

November 1, 2005

Mr. Christopher M. Crane
President and CNO
Exelon Nuclear
Exelon Generation Company, LLC
200 Exelon Way KSA 3-E
Kennett Square, PA 19348

SUBJECT: PEACH BOTTOM ATOMIC POWER STATION - NRC INTEGRATED
INSPECTION REPORT 05000277/2005004 AND 05000278/2005004

Dear Mr. Crane:

On September 30, 2005, the United States Nuclear Regulatory Commission (NRC) completed an inspection at your Peach Bottom Atomic Power Station Units 2 and 3. The enclosed inspection report documents the inspection results, which were discussed on October 20, 2005, 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 two NRC-identified findings and one self-revealing finding of very low safety significance (Green). Three of these 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 three findings as non-cited violations (NCVs) consistent with Section VI.A.1 of the NRC's Enforcement Policy. If you contest any NCVs 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, D.C. 20555-0001; with copies to the Regional Administrator, Region I; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, D.C. 20555-0001; and the NRC Resident Inspector at Peach Bottom.

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

Mr. Christopher M. Crane

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Sincerely,

/RA/

James Trapp, Chief
Reactor Projects Branch 4
Division of Reactor Projects

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

Enclosure: Inspection Report 05000277/2005004 and 05000278/2005004
w/Attachment: Supplemental Information

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U. S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket Nos.: 50-277, 50-278

License Nos.: DPR-44, DPR-56

Report No.: 05000277/2005004 and 05000278/2005004

Licensee: Exelon Generation Company, LLC

Facility: Peach Bottom Atomic Power Station (PBAPS), Units 2 and 3

Location: 1848 Lay Road
Delta, Pennsylvania

Dates: July 1, 2005 through September 30, 2005

Inspectors: F. Bower, Senior Resident Inspector
D. Schroeder, Resident Inspector
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Approved by: James Trapp, Chief
Reactor Projects Branch 4
Division of Reactor Projects

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SUMMARY OF FINDINGS

IR 05000277/2005-004, 05000278/2005-004; 07/01/2005 - 09/30/2005; Peach Bottom Atomic Power Station, Units 2 and 3; Operator Performance During Non-Routine Evolutions and Events, Emergency Response Organization Augmentation, Radiological Environmental Monitoring Program and Material Control Program.

The report covered a 13-week period of inspection by the resident inspectors and announced inspections by a regional senior health physicist, a regional emergency preparedness inspector, and regional reactor inspectors. Three Green findings, all of 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 commercial nuclear power reactors is described in NUREG-1649, Reactor Oversight Process, Revision 3, dated July 2000.

A. NRC-Identified and Self-Revealing Findings

Cornerstone: Initiating Events

- Green. A self-revealing non-cited violation (NCV) of Technical Specification (TS) 5.4.1.a was identified because a reactor trip resulted when operators did not implement established procedure adherence standards during recovery from an aborted routine test. The licensee entered the deficiency with procedure adherence into their corrective action program for resolution. A contributing cause of the finding is related to the cross-cutting element of human performance, in that operators did not perform the appropriate portions of the restoration section, did not initiate a temporary procedure change and did not seek technical support after receiving an unexpected result.

The finding is greater than minor because it resulted in a reactor trip and is associated with the Initiating Events Cornerstone and the respective attribute of human performance. Although the finding contributed to a reactor trip, the inspectors determined that it was of very low safety significance (Green) because the likelihood that mitigation equipment or functions were not available did not increase. (Section 1R14)

Cornerstone: Emergency Preparedness

- Green. The inspectors identified an NCV of 10 CFR 50.47(b)(10) because emergency workers required to use respiratory equipment had not maintained their qualifications. The licensee entered the deficiency of not having at least half the operations support center respirator qualified into the corrective action program.

This finding is greater than minor because it affects the readiness attribute of the Emergency Preparedness (EP) Cornerstone. Not maintaining respiratory qualifications current for emergency response organization personnel could

Summary of Findings (cont'd)

impact the EP Cornerstone objective of ensuring that the licensee is capable of implementing adequate measures to protect the public health and safety during a radiological emergency. This finding was determined to be of very low safety significance because it did not constitute a failure to meet a risk significant planning standard. (Section 1EP3)

Cornerstone: Public Radiation Safety

- Green. The inspectors identified a NCV of TS 5.5.1 for inadequate implementation of provisions in the Offsite Dose Calculation Manual (ODCM). Specifically, one of three airborne radioiodine and particulate samplers, required to be in one of the three highest annual average ground level D/Q areas, in accordance with the ODCM, was not sampling correctly. Alternatively, Exelon did not conduct vegetation or milk sampling at the nearest offsite garden of highest calculated annual average ground level D/Q in accordance with the ODCM. The finding was entered into the licensee's corrective action program.

This finding is greater than minor because it affects the Public Radiation Safety Cornerstone objective to ensure adequate protection of public health and safety from exposure to radioactive materials released into the public domain. Specifically, these conditions resulted in an impaired ability to assess environmental impact. This finding was determined to be of very low safety significance because calculations of public dose commitments did not identify any significant public dose or environment impacts. (Section 2PS3)

B. Licensee-Identified Violations

None.

REPORT DETAILS

Summary of Plant Status

Unit 2 began the inspection period at approximately 100 percent rated thermal power (RTP). On July 10, 2005, Unit 2 automatically scrammed during the performance of routine main turbine mechanical trip valve testing. On the same day, Unit 2 was restarted and on July 15, 2005, Unit 2 was returned to full power. On September 8, 2005, Unit 2 was shutdown for a maintenance outage that included replacement of 2B recirculation pump mechanical seal. On September 11, 2005, Unit 2 was restarted. Unit 2 returned to full power on September 14, 2005, where it remained, except for brief periods for the conduct of planned testing and rod pattern adjustments.

Unit 3 began the inspection period operating at 100 percent RTP. On July 1, 2005, Unit 3 commenced a power reduction to 65 percent for the purpose of repairing a condenser tube leak in the B1 condenser. One leaking tube and 26 surrounding tubes were plugged. Unit 3 returned to full power on July 3, 2005, where it remained, except for brief periods for the conduct of rod pattern adjustments. On August 24, 2005, the end of cycle coast down began for Unit 3. On August 30, 2005, the fifth stage feedwater heaters were removed from service during a planned load drop. On September 19, 2005, Unit 3 was manually scrammed from 11 percent power to start refueling outage 15 (3R15).

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R01 Adverse Weather Protection (71111.01 - 2 Samples)

b. Inspection Scope

On August 11, 2005, the inspectors reviewed Peach Bottom Atomic Power Station's (PBAPS) actions taken to prepare and to respond to potential adverse environmental conditions from the ultimate heat sink (Conowingo Pond) that included increasing pond temperature and reduced Susquehanna river flow. These conditions occurred concurrently with the transmission system operator alerting PBAPS of predicted maximum emergency generation grid conditions. The review was performed to verify the adequacy of procedure AO 28.1, Minimization of High River Temperature Effects Due to Muddy Run Pumping Operations, and its implementation to minimize plant risk.

Since high winds were forecast and elevated wind gusts were being experienced at PBAPS on September 29, the inspectors reviewed the site preparations and protection for the expected weather conditions. The inspectors observed plant conditions. Plant conditions were evaluated using criteria documented in procedure AG-108, Preparation for Severe Weather. The inspectors reviewed PBAPS's implementation of this procedure. The inspectors also toured the plant grounds for loose debris, which could become missiles during high winds, and inspected temporary refueling outage related openings in plant buildings and equipment for potential adverse consequences. The inspectors discussed these actions with PBAPS's operations, maintenance, engineering and outage personnel.

Enclosure

c. Findings

No findings of significance were identified.

1R04 Equipment Alignments (71111.04 - 5 Samples).1 Partial Walkdown (4 Samples)a. Inspection Scope

The inspectors performed four partial system walkdowns during this inspection period to verify system and component alignment and to note any discrepancies that could impact system operability. The partial walkdowns included verification of the alignment of selected portions of redundant or backup systems and risk-significant systems that were recently realigned following an extended system outage, maintenance, modification, or testing. The inspectors reviewed selected valve positions, electrical power availability, and the general condition of major system components. This inspection activity represented four samples. The partial walkdowns included the following systems:

- Reactor core isolation cooling (RCIC) system while high pressure coolant injection (HPCI) out of service
- Unit 3 B shutdown cooling system while A residual heat removal (RHR) loop was inoperable
- Unit 3 A shutdown cooling system while B RHR Loop was inoperable
- Unit 3 E-23 bus, 4KV bus reenergization following E-23 bus maintenance

.2 Complete Walkdown (1 Sample)a. Inspection Scope

During the week of September 23, 2005, the inspectors performed a complete walkdown of the A train of the Unit 3 core spray system using the PBAPS's system alignment procedure to verify proper system alignment and configuration control. The inspectors also reviewed the Updated Final Safety Analysis Report (UFSAR), and issues tracked by the corrective action program (CAP). These reviews were conducted to identify discrepancies that could impact system operability. This inspection activity represented one sample.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05 - 10 Samples).1 Fire Protection - Toursa. Inspection Scope

The inspectors reviewed the PBAPS's Fire Protection Plan, Technical Requirements Manual, 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 then performed walkdowns of the following 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. This inspection activity represented ten samples. The following ten fire areas were reviewed for impaired fire protection features:

- Unit 2 Torus Room, Reactor Building Elevation 92'6" and 116' (Fire Zone 5C)
- Unit 3 Torus Room Reactor Building, Elevation 91'6" and 116' (Fire Zone 13C)
- Unit 2 High Pressure Coolant Injection (HPCI) Room/Stairwell (Fire Zone 59)
- Unit 3 Emergency Battery/Switchgear Room (Fire Zone 117)
- Unit 2 Reactor Recirculation Pump/Motor Generator Set Room (Fire Zone 4C)
- Units 2 & 3 Common Cable Spreading Room (Fire Zone 78H)
- Unit 2 Emergency Battery/Switchgear Room (Fire Zone 127)
- Unit 3 Main Corridor (Fire Zone 78D)
- Unit 3 Reactor Building Closed-Cooling Water (RBCCW) Room (Fire Zone 12B)
- Diesel Generator Building Upper Level (Fire Zone 132A)

The inspectors verified that issues (IR 358581, 361287, and 358584) noted during these walkdown inspections were entered into the CAP. Documents, procedures and drawings reviewed during the inspection are listed in the Attachment.

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures (71111.06 - 1 Sample).1 Internal Floodinga. Inspection Scope

The inspectors reviewed PBAPS's internal flood analysis contained in their Individual Plant Examination for the Unit 3 high pressure coolant injection (HPCI) room. The inspectors also reviewed AC-134-06, Rev 9, Control of Hazard Doors/Hatches and Penetrations at Peach Bottom Atomic Power Station, and T-103, Rev 15, Secondary

Containment. The Unit 3 HPCI room was walked down to verify internal flooding design features. This inspection activity represented one sample.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification Program (71111.11 - 1 Sample)

.1 Resident Inspector Quarterly Review

d. Inspection Scope

The inspectors observed one crew of operators in the plant's simulator during licensed operator requalification training to verify that operator performance was adequate and that evaluators were identifying and documenting crew performance problems. The inspectors also verified that performance errors were discussed in the crew's post-scenario critiques. The inspectors focused on the control room supervisor's satisfactory completion of critical tasks, including proper and timely identification and classification of emergencies. The inspectors also evaluated whether the operators adhered to the emergency operating procedures. The inspectors discussed the training, simulator scenarios, and critiques with operators, shift supervision, and training instructors. This inspection activity represented one sample. The scenarios observed are listed below:

- T-112, Emergency Blowdown
- T-101, Reactor Pressure Vessel (RPV) Control
- T-102, Containment Spray

e. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12 - 1 Sample)

.1 Routine Maintenance Effectiveness Issues

a. Inspection Scope

The inspectors reviewed the follow-up actions for issues to assess the effectiveness of PBAPS's maintenance activities. The review included items such as: (1) appropriate work practices; (2) identifying and addressing common cause failures; (3) scoping in accordance with 10 CFR 50.65(b) of the Maintenance Rule (MR); (4) characterizing reliability issues for performance; (5) trending key parameters for condition monitoring; (6) charging unavailability for performance; (7) classification and reclassification in accordance with 10 CFR 50.65(a)(1) or (a)(2); and (8) appropriateness of performance criteria for structures, systems, and components (SSCs)/functions classified as (a)(2)

and/or appropriateness and adequacy of goals and corrective actions for SSCs/functions classified as (a)(1). The item reviewed included the following:

- Control Rod Drive Water Pumps Leakage (IR A1505204)

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13 - 6 Samples)

a. Inspection Scope

The inspectors reviewed PBAPS's planning and risk management actions for planned and emergent work activities to assess PBAPS's management of overall plant risk. The activities selected were based on plant maintenance schedules and systems that contributed to risk. As applicable, the inspectors reviewed PBAPS's probabilistic safety assessment risk evaluation results forms. The inspectors compared the risk assessment results and the risk management actions against the requirements of 10 CFR 50.65(a)(4) and the information in Regulatory Guide 1.182, Assessing and Managing Risk Before Maintenance Activities at Nuclear Power Plants, and procedure WC-AA-101, On-line Work Control Process. The inspectors verified that risk assessments were performed when required and appropriate risk management actions were identified. The inspectors also reviewed control room operating logs, walked down protected equipment and maintenance locations, and interviewed personnel. These reviews were performed to determine whether PBAPS properly assessed and managed plant risk and performed activities in accordance with applicable TS and work control requirements. The following six planned and emergent work order (WO) activities were reviewed:

- Unit 3 Drywell Chilled Water System Local Test Switch Investigation (WO A1525464)
- Unit 2 Common Intake Bay Inspection/Cleaning (WO R0989719)
- Loss of Power to the Station Blackout (SBO) and Technical Support Center (TSC) (WO C0214804)
- Seismic Monitoring Equipment Failed Battery Replacement (WO R0963945)
- RHR Loop A Check Valve Equalizing Line (WO C0215125)
- E-23 Bus Work (WO R0815969)

b. Findings

No findings of significance were identified.

1R14 Operator Performance During Non-Routine Evolutions and Events (71111.14 - 4 Samples)

.1 Unit 2 Automatic Scram While Aborting a Routine Main Turbine Test

a. Inspection Scope

The inspectors reviewed the personnel performance associated with a Unit 2 automatic reactor scram that occurred on July 10, 2005, at approximately 0318 hours, due to the closure of the main turbine stop valves. The main turbine stop valves had closed as a result of a main turbine trip signal generated during main turbine mechanical trip valve testing in accordance with routine test (RT)-O-01D-404-2, Main Turbine Mechanical Trip Valve Test. The main turbine trip signal was generated when a failed test was being aborted and did not reflect an actual adverse main turbine condition that required the main turbine to be tripped. The inspectors reviewed the prompt investigation and root cause analysis for this event that was documented in Issue Report (IR) 351609.

b. Findings

Introduction. A self-revealing (Green) NCV of TS 5.4.1.a was identified because a reactor trip resulted when operators did not perform the restoration steps, as written, to recover from an aborted routine main turbine test. The operators also did not initiate a procedure change request to revise the procedure to perform the restoration in a manner other than specified prior to continuing.

Description. On July 10, 2005, during the weekly performance of the main turbine mechanical trip system RT, an unexpected result was experienced when neither indication (trip light "on" and reset light "off") was received for the inserted test oil trip signal for the turbine mechanical trip. The test oil trip signal was reinserted with the same unexpected result. In accordance with the RT and station procedure A-C-43, Surveillance Test Program, the procedure was aborted and a system restoration was performed. Operations personnel incorrectly assumed that the test oil trip signal was not received and the mechanical trip valve had not actuated. The RT steps to reset the test oil trip signal were not performed and the turbine tripped when the subsequent RT steps to return the test lockout to normal were completed.

The inspectors noted that during a June 2005 performance of the RT, one (tripped light "on") of the two indicating lights was not received and was documented in IR 343192. The acceptance criteria in the RT was changed to accept one of the two indications to verify satisfactory operation of the mechanical trip valve. To minimize the potential production risk associated with working in the electro-hydraulic control (EHC) cabinet online, work to correct the indication problem was deferred.

Analysis. An automatic reactor scram occurred when operators did not follow station and corporate administrative procedure requirements regarding procedure adherence. The inspectors referred to IMC 0612 and determined that the finding is greater than minor in that it resulted in a reactor trip and is associated with the Initiating Events

Cornerstone and the respective attribute of human performance. The inspectors evaluated the finding using IMC 0609 and determined that it was of very low safety significance (Green) because although the finding resulted in a reactor scram, the likelihood that mitigation equipment or functions were unavailable did not increase. The primary contributing cause of the finding is related to the cross-cutting element of human performance, in that operators did not perform the appropriate portions of the routine test restoration section, did not initiate a temporary procedure change as specified in Section 7.4.6.5 of station procedure A-C-43, Surveillance Test Program, and did not seek technical support upon receiving an unexpected result during testing.

Enforcement. TS 5.4.1.a requires that written procedures shall be established, implemented, and maintained covering the applicable procedures recommended in Regulatory Guide (RG) 1.33, Appendix A, November 1972. Item A.4 of RG 1.33 states that administrative procedures are required to establish procedure adherence practices. Exelon procedure HU-AA-104-101, Procedure Use and Adherence, Section 4.2.1, requires, for situations where a procedure cannot be performed as written, the job supervisor to initiate a procedure change request and revise the procedure prior to continuing. Contrary to the above, when Step 6.1.5 was not completed satisfactorily during the performance of procedure RT-O-01D-404-2, Main Turbine Mechanical Trip Valve Test, the routine test was not performed as written and a procedure change was not initiated. Because this violation was determined to be of very low safety significance and because it was entered into Peach Bottom's corrective action program (IR 351609), this violation is being treated as an NCV, consistent with Section VI.A of the NRC Enforcement Policy: **NCV 05000277/2005004-01, Inadequate Procedure Adherence During Surveillance Testing of the Unit 2 Main Turbine Mechanical Trip Valve.**

.2 Non-Routine Plant Evolutions

a. Inspection Scope

The inspectors reviewed selected plant computer and recorder data, operator logs and approved procedures while evaluating the performance of operations, engineering, radiation protection and maintenance personnel in response to non-routine evolutions. The inspectors assessed personnel performance to determine what occurred and how the operators responded, and to determine if plant personnel's response was in accordance with plant procedures and training. The following non-routine evolutions were observed or reviewed:

- On August 2, 2005, the inspectors reviewed plant personnel's response to an unexpected rise in the Unit 3 Drywell pressure and temperature. Investigation by Operations determined that the cooling water supplied to the Drywell Coolers was aligned to the reactor building closed cooling water (RBCCW) system instead of the normal cooling water source, drywell chilled water (DWCW). The PBAPS Prompt Investigation of this issue was documented in IR 358889 that concluded that the cooling water supply swapped as a result of a switch being inadvertently bumped by a long handled device used to perform large area contamination surveys. The drywell average temperature did not exceed the TS

value. The inspectors verified that an issue (IR 359665) regarding the investigative process was entered into the CAP.

- The inspectors reviewed an event that involved the Unit 3 fuel floor overhead crane tripping on its upper load limit. At the time that the crane was found tripped, the load cell was reading 268,400 pounds. The crane's rating is 250,000 pounds. The Prompt Investigation (IR 375702) was reviewed. Immediate corrective actions included testing the crane control circuitry, performing inspections of the rigging and NDE on the drywell head lifting lugs and performing an engineering analysis to verify that the components would withstand the imparted load.
- The inspector reviewed issues associated with implementing compensatory measures in the Diesel Generator Building due to multiple fire system impairments, as specified in TRM 3.14.6, Action B. Following an existing TRM entry for the EDG Cardox system in manual operation, additional impairments were tracked using paper log entries when entering a Diesel Generator Building TRM. The inspector noted that the necessary compensatory measures for the multiple fire system impairments were inconsistently implemented. The licensee generated IR 340219, IR 340614, and IR 357275 to address fire system TRM entries and the implementation of required compensatory measures.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15 - 6 Samples)

c. Inspection Scope

The inspectors reviewed six issues that were selected based on risk insights to assess the adequacy of the evaluations, the use and control of compensatory measures, and compliance with the licensing and design bases. As applicable, associated adverse condition monitoring (ACM) plans, engineering technical evaluations (TE) and operational and technical decision making (OTDM) documents were also reviewed. The inspectors verified these processes were performed in accordance with the applicable procedures listed in the Attachment. The inspectors used the Technical Specifications, Technical Requirements Manuals, the Updated Final Safety Analysis Report, and associated Design Basis Documents as references during these reviews. This inspection activity represented six samples. The issues reviewed included:

- Unit 2 Recirculation Pump (IR 335031 & AR A1517309)
- Unit 3 Cycle 15 Cycle Extension Options - OTDM
- Unit 3 High Pressure Coolant Injection (HPCI) Turbine Exhaust Check Valve - MO-3-23-14 (IR 250405)
- Control Room Habitability (IR 313496)
- E3 Emergency Diesel Generator (EDG) Jacket Coolant Leak (AR A1415409)

- Unit 3 HPCI Pump Discharge Pipe Supports (IR 332355-22)

b. Findings

No findings of significance were identified.

1R16 Operator Work-Arounds (71111.16 - 2 Samples)

d. Inspection Scope

The inspectors reviewed the two following selected burdens to operators to determine if the functional capability of the system or human reliability in responding to an initiating event is affected by the operator workaround or operator challenge. The inspector referred to the definitions and standards identified in Exelon Administrative Procedure OP-AA-102-103, Operator Work-Around Program. Specifically, the review was conducted to evaluate the effect of the operator burden on the operator's ability to implement abnormal or emergency operating procedures. The two samples selected were for operator burdens and work-arounds that were identified through other inspection activities:

- The inspectors performed a focused review of PBAPS's Administrative Guideline AG-CG-031, Shift Update Notices (SUNs). The SUNs are intended to be a mechanism for passing information regarding plant problems between site engineering groups and shift managers. The inspectors reviewed the outstanding SUNs for cumulative effects to determine whether or not they could affect the reliability, availability, and potential for misoperation of a mitigating system; affect multiple mitigating systems; or affect the ability of operators to respond in a correct and timely manner to plant transients and accidents. The inspectors verified that administrative issues regarding SUN implementation and timeliness of SUN closure were entered into the CAP as IR 370439.
- During the Unit 2 automatic scram on July 10, 2005, a low vacuum condition was experienced. A large amount of air was introduced to the main condenser because the main turbine is not self-sealing with main steam below 45 percent power. In this instance, sealing steam from the auxiliary boiler was isolated (normally open valve MO-2323 was closed) due to a leak through a normally closed upstream valve (MO-2525) in the auxiliary steam system. The inspectors verified that this issue was subsequently added to the operator workaround list and an alarm response card change was made.

b. Findings

No findings of significance were identified.

1R17 Permanent Plant Modifications (71111.17 - 1 Sample)a. Inspection Scope

The inspectors reviewed selected portions of engineering change request (ECR)/Modification (MOD) PB 04-00367, Evaluate Areva Boiling Water Reactor (BWR) Cavity Work Platform. The inspectors observed selected portions of the field implementation activities and compared the implementation performance to the design requirements and installation standards in the modification package. The inspectors reviewed field changes that were made during the installation to confirm that problems associated with the installation were adequately resolved. The inspectors also verified that the implementation did not impair refueling bridge operations. This inspection activity represented one sample.

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing (71111.19 - 6 Samples)a. Inspection Scope

The inspectors observed portions of post-maintenance testing activities in the field and reviewed selected test data at the job site. 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 verify 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 evaluate whether the acceptance criteria were satisfied. The inspectors reviewed six post-maintenance tests performed in conjunction with the following maintenance activities:

- ST-I-076-101-2, Replace Switch and Perform Post-Maintenance Testing (PMT) (WO C0213764-CM) RMS-2-16A-5076C
- ST-O-014-301-3, Core Spray 'A' Loop Pump, Valve, Flow (PVF), and Cooler Functional and Inservice Testing (IST) (WO R0995128)
- Insulation Resistance Testing of Bus Networks (SBO PMT) (WO C0214804)
- Level Switch for 2 B Lower Bearing Oil Reservoir - Low Level Alarm (WO C0210244-16)
- 46 A Retest (WO C0215125)
- Testing Scram Backup Valves Without Initiating a Scram, SV-3-03-140A and SV-3-03-140B (WO R094318301)

b. Findings

No findings of significance were identified.

1R20 Refueling and Other Outage Activities (71111.20 - 2 Samples)

.1 Unit 2 Maintenance Outage

A Unit 2 maintenance outage was started on September 8, 2005. Following completion of work to replace the 2B recirculation pump shaft seal, the inspectors accompanied plant personnel on a walkdown of containment during deep back shift hours on September 11, 2005, in preparation for containment closure prior to plant startup. Particular attention was given to the areas where work was completed, including the areas adjacent to the 2B recirculation pump. The inspection was conducted to verify no significant evidence of leakage and to verify that debris had not been left which could affect performance of the emergency core cooling system strainers. Observed issues were identified to accompanying plant personnel for resolution.

On September 11, the inspectors observed the Unit 2 startup from a maintenance outage. While the operators were performing the Rod Worth Minimizer (RWM) Operability Check Surveillance, ST-O-62A-210-2, during startup, a satisfactory surveillance could not be obtained because the procedure had not been updated to reflect the new rod groupings in the startup 2 sequence. The licensee declared the RWM inoperable until a temporary change was made to the surveillance to reflect the new rod groupings and the surveillance was satisfactorily completed.

b. Findings

No findings of significance were identified.

.2 Unit 3 Refueling Outage 15

a. Inspection Scope

Prior to the start of Unit 3, Refueling Outage 15 (3R15), on September 19, 2005, the inspectors reviewed the Outage Risk Assessment Management (ORAM) Plan. The ORAM plan was reviewed to confirm that PBAPS had appropriately considered risk, industry operating experience, and previous site specific problems in developing and implementing a risk plan that maintained defense-in-depth.

During the refueling outage, the inspectors observed portions of the shutdown process and performed the activities listed below to verify PBAPS controls over the outage activities:

- Containment - conducted an initial drywell walkdown to check for unidentified leakage.
- Clearance Activities - verified clearances on the 'A' loop of RHR and the core spray system.
- Electrical Power - verified the PBAPS risk control plan for the E-23 bus maintenance met TS requirements, verified breaker alignment on the E-23 bus after its restoration.

- Decay Heat Removal - conducted partial equipment alignments of 'B' RHR and a complete system alignment of 'A' core spray, verifying proper alignment of decay heat removal systems while one loop is out-of-service and when the loop is returned to service.
- Spent Fuel Cooling - verified the proper alignment of RHR in the split flow mode to ensure the spent fuel pool was being adequately cooled.
- Inventory Control - verified procedures were being followed for the control rod drive replacement and lowering of reactor cavity level for the installation of the reactor cavity work platform to prevent unanticipated loss of inventory.
- Reactivity Control - verified that control rod blade removal was being performed in accordance with PBAPS procedures and the Technical Specifications.
- Refueling Activities - verified that the PBAPS was using adequate controls to ensure the location of the fuel assemblies is properly tracked and that foreign material exclusion procedures are implemented on the refueling floor.
- PBAPS Identification and Resolution of Problems - verified that the PBAPS was properly documenting outage issues in the CAP.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22 - 7 Samples)

a. Inspection Scope

The inspectors reviewed and/or observed portions of surveillance tests, 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 Technical Specification requirements, and were capable of performing the design basis functions. This inspection activity represented seven samples, including two inservice testing (IST) samples and one containment isolation valve (CIV) sample. The surveillance tests reviewed and observed included:

- ST-I-0313-100-3, Alternate Rod Insertion (ARI)/Recirculation Pump Trip (RPT) Channel A/B Logic System Functional Test
- ST-O-010-506-3, 3B Residual Heat Removal (RHR) Pump & Valve Flow Inservice Test (IST)
- ST-O-62A-210-2, Rod Worth Minimizer Operability Check
- RV-2-23S-034, Relief Valve Testing (IST)
- ST-I-03B-100-2, Channel A ARI/RPT Logic System Functional Test
- ST/LLRT 30.14.02, Local Leak-Rate Test (LLRT) Core Spray 'B' Loop (CIV)
- ST-O-034-752-3, E-23 4KV Bus Undervoltage Relays & LOCA Loop Functional Test and E-23 & E-234 Alternate Shutdown Control Functional Test

1R23 Temporary Plant Modifications (71111.23 - 2 Samples)e. Inspection Scope

The inspectors reviewed two temporary modifications to verify that implementation of the modifications did not place the plant in an unsafe condition. The review was also conducted to verify that the design bases, licensing bases, and performance capability of risk significant SSCs had not been degraded through these modifications. The inspectors verified the modified equipment alignment through control room instrumentation observations, UFSAR, drawings, procedures, and work order reviews, and plant walkdowns of accessible equipment. The following two temporary modifications were reviewed:

- Installing Air Jumper Belt Moisture Separator Drain Tank Pump Valve and Drain Valve (AR A1524232)
- Temporary Metering Pump to Add Oil to the 2A Recirc Pump While at Power (TCCP 05-247)

b. Findings

No findings of significance were identified.

Cornerstone: Emergency Preparedness1EP2 Alert and Notification System (ANS) Testing (71114.02 - 1 Sample)a. Inspection Scope

An onsite review of the Peach Bottom ANS was conducted to ensure that the system provided for prompt notification of the public for taking protective actions. The inspectors reviewed the following emergency preparedness (EP) procedures: EP-MA-1002, Exelon East ANS Program, EP-MA-121-1004, Siren Independent Verification Check, Exelon East ANS Corrective Maintenance, and Exelon East ANS Preventive Maintenance Program. In addition, the inspectors interviewed the siren program manager and reviewed maintenance and test records for calendar years 2004 and 2005 to determine if test failures were being properly addressed and sirens were routinely maintained. The applicable planning standard, 10 CFR 50.47(b)(5) and related 10 CFR 50, Appendix E requirements were used as inspection criteria.

b. Findings

No findings of significance were identified.

1EP3 Emergency Response Organization (ERO) Augmentation (71114.03 - 1 Sample)f. Inspection Scope

An onsite review of Peach Bottom's ERO augmentation staffing requirements and the process for notifying the ERO was conducted to review the readiness of key staff to respond to an event and facility activation timeliness. The review included an assessment of the backup notification system in case the primary system was unavailable. The inspectors reviewed the notification test records from 2004 and 2005 and the associated corrective action reports. The emergency plan (E-Plan) qualification records for key ERO positions were also reviewed to ensure that the ERO staff qualifications were current. The applicable planning standard, 10 CFR 50.47(b)(2) and related 10 CFR 50, Appendix E requirements were used as inspection criteria.

g. Findings

Introduction. A Green NCV was identified by the inspectors because emergency responders required to use respiratory equipment had not maintained their qualifications current as required by 10 CFR 50.47(b)(10).

Description. From January 2004 to July 2005, 67 percent of the emergency responders (maintenance and instrument and control (I&C) personnel) designated to support the activities in the operations support center (OSC) failed to maintain their annual respiratory equipment qualifications current. Exelon's standard E-Plan, section O.4.E, requires at least 50 percent of potential responders to the OSC control teams are required to be qualified in the use of respiratory protection equipment. Exelon determined that maintenance department supervisors were not adequately reviewing the training qualification tracking system to ensure their staffs' respirator qualifications were current. Also, they were not cognizant of the 50 percent respiratory equipment qualification threshold criteria required by the E-Plan. In September 2005, the licensee restored the OSC respirator qualified staff to greater than 50 percent.

Analysis. The inspectors determined that Exelon's failure to maintain respiratory equipment qualifications current was a performance deficiency because it did not meet the requirements of 10 CFR 50.47(b)(10). This finding is greater than minor because it affects the ERO readiness attribute of the EP Cornerstone. Failure to maintain respiratory equipment qualifications current could impact the EP Cornerstone objective of ensuring that emergency responders are available to take adequate measures to protect the public health and safety during a radiological emergency.

Using IMC 0609, Appendix B, "Emergency Preparedness Significance Determination Process, Sheet 1, Failure to Comply," this finding was determined to be of very low safety significance (Green) because it did not constitute a failure to meet a risk significant planning standard.

Enforcement. Title 10, Code of Federal Regulations, 50.47(b)(10) states, protective actions have been developed for emergency workers. Exelon's standard E-Plan,

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section O.4.E, specifies one of the developed protective actions and requires that at least 50 percent of potential responders to the OSC control teams are required to be qualified in the use of respiratory protection equipment. Contrary to the above, from January 2004 through July 2005, 67 percent of the emergency responders (maintenance and I&C personnel) designated to support the activities in the OSC failed to maintain their annual respiratory equipment qualifications current. This issue was determined to be of very low safety significance (Green) and entered into the PBAPS's corrective action program (Issue 349626). Therefore, this issue is being treated as a NCV, consistent with Section VI.A. of the NRC Enforcement Policy: **NCV 05000277; 278/2005004-02, Failure to Maintain Respiratory Equipment Qualifications Current.**

1EP4 Emergency Action Level (EAL) and Emergency Plan Changes (71114.04 - 1 Sample)

a. Inspection Scope

During the period of July through September 2005, the NRC has received and acknowledged the changes made to Exelon's E-Plan in accordance with 10 CFR 50.54(q). Exelon had determined that the changes did not result in a decrease in effectiveness to the E-Plan and had concluded that the E-Plan continued to meet the requirements of 10 CFR 50.47(b) and Appendix E to 10 CFR 50. The inspectors conducted a sampling review of the E-Plan changes which could potentially result in a decrease in effectiveness. The review did not constitute an approval of the changes and the changes are subject to future NRC inspection. The applicable requirements in 10 CFR 50.54(q) were used as inspection criteria.

b. Findings

Introduction: This URI is closed. An unresolved item (**URI 50-277; 278/ 2004-007-01, Removal of Sheltering from PAR Options**) was issued pending further review of the enforcement aspects of this issue. An inspection conducted in August 2004, identified that Exelon had removed the sheltering option from their PARs.

Description. The NRC requires the development of a range of protective actions which include evacuation and sheltering. After a review of several licensees' emergency plans, the NRC staff identified a generic misinterpretation of the regulatory requirement to include sheltering in a licensee's protective action recommendations (PARs). An NRC review determined that licensees were implementing varied approaches to include sheltering as a PAR option to meet the requirements of 10 CFR 50.47(b)(10). The NRC issued Regulatory Issue Summary (RIS) 2004-13, "Consideration of Sheltering in Licensees' Range of Protective Action Recommendations," as a means to generically communicate the regulatory requirements for complying with 10 CFR 50.47(b)(10). Supplement 1 to RIS 2004-13, was issued to further clarify the regulations and to require that licensees' consider sheltering as part of their range of protective actions by June 8, 2005. The inspectors' review concluded that Exelon revised their standardized radiological E-Plan and implementing procedures in May 2005, to include the sheltering option in their PAR scheme to be in compliance with RIS 2004-13 and its supplement.

Analysis. Based on the NRC's recognition of the need to clarify the requirements, licensee performance prior to June 8, 2005, will not be considered a performance deficiency.

Enforcement. A violation of 10 CFR 50.47(b)(10) was identified. Because the violation was identified and corrected during the enforcement discretion period, the NRC is exercising discretion in accordance with Section VII.B.6 of the NRC's Enforcement Policy, and is not issuing any enforcement action for this violation. This URI is closed.

1EP5 Correction of Emergency Preparedness Weaknesses and Deficiencies (71114.05 - 1 Sample)

a. Inspection Scope

The inspectors reviewed drill and exercise reports from 2004 and 2005 to assess Exelon's capability to be self-critical in identifying drill and exercise performance issues. The associated corrective action reports were reviewed to determine the significance of the issues and whether repeat problems were occurring. Also, a review was conducted of Exelon's quality assurance program and associated assessment reports to ensure the PBAPS was able to independently assess the overall maintenance and effectiveness of the EP Program. In addition, the inspectors reviewed several 2004 and 2005 focus area self-assessment reports to assess the EP staff's ability to be self-critical, for making improvements, avoiding complacency and degradation of their EP program. The applicable planning standard, 10 CFR 50.47(b)(14) and its related 10 CFR 50, Appendix E and 10 CFR 50.54(t) requirements were used as inspection criteria.

b. Findings

No findings of significance were identified.

1EP6 Drill Evaluation (71114.06 - 2 Samples)

a. Inspection Scope

The inspectors observed two simulator-based emergency planning training evolutions on September 2, 2005, to identify any weaknesses and deficiencies in classification, notification, and protective action recommendation (PAR) development activities. The inspectors verified that event classification and notifications were done in accordance with EP-AA-1007, Exelon Nuclear Radiological Emergency Plan Annex for Peach Bottom Atomic Power Station. The inspectors also attended PBAPS's licensee critique of the drill to compare any inspector-observed weakness with those identified by the licensee in order to verify whether PBAPS was properly identifying failures. This training evolution and inspection activity represented two samples and the following two simulated events were classified during this training evolution:

- MU13 - Elevated Radiation Levels for Independent Spent Fuel Storage Installation

- HU5 - Release of Toxic or Flammable Gases Deemed Detrimental to Safe Operations of the Plant

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY

Cornerstone: Occupational Radiation Safety

2OS1 Access Control to Radiologically Significant Areas (71121.01 - 4 Samples)

a. Inspection Scope

The inspectors reviewed selected activities and associated documentation in the below listed areas. Exelon's performance in these areas was evaluated against the criteria in 10 CFR 20, the applicable Technical Specifications, and applicable Exelon procedures. The inspectors toured selected radiological controlled areas and reviewed housekeeping, material conditions, posting, barricading, and access controls to radiological areas. During station tours, the inspectors reviewed ongoing work activities associated with inspection of new fuel. The reviews included evaluation of the adequacy of applied radiological controls including radiation work permit adherence, radiological surveys, job coverage, and contamination controls.

The inspectors reviewed and discussed internal dose assessments for 2004 and 2005, since the previous inspection, to identify any actual occupational internal doses greater than 50 millirem committed effective dose equivalent (CEDE). The review also included an evaluation of the adequacy of associated dose assessments, as appropriate, and selected review of the program for evaluation of potential intakes associated with transuranic radionuclides.

The inspectors discussed procedure changes for high radiation area access controls since the last inspection to determine if the changes resulted in a reduction in the effectiveness and level of worker protection. The inspectors reviewed high radiation and very high radiation area key controls.

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. The review also included evaluation of data to determine if any problems involved PI events with dose rates greater than 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 - 1 Sample)

a. Inspection Scope

The inspectors conducted reviews 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 selectively reviewed against the criteria contained in 10 CFR 20, applicable industry standards, and applicable station procedures. Specifically, the inspectors reviewed planning and preparation for the upcoming Unit 3 maintenance outage. The inspectors selected work activities likely to result in the highest personnel collective exposures and selectively reviewed the planning and preparation for those work activities. The work activities reviewed were:

- control rod drive change-out
- in-vessel inspection
- in-service inspection
- scaffolding activities
- snubbers, and
- recirculation pump work

The inspectors also reviewed contingency plans for expected changes in the source term due to changes in plant fuel performance issues or changes in plant primary chemistry. The inspectors selectively reviewed and discussed Exelon's cobalt reduction strategy designed to minimize the source-term external to the core.

The inspectors reviewed the Station ALARA Council Meeting Minutes for 2005. A selected sample of self-assessments and audits related to the ALARA program were also reviewed to determine if the Exelon's overall audit program met the requirements of 10 CFR 20.1101(c).

b. Findings

No findings of significance were identified.

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

a. Inspection Scope

The inspectors selected several instruments in use for fuel inspection activities at Unit 3. The review included calibration methodology, source selection, and actions taken when instruments were found out of calibration or determined to fail an operability check. The inspectors verified calibration and operability checks for selected instruments (RM-14,

78185; SAC-4, 77173; Telepole 6698015). The inspectors also reviewed calibration and checking of electronic personnel dosimeters (73486, 40060, 71464). The inspectors checked that instrument calibrations were reviewed relative to potential changes in plant radionuclide mix. The inspectors also selectively reviewed the calibration of the whole body counter relative to applicable standards.

b. Findings

No findings of significance were identified.

Cornerstone: Public Radiation Safety

2PS3 Radiological Environmental Monitoring Program (REMP) and Material Control Program (71122.03 - 10 Samples)

a. Inspection Scope

REMP Implementation: The inspectors reviewed the implementation of Exelon's Radiological Environmental Monitoring Program (REMP). The review was against applicable criteria specified in the Technical Specifications (TS) and the Offsite Dose Calculation Manual (ODCM), procedures, and NRC Branch Technical Position, Rev. 1, An Acceptable Radiological Environmental Monitoring Program. The inspectors also reviewed the Updated Final Safety Analysis (UFSAR) results for information regarding the environmental monitoring program and meteorological monitoring instrumentation.

The inspectors conducted a review of the 2003 and 2004 Annual Environmental Monitoring Reports and PBAPS assessment results for changes to sampling locations, monitoring and measurement frequencies, land use census, inter-laboratory comparison program and the analysis of data. The inspectors reviewed each event documented in the Annual Environmental Monitoring Report, which involved a missed sample, inoperable sampler, lost thermoluminescence dosimeter (TLD), or anomalous measurement for the cause and corrective actions. The inspectors reviewed any significant changes made by Exelon to the ODCM as the result of changes to the land census or sampler station modifications since the last inspection. The inspectors reviewed technical justifications for any changed sampling locations. The inspectors evaluated 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 inspectors reviewed the calibration and maintenance records for selected air samplers and composite water samplers.

The inspectors walked down four air sampling stations and four TLD monitoring stations to determine whether they are located as described in the ODCM and to determine the equipment material condition. The inspectors observed the collection of two particulate and iodine samples from environmental monitoring stations and the collection of a drinking water sample to verify that the environmental sampling was representative of the release pathways as specified in the ODCM and that sampling techniques were in accordance with applicable procedures. The inspectors observed ongoing surface

water sampling at the station discharge. The inspectors conducted a review of the Exelon's assessment of positive sample results (i.e., licensed radioactive material detected above the lower limits of detection (LLDs)), as applicable. The inspectors reviewed, as applicable, the associated radioactive effluent release data that was the likely source of the released material.

Meteorological Monitoring Program: The inspectors selectively reviewed calibration testing records for the three meteorological towers to verify that meteorological instruments were operable, calibrated, and maintained in accordance with guidance contained in the UFSAR, NRC Safety Guide 23, and PBAPS procedures. The inspectors compared meteorological instrument readouts in the control room and at the tower for operability and evaluated readout data to identify if there were line loss differences from the control room and meteorological towers.

The inspectors reviewed the results of Exelon's vendor laboratory to analyze the REMP samples and reviewed the results of the vendor's quality control program, including the inter-laboratory comparison program, to verify the adequacy of the vendor's program. The inspectors reviewed audits and technical evaluations performed on the vendor's program. The inspectors reviewed the results of the inter-laboratory comparison program to verify the adequacy of environmental sample analyses performed and the quality control evaluation of the inter-laboratory comparison program and the corrective actions for any deficiencies. Where applicable, the inspectors reviewed determination of any bias to the data and the overall effect on the REMP. The inspectors reviewed quality assurance (QA) audit results of the program to determine whether the Exelon met applicable the TS/ODCM requirements.

Restricted Release of Material from the RCA: The inspectors also observed several locations where Exelon monitors potentially contaminated material leaving the radiologically controlled area (RCA), and inspected the methods used for control, survey, and release from these areas. The inspectors observed the performance of personnel surveying and releasing material for unrestricted use to verify that the work was performed in accordance with plant procedures. The inspectors verified that the radiation monitoring instrumentation was appropriate for the radiation types present and was calibrated with appropriate radiation sources. The inspectors reviewed Exelon's criteria for the survey and release of potentially contaminated material and verified that there was guidance on how to respond to an alarm which indicated the presence of licensed radioactive material. The inspectors reviewed Exelon's equipment to ensure the radiation detection sensitivities were consistent with the NRC guidance for surface contamination and for volumetrically contaminated material. The inspectors discussed Exelon's capabilities to detect radionuclides that decay via electron capture. The inspectors reviewed procedures and records to verify that the radiation detection instrumentation was used at its typical sensitivity level based on appropriate counting parameters (i.e., counting times and background radiation levels). The inspectors verified that Exelon had not established a release limit by altering the instruments typical sensitivity through methods such as raising the energy discriminator level or locating the instrument in a high radiation background area.

b. Findings

Introduction. The inspector identified an NCV (Green) of TS 5.5.1 and Offsite Dose Calculation Manual (ODCM) Tables 4.8.E.1 and VII.A-1 of the Radiological Environmental Monitoring Program associated with airborne pathway and ingestion pathway sampling. Specifically, one of three airborne radioiodine and particulate samplers, required to be in one of the three highest annual average ground level D/Q areas, was not sampling correctly. The sampling station (Station 1B) exhibited by-pass sampling of the interior of the sample box when examined by an NRC inspectors on July 28, 2005. In addition, Exelon did not collect samples of broadleaf vegetation grown in the nearest offsite garden of highest annual average ground level D/Q and milk sampling was not conducted at this location.

Description. TS 5.5.1 requires that the ODCM and its REMP be implemented. Table 4.8.E.1 requires that radioiodine and particulate samples from three different sectors be collected close to the site boundary of the highest calculated annual average ground level D/Q. The inspectors determined on July 28, 2005, that one of the three required airborne radioiodine and particulate samplers was not sampling correctly. The particulate and iodine sampler (Station 1B) exhibited by-pass sampling of the interior of the sample box when examined by an NRC inspectors on July 28, 2005. In addition, Tables 4.8.E.1 and VII.A-1 of the REMP requires that samples of three different kinds of broad leaf vegetation, grown in the nearest offsite garden of highest annual average ground level D/Q, be collected and analyzed if milk sampling is not performed. The inspectors determined on July 28, 2005, that no broad leaf vegetation sampling was conducted at the nearest offsite garden location with the highest annual average ground level D/Q. Further, milk sampling was not conducted in lieu of the vegetation sampling at this location.

Analysis. The failure to implement Technical Specification environmental monitoring requirements is a performance deficiency in that requirements were not met by Exelon which were reasonably within its ability to foresee and correct, and which should have been prevented.

The finding is not subject to traditional enforcement in that the finding did not have any actual safety consequence, did not have the potential for impacting the NRC's ability to perform its regulatory function, and there were no willful aspects.

This finding is greater than minor because it affected the Public Radiation Safety Cornerstone objective to ensure adequate protection of public health and safety from exposure to radioactive materials released into the public domain. Specifically, these conditions resulted in an impaired ability to assess environmental impact, in the affected compass sectors. By-pass sampling of the airborne particulate sampler at Station 1B could result in reduced detection capability. In addition, the failure to collect a sample at the nearest garden in the highest calculated annual ground level D/Q could result in reduced capability to detect potential impacts associated with this pathway.

Using NRC Manual Chapter 0609, Appendix D, Public Radiation Safety Significance Determination Process, this finding was determined to be of very low safety significance (Green) because: 1) it was not a radioactive material control issue, 2) it did not involve the effluent release program, 3) it was associated with the environmental monitoring program, 4) it did result in an impaired ability to assess environmental impact, and 5) there was no failure to assess environmental impact. Specifically, Exelon's calculations of public dose commitments for airborne effluent releases, via the ODCM specified effluents monitoring and assessment program, had not identified any significant public dose impact or impact on the environment. Exelon's calculations of projected public doses were well within applicable limits. In addition, direct monitoring of public dose via thermoluminescent dosimetry in areas with highest predicted annual average D/Q also did not identify any significant public dose impact or impact on the environment. Further, Exelon did conduct milk sampling at available farms at other locations, and did not identify any radioactivity during conduct of REMP specified analyses. (Section 2PS3)

Enforcement. TS 5.5.1 requires that the ODCM and REMP be implemented. Table 4.8.E.1 and VII.A-1 require that radioiodine and particulate samples from three different sectors be collected close to the site boundary of the highest calculated annual average ground level D/Q. In addition, Table 4.8.E.1 of the REMP require that samples of three different kinds of broad leaf vegetation grown in the nearest offsite garden of highest annual average ground level D/Q be collected and analyzed if milk sampling is not performed. Contrary to Technical Specification 5.5.1, on July 28, 2005, one of the three required airborne radioiodine and particulate samplers (Station 1B) exhibited by-pass sampling of the interior of the sample box on July 28, 2005. In addition, broad leaf vegetation samples were not collected at the nearest offsite garden with the highest calculated annual average ground level D/Q, and milk sampling was not conducted at this location. Because this finding was of very low safety significance (Green), and Exelon entered this finding into its corrective action program (IR 358684, IR 361495), this violation is being treated as a Non-Cited Violation (NCV) consistent with Section VI.A of the NRC Enforcement Policy: **NCV 05000277, 278/2005004-03, The PBAPS Did Not Implement Certain Aspects of Its Offsite Dose Calculation Manual Associated with Airborne Radioactivity Sampling and Broad Leaf Vegetation Sampling.**

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification (71151 - 3 Samples)

b. Inspection Scope

The inspectors reviewed Exelon's procedure for developing the data for the EP PIs:

- Drill and Exercise Performance (DEP)
- ERO Drill Participation
- ANS Reliability

The review covered the period of July 2004 to June 2005. The inspectors also reviewed the PBAPS's 2004 and 2005 drill and exercise reports, training records and ANS testing data to verify the accuracy of the reported data. The acceptance criteria used for the review were 10 CFR 50.9 and NEI 99-02, Revision 3, Regulation Assessment Performance Indicator Guideline.

c. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems (71152 - 1 Sample)

.1 Corrective Actions For Electrohydraulic Control (EHC) Circuit Card Failures

a. Inspection Scope

The inspectors selected two Issue Reports (IRs) 137110 and 285024 for detailed review. The issue reports dealt with two plant scrams which occurred in December 2002 and December 2004. Both scrams resulted from the failure of an electronic circuit card in the turbine electrohydraulic control (EHC) system. The associated root cause reports and the resulting corrective actions to prevent recurrence and the corrective actions were also reviewed.

b. Findings and Observations:

No findings of significance were identified. However, the inspectors did identify several minor examples of weak implementation of the corrective action program related to the issue.

The extent of condition review for the December 2002 EHC circuit card failure verified that no defective operational amplifiers were installed at Peach Bottom. Nonetheless, the actual corrective actions taken did not resolve one of the Exelon documented causal factors, a fault intolerant EHC system. The licensee subsequently determined that the operational amplifier failure was due to a bad batch of parts from the circuit card assembler. The existence of this manufacturing problem was beyond the ability of the licensee to preclude. This was judged to be a minor issue.

The inspectors observed that, in March 2003, Exelon revised the IR 137110 to credit corrective actions that were already completed and to reschedule replacement of the Unit 2 and Unit 3 EHC systems to a later time (from the 2006 and 2007 to 2008 and 2009, respectively) due to estimated equipment lead times. PBAPS also reduced the scope of planned vital circuit card inspections and replacements despite the existence of a "Circuit Card Vulnerability Study" published in February 2004, which found that, "Exelon plants are extremely vulnerable to aging circuit cards." Specifically, PBAPS's scope of the planned vital circuit card inspection and replacement program for the September 2004 Refueling Outage was reduced to 27 of an originally planned 141 circuit cards in the EHC and feedwater systems. These decisions were based upon

further industry guidance which recommended that circuit cards not be disturbed if they had operated past the card burn in times. The licensee has decided to operate with the increased potential for further failures.

The inspectors reviewed a PBAPS self-assessment, of the corrective actions for the December 2002 and December 2004 EHC circuit card failures, that was conducted in August 2005. The self-assessment identified that several planned corrective actions from the December 2004 failure had been closed although the specified actions were not completed. The issue was documented in IR 140062 and the affected corrective actions were reopened. Because there have been no further circuit card failures this is a minor item.

The inspectors noted that the corrective actions to prevent recurrence (CAPRs) for the December 2004 EHC circuit card failure were completed for Unit 2. The Unit 3 CAPRs are scheduled for completion during the 3R15 Refueling Outage in the third and fourth quarters of 2005.

The inspectors identified that Exelon had reduced their purchase specification requirement for circuit card burn-in time. The original specified requirement (720 hours) was based on a military specification. Exelon determined that the specification was inappropriate and reduced the requirement to 100 hours without a documented technical basis. The inspectors noted that this change in testing criteria was accomplished after the December 2002 EHC circuit card failure. This change is viewed as a minor item. Issue Report 355751 was initiated to resolve this issue through the CAP.

.2 Routine Review and Screening of Identification and Resolution of Problems

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

.3 Problem Identification and Resolution (PI&R) Semi-Annual Trend Review

a. Inspection Scope

The inspectors reviewed a list of over 4,000 issue reports (IRs) that Exelon initiated at PBAPS from December 1, 2004 through June 1, 2005, to perform the semi-annual PI&R trend review. Approximately 65 of the IRs were reviewed in detail to verify whether the issues were adequately identified, appropriately evaluated and corrected. The inspectors evaluated the IRs against the requirements of LS-AA-125, Corrective Action Program (CAP) Procedure, and 10 CFR 50, Appendix B, Criterion XVI, Corrective Action. This sample represented one semi-annual PI&R review.

b. Findings and Observations

No findings of significance were identified.

4OA3 Event Followup (71153)

The inspectors reviewed the following Licensee Event Reports (LERs) and related documents listed in the Attachment, to verify the accuracy of the LERs, the appropriateness of the corrective actions and to determine whether violations of requirements or generic issues existed.

.1 (Closed) Licensee Event Report (LER) 05000277/2004-003-00, Automatic Scram Due to An ElectroHydraulic Control System Malfunction

On December 22, 2004, Peach Bottom Unit 2 experienced an automatic scram when an EHC pressure regulator card failed due to a manufacturing defect. The defect was the result of poor soldering practice which, after approximately three months of operation, caused the regulator to lower the reference set pressure. The PBAPS replaced the failed circuit card, realigned the pressure regulator and returned the plant to service. The LER was reviewed by the inspectors and no findings of significance were identified. The PBAPS documented the event in CR 285024. This LER is closed.

.2. (Closed) Licensee Event Report (LER) 05000277/2005-001-00, Unit 2 Automatic Scram Due to Incorrect Assumptions when Aborting a Main Turbine Test

On July 10, 2005, at approximately 0318 hours, a Unit 2 automatic scram occurred as a result of a main turbine stop valve closure signal. As a result of the automatic scram, the reactor vessel water level 3 set point was reached as expected. This resulted in primary containment isolation system (PCIS) Group II and III isolations. A reactor vessel high pressure condition occurred resulting in automatic operation of the C, D, and E main steam safety relief valves. Corrective actions include remediation and re-evaluation of involved personnel and reinforcing management expectations regarding human performance practices. The PBAPS documented these problems in IR 351609. A self-revealing finding associated with this event was documented in Section 1R14 of the report. This LER is closed.

4OA5 Other Activities

.1 TI 2515/163, Operational Readiness of Offsite Power (1 Sample)

a. Inspection Scope

The inspectors performed a supplemental inspection of Temporary Instruction (TI) 2515/163, Operational Readiness of Offsite Power. The inspectors collected and reviewed recent revisions to PBAPS procedures and supporting information pertaining to the offsite power system specifically relating to the areas of offsite power operability, the Maintenance Rule (10 CFR 50.65), and the station blackout rule (10 CFR 50.63).

Enclosure

The procedure revisions were issued subsequent to the initial TI 2515/163 inspection documented in NRC IR 05000277, 278/2005-03. The inspectors reviewed the information gathered using guidance provided by the NRC Office of NRR (ML052230423). This information was forwarded to NRR for further review.

b. Findings

No findings of significance were identified.

.2 (TI) 2515/161, Transportation of Reactor Control Rod Drives in Type A Packages (2 Samples)

a. Inspection Scope

This area was inspected to verify that the PBAPS's radioactive material transportation program complied with specific requirements of 10 CFR Parts 20, 71, and Department of Transportation regulations contained in 49 CFR Part 173. The temporary instruction (TI) required conduct of a Phase I review to determine if the licensee had transported control rod drives in Department of Transportation Specification 7A Type A packages. If so, a Phase II review was to be conducted to review the licensee's conformance with applicable Department of Transportation (DOT) shipment requirements.

b. Findings and Observations

No findings of significance were identified for purposes of this specific inspection report.

The NRC had previously reviewed shipments of control rod drives during inspections conducted in May 2004 (NRC Integrated Inspection Report (IR) 05000277; & 278/2004003), and September 2004 (IR 05000277; & 278/2004004) and identified one NCV of low-risk significance (Green). Relative to Phase 1 inspection criteria, the inspectors determined that Exelon had undergone refueling since calendar year 2002 and had packaged and shipped irradiated control rod drive mechanisms in DOT Specification 7A Type A packages. Relative to Phase II inspection criteria, during the referenced inspection, the NRC conducted a review of Exelon's conformance with applicable NRC/DOT transportation requirements. In addition, the NRC evaluated Exelon's use of a properly certified Specification 7A packages including verification that the packages met Specification 7A package test requirements.

40A6 Meetings, Including Exit

.1 Exit Meeting Summary

On October 20, 2005, the resident inspectors presented the inspection results to Mr. J. Grimes and other PBAPS staff, who acknowledged the findings. The inspectors confirmed that proprietary information was not included in the inspection report.

.2 Senior Management Visits

Deputy Regional Administrator Site Visit

On September 8, 2005, a site visit was conducted by Mr. Marc Dapas, Deputy Regional Administrator for the NRC Region I. Mr. Dapas was accompanied by Mr. David Lew, Deputy Director, Division of Reactor Projects, Region I. During Mr. Dapas' visit, he toured the Peach Bottom station and met with Exelon managers.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION**KEY POINTS OF CONTACT**Exelon Generation Company

R. Braun, Site Vice President
 J. Grimes, Plant Manager
 S. Beck, CAP Manager
 P. Davison, Engineering Director
 D. Foss, Senior Regulatory Engineer, Regulatory Assurance
 G. Jardell, Manager, Emergency Preparedness
 A. Knoll, Engineer, Engineering-Programs
 K. Langdon, Work Management Director
 D. Lewis, Operations Director
 J. Mallon, Regulatory Assurance Manager
 R. Norris, Manager, Radiation Protection
 W. Scott, Acting Chemistry Manager
 G. Stathes, Maintenance Director

U. S. Nuclear Regulatory Commission

M. Dapas, Deputy Regional Administrator, RI
 D. Lew, Deputy Director, DRP
 J. Dreisbach, General Engineer, NRR
 J. Kulp, Reactor Inspector, DRS

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSEDOpened and Closed

05000277/2005004-01	NCV	Inadequate Procedure Adherence During Surveillance Testing of the Unit 2 Main Turbine Mechanical Trip Valve (Section 1R14)
05000277, 278/2005004-02	NCV	Failure to Maintain Respiratory Equipment Qualifications Current (Section 1EP3)
05000277, 278/2005004-03	NCV	The Licensee Did Not Implement Certain Aspects of its Offsite Dose Calculation Manual Associated with Airborne Radioactivity Sampling and Broad Leaf Vegetation Sampling (Section 2PS3)

Closed

05000277/2004-003-00	LER	Automatic Scram Due to An Electro-Hydraulic Control System Malfunction (Section 4OA3)
05000277/2005-001-00	LER	Unit 2 Automatic Scram Due to Incorrect Assumptions when Aborting a Main Turbine Test (Section 4OA3)
0500277, 278/2004007-01	URI	Removal of Sheltering from PAR Options (Section 1EP4)

Discussed

None.

LIST OF DOCUMENTS REVIEWED

Section 1R01: Adverse Weather Protection

AG-108, Preparation for Severe Weather

Section 1R04: Equipment Alignment

COL 13.1.A-3, Rev. 13, Reactor Core Isolation Coolant (RCIC) System
 COL 10.1A-3B, Rev. 18, Residual Heat Removal (RHR) System Loop B
 COL 14.1.A-3A, Rev. 11, Core Spray System Loop A
 SO 54.7.B, Rev. 4, 4KV Bus Deenergization and Reenergization
 AO 56E.3-3, Rev. 7, E234-R-B, E234-T-B, E234-D-A and E234-EC-A Motor Control Centers or E234 and E23A4 Emergency Load Centers Deenergization and Reenergization

Section 1R05: Fire Protection

PBAPS Fire Protection Program (FPP), Revision 14
 Peach Bottom Fire Risk Analysis, Update Project Summary Report, W0467030802.R01
 Exelon Procedure OP-MA-201-007, Fire Protection System Impairment Control, Revision 2
 PF-13C, Unit 3, Torus Room, Reactor Building 92'6" Elevation, Fire Zone 13C
 PF-5C, Unit 2, Torus Room Reactor Building, 91'6" Elevation, Fire Zone 5C

Section 1R06: Flood Protection Measures

PBAPS Level 1 Probabilistic Safety Assessment (PSA) 2002 Update-Main Documentation
 Peach Bottom UFSAR, Vol. 1
 PBAPS Individual Plant Examination, Vol . 1

Section 1R12: Maintenance Effectiveness

WO R0963945

Section 1R13: Maintenance Risk Assessments and Emergent Work Evaluation

Regulatory Guide 1.160, Monitoring the Effectiveness of Maintenance at Nuclear Power Plants
Regulatory Guide 1.182, Assessing and Managing Risk Before Maintenance Activities at
Nuclear Power Plants

AR 00375299
P&ID 361, Rev. 5
AR A1531545

Section 1R14: Personnel Performance During Non-routine Plant Evolutions

AR 00375702
R1007704
A1531314
WO 30H001
IR 343192, RT-O-01D-404-2 Completed Unsat
IR 351644, SRV's C, D, and E Lifted at 1118 PSIG During Unit 2 Turbine Trip
IR 351913, Issues with Unit 2 SCRAM Prompt Investigation Report
GP-18, SCRAM Review Procedure, Revision 21
GP-18 - COL, SCRAM Review Check List, Revision 38
Action Request A1522743, SRV's C, D and E Lifted at 1118 PSIG During Unit 2 Turbine
Trip
OP-AA-111-101 Rev. 5 "Operating Narrative Logs and Records"
OP-MA-201-107 Rev. 2 "Fire Protection System Impairment Control"
IR 340219 "TRM 3.14.8 Entry Was Not Documented In Lotus Notes"
IR 340614 "NRC Question Related to Cardox System and TRM Requirements"
IR 341861 "Continuous Fire Watch Not Properly Implemented IAW Ops"
IR 340256 "Evaluate the Current Practice of Continuous Fire Watch"
IR 357275 "IR 340614 Assignments Created Out of SOC"
IR 358842 "TRM Tracking Paperwork Not Found"
IR 110334 "CARDOX Injection in E3 EDG Room During Surveillance Testing"
TRM 3.14.8
TRM 3.14.6
PBAPS Fire Protection Program
PBAPS Updated Final Safety Analysis Report

Section 1R15: Operability Evaluations

CC-AA-309-101, Engineering Technical Evaluations
LS-AA-105, Operability Determinations
OP-AA-108-111, Adverse Condition Monitoring and Contingency Planning
OP-AA-106-101-1006, Rev. 2, Operational and Technical Decision Making Process
OP-AA-108-111, Rev. 2

AR A1517309

Section 1R16: Operator Work-Arounds

Drawing —303, P & I Diagram - Main Steam, Bypass and Crossaround
Drawing —304, P & I Diagram - Turbine & Extraction Steam
Operator Workaround Board Meeting Minutes for 7/19/2005 meeting
IR 351613
AR A1487260, Auxiliary Steam Supply to Seal Steam Header
TC #05-0140, ARC-20C208R, Steam Seal Header Low Pressure

Section 1R19: Post-Maintenance Testing

WO C0213764-CM
WO R0995128
WO CO214804
WO CO 210244-16
WO CO215125
WO R094318301

Section 1R20: Refueling and Outage Activities

M-C-747-011, Rev. 20, Control Rod Drive Exchange Using NES Machine

Section 1R22: Surveillance Testing

SO-52A-1-B, Rev. 33
ST/LLRT 30.14.02, Rev. 9

Section 1R23: Temporary Plant Modification

IR 00373571

Section 1EP2: Alert and Notification System Testing

ANS Field Observation Checklists, Rev. 0
EP-MA-121-1006, Exelon East ANS Siren Monitoring, Troubleshooting & Testing
ANS Mid-2005 Self-Assessment Report
IR 358446, Deficiencies Self-Identified in Mid-2005 ANS FASA

Section 1EP3: Emergency Response Organization (ERO) Augmentation Testing

EP-AA-112-100-F-07, Mid-Atlantic ERO Notification or Augmentation
TQ-AA-113, ERO Training and Qualification
ERO Notification and Backup Activation Process Checklist
Peach Bottom Communication (Augmentation) Drill Report, 12/2004
Peach Bottom Communication (Augmentation) Drill Report, 8/2004

Peach Bottom Communication (Augmentation) Drill Report, 3/2005

Section 1EP4: Emergency Action Level (EAL) Revision Review and Emergency Plan (E-Plan) Changes

EP-AA-1000, Standardized Radiological Emergency Plan, Rev. 16
EP-AA-1008, Radiological Emergency Plan Annex for Peach Bottom
EP-AA-120-1001, 10 CFR 50.54(q) Change Evaluation
Exelon Standard Emergency Plan and Implementing Procedures
Peach Bottom Annex Emergency Plan

Section 1EP5: Correction of Emergency Preparedness Weaknesses and Deficiencies

LS-AA-126-126, Self Assessment Program
LS-AA-126-1001, Focus Area Self Assessment Program
LS-AA-120, Issue Identification and Screening Process
LS-AA-125, Corrective Action Program
NOS 2004 EP 50.54(t) Audit Report (AR No. 208377)
NOS 2005 EP 50.54(t) Audit Report (AR No. 337629)
FASA No. 287265, NOS 50.54(t) Audit Preparation
FASA No. 297532, Readiness for 2005 NRC Inspection
FASA No. 26897, 4th Quarter ERO Training
NOS 2005 EP Corporate Comparative Audit Report (AR No. 313088)
Common Cause Analysis Report No. 317178, dated 4/18/05, Lapsed Qualifications
Peach Bottom Unusual Event Report, 9/15/2003
AR No. 223362, 2004 EP Improvement Procedures Upgrade Project
FASA No. 235389, EP Corrective Action Program
AR 232733, Issues Identified in 6/28 Augmentation Drill
AR 242971, EP Recommendation
AR 348390, TSC Emergency Ventilation will not Start
AR 321296, EAL Declaration Not Timely
AR 307550, Call-in Drill Response Deficiencies for On-Call
AR 309359, Develop Long Term Strategy for ERO Pager Reliability
AR 357458, ERO Call-in performance improvement.

Section 2OS1: Access Controls to Radiologically Significant Areas

Health Physics Functional Area Audit - July 2005
Focused Area Self Assessments - AR - 272886, 272894, 272896, 272897, 272899, 272900, 272903, 277965
ARs - 269213, 272950, 278047, 280140, 286739, 287915, 289718
Procedure RP-PB-460-1020, Rev. 0
Station ALARA Council Meeting Topics: 2005
Cobalt 60 Reduction Strategy
Exposure Reduction Plan - 2003-2005
Contingency Plan for Drywell Dose Increase

Section 2PS3: Radiological Environmental Monitoring Program (REMP)

REMP QA Performance Audit /Evaluation - April 2004
 NOS REMP Audit, October 2003
 NOS Assessment, December 2003
 Check-in Report, November 2004
 NOS Assessment - May 2005
 NUPIC Audit - March 2003
 REMP ARs - 181285, 180988, 181496, 180308, 181021, 180322, 178862, 181441
 Focused Self-Assessment - AR 270283
 Meteorological Tower Calibration Records and Associated Procedures (most recent)
 Teledyne Brown - Reports of Analysis/Certificates of Conformance (2004)
 NOS Audit Templates
 REMP Sampling Procedures (air, land use, milk, water, silt, TLD, fish)
 Land Use Survey - 2004
 ODCM Radiation Dose Reports - 2003, 2004
 Radioactive Effluent Release Reports - 2003, 2004
 Calibration Procedures, Calibration Results, Operability Checks for Instrumentation Used for
 Material and Personnel Surveys (SAM, RM-14, APTEC, PM-7) (most recent)
 Evaluation of Plant Radioisotopes and Energies - 2004, 2005

Section 4OA1: Performance Indicator (PI) Verification

EP-AA-125-1001, EP PI Guidance
 EP-AA-125-1002, ERO Performance, PI Guidance
 EP-AA-125-1003, ERO Readiness, PI Guidance
 EP-AA-125-1004, Emergency Response Facilities and Equipment PI Guidance

Section 4OA2.4: Problem Identification and Resolution

AR 00301076	AR 00327121	AR 00372374
AR 00289639	AR 00328572	AR 00370395
AR 00324492	AR 00334242	AR 00372520
AR 00279957	AR 00290078	AR 00348570
AR 00310857	AR 00288584	AR 00376331
AR 00282960	AR 00294486	AR 00367591
AR 00283003	AR 00315869	AR 00368257
AR 00283344	AR 00304043	AR 00368287
AR 00284748	AR 00307986	AR 00379268
AR 00290719	AR 00306933	AR 00378381
AR 00292019	AR 00304543	AR 00378786
AR 00294570	AR 00290719	AR 00299448
AR 00304529	AR 00294486	AR 00301103
AR 00306294	AR 00372100	AR 00367380
AR 00311464	AR00372199	AR 00367414
AR 00314583	AR 00372201	AR 00250405
AR 00314434	AR 00372344	AR 00347249
AR 00316702	AR 00372356	AR 00189765

AR 00313496
AR 00355633
AR 00378820
AR 00378853
AR 00379260
A1415409
A1524151
A1531545
AR 00315875
AR 00315877
AR 00318473
137110
285024
137136
137621
140062
355751*
355734*

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

Procedures

LS-AA-125, Revision 8; Corrective Action Program (CAP) Procedure
LS-AA-125-1001, Revision 4; Root Cause Analysis Manual

Examination Reports

PEA-37733, 1/10/05; Failure Analysis of Two Novatech, P/N 99041P1, Revision 1, EHC
Pressure Set Circuit Cards from Peach Bottom, Stock Code No. 116-05854, AR
#1496273. Technical services Request Number: 1263
BRW-41732, 2/14/05; Failure Analysis of a Westinghouse 2837A19G01 7NMD7 Circuit Card,
Component ID 2FY-0540B (c1-433 location), Reference W.O. 771360-01
(Braidwood U2)

Miscellaneous Documents

WO R0914744, Revision 01, 10/3/04; EHC Alignment/Filter Replacement
Design Basis Document, Main Steam, Turbine and Extraction Steam Systems, P-S-45,
Revision 16, PECO Nuclear, Peach Bottom Atomic Power Station, Unit 2 & 3
LER 2-02-001, 2/7/03
LER 015-01, 1/16/90
LER 2-04-03, 1/20/05; 12/22/04 Reactor Scram - Failed EHC Card
Purchase Order 90171877, Revision 0, 8/25/99
Purchase Order 90176488, Revision 1, 9/17/00
GE Services, Root Cause Analysis, EHC Mark I Circuit Card Failure - Peach Bottom Unit #2,
Date of Failure: December 21, 2002; Steam Line Resonance Compensation Card
(SLRC), Drawing No. 118D1302G0003, Serial No. TTP2V, May 16, 2003
TIN 01-03, 5/18/01; Circuit Card Repair reporting
OE 15286, 2/27/03

OE 15872 (Update of 15286), 4/1/03
Event Notification 41277, 12/22/04, Peach Bottom, Unit #2

Section 4OA5.1: TI 2515/163, Operational Readiness of Offsite Power

Action Tracking Item 289216-94-02
Special Event Procedure SE-16, Grid Emergency, Revision 3
SE-16, Attachment F, Inadequate Contingency Voltage, Region 0

LIST OF ACRONYMS

ALARA	as low as is reasonably achievable
ANS	alert and notification system
AR	action report
ASME	American Society of Mechanical Engineers
CAP	corrective action program
CEDE	committed effective dose equivalent
CR	condition report
DEP	drill and exercise performance
DOT	Department of Transportation
EAL	emergency action level
EHC	electrohydraulic control
EP	emergency preparedness
E-Plan	emergency plan
ERO	emergency response organization
HPCI	high pressure coolant injection
IMC	Inspection Manual chapter
IR	issue report
ISI	in-service inspection
LER	licensee event report
LHP	lower head penetration
LHRA	locked high radiation area
MAPL	maximum allowable power level
MG	motor generator
NCV	non-cited violation
NDE	non-destructive examination
NRC	Nuclear Regulatory Commission
OCs	operator challenges
ODCM	offsite dose calculation manual
OSC	operation support center
OWAs	operator work-arounds
PARS	protective action recommendations
PBAPS	Peach Bottom Atomic Power Station
PI	performance indicator
PI&R	problem identification and resolution

QA	quality assurance
RCA	radiologically controlled area
RCS	reactor coolant system
REMP	radiological environmental monitoring program
RG	regulatory guide
RHR	residual heat removal
RIS	regulatory issue summary
ROP	Reactor Oversight Program
RPV	reactor pressure vessel
RT	routine test
RTP	rated thermal power
RWP	radiation work permit
SDP	significant determination process
SSC	system, structure, or component
SUN	shift update notices
TI	temporary instruction
TS	technical specification
TLD	thermoluminescence dosimeter
UFSAR	Updated Final Safety Analysis Report
UT	ultrasonic testing
VT	visual examination
WO	work order