation dose rate gradients. The inspectors reviewed electronic dosimeter alarm setpoints for adequacy and conformity with survey indications and plant policy.

The inspectors reviewed and discussed internal dose assessments, since the previous inspection, to identify any apparent actual occupational internal doses greater than 50 millirem committed effective dose equivalent. The review also included the adequacy of evaluation of selected dose assessments, and included selected review of the program for evaluation of potential intakes associated with hard-to-detect radionuclides (e.g., transuranics). The inspectors selectively reviewed in-plant source term evaluations including average energy determinations. The inspectors reviewed airborne radioactivity control and monitoring for job coverage and selectively reviewed use of continuous air monitors.

During the inspection, the inspectors also reviewed the adequacy and effectiveness of routine contamination control and monitoring practices; evaluated the adequacy of contamination detection capabilities; evaluated the extent of station contamination;

evaluated the frequencies and magnitude of personnel contamination events; and evaluated the detection of contamination beyond established barriers for the radiological controlled area (RCA). In addition, the inspectors also evaluated and reviewed the radiation dose consequences of the personnel contaminations. The inspectors evaluated the frequencies and magnitude of internal contaminations of personnel. The inspectors reviewed electronic dosimetry performance. The inspectors reviewed use of electronic dosimetry for monitoring of workers in high radiation areas.

The inspectors reviewed and discussed high radiation area controls, including high-dose rate and very high radiation area controls with radiation protection supervisors and technicians to identify changes that could potentially reduce program effectiveness and the level of worker protection. The inspectors reviewed high radiation area access controls to the Unit 3 torus. The inspectors observed and conducted a selective high radiation area key inventory. The inspectors reviewed implementation of key control log books and proper sign-out of high radiation area keys.

Radiation Worker and Radiation Protection Technician Proficiency

During station tours, the inspectors observed radiation worker performance with respect to stated radiation protection work requirements. The inspectors selectively questioned workers to determine if they were aware of the radiological conditions in their workplace; their RWP controls/limits in place; and that their performance took into consideration the level of radiological hazards present.

The inspectors observed radiation protection technician performance with respect to radiation protection work requirements to determine if they were aware of the radiological conditions in their workplace and the RWP controls/limits, and if their performance was consistent with expectations for potential radiological hazards present.

The inspectors reviewed radiological problem reports since the last inspection to identify radiation worker or radiation protection errors traceable to a similar cause. Corrective actions were also reviewed.

Problem Identification and Resolution

The inspectors selectively reviewed self-assessments and audits since the previous inspection to determine if identified problems were entered into the CAP for resolution. The inspectors evaluated the database for repetitive deficiencies or significant individual deficiencies to determine if self-assessment activities were identifying and addressing the deficiencies. The review also included evaluation of data to determine if any problems involved PI events with dose rates greater that 25 R/hr at 30 centimeters, greater than 500 R/hr at 1 meter or unintended exposures greater than 100 millirem total effective dose equivalent (TEDE), 5 rem shallow dose equivalent (SDE), or 1.5 rem lens dose equivalent (LDE).

b. Findings

No findings of significance were identified.

2OS2 ALARA Planning and Controls (71121.02 – 15 Samples)

a. Inspection Scope

The inspectors conducted the following activities to determine if Exelon was properly implementing operational, engineering, and administrative controls to maintain personnel exposure as low as is reasonably achievable (ALARA). Implementation of these controls was reviewed against the criteria contained in 10 CFR 20, applicable industry standards, and applicable station procedures.

Inspection Planning

The inspectors reviewed pertinent information regarding station collective dose history, current exposure trends, and ongoing or planned activities in order to assess current performance and exposure challenges. The inspectors determined the plant's current 3-year rolling average collective exposure and determined the site specific trends in collective exposures (using NUREG-0713) and plant historical data.

The inspectors reviewed Unit 3 refueling and maintenance outage work activities. For this review, the inspectors selected work activities likely to result in the highest personnel collective exposures and reviewed the planning and preparation for those work activities to determine if ALARA requirements were integrated into work procedure and radiation work permit documents. The work activities reviewed included torus inspection (diving activities), under vessel work/control rod drive change-out, in-service inspection, scaffolding activities, refueling activities, recirculation pump work, and valve work activities.

During the Unit 3 refueling outage, the inspectors reviewed on-going and completed work activities to identify the adequacy and effectiveness of planning efforts to reduce radiation exposures ALARA. The inspectors reviewed scaffolding work, control rod drive replacement, refueling work activities, in-vessel inspections, reactor vessel disassembly, main steam line valve work, recirculation pump work activities, and turbine and condenser work activities. The inspectors toured the radiological controlled areas and observed efforts to minimize occupational radiation exposure.

Verification of Dose Estimates and Exposure Tracking Systems

The inspectors reviewed the assumptions and basis for current annual collective exposure estimates. The inspectors reviewed the exposure tracking system to evaluate the level of detail, and exposure report timeliness. The inspectors reviewed the methods used for adjusting exposure estimates, or replanning work when unexpected changes in scope or emergent work were encountered. The inspectors selectively reviewed contingencies implemented for work exhibiting elevated dose rates. The inspectors selectively reviewed exposure results achieved, for the above tasks, with the intended dose established in ALARA plans for the work activities. The inspectors reviewed post-job evaluations and bases for additional exposures sustained for selected work activities.

Source-Term Reduction and Control

The inspectors reviewed and discussed Exelon's understanding of the plant source-term, including knowledge of input mechanisms to reduce the source term; and the

source-term control strategy in place. The inspectors evaluated Exelon's efforts to reduce radiation exposure, including modified reactor shutdown and reactor coolant cleanup practices. The inspectors reviewed contingency plans for potential changes in source term and changes in plant source term. The inspectors reviewed source term controls and radiation exposure mitigation for reactor cavity drain-down. The inspectors discussed preliminary licensee reviews of Unit 3 chemistry controls for crud control for shutdown.

Radiation Worker Performance

The inspectors observed radiation worker and radiation protection technician performance to determine if workers demonstrated exposure reduction practices. The inspectors also reviewed radiation protection technician performance to determine whether training/skill level was sufficient with respect to radiological hazards and the work involved.

Declared Pregnant Workers

The inspectors selectively reviewed exposure results and exposure controls for declared pregnant workers with respect to requirements of 10 CFR 20.

Problem Identification and Resolutions

The inspectors selectively reviewed applicable self-assessments, audits, and special reports related to the ALARA program since the last inspection. (See Section 4OA2.5)

b. Findings

No findings of significance were identified.

2OS3 Radiation Monitoring Instrumentation and Protective Equipment (71121.03 – 6 Samples)

a. Inspection Scope

The inspectors reviewed selected activities, and associated documentation, in the areas listed below. The evaluation of Exelon's performance in these areas was against criteria contained in 10 CFR 20, applicable TSs, and applicable station procedures.

Calibration, Operability, Alarm Setpoint

The inspectors selectively reviewed calibration of the following instrumentation used for radiological assessment: RO2A-330360; AMP-100-077568; SAC-4-079099; MGP-079146; GAST - 1781; RM-14-73472; and 332030. The inspectors also reviewed dosimetry for torus divers (Dive Pack 1-13).

The inspectors selectively reviewed operability checks; calibration, including use of appropriate sources; and alarm setpoints.

Problem Identification and Resolution

The inspectors reviewed audits and self-assessments in this area to determine if identified issues in this area were entered into the CAP. The inspectors reviewed condition reports and action requests (ARs) to evaluate Exelon's threshold for identifying, evaluating, and resolving problems in this area. (See Section 4OA2.5)

b. Findings

No findings of significance were identified.

Cornerstone: Public Radiation Safety

2PS1 Radioactive Gaseous and Liquid Effluent Treatment and Monitoring Systems (71122.01 – 1 Sample)

a. Inspection Scope

The inspectors selectively reviewed 2006 meteorological data used for public dose projections.

b. Findings

No findings of significance were identified.

2PS3 Radiological Environmental Monitoring Program (REMP) and Radioactive Material Control Program (71122.03 – 1 Sample)

a. Inspection Scope

The inspectors selectively reviewed 2006 results of environmental thermoluminescent dosimetry measurements used for public dose assessment. The inspectors selectively reviewed the 2006 REMP report, dated May 25, 2007.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator (PI) Verification (71151 - 7 Samples)

Cornerstone: Mitigating Systems

.1 Review of Safety System Functional Failures (SSFFs) PIs (2 Samples)

a. Inspection Scope

The inspectors reviewed PBAPS's submittals for the SSFFs PIs for both Units 2 and 3. For the functional failures, the inspectors looked at the period from the fourth quarter 2006 through the third quarter 2007. To verify the accuracy of the PI data reported

during that period, PI definitions and Nuclear Energy Institute (NEI) 99-02, "Regulatory Assessment Indicator Guideline," Revision 5, July 2007, were used to verify the basis in reporting for each data element.

The inspectors reviewed licensee event reports (LERs) issued during the referenced time frame for safety system functional failures. The LERs reviewed are listed in the Attachment. The inspectors also discussed the methods for compiling and reporting the PI with cognizant licensing personnel. The inspectors compared graphical representations from the most recent PI report to the raw data to verify that the data was correctly reflected in the report.

Cornerstone: Public Radiation Safety

.2 Occupational Exposure Control Effectiveness (1 Sample)

a. Inspection Scope

The implementation of the Occupational Exposure Control Effectiveness PI Program was reviewed. Specifically, the inspectors selectively reviewed CAP records for occurrences involving high radiation areas, very high radiation areas, and unplanned personnel radiation exposures since the last inspection in this area. The inspectors also selectively reviewed RWP entries indicating greater than 100 millirem. The review was against the applicable criteria specified in NEI 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 5. The purpose of this review was to verify that plant issues that met NEI criteria were recognized and identified as PI occurrences.

b. Findings

No findings of significance were identified.

.3 RETS/ODCM Radiological Effluent Occurrences (1 Sample)

a. Inspection Scope

The implementation of the RETS/ODCM PI was reviewed. Specifically, for the previous four quarters, the inspectors selectively reviewed CAP records and projected monthly and quarterly dose assessment results due to radioactive liquid and gaseous effluent releases. The inspectors also reviewed the 2006 Annual Effluent Release Report. The review was against the applicable criteria specified in NEI 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 5. The purpose of this review was to verify that plant issues that met NEI criteria were recognized and identified as Performance Indicator occurrences.

b. Findings

No findings of significance were identified.

Cornerstone: Physical Protection

.4 Review of Physical Protection PIs - (3 Samples)

a. Inspection Scope

The inspectors performed a review of PI data submitted by the licensee for the Physical Protection Cornerstone. The review was conducted of the licensee's programs for gathering, processing, evaluating, and submitting data for the Fitness-for-Duty, Personnel Screening, and Protected Area Security Equipment PIs. The inspectors verified that the PIs had been properly reported as specified in NEI 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 5. The review included the licensee's tracking and trending reports, personnel interviews and security event reports for the PI data collected since the last security baseline inspection. The inspectors noted from the licensee's submittal that there were no reported failures to properly implement the requirements of 10 CFR 73 and 10 CFR 26 during the reporting period. This inspection activity represents the completion of three samples relative to this inspection area; completing the annual inspection requirement.

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems (PI&R) (71152 - 2 Samples)

.1 Routine Review of Items Entered into the CAP

a. Inspection Scope

As required by Inspection Procedure (IP) 71152, "Identification and Resolution of Problems," and in order to help identify repetitive equipment failures, human performance issues for follow-up, the inspectors performed routine screening of issues entered into PBAPS's CAP. The review was accomplished by selectively reviewing copies of IRs and accessing PBAPS's computerized database.

b. Findings

No findings of significance were identified.

.2 Semi-Annual Review to Identify Trends (1 Semi-annual Resident Inspector Sample)

a. Inspection Scope

The inspectors reviewed a list of approximately 7,200 IRs that PBAPS initiated and entered into the CAP action tracking system (Passport) from June 1, 2007 through December 1, 2007. The list was reviewed to complete the required semi-annual PI&R trend review. Approximately 43 of the Passport IRs were reviewed in detail to verify whether the issues were adequately identified and evaluated, and that corrective actions were planned. The inspectors evaluated the IRs against the requirements of Exelon Procedure, LS-AA-125, and 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action." A list of IRs reviewed to identify potential adverse trends is included in the Attachment.

b. Findings and Observations

No findings of significance were identified.

From the review of the 43 IRs, the inspectors noted two potential human performance trends. IRs 677675 and 686077 identified documents that were signed without the work being complete. The inspectors discussed this with licensee personnel and IR 691124 was initiated to perform an extent of condition review to determine if an adverse trend existed. The inspectors also noted several issues (IR 657738, 658607 and 643314) associated with emergency planning (EP). The licensee identified an adverse trend related to EP drill and exercise performance (DEP) and initiated a common cause analysis (IR 658216) of these DEP failures.

The inspectors also noted several equipment reliability and material condition issues. The first problem (IRs 656655, 647557, 657172, and 657327) was identified with the E-1 emergency diesel generator (EDG) speed sensing circuitry. The licensee identified this trend and initiated IR 666965 to investigate cause of recurring problems with the E-1 EDG that resulted in extended inoperability time or unplanned inoperability. The second problem (IRs 694887 and 694879) was noted with RHR-to-HPSW (shell-to-tube) leaks on two additional RHR HXs. The new leaks were on the 3 'A' and 3 'C' RHR HXs. This was an existing equipment reliability issue for the 2 'C' and 2 'D' RHR HXs. The inspectors noted that earlier in the year, a similar leakage problem was corrected on the 3 'D' RHR HX by replacing one of its heads. Additional RHR HX head replacements are being considered. Thirdly, torus material condition issues continued as evidenced by increased corrosion rate of Unit 3 torus shell (IR 677914), a greater than expected accumulation of sludge (IR 682042) and bolting issues with ECCS suction strainers submerged in the Unit 3 torus (IR 679972).

As a fourth item, the inspectors also noted two existing equipment problems with the reactor recirculation pumps (RRPs) that recurred after repair efforts during the recent P3R16. The first involved speed oscillations on the 3 'A' RRP (ARs A1374347, A1439041 and A1537383) that, while improved, remained after the outage (IRs 686634 and 683718). Additionally, degraded pump shaft seals was a recurring problem on both the 3 'A' and 3 'B' RRPs. Problems (IRs 654785 and 651056) existed before P3R16 and similar problems (IRs 687330 and 686165) continued after the seals were replaced during the RFO.

.3 Unit 3 Motor-Operated Valve (MOV) Failure to Stroke Follow-up (1 – Annual Resident Inspector Sample)

a. Inspection Scope

This inspection focused on Exelon's problem identification, evaluation, and resolution concerning the failure of a Unit 3 RHR motor-operated valve (MOV MO-3-10-026B) to stroke closed during a scheduled ST on October 31, 2006 (IR 0551703). Failure of the valve had the potential to impact the 'B' train of Unit 3 drywell spray and the containment isolation function for this particular penetration. In addition, failure of the valve to stroke also represented a potential common cause failure concern.

The inspectors reviewed Exelon's associated equipment apparent cause evaluation (EACE), extent of condition review, and short and long-term corrective actions. The inspectors conducted a walkdown of MOV MO-3-10-026B and a risk-informed sample of additional Unit 3 MOVs to assess material condition, extent of condition, and configuration control. The inspectors also interviewed plant personnel; inspected the quarantined MO-3-10-026B stem nut; reviewed procedures; and reviewed related industry OE and drawings. Documents reviewed are listed in the Attachment.

b. Findings and Observations

No findings of significance were identified.

The inspectors concluded that Exelon had taken timely and appropriate action in accordance with the PBAPS's TSs, TRM, and their CAP. The inspectors determined that engineering's associated EACE was sufficiently thorough and based on the best available information, diagnostic testing, sound engineering judgment, and relevant industry OE. In general, Exelon's assigned corrective actions were aligned with the apparent causal factors, adequately tracked, appropriately documented, and completed as scheduled.

The inspectors identified several weaknesses in Exelon's identification, evaluation, and resolution of degraded conditions or problems. In response to the inspectors' observations, Exelon initiated corrective action IRs to address the issues. These issues included:

- During a RHR walkdown on October 24, 2007, the inspectors observed an active leak (approximately 30 gpm) apparently emanating from the pressure seal of MO-3-10-025A (a normally closed 'A' train low pressure coolant injection valve). Subsequent Exelon review determined that, at the time of the walkdown, there was no open IR, no WO to correct the condition, and no open operability evaluation of the condition. Exelon originally identified this longstanding degraded condition (pressure seal leakage path) in 2003 and then again in 2005, resulting in operability evaluation 05-018 which analyzed and bounded the leakage. Exelon closed this operability evaluation and an associated work order during their most recent RFO (P3R16) in October 2007 without going in-body of the valve to correct the degraded condition. On October 11, 2007, operators identified that the valve was again leaking, initiated IR 683105, and requested that the leak be monitored during the post-outage hydro. During the hydro, Exelon noted that there was no gross leakage in the south isolation valve room (where the valve is located); however, they did specifically check the MO-3-10-025A seal leak. On October 17, 2007, operators inspected the valve for leakage, documented zero leakage, and closed IR 683105 stating that no additional actions were required. [IR 689486]

- Exelon's initial assessment of the MO-3-10-026B failure to stroke pointed to potential binding in the stem to stem nut interface due to an as-found hardened grease condition (a mix of the old and new grease). Although subsequent engineering analysis did not identify hardened grease as the most probable cause, the inspectors noted that Exelon did not perform any extent of condition inspections of a cross-section of MOVs to ensure adequate stem lubrication. During a RHR walkdown on October 24, 2007, the inspectors observed degraded lubricating grease on the MO-3-10-031A valve stem (a Unit 3 'A' train drywell spray valve). Subsequently, Exelon MOV experts noted that the grease

appeared to be a mix of the old N-5000 (“never sieze” grease) and the new grease (Nebula EP-1). [IR 689020]

- On August 5, 2007, operations documented an unsatisfactory condition during step 6.5.7 of procedure ST-O-010-306-3, “‘B’ RHR Loop Pump, Valve, Flow, and Unit Cooler Functional and IST,” and did not initiate an IR. The unsatisfactory condition did not adversely impact the TS acceptance criteria for this RHR ST. [IR 689492]

- Engineering dispositioned a technical evaluation (A1590948 Eval 9) to not perform more frequent stroking of MO-3-10-026B as requested without providing adequate justification and did not reference the originating technical evaluation (A1590948 Eval 8). [IR 689034]

The inspectors independently evaluated the performance deficiencies noted above for potential significance. The inspectors determined that none of the individual issues were findings of more than minor significance based upon the guidance in IMC 0612, Appendix E, “Examples of Minor Issues.”

.4 Identification and Resolution of Problems – ISI (71111.08)

a. Inspection Scope

IR 0677397 was initiated for the linear indication identified in the heat affected zone adjacent to CS (pipe to elbow) weld RS-1. The indication was characterized as a crack of approximately 0.78" in circumferential length and was entered into the CAP for engineering evaluation and disposition. The inspector reviewed the licensee’s technical evaluation (IR 677397-A02) and disposition of the indication as acceptable "as-is" for continued operation for two additional 2-year cycles without repair or rework. Also, the inspectors interviewed responsible engineering personnel to assess the level of analysis, including the technical basis for the acceptance "as-is."

b. Findings

No findings of significance were identified.

.5 Identification and Resolution of Problems – Occupational Radiation Safety (71121.01, 71121.02, 71121.03, 71151)

a. Inspection Scope

The inspectors reviewed ARs to evaluate Exelon’s threshold for identifying, evaluating, and resolving problems, including identifying and implementing effective corrective actions. The review included a check of possible repetitive issues such as radiation worker or radiation protection technician errors. The ARs reviewed in this inspection are listed in the Attachment. This review was against the criteria contained in 10 CFR 20, TSs, and the station procedures.

b. Findings

No findings of significance were identified.

4OA3 Event Followup (71153 – 1 Sample)

.1 (Closed) LER 2007001-00, Laboratory Analysis Identifies Safety-Relief Valves (SRVs) and Safety Valve (SV) Set Point Deficiencies

Based on information received between October 4 and October 6, 2007, from a laboratory performing SRV and SV as-found testing, site engineering personnel determined that SRV and SV set point and performance deficiencies existed with two SRVs and one SV that were installed during the 16th operating cycle for Unit 3. Two SRVs and one SV were determined to have their as-found set points in excess of the TS allowable set point + 1% tolerance. All three valves were within the ASME code allowable + 3%. The cause of the two SRVs and one SV being outside of their allowable as-found set points is due to set point drift. The two SRVs and one SV were replaced with refurbished SRVs /SV for the 17th Unit 3 operating cycle. There were no actual safety consequences associated with this event. The licensee documented the event in issue report 680967. This LER was reviewed by the inspectors and no findings of significance were identified. This LER is closed.

4OA6 Meetings, Including Exit

Exit Meeting Summary

On January 18, 2008, the resident inspectors presented the inspection results to Mr. J. Grimes and other PBAPS staff, who acknowledged the findings. The inspectors asked the licensee whether any of the material examined during the inspection should be considered proprietary. No proprietary information was identified.

4OA7 Licensee-Identified Violations

None.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Exelon Generation Company Personnel

J. Grimes, Site Vice President
M. Massaro, Plant Manager
J. Armstrong, Regulatory Assurance Manager
C. Behrend, Engineering Director
L. Bunner, Work Management Director
C. Jordan, Chemistry Manager
D. Lewis, Operations Director
G. Stathes, Maintenance Director
S. Taylor, Radiation Protection Manager
W. Trump, Security Manager
T. Wasong, Training Director
T. Vanywen, Manager, Operations Training

NRC Personnel

F. Bower, Senior Resident Inspector
M. Brown, Resident Inspector
T. Burns, Reactor Inspector
J. Cherubini, Physical Security Inspector
A. Dimitriadis, Physical Security Inspector
P. Frechette, Physical Security Inspector
R. Fuhrmeister, Senior Project Engineer
G. Johnson, Operations Engineer
R. Nimitz, Senior Health Physicist
J. Schoppy, Senior Reactor Inspector
G. Smith, Physical Security Inspector

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

None.

Opened/Closed

05000277/278/2007005-01	NCV	Failure to Include Reactor Building Drain System Into the Scope of the Maintenance Rule Program (Section 1R12)

Closed

05000278/2007001-00	LER	Laboratory Analysis Identifies Safety Relief Valves and Safety Valve Set Point Deficiencies (Section 4OA3)

Discussed

None.

LIST OF DOCUMENTS REVIEWED

Section 1R01: Adverse Weather Protection

WC-AA-107, Revision 4, Seasonal Readiness
MA-PB-1003, Revision 14, Winter Readiness and Storm Response Guidelines for the Peach Bottom Facility
OP-PB-108-111-1001, Revision 3, Preparation for Severe Weather
OP-AA-108-111-1001, Revision 2, Severe Weather and Natural Disaster Guidelines
SO 48.4.A, Revision 4, Draining Emergency Service Water and High Pressure Service Water Return Lines to Emergency Cooling Tower for Winter Freeze Protection
System Engineering Winter Readiness Review
IR 699011, Winter Readiness Issues Not Completed Before 11/15 Milestone
IR 691732, Material Not Here to Support Winter Readiness Work
IR 681879, NOS ID: Winter Readiness Assessment
IR 689490, Evaluate Composite Sampler for Winter Readiness

Section 1R04: Equipment Alignment

COL 13.1.B-2, Revision 2, RCIC System Control Board Lineup
COL 13.1.A-2, Revision 19, RCIC System
SO 13.1.A-2, Revision 13, RCIC System Alignment for Automatic or Manual Initiation

Section 1R05: Fire Protection

PF-158, Revision 3, Prefire Strategy Plan, Recombiner Building, Elevation 135
PF-163, Revision 0, Prefire Strategy Plan, 343 SU Switchgear Building
PF-61, Revision 1, Prefire Strategy Plan, Unit 2 Reactor Building, 88' Elevation, Reactor Sump Pump Room
PF-3, Revision 3, Prefire Strategy Plan, 2 'B' & 2 'D' RHR pump and HX Room, RB2 91'6" and 116' Elevation
PF-49, Revision 1, Prefire Strategy Plan, Reactor Building and Refuel Floor Vent Equipment
PF-13A, Revision 1, Prefire Strategy Plan 3B/3D Core Spray Rooms, Reactor Building, 91'6" Elevation
PF-5H, Revision 2, Prefire Strategy Plan, Unit 2 Reactor Building, 135' Elevation, North
PF-62, Revision 4, Prefire Strategy Plan, Unit 3 HPCI Room, 88' Elevation
PF-88, Revision 2, Prefire Strategy Plan, Unit 2 Lube Oil Tank Room, 116' Elevation
SO 51C.1.B, Revision 4, Placing 3SU Transformer In Service
ST-O-054-950-2, Revision 17, Offsite and Onsite Electrical Power Breaker Alignment and Power Availability Check
*IR 713686, There is No Prefire Plan for Unit 3 Startup Building
*IR 713224, NRC Identified Evaluation Location of Smoking Area Behind Plant Services Building

*Indicates this was Generated as a Result of this Inspection

Section 1R08: Inservice Inspection Activities

NDT Examination Reports

222100, Magnetic Particle Examination Report, RHR System, 10GB-H50(IA)
236800, Magnetic Particle Examination Report, RHR System, 10HB-S10(IA)

008010PT005, Liquid Penetrant Examination Report, RPV Stabilizer Support 1(IA)
008010VT037, Visual Examination (VT-1) Report, RPV Stabilizer Support 1(IA)
273100 (D-026,030), Ultrasonic Test Examination Sheet. Data Sheets D-029 and 030
005100, Ultrasonic Test Exam Summary Sheet. Data Sheets D-022, 023 and 024, N2J Recirc Inlet Nozzle, RPV-N2J-NV
007650, Ultrasonic Test Exam Summary sheet. Data Sheets D-019, 020 and 021, N2J Recirc Inlet Nozzle Inner Radius, RPV-N2J-NIR
650250, Visual Examination Report of Weld 33HB-H144(IA)
650350, Visual Examination Report of Weld 33HB-H145(IA)

NDT Examination Procedures

GT-UT-311 Ver 15, Manual UT Exam of Nozzle Inner Radius, Bore and Other Nozzle Regions
GE-PDI-UT-1 R5, PDI Generic Procedure for UT Exam of Ferritic Pipe Welds
ER-AA-335-003 R3, Magnetic Particle Examination
ER-AA-335-014 R3, VT-1 Visual Examination

In Vessel Remote Visual Examination

IR677397 A02, Technical Evaluation for P3R16 Jet Pump 19/20, RS-1 Weld Indication
INR-P3R16-07-02 R2, Jet Pump 19/20 Riser RS-1 Weld (In vessel Core Spray Piping)
INR-P3R16-07-03, Jet Pump 15/16 Riser Brace RB-2 b/d Weld Area
INR-P3R16-07-01, R0 Foreign Material (debris) Identified on Bottom of Annulus

Welding Procedures

WPS 1-1-GTSM-PWHT, Gas Tungsten Arc/Shielded Metal Arc (GTAW/SMAW), P1 to P1

Welding Procedure Qualifications

PQR A-001, Welding Procedure Qualification of P1 to P1, GTAW/SMAW Manual Process with Impact Testing
PQR A-002, Welding Procedure Qualification of P1 to P1, GTAW/SMAW Manual Process with Impact Testing and Post-weld Heat Treatment
PQR 1-50C, Manual GTAW of P1 to P1

Work Orders

C0220043, Remove Existing HV-3-23C-31158 for Leakage and Pipe Inspection
C0219865, NDE ISI UT Exam on Main Steam Weld 1-2MSD14-2
C0219214, Add Isolation Valves to the SDVH Piping

CAP Reports

IR 679363, Retrieval of Past ASME Section XI Reports
IR 678258, Inspection of Torus Downcomers Identify Sludge and Rust
IR 597402, Evaluate Recirculation Pump Mismatch
IR 662683, P3R16 Scope Change for ISI
IR 677914, Unit 3 Torus Corrosion Rate Higher than Expected
IR 677697, Non-qualified Transducer Used on ISI Ultrasonic Exam

IR 589118, P3R16 ISI Exam of 'A' RHR HX and Pump Supports
IR 628341, Qualification of Equipment for RPV Weld Exams Questionable
IR 677397, Jet Pump 19/20 Riser RS-1 Weld Indication (Core Spray Piping)

Drawings

M23 R7, Equipment Location Turbine Building Unit 3
DB-01-MI-301-2-D, Main Steam IDB-26 From Valve AO-3-01-086D to Valve MSV-4
M3023 Sheet 36 R14, Drip Leg Drain to Gland Seal Condenser
FSK-M-3023 Sheet 36A, Drip Leg Drain to Gland Seal Condenser
CS-03-MI-301-1-A R2, Scram Discharge Piping, 8"
6280-M-366 R50, P&ID, HPCI Pump Turbine Details
ISI-203-RV-04 R0, Reactor Pressure Vessel Details, RPV Stabilizers

Miscellaneous

9.0-NDES-002, Change to Procedure ISWT-PDI-AUT1 Revision 1, Chg 1
3R16 IVVI Scope, Steam Dryer Layout and Weld Identification of U3 Dryer
AR1561126, Action Request-Technical Evaluation of Piping Modification and Removal of Valve (HV-3-23C-31158)
IR677397A02, Technical Evaluation for P3R16 Jet Pump19/20, RS-1 Weld Indication

Section 1R11: Licensed Operator Requalification Program

PSEG0318R, Revision 9, T-116, "RPV Flooding" with an ATWS
PSEG0208R, Revision 28, OT-111, Reactor Low Pressure
Examination PLORT 06-10 S5 Approved on November 14, 2007

Section 1R12: Maintenance Effectiveness

Procedures

SI2R-63E-2979-A1CE, Revision 9, Vent Stack Radiation Monitor RY-2979A Electronic Calibration Check
MA-MA-716-004-1000, Revision 2, Troubleshooting, Rework, and Testing (TRT) Control Manual for Peach Bottom and Limerick
OP-AA-108-115, Revision 4, Operability Determinations
RT-W-020-930-2, Survey for Floor Barriers in Reactor Building Drainage System
CC-MA-112-1001, Revision 3, Temporary Configuration Change Packages (TCCP)
CC-AA-112, Revision 12, Temporary Configuration Changes
AO 20A.1, Revision 11, Temporary Removal and Installation of Flood Barriers in the Reactor Building Drainage System
LS-AA-104, Revision 5, Exelon 50.59 Review Process
LS-AA-104-1000, Revision 4, Exelon 50.59 Resource Manual

Drawings

M-361 Sheet 2, Residual Heat Removal System
M-368, Sheet 1, Radwaste Liquid Collection System
M-309, Sheet 1, Condensate and Refueling Water Storage and Transfer Systems
S-14, Area 8, Reactor Building Foundation Plan (Elevation 91' 6")
M-518, Sheet 1, Plumbing and Drainage Reactor Building Unit 2, Plan at Elevation 91'-6"
M-518, Sheet 2, Plumbing and Drainage Reactor Building Unit 2, Plan at Elevation 91'-6"

Work Orders

WO A1640023, RI-3979A Indicates a Loss of Communication
WO A1568513, Loss of RI-2979A Operating Lights
WO M1568513, Replace AIO Card in RY-2979A
WO A1596621, RI-3979A Loss of Communication Alarm
WO M1596621, Investigate and Repair RY-3979A
WO A1606465, RI-3979A Vent Stack Radiation Monitor Inoperable
WO A1600597, 3 'A' Vent Stack Radiation Monitor Ch 2 and 3 in Alarm
WO A1609616, Unexpected 2 'B' Vent Exh Stack Radiation Monitor Alarm
WO A1614964, 3 Vent Exh Stack Radiation Monitor High/Trouble Alarm
WO A1639451, 3 'A' Vent Stack Radiation Monitor RI-3979A Trouble and High Alarms
WO A1621433, 3 Vent Stack Radiation Monitor High/Trouble Alarm Procedure
SI2R-63E-2979-A1CE, Revision 9, Vent Stack Radiation Monitor RY-2979A Electronic Calibration Check

Other Documents

Operator Logs 9/11/07 to 9/13/07

NRC Information Notice 83-44, Supplement 1, Potential Damage to Redundant Safety Equipment as a Result of Backflow Through the Equipment and Floor Drain System
SI2R-63E-2979-A1CE, Revision 9, Vent Stack Radiation Monitor RY-2979A Electronic Calibration Check
PBAPS TS 5.4 - Procedures
TRT 07-44, Flushing the 2 'D' RHR HX with Condensate Transfer

Issue Reports

IR 670208, Water Found in the 2 'B' CS Room
IR 592993, DRN-2-20B-2067 Has a Leak
IR 670330, Critique Items from the 2 'B'/2 'C' CS Room Water on Floor
IR 715173, System 20A MR Bases Requires Further Evaluation
IR 700951, 3 'A' Vent Stack Radiation Monitor RI-3979A Trouble and High Alarms
IR 643189, Maintenance Rule OPEX for Applicability Review at PBAPS
IR 579971, Purge Will Not Initiate

A1630240, Water Found in the 2 'B' CS Room
A1612918, RHR HX 'D'

Design Information Report , November 1969, Protection of ECCS Pumps Against Flooding from Leakage in ECCS Piping Complex
Design Basis Document P-T-09, Revision 8, Internal Hazards

Section 1R13: Maintenance Risk Assessments and Emergent Work Control

WO C0223075, Inspect/Repair MO-3-10-039B, RHR Loop 'B' Outer Block for Torus Cooling Spray
IR 693749, MO-3-10-039B Did Not Open
ST-O-010-306-3, 'B' RHR Loop Pump, Valve, Flow and Unit Cooler Functional and Inservice Test, Completed 11/4/07
ST-O-010-306-3, 'B' RHR Loop Pump, Valve, Flow and Unit Cooler Functional and Inservice Test, Completed 11/2/07

IR 559583, Apparent Conservative Error in Calculation ME-507
IR 712030, Fault on #1 Transformer Caused a Loss of an Offsite Source
IR 712028, 3 Startup (SU) Auxiliary Breaker 252-0906 Did Not Trip on a 3 Startup Cable Failure
AR A1642730, 3SU Aux Breaker 252-0906 Did Not Trip on a 3 Startup Cable Failure
IR 317709, Breaker 3 Startup (0906) Failed to Trip During Switching
WO C0223338, 3SU Aux BKR 252-0906 Did Not Trip When Required
SO 53.7.A – App 6, Revision 1, Removal of 3SU SWGR 00A009 and 3SU XFMR 00X0005 From Service
IR 712153, Sec Rec/ Security Posture Code Yellow Declared for LOOP
IR 712156, Critique of Security Code Yellow Declared
*IR 703991, NRC Questions During Conduct of 2 'C' RHR Heat Exchanger Flush TRT
SO 53.7.E 13KV Fast Transfer and Generator Lockout
NEI 00-02, Revision 5, Regulatory Assessment Performance Indicator Guideline
WC-AA-101, "On-line Work Control Process," Attachment 6, "Unavailability Guidelines"

* Indicates this was Generated as a Result of this Inspection

Section 1R15: Operability Evaluations

IR 685612, 3 'B' Recirculation Pump #2 Seal Temperature Swing > 10F
IR 687384, Recirculation Hourly Readings
IR 687903, Unit 3 Recirculation Seal Venting Deficiencies
IR 687907, Potential Impact of Low Pressure Operation on Recirculation Seals
IR 684600, Unexpected Change in 3 'B' Recirculation Pump Speed
IR 687913, Foreign Material as Possible Unit 3 Recirculation Seal Failure Mode
IR 687921, Recirculation Seal Parts Inspections
IR 678258, Inspection of Torus Downcomers Identified Sludge and Rust (P3R16 CISI)
IR 683747, Nonconservative Technical Evaluation – Torus Sludge
IR 685857, NOS ID: PB Lacks Strategy for Torus Cleaning
IR 680254, Inspection of Downcomer in Torus (P3R16 CISI)
IR 677994, P3R16 Torus Inspections Delayed Due to Water Clarity
IR 681373, Interior of the Vent Header Missing Coating (P3R16 CISI)
IR 678643, Rust on Piping in Torus Air Space (P3R16 CISI)
IR 676215, P3R16, CISI – Containment Inspection Did Not Include External Surfaces
IR 681460, Welding Arc Stike in Torus (P3R16 CISI)
IR 701430, P3R16 Torus UCC Containment ISI Inspections
AR A1554416E29, Revise Unit 3 Torus Coating Repair Threshold
AR A1554416E30, Analysis of Unit 3 Torus Shell NDE Report - Specific
AR A1554416E32, Document the Results of the P3R16 Torus Pit Inspections Scope Change Request, WO C0220289-A01
IR 679972, HPCI Suction Strainer has Missing Nut (P3R16 CISI)
IR 680255, Inspection of RCIC Suction Strainer in Torus (P3R16 CISI)
IR 680252, 3 'A' RHR Suction Strainer has Loose Nut (P3R16 CISI)
IR 680257, Inspect 3 'C' and 3 'D' RHR Suction Strainers in Torus (P3R16 CISI)
IR 701447, Inspect ECCS Strainers in Torus During P2R17
AR A1632695, 3 'B' RHR Suction Strainer Flange has Loose Nuts
AR A1633597, HPCI Suction Strainer has Missing Nut (P3R16 CISI)
AR A1554416-E09, HPCI Suction Strainer Inspection Scope
AR A1633591, Inspection of RCIC Suction Strainer in Torus (P3R16 CISI)
AR A1633592, 3 'A' RHR Suction Strainer has Loose Nut (P3R16 CISI)
AR A1633590, Inspect 3 'C' and 3 'D' RHR Suction Strainers in Torus (P3R16 CISI)
A1534875, MO-3-10-025A Leaking

IR 683105, MO-3-10-25A Has a 1 Drop per 10 Second Seal Leak
IR 384030, MO-3-10-025A Leaking
A1634843, MO-3-10-25A Has a 1 Drop per 10 Second Seal Leak
ACMP – MO-3-10-025A, Pressure Seal Leakage Monitoring
IR 689486, MO-3-10-025A, Pressure Seal Leakage
A1636791, MO-3-10-025A Pressure Seal Leaking Following P3R16

Section 1R19: Post-Maintenance Testing

C0220342, CHK-3-06-96B, Inspect/Rework as Required
C0220385, CHK-3-06-96A, Inspect/Rework as Required
ST-O-052-702-2, EDG Diesel Generator 24-Hour Endurance Test (Partial Test Record – 11/14/2007)
AR A1638705, E-2 EDG Would Not Shutdown From MCR
IR 698210, E-2 EDG Would Not Shutdown From MCR
IR 699373, E-2 EDG Load Indication Inconsistencies
IR 699155, NOS ID – EDG Surveillance Test Procedure Missing a Page
C0220964, HV-3-32-32223C, Replace Downstream Pipe/Fittings
A1591798, Replace 3C HPSW pump cooling water piping
A1639361, Flange Leak Downstream of RO-3234C
IR 700041, Flange Leak Downstream of RO-3234C
ST-O-032-301-3, Revision 23, HPSW Pump, Valve, and Flow Functional and Inservice Test

Section 1R22: Surveillance Testing

ST-O-052-413-2, Revision 18, E-3 Diesel Generator Fast Start and Full Load Test Performed November 6, 1007
ST-O-003-560-2, Revision 18, Control Rod Exercise – Fully Withdrawn Performed November 17, 2007
ST-O-011-301-2, Revision 18, Standby Liquid Control Pump Functional Test for IST [IST Sample] Performed December 8, 2007
ST-O-020-560-2, Revision 12, Reactor Coolant Leakage Test [Leakage Sample] Performed December 9, 2007
WO R1082797, CRD Exercise - Fully Withdrawn
WO R1077305, SBLC Pump Function for IST
WO R1082503, E-3 D/G Fast Start/Full Load Test
WO R1084532, Reactor Coolant Leak Test

Section 4OA1: Performance Indicator Verification

LER 2-06-01, Main Steam Isolation Valves Exceeded Their Allowable Leakage Limits
LER 2-06-02, Automatic Depressurization System Safety Relief Valve Deficiencies
LER 2-06-03, Elbow Leak on Piping Attached to Suppression Pool Results in Loss of Containment Integrity
LER 2-06-04, Plant Modification Created Diesel Generator Building Carbon Dioxide Suppression Room Flooding Vulnerability

Section 4OA2: Identification and Resolution of Problems

Procedures

ER-AA-302, Revision 4, Motor-Operated Valve Program Engineering Procedure
ER-AA-302-1006, Revision 4, Generic Letter 96-05 Program Motor-Operated Valve Maintenance and Testing Guidelines
LS-AA-125, Revision 11, CAP Procedure
LS-AA-125-1003, Revision 7, Apparent Cause Evaluation Manual

Assignment Reports:

AR A1604675, RHR to PHSW Leakage Greater Than Acceptance Criteria
674624, 674635, 675574, 676250, 676783, 677411, 677601, 674617, 674618, 674619, 674636, 674635, 674815, 675180, 678201, 679101, 671415, 648595, 691567, 693122, 706695, 562250, 670705, 658380, 647075, 664882, 510956, 674807, 670626, 674807

Issue Reports

691124, Documents Signed Off Without Work Complete
677675, Step Missed During Setup Portion of Standby Liquid Control Test
686077, E-1 D/G Auxiliary Pump Abandonment Work Scope Incomplete in Field
678579, Place Keeping and Sign-offs Not Performed During RT
680997, Switch Found Out of Position During ST-M-01G-600-3
682042, NRC Teleconference Regarding Torus Debris Loading
677914, Unit 3 Torus Corrosion Rate Higher Than Expected
679972, HPCI Suction Strainer Has Missing Nut
686634, 3 'A' Recirculation Pump RPM's Oscillating With no Operator Input
683718, 3 'A' Recirculation M/G Set Failed to Run
666965, Multiple Unplanned E-1 EDG Operability Due to a Speed Switch
656655, E-1 Diesel Running Alarm and Reset During Full Load Run
647557, E-1 D/G Speed Sensor SPE-7257A Not Attached
657172, E1 D/G Low Speed Switch Failed to Drop Out During Post-Maintenance Testing
657327, Multiple Adjustments Required to Set D/G Speed Switches
660549, EDG Speed Switch Adapter Classification Discrepancy
669556, NOS ID: Equipment Reliability Issues Challenging Station
686762, Maintenance Common Cause Analysis for Breaker and Relay Issues
678935, 3 'A' RHR Pump Trip
674606, RHR Shut Down Cooling (SDC) Isolation Received When Placing SDC In-Service
648352, NCV-07-06-02 2006 NRC ID Green NCV from PI&R Inspection (TRM)
648341, NCV-07-06-01 2006 NRC ID NCV from P&IR Inspection (ST)
694887, 3 'C' RHR Heat Exchanger – Potential RHR to HPSW Leak
694879, 3 'A' RHR Heat Exchanger – RHR (Shell) to HPSW (Tube) Leak
658216, Peach Bottom Drill and Exercise Performance (DEP) Failure Review
643314, NOS ID: INPO E-7 Unidentified Trend #7-EP Performance
658607, Alert Declared for C02 in E-3 EDG Bay
657738, Training: Licensed Operator Requalification (LORT) DEP Failures
687330, Unplanned Downpower in Response to 3 'A' Recirculation Seal High Temp
686165, Received "Recirculation Pump Motor High Temperature" Alarm on Unit 3
686194, 3 'A' Recirculation Pump Seal Temperatures Hotter Than Expected
654785, Rapid Rise in the 3'A' Recirculation Pump Second Stage Seal Temperature
651056, 3 'B' Recirculation #2 Seal Pressure is Steadily Lowering
666150, Unit 3 Power Reduction for Recirculation Pump Seal – Issue for Tracking
669960, 3 'A' Recirculation Pump Vent Connection Addition not in P3R16 Scope
685160, Points 8, 9, 20, and 21 are Oscillating on TR-3-02-2-031
669963, Installation of Vent Connections for 3 'B' RR Pump not in P3R16

685612, 3 'B' Recirculation Pump #2 Seal Temperature Swing Greater than10F
687903, Unit 3 Recirculation Seal Venting Deficiencies
687907, Potential Impact of Low Pressure Operation of Recirculation Seals
687913, Foreign Material as Possible Unit 3 Recirculation Seal Failure Mode
687384, Recirculation Hourly Readings
688141, Actions from Pre-Outage RR Seal Prep Assessment not Complete
148870, RHR HX Leak: Evaluate per CFR's and ODCM
594481, RHR to HPSW Leakage Greater Than Acceptance Criteria

526064	571278	681413	689026*
551703	574515	683105	689034*
557771	637144	683260*	689486*
563657	680235	684569*	689492*
564108	680428	689020	689543*
570895	680662	689023	

*Indicates this was generated as a result of this inspection.

Engineering Evaluations

EACE 551703, Failure of MO-26B to Close After Going Fully Open, dated 12/19/06

Drawings/Isometrics

Bechtel DWG M-1-H-34, Revision 7, Job #6280; Cast Steel Wedge Gate Valve with Limitorque

Operating Experience

NRC Generic Letter 95-07: Pressure Locking and Thermal Binding of Safety-Related Power-Operated Gate Valves, Dated August 17, 1995
NRC Information Notice 86-02: Failure of Valve Operator Motor During Environmental Qualification Testing, Dated January 6, 1986
NRC Information Notice 92-59: Horizontally-Installed Motor-Operated Gate Valves, Dated August 18, 1992
NRC Information Notice 2006-26: Failure of Magnesium Rotors in Motor-Operated Valve Actuators, Dated November 20, 2006
NRC NUREG/CR-6205, Valve Actuator Motor Degradation, Dated December 1994

Miscellaneous

EVP 070925, Magnesium Rotor Inspection for MOV Motors, Dated September 26, 2007
Motor- Operated Valves PCM Templates, Dated July 25, 2005
MOV MO-26B IST Stroke Time Trending, Dated February 2, 1006 – October 13, 2007
SPEC No. NE-201, Revision 2, NRC Generic Letter 89-10 MOV Program Plan and Description - Peach Bottom Atomic Power Station and Limerick Generating Station
ST-O-010-306-3, B RHR Loop Pump, Valve, Flow, and Unit Cooler Functional and Inservice Test, Dated August 5, 2007
Video of MOV MO-26B Motor Boroscopic Inspection, Dated October 2007

Work Orders

C0219312
R0549430

Section 4OA3: Event Followup

IR 680967, 3 SRV/SV "As-Found" Lifts not Within the TS Required ± 1%

LER 05000278/2007001-00, Laboratory Analysis Identifies Safety Relief Valves and Safety Valve Set Point Deficiencies

LIST OF ACRONYMS

ADAMS	Agency-wide Documents Access and Management System
ALARA	as low as is reasonably achievable
AO	air operated
ASME	American Society of Mechanical Engineers
AR	action requests/assignment report
ATWS	anticipated transient without scram
CAP	Corrective Action Program
CFR	Code of Federal Regulations
CISI	containment inservice inspection
CR	condition report
CRD	control rod drive
CS	core spray
DBDs	Design Basis Documents
DEP	drill and exercise performance
EACE	equipment apparent cause evaluation
ECCS	emergency core cooling system
ECR	engineering change request
EDG	emergency diesel generator
EP	emergency planning
ESW	emergency service water
GTAW	Gas Tungsten Arc Welding
HV	hand (operated) valve
HPCI	high pressure coolant injection
HPSW	high pressure service water
HX	heat exchanger
IMC	Inspection Manual Chapter
INR	indicator notification report
IP	Inspection Procedure
IR	Issue Report
ISI	Inservice Inspection
IST	inservice testing
IVVI	In-Vessel Visual Inspection
LDE	Lens Dose Equivalent
LER	licensee event report
LHRA	locked high radiation area
MOV	motor-operated valve
MR	Maintenance Rule
MT	magnetic particle test
NCV	non-cited violation
NDE	non-destructive examination
NDT	non-destructive test

NEI	Nuclear Energy Institute
NRC	Nuclear Regulatory Commission
OE	operating experience
PBAPS	Peach Bottom Atomic Power Station
PDI	performance demonstration initiative
PI	performance indicator
PI&R	problem identification & resolution
PMT	post-maintenance testing
PQR	(Weld) Procedure Qualification Record
PT	liquid penetrant test
RCA	radiological controlled area
RCIC	reactor core isolation cooling
REMP	radiological environmental monitoring program
RFO	refueling outage
RHR	residual heat removal
RPV	reactor pressure vessel
RWP	radiation work permit
RPV	reactor pressure vessel
RRPs	reactor recirculation pumps
RT	routine test
SDP	significance determination process
SDVH	scram discharge volume header
SMAW	shielded metal arc welding
SRVs	safety relief valves
SSCs	structures, systems, and components
SSFF	safety system functional failure
ST	surveillance test
SV	safety valve
TEDE	Total Effective Dose Equivalent
TRM	Technical Requirements Manual
TRT	troubleshooting, rework, and testing
TS	technical specification
UFSAR	Updated Final Safety Analysis Report
UT	ultrasonic test
VT	visual test
WO	work order
WPS	weld procedure specification