January 26, 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 05000277/2004005 AND 05000278/2004005

Dear Mr. Crane:

On December 31, 2004, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at the Peach Bottom Atomic Power Station, Units 2 and 3. The enclosed integrated inspection report documents the inspection findings, which were discussed on January 10, 2005, with Mr. 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 self-revealing findings of very low safety significance (Green). 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 findings as non-cited violations (NCVs), in accordance with Section VI.A of the NRC's Enforcement Policy. If you contest any NCVs in this report, you should provide a response with the basis for your denial, within 30 days of the date of this inspection report, to the 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 the Peach Bottom facility.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, 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).

If you have any questions, please contact me at 610-337-5209.

Sincerely,

/RA/

Mohamed Shanbaky, Chief
Projects Branch 4
Division of Reactor Projects

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

Enclosure: Inspection Report 05000277/2004005 and 05000278/2004005
w/Attachment: Supplemental Information

cc w/encl:
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Site Vice President, Peach Bottom Atomic Power Station
Plant Manager, Peach Bottom Atomic Power Station
Regulatory Assurance Manager - Peach Bottom
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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.:	05000277/2004005, 05000278/2004005
Licensee:	Exelon Generation Company, LLC Correspondence Control Desk P.O. Box 160 Kennett Square, PA 19348
Facility:	Peach Bottom Atomic Power Station Units 2 and 3
Location:	1848 Lay Road Delta, Pennsylvania
Dates:	October 1, 2004, through December 31, 2004
Inspectors:	B. Welling, Acting Senior Resident Inspector D. Schroeder, Resident Inspector A. Barker, Reactor Inspector R. Bhatia, Reactor Inspector C. Colantoni, Reactor Inspector N. McNamara, EP Inspector R. Nimitz, Senior Health Physicist A. Rosebrook, Reactor Inspector
Approved by:	Mohamed M. Shanbaky, Chief Projects Branch 4 Division of Reactor Projects

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SUMMARY OF FINDINGS

IR 05000277/2004005, 05000278/2004005; 10/01/2004 - 12/31/2004; Peach Bottom Atomic Power Station, Units 2 and 3; Surveillance Testing and Occupational Radiation Safety.

The report covered a 13-week period of inspection by resident inspectors and announced inspections by a regional senior health physicist, an emergency preparedness inspector, and regional reactor inspectors. Two Green 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: Mitigating Systems

- Green. A self-revealing non-cited violation (NCV) of Unit 3 Technical Specification (TS) 3.3.5.1, "Emergency Core Cooling System (ECCS) Instrumentation," was identified on October 9, 2004. Loss of the auto closure function on the Unit 3 high pressure coolant injection (HPCI) condensate storage tank suction valve, caused by a wire lug nut that was eight turns loose, resulted in HPCI inoperability.

  The finding is considered more than minor because the issue was associated with the configuration control attribute of the mitigating systems cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The loss of the automatic condensate storage tank (CST) function affected HPCI reliability because it could lead to vortexing and loss of pump suction.

  A contributing cause to the relay lug being eight turns loose on the HPCI CST suction valve auto closure relay is related to the human performance cross cutting area. The most likely cause of this condition was inadequate instrumentation and controls maintenance work practices. (Section 1R22)

Cornerstone: Occupational Radiation Safety

- Green. A self-revealing non-cited violation of Technical Specification 5.4 associated with implementation of Regulatory Guide 1.33 procedures for control of radioactivity was identified. Specifically, positive control was not maintained of an unlabeled bucket containing elevated levels of residual radioactive materials. The material was unknowingly spilled in a non-contaminated area resulting in personnel and area contamination. Exelon conducted a clean-up of the contamination, evaluated potential personnel exposures, reviewed extent of condition, and placed this issue into the corrective action program. No significant occupational dose was identified.

The finding was greater than minor because it affected the Occupational Radiation Safety cornerstone attributes of program and processes for exposure control and monitoring in that Exelon did not maintain control of radioactive materials to ensure adequate protection of worker health and safety from exposure to radioactive materials. This finding was determined to be of very low safety significance (Green), in that: 1) it did not involve an ALARA finding, 2) it did not involve an overexposure, 3) there was no substantial potential of an overexposure and, 4) the ability to assess dose was not compromised. (Section 2OS1)

B. Licensee-Identified Violations

None.

REPORT DETAILS

Summary of Plant Status

Unit 2 began this inspection period shutdown for refueling outage 2R15. On October 7, the unit was taken critical, and on October 14, the unit reached 100% power. On October 16, Unit 2 reduced power to 89% due to a high oil level alarm on the 2B recirculation pump. On October 21, Unit 2 reduced power to 57% for power suppression testing for a leaking fuel assembly. On November 7, Unit 2 reduced power to 71% to repair a main steam isolation valve solenoid. On December 13, Unit 2 experienced an automatic recirculation system runback to approximately 70% power due to an equipment deficiency on a static inverter. On December 22, Unit 2 automatically scrammed due to an electro-hydraulic control system failure. On December 28, the unit experienced an automatic recirculation system runback to approximately 72% power due to a trip of the 2A condensate pump. The unit was restored to approximately 100% power on December 31, 2004.

Unit 3 began this inspection period operating at approximately 100% power and remained at or near that power level except for brief periods of planned testing and rod pattern adjustments.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R01 Adverse Weather Protection (71111.01 - 2 Samples)

a. Inspection Scope

The inspectors reviewed Exelon's preparations for cold weather conditions and walked down selected systems that could be affected by low temperatures to verify that these systems would remain functional during cold weather conditions. The systems included the emergency diesel generators and high pressure service water. The inspectors used procedure RT-O-040-630-2, Revision 11, "Winterizing Procedure," during this inspection. The inspectors also reviewed the documentation of the actions taken for winter readiness preparations in accordance with procedure WC-AA-107, Revision 0, "Seasonal Readiness." The inspectors discussed these actions with station operations and work management personnel. This inspection activity represented two samples.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment (71111.04)

a. Inspection Scope

Partial System Walkdowns (71111.04Q - 2 Samples). The inspectors performed partial system walkdowns during this inspection period to verify system and component alignments and note any discrepancies that could impact system operability. The inspectors verified selected portions of redundant or backup systems/trains were available while a system was out-of-service. The inspectors reviewed selected valve

positions, electrical power availability, and the general condition of major system components. This inspection activity represented two samples. The partial walkdowns included the following systems:

- 3'B' core spray (CS) system with 3'A' CS out-of-service on November 29, 2004
- 'A' standby gas treatment (SBGT) train with 'B' SBGT out of service on December 6, 2004

Complete System Walkdown (71111.04S - 1 Sample). The inspectors performed a complete walkdown of accessible portions of the Unit 2 reactor core isolation cooling system in November and December 2004, to verify proper system alignment and configuration control. This inspection activity represented one sample.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05Q)

1. Routine Plant Area Tours (71111.05 - 11 Samples)

a. Inspection Scope

The inspectors reviewed the 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 inspectors performed walkdowns of the following areas to assess control of transient combustible material and ignition sources, fire detection and suppression capabilities, fire barriers, and any related compensatory measures. This inspection activity represented eleven samples. The following fire areas were reviewed:

- Unit 2 north control rod drive equipment area on November 9, 2004
- Unit 2 south CRD equipment area on November 9, 2004
- Unit 2 battery room #225 on December 13, 2004
- Unit 2 battery room #218 on December 13, 2004
- Unit 2 and Unit 3 cable spreading room on December 13, 2004
- Unit 3 reactor core isolation coolant room on December 14, 2004
- Unit 3 high pressure coolant injection room on December 14, 2004
- Unit 3 core spray room 3 'A'/ 3 'C' on December 14, 2004
- Unit 2 core spray rooms 2 'A' / 2 'C' on December 16, 2004
- Unit 2 core spray instrument room on December 16, 2004
- Unit 2 emergency switchgear rooms #226 and #231 on December 16, 2004

b. Findings

No findings of significance were identified.

2. Annual Fire Brigade Drill Observation (71111.05A - 1 Sample)

a. Inspection Scope

The inspectors observed plant personnel performance during an annual fire brigade drill on November 3, 2004, to evaluate the readiness of station personnel to prevent and fight fires. The drill simulated fighting a fire involving the Unit 3 hydrogen seal oil unit, in the turbine building, elevation 116 feet.

The inspectors reviewed the drill scenario and Exelon Nuclear fire protection procedures RT-F-101-922-2, "Fire Drill," and FF-01 "Fire Fighting and Prefire Strategy Plan." The inspectors also reviewed the information and strategies in the pre-fire plan PF-81, "Prefire Strategy Plan, Unit 3 Hydrogen Seal Oil Unit." The review was performed to verify that the prefire strategy plan was consistent with the fire protection design features, fire boundaries, and combustible loading assumptions listed in the fire protection plan for Peach Bottom. The inspectors observed the fire brigade members don protective clothing, turnout gear, and self-contained breathing apparatus. The inspectors observed the fire fighting equipment brought to the fire area scene to evaluate whether sufficient equipment was available for the simulated fire. The inspectors evaluated whether the fire hose lines identified in the prefire plan were capable of reaching the fire area and whether the hose usage was adequately simulated, including laying out the hose without flow constrictions. The inspectors observed fire fighting directions and radio communications between the brigade leader and the brigade members. The inspectors observed the post drill critique to evaluate if the drill objective acceptance criteria were satisfied and any drill weaknesses were discussed. This inspection activity represented one sample.

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures (71111.06 - 1 Sample)

Internal Flood Protection

a. Inspection Scope

The inspectors reviewed the station's internal flooding analysis, flood mitigation procedures, and design features, to verify whether they were consistent with the design basis document for internal flooding P-T-09, "Internal Hazards." The inspectors walked down selected risk significant plant areas to verify whether flood detectors, watertight doors, sump pumps, and other flood protection design features were adequate and operable. During the walk down, the inspectors also verified whether there were any unidentified or unanalyzed sources of flooding, including holes and unsealed penetrations in floors and walls, between flood areas, and between common drain systems and sumps and the flood area. This inspection activity represented one sample.

b. Findings

No findings of significance were identified.

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

a. Inspection Scope

The simulator scenarios included an evaluation of the performance of shift supervision to properly use the emergency operating procedures. The inspectors observed and evaluated critiques of the operators' performance to ensure that any performance errors were detected and corrected. 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 Technical Specifications, emergency plan implementation, and the correct use of the emergency operating procedures. The inspectors discussed the training, simulator scenario, and critique with operators, shift supervision, and training instructors. This inspection activity represented one sample.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12Q - 2 Samples)

a. Inspection Scope

The inspectors reviewed the follow-up actions for issues identified on systems, structures, or components (SSCs) and the performance of those SSCs to assess the effectiveness of Exelon's maintenance activities. This inspection activity represented two samples. The following equipment performance issues were reviewed:

- Unit 2 High pressure coolant injection (HPCI) flow controller malfunction (Issue Report 246290)
- Unit 3 HPCI loss of high reactor level trip function (Issue Report 252501)

b. Findings

No findings of significance were identified.

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

a. Inspection Scope

The inspectors reviewed Exelon's risk evaluations and contingency plans for selected planned and emergent work activities to verify that appropriate risk evaluations were performed and to assess Exelon's management of overall plant risk. The inspectors

compared the risk assessments and risk management actions against the requirements of 10 CFR 50.65(a)(4) and the recommendations of NUMARC 93-01 Section 11, "Assessment of Risk Resulting from Performance of Maintenance Activities." The inspectors verified that risk assessments were performed when required and appropriate risk management actions were identified. This inspection activity represented six samples.

The inspectors attended planning meetings and discussed the risk management of the activities with operators, maintenance personnel, system engineers, and work coordinators to verify that risk management action thresholds were identified correctly. The inspectors also verified that appropriate implementation of risk management actions were performed. The following planned and emergent work activities were reviewed:

- E-42 loss-of-coolant accident/loss of offsite power testing on October 4, 2004
- Emergent E3 emergency diesel generator (EDG) generator bearing issue on October 19, 2004
- Missed reactor protection system response time surveillance on October 22, 2004
- 3B core spray pump relay with E-23 and E-33 undervoltage relay testing on November 23, 2004
- 3B core spray system outage window on November 29, 2004
- Station blackout line inoperable on December 2, 2004

In addition, the inspectors reviewed the assessed risk configurations against the actual plant conditions and any in-progress evolutions or external events to verify that the assessments were accurate, complete, and appropriate for the issues. The inspectors performed control room and field walkdowns to verify that compensatory measures identified by the risk assessments were appropriately performed.

b. Findings

No findings of significance were identified.

1R14 Personnel Performance During Non-routine Plant Evolutions (71111.14 - 4 Samples)

a. Inspection Scope

The inspectors reviewed plant computer and recorder data, operator logs and approved procedures while evaluating the performance of operations, engineering, and instrument and maintenance personnel in response to four non-routine evolutions. The inspectors assessed personnel performance to determine whether the operator's response was appropriate and in accordance with procedures and training. The inspectors also assessed whether engineering and instrument and maintenance personnel followed procedures, as required, and were properly trained and briefed prior to performing work evolutions. This inspection activity represented four samples. The following non-routine evolutions were observed or reviewed:

- Unit 2 power suppression testing on October 22, 2004
- Unit 2 recirculation system runback on December 13, 2004
- Unit 2 scram on December 22, 2004
- Unit 2 recirculation system runback on December 28, 2004

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15 - 6 Samples)

a. Inspection Scope

The inspectors reviewed operability evaluations to assess the adequacy of the evaluations, the use and control of compensatory measures, compliance with the Technical Specifications, and the risk significance of the issues. The inspectors verified that the operability determinations were performed in accordance with Exelon administrative procedure LS-AA-105, "Operability Determinations." 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:

- E3 EDG generator bearing high temperature on October 19, 2004
- Unit 2 residual heat removal system cross-tie valve leakage on October 6, 2004
- Unit 2 leaking edge flow meter re-commissioning on October 14, 2004
- Emergency diesel generator lube oil temperature switches on December 17, 2004
- 3C high pressure service water wall thickness below code minimum on December 20, 2004
- Unit 3 HPCI turbine exhaust drain line vibration on December 17, 2004

b. Findings

No findings of significance were identified.

1R16 Operator Work-Arounds (71111.16 - 4 Samples)

a. Inspection Scope

During November 2004, the inspectors reviewed both units for the effects of operator work-arounds and equipment deficiencies on the reliability, availability, and potential for misoperation of systems. The inspectors evaluated the effects of identified items on the ability of operators to respond, in a correct and timely manner, to plant transients and accidents. The inspectors also reviewed deficiencies to determine if any items complicating the operators' ability to implement emergency operating procedures had not been identified by Exelon as an operator work-around. The inspectors reviewed

Exelon administrative procedure OP-AA-102-103, "Operator Work-Around Program," for implementation at the site. This inspection activity represented four samples.

- Cumulative effects of operator work-arounds
- Unit 2 reactor manual control system problems
- Unit 3 recirculation pump speed oscillations
- Unit 2 feedwater master level controller problem

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing (71111.19 - 4 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 Technical Specification requirements. The inspectors reviewed the recorded test data to evaluate whether the acceptance criteria was satisfied. This inspection activity represented four samples. The inspectors reviewed post-maintenance tests performed in conjunction with the following maintenance activities:

- Scram inlet valve repair of Hydraulic Control Unit (HCU) 54-19, Control Rod Drive (CRD) scram insertion timing per ST-R-003-485-2 on December 27, 2004
- Leak rate test of MO-26B valve on October 5, 2004
- Unit 2 reactor pressure vessel hydrostatic test on October 6, 2004
- Standby gas treatment stroke time test of AO-O-09A-00475-01/02 on December 12, 2004

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22 - 8 Samples)

1. Routine Surveillance Tests (71111.22 - 7 Samples)

a. Inspection Scope

The inspectors reviewed and 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. The reviewed and observed surveillance tests included:

- Unit 2 reactor vessel hydro test on October 5, 2004
- HPCI logic system functional test (ST-I-023-100-2) on November 16, 2004
- HPCI flow rate test at less than 175 psig steam pressure on October 7, 2004
- ST-O-010-301-3 'A' RHR loop pump, valve, flow and unit cooler functional and inservice test on November 12, 2004
- Unit 2 HPCI pump, valve, flow and unit cooler functional and in-service test (ST-O-023-301-2) on December 8, 2004
- ST-O-020-560-3 reactor coolant leakage test on December 20, 2004
- SI3R-63G-5132-XXRM, functional check of drywell radiation monitor on December 20, 2004

b. Findings

No findings of significance were identified.

2. High Pressure Coolant Injection Condensate Storage Tank Suction Valve Resulted in HPCI Inoperability (71111.22 - 1 Sample)

a. Inspection Scope

The inspectors reviewed the circumstances of a Technical Specification non-compliance due to loose wire on a Unit 3 HPCI suction valve logic relay. This inspection activity represented one sample.

b. Findings

Introduction. A self-revealing non-cited violation (NCV) of Unit 3 Technical Specification (TS) 3.3.5.1, "Emergency Core Cooling System (ECCS) Instrumentation," was identified. The NCV is of very low safety significance (Green). Loss of the auto closure function on the High Pressure Coolant Injection (HPCI) Condensate Storage Tank (CST) suction valve resulted in HPCI inoperability.

Description. On October 9, 2004, with Unit 3 operating at 100% power, the HPCI CST suction valve (MO-3-23-017) did not auto-close as expected during the transfer of HPCI pump suction from the CST to the torus per Exelon operating procedure SO 23.7.B-3. Investigation revealed a loose connection on the #10 terminal lug of the 3-23A-K022 relay. The connection was found to be at least eight turns loose. Exelon determined that the most likely cause of this condition was previous I&C maintenance work practices. A review of work order history could not determine how long the loose connection had existed. The HPCI CST suction valve auto closure function was last tested satisfactory on September 7, 2004. It was subsequently determined that the

Technical Specification function of transferring the HPCI suction from the CST to the suppression pool was inoperable per TS 3.3.5.1.

Analysis. The performance deficiency is a human performance related maintenance error. Specifically, the screw located on relay 3-23A-K022, lug #10, was found to be at least eight turns loose. The relay and associated loose wire were in a cabinet in a low vibration area. The loose wire could not be attributed directly to any recently accomplished work. The loose wire resulted in a break in the circuit continuity and the loss of the relay function. Traditional enforcement does not apply because the issue did not have an actual safety consequence or potential for impacting the NRC's regulatory function and was not the result of a willful violation of NRC requirements or Exelon's procedures. The finding is considered more than minor because the issue was associated with the configuration control attribute of the mitigating systems cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The condition resulted in the loss of the automatic closure function of the Unit 3 HPCI CST suction valve, which is required by Technical Specification 3.3.5.1. The loss of the automatic CST suction closure function affected HPCI reliability because it could lead to vortexing and loss of pump suction while aligned to the torus, which is the safety-related water source. The containment cornerstone was affected because the potential for draining the CST to the torus could lead to a breach of the torus. Site specific analysis was performed based on the mitigating systems cornerstone. HPCI could lose suction due to vortexing on low CST level in scenarios where the CST would likely swap over to the torus. This finding required the performance of a phase 2 significance determination process (SDP) evaluation specific to PB-3 because it affected both the mitigating systems and containment cornerstones. The Unit specific phase 2 scenarios evaluated included anticipated transient without scram (ATWS), medium loss of coolant accident (LOCA), and stuck open relief valve (SORV). A recovery credit was assigned for operator action in the phase 2 analysis because there are two separate alarms on the HPCI panel that would prompt the control room operator to verify that the HPCI CST suction valve has closed, as specified on the alarm response card. These two alarms are labeled "Torus Water Level High," and "Condensate Storage Tank Level Low - Low," and would occur approximately 10 and 20 minutes after the initial transient, assuming that the CST level was lowering from a normal start level at a rate of 5000 gallons per minute, and that all of this water ends up in the torus. These two alarms would be received prior to the vortexing of the HPCI suction in the CST. Remaining systems mitigation capability for the initiating events listed include reactor core isolation cooling (RCIC), low pressure coolant injection (LPCI), core spray, and the automatic depressurization system (ADS). The phase 2 SDP results in a finding of very low safety significance (Green).

A contributing cause to the relay lug being at least eight turns loose on the HPCI CST suction valve auto closure relay is related to the human performance cross-cutting area. The most likely cause of this condition was previous I&C maintenance work practices.

Enforcement. Unit 3 Technical Specification 3.3.5.1.D, "Emergency Core Cooling System Instrumentation," requires high pressure coolant injection system valves to automatically transfer the suction source of water from the condensate storage tank to

the torus if CST level is low or if torus water level is high. Contrary to the above, on October 9, 2004, the automatic closure function of the Unit 3 HPCI CST suction valve did not function as required, which could result in the HPCI pump loss of function. This loss of the automatic suction transfer function occurred between the last successful test on September 7, 2004, and the discovery of the problem on October 9, 2004. Exelon's search of the work history on the affected relay could not determine the exact time that this relay could no longer perform its required function.

Exelon initiated corrective action to inspect a sample population of station relay terminal connections for similar conditions. The underlying cause was inadequate maintenance work practices resulting in the relay connection being loose and allowing a break in circuit continuity.

Exelon documented this occurrence in condition report 261852 and in LER 50-278/2004-003. Because this finding is of very low safety significance, and has been entered into the corrective action program, this violation is being treated as a non-cited violation (NCV), consistent with section VI.A of the NRC Enforcement Policy: **NCV 05000278/2004005-01, High Pressure Coolant Injection Condensate Storage Tank Suction Valve Resulted in HPCI Inoperability**.

1R23 Temporary Plant Modifications (71111.23 - 2 Samples)

a. Inspection Scope

The inspectors reviewed the drywell equipment drain sump delay relay installation per ECR 04-00634 on November 30, 2004, and the station blackout (SBO) line temporary modification on December 9, 2004. The inspectors verified that (1) the design bases, licensing bases, and performance capability of risk significant structures, systems, and components (SSCs) had not been degraded through these modifications, and (2) that implementation of the modifications did not place the plant in an unsafe condition. The inspectors verified the modified equipment alignment through control room instrumentation observations; UFSAR, drawing, procedure, and work order reviews; and plant walkdowns of accessible equipment. This inspection activity represented two samples.

b. Findings

No findings of significance were identified.

Cornerstone: Emergency Preparedness [EP]

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

a. Inspection Scope

A regional in-office review was conducted of Exelon's submitted revisions to the emergency plan, implementing procedures and EALs which were received by the NRC during the period of October - December 2004. A thorough review was conducted of plan aspects related to the risk significant planning standards (RSPS), such as classifications, notifications and protective action recommendations. A cursory review was conducted for non-RSPS portions. These changes were reviewed against 10 CFR 50.47(b) and the requirements of Appendix E and they are subject to future inspections to ensure that the combination of these changes continue to meet NRC regulations. The inspection was conducted in accordance with NRC Inspection Procedure 71114, Attachment 4, and the applicable requirements in 10 CFR 50.54(q) were used as reference criteria. This inspection activity represented one sample.

b. Findings

No findings of significance were identified.

1EP6 Drill Evaluation (71114.06 - 2 Samples)

a. Inspection Scope

The inspectors observed a station emergency response organization (ERO) drill on November 4, 2004, including the transport of a simulated contaminated injured person to York hospital. The inspectors observed an ERO drill in the technical support center on November 9, 2004. These evolutions included emergency classification, and NRC and offsite agency notification to issue the protective action recommendations. The inspectors also evaluated the emergency response organization's recognition of abnormal conditions, command and control, communications, and the overall implementation of emergency plan procedures. The inspectors observed Exelon's critique of personnel performance and verified that any weaknesses or deficiencies observed during the drill were discussed and evaluated.

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY

Cornerstone: Occupational Radiation Safety [OS]

2OS1 Access Controls (71121.01 - 3 Samples)

a. Inspection Scope

The inspector 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 Technical Specifications, and applicable Exelon procedures.

Inspection Planning - Performance Indicators

The inspector reviewed performance indicators (PIs) for the Occupational Exposure Cornerstone. The inspector discussed and reviewed current performance, relative to the indicators, with cognizant Exelon personnel. The inspector reviewed both external and internal occupational exposure results relative to applicable performance indicators. (See Section 4OA1)

Plant Walkdowns, RWP Reviews, and Jobs in Progress Reviews

The inspector walked down selected radiological controlled areas and reviewed housekeeping, material conditions, posting, barricading, and access controls to radiological areas. The inspector reviewed ongoing hydro-lazing of Unit 2 reactor cavity to fuel pool cooling piping.

The inspector reviewed and discussed internal dose assessments made for the Unit 2 outage, since the previous inspection, to identify any apparent actual occupational internal doses greater than 50 millirem committed effective dose equivalent (CEDE). The review also included the adequacy of the selected dose assessments, as appropriate, and included selected review of the program for evaluation of potential intakes associated with hard-to-detect radionuclides.

The inspector discussed physical and programmatic controls for highly activated or contaminated materials (non-fuel) stored within spent fuel and other storage pools.

Problem Identification and Resolution

The inspector selectively reviewed self-identified occupational exposure control issues entered into the corrective action program for resolution. The inspector evaluated the database for repetitive deficiencies or significant individual deficiencies to determine if self-assessment effort was identifying and addressing the deficiencies. The review also included evaluation of data to determine if any problems involved performance indicator (PI) events.

The review also included a review of problem reports since the last inspection which involved potential radiation worker or radiation protection personnel errors to determine if there was an observable pattern traceable to a similar cause. The review included an evaluation of corrective actions, as appropriate. (See Section 4OA2.)

Radiation Worker/Radiation Protection Technician Performance

The inspector observed radiation worker and technician performance during hydrolazing activities with respect to stated radiation protection requirements to determine if personnel were aware of radiological conditions in their work place and the RWP controls/limits in place. The inspector also reviewed performance relative to radiological hazards present.

b. Findings

Introduction: A self-revealing non-cited violation (Green) of Technical Specification 5.4 associated with implementation of Regulatory Guide 1.33 procedures for control of radioactivity was identified. Specifically, positive control was not maintained of an unlabeled bucket containing elevated levels of residual radioactive materials. The residual materials were unknowingly spilled in a non-contaminated area resulting in personnel and area contamination.

Description: On November 8, 2004, a worker obtained a bucket from the Hot Tool Room to use for a work activity. The bucket did not indicate the presence of radioactive contamination therein. The worker held the bucket up to a source of light to check for any holes in the bottom of the bucket. As the bucket was inverted, a quantity of residual radioactive dust and debris came out of the bucket and spilled to the floor. Because the bucket was not identified as containing contamination and the bucket was in a clean area, the worker assumed the material was not contaminated. The contamination was subsequently tracked to other clean areas outside the tool room but within the radiologically controlled area (RCA). The worker, who inspected the bucket, was identified as contaminated (shoe) when he attempted to pass through a personnel contamination monitor at another location within the RCA. A second worker's shoe was found contaminated. The bucket and floor contamination was identified during follow-up surveys for the personnel contamination event. The surveys identified contamination levels of several hundred thousand disintegrations per minute (dpm), based on large area removable contamination surveys.

Analysis: Failure to control radioactive contamination is a performance deficiency in that procedure requirements for maintaining control of radioactive materials being handled to prevent unwarranted exposure were not met which were reasonably within Exelon's 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.

The finding was greater than minor because it affected the Occupational Radiation Safety Cornerstone attributes of program and processes for exposure control and monitoring. Specifically, Exelon did not maintain control of radioactive materials to ensure adequate protection of worker health and safety from exposure to radioactive materials. Further, this matter is suitable for review under the Significance

Determination Process (SDP) in that it involved a potential for elevated unintended dose under different circumstances. However, this finding was determined to be of very low safety significance (Green), in that: 1) it did not involve an ALARA finding, 2) it did not involve an overexposure, 3) there was no substantial potential of an overexposure and, 4) the ability to assess dose was not compromised. Exelon conducted a clean-up of the contamination, evaluated potential personnel exposures, reviewed extent of condition and placed this issue into its corrective action program. The worker did not sustain any intake or contamination of the skin, and no significant occupational dose was identified.

Enforcement: Technical Specification (TS) 5.4 and Regulatory Guide 1.33, Appendix A (November 1972), require procedures for control of radioactivity including surveys and monitoring. Exelon procedure RP-AA-500, Rev. 5, delineates responsibilities and provides instructions for identification, control and movement of radioactive materials. RP-AA-500, Section 3, requires that plant personnel maintain positive controls of radioactive materials handled or generated in order to prevent unwarranted exposure to workers. Contrary to this requirement, a bucket containing residual radioactive material was not controlled for an unknown period of time during the Unit 2 fall outage, resulting in contamination of floor areas and personnel in a non-contaminated area when the bucket was handled on November 8, 2004.

This is a violation of TS 5.4. Because this finding was of very low safety significance (Green), and Exelon entered this finding into its corrective action program (AR 271404), this violation is being treated as a Non-Cited Violation (NCV) consistent with Section VI.A of the NRC Enforcement Policy: **NCV 05000277/2004005-02, Exelon Did Not Adhere to Radiation Protection Procedures for Control of Radioactive Material Within the Radiologically Controlled Area**.

2OS2 ALARA Planning and Controls (71121.02 - 3 Samples)

a. Inspection Scope

The inspector 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.

Radiological Work Planning

The inspector selectively reviewed dose results for completed Unit 2 outage work activities. The inspector compared the results achieved (dose reductions, person-rem used) with the intended dose established in the ALARA plans for these activities. The inspector evaluated inconsistencies between dose estimates and actual doses sustained for the work activities. Work-in-progress reviews as well as post-job ALARA evaluations were reviewed, as appropriate. Tasks reviewed included valve work

activities, control rod drive removal and replacement activities, refueling activities, reactor disassembly, and reactor cavity decontamination activities. The inspector reviewed the Unit 2 post-outage critique for refueling floor activities.

Verification of Dose Estimates and Exposure Tracking Systems

The inspector reviewed the exposure tracking system to evaluate the level of detail, and exposure report timeliness. Work-in-progress reviews for Unit 2 outage work activities were reviewed.

Source-Term Reduction and Control

The inspector reviewed and discussed Exelon's plant source-term control during shutdown of Unit 2. The inspector discussed the source term controls implemented and their effectiveness.

Problem Identification and Resolution

The inspector selectively reviewed self identified ALARA issues placed in the corrective action program. The inspector reviewed condition reports and action requests to evaluate Exelon's threshold for identifying, evaluating, and resolving problems in this area. (See Section 4OA2)

b. Findings

No findings of significance were identified.

2OS3 Radiation Monitoring Instrumentation and Protective Equipment (71121.03 - 1 Sample)

a. Inspection Scope

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

Problem Identification and Resolution

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

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification (71151)

1. Routine Performance Indicator Verifications (71151 - 6 Samples)

a. Inspection Scope

The inspectors reviewed selected records at the station to assess the accuracy and completeness of the NRC Performance Indicator (PI) data. The records reviewed included Technical Specification limiting condition for operation logs, system surveillance tests, licensee event reports, action requests and condition reports. The information reviewed was compared against the criteria contained in Nuclear Energy Institute (NEI) 99-02, "Regulatory Assessment PI Guideline," Revision 2. The inspectors verified that conditions met the NEI criteria, were recognized, identified, and accurately reported. This inspection activity represented six samples. The following specific indicators were reviewed for the previous four calendar quarters of reported data:

- Unit 2 & 3 EDG unavailability
- Unit 2 & 3 HPCI unavailability
- Unit 2 & 3 Safety system functional failures

b. Findings

No findings of significance were identified.

2. Occupational Exposure Control Effectiveness (71151 - 1 Sample)

a. Inspection Scope

The implementation of the Occupational Exposure Control Effectiveness Performance Indicator (PI) Program was reviewed. Specifically, the inspector reviewed corrective action program records for occurrences involving High Radiation Areas, Very High Radiation Areas, and unplanned personnel radiation exposures since the last inspection in this area. The review was against the applicable criteria specified in NEI 99-02, Regulatory Assessment Performance Indicator Guideline, Revision 2. The purpose of this review was to verify that occurrences that met NEI criteria were recognized and identified as Performance Indicators.

b. Findings

No findings of significance were identified.

3. RETS/ODCM Radiological Effluent Occurrences (71151 - 1 Sample)

a. Inspection Scope

The implementation of the RETS/ODCM Performance Indicator (PI) was reviewed. Specifically, the inspector reviewed corrective action program records and projected monthly and quarterly dose assessment results due to radioactive liquid and gaseous effluent releases; for the fourth quarter 2003 to the fourth quarter 2004 (to date). The review was against the applicable criteria specified in NEI 99-02, Regulatory Assessment Performance Indicator Guideline, Revision 2. The purpose of this review was to verify that occurrences that met NEI criteria were recognized and identified as Performance Indicators.

b. Findings

No findings of significance were identified.

4OA2 Problem Identification and Resolution (71152)

1. Routine Review 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 or specific human performance issues for follow-up, the inspectors performed a daily screening of items entered into the licensee's corrective action program. This review was accomplished by reviewing copies of issue reports, attending daily screening meetings, and accessing Exelon's computerized database.

2. Annual Sample Reviews (71152 - 6 Samples)

.1 Safety Relief Valve (SRV) Issues

a. Inspection Scope

The inspector reviewed the corrective actions associated with the Safety Relief Valve (SRV) issues experienced during the dual unit scram that occurred in September 2003. These issues included the failure of the 3D SRV to close on demand, failure of the 3G SRV to open on demand, and various acoustic monitoring problems associated with the SRVs. The inspector performed a detailed review to ensure that Exelon identified the full extent of the issues, performed appropriate evaluations, and specified and implemented appropriate corrective actions. This review included an evaluation of various issue reports, action requests, work orders, root causes, common causes, and apparent causes, as well as interviews with various station personnel.

b. Findings and Observations

No findings of significance were identified.

.2 Inadvertent Operation of RCIC Controller by I&C Personnel

a. Inspection Scope

The inspector reviewed the corrective actions associated with an inadvertent operation of a reactor core isolation cooling (RCIC) system controller by instrumentation and controls (I&C) personnel to determine whether Exelon's actions addressed the cause(s) of the human performance error. The inspector interviewed the I&C technicians and observed training of several technicians to ensure that they were knowledgeable of the human performance aspects per the established procedures and were meeting managements expectations. Also, the inspector observed surveillance testing in the control room and the relay cabinet areas to ensure the testing was performed appropriately.

The inspectors also reviewed Exelon's timeliness for implementing the corrective actions of the associated issues, and their effectiveness in precluding recurrence of human error aspects for significant conditions adverse to quality.

b. Findings and Observations

No findings of significance were identified.

Observations: The inspector noted that there were some instances where long-standing/recurring human error problems were still not fully addressed in I&C work after the above incident. Some lapses of human error still occurred, and Exelon continued to provide additional training and emphasis on management expectations in these areas. I&C management and training department personnel stated that they will continue to observe I&C staff personnel effectiveness in these areas until human performance meets management expectations.

.3 Loss of Power/Trip 343 SU-E and 3435 Breakers

a. Inspection Scope

The inspector reviewed Exelon's corrective actions taken associated with the trip of breakers 3435 and 343 SU-E on April 25, 2004, resulting in the loss of 13 kV, 343 Startup sources, to determine whether Exelon's actions had addressed the identified cause(s) of an animal intrusion problem in this substation. The inspector interviewed the system manager and walked down the applicable substations to ensure that the planned corrective actions were taken to address this issue.

The inspectors also reviewed Exelon's timeliness for implementing the corrective actions of associated issues, and their effectiveness in precluding recurrence.

b. Findings and Observations

No findings of significance were identified.

Observations: The inspector noted that the apparent cause of the breaker trips was a ground on the 343 Startup source. A raccoon came in contact with “a” phase of the 343 line causing the fault. Protective instrumentation monitoring the line correctly actuated on sensing fault and tripped open 3435 and 343SU breakers. A contributing cause was the lack of fully effective corrective actions from a similar event in June 2001 to minimize the potential for animal intrusion to occur in the fenced area of 343 line takeoff tower.

.4 Root Cause Report on Substantive Cross-cutting Issue in Problem Identification and Resolution

a. Inspection Scope

The inspector performed a detailed review of the root cause report (IR 248779, issued November 11, 2004) on repeat equipment failures due to a substantive cross-cutting issue in problem identification and resolution. The report was reviewed to ensure that the full extent of the issue was identified, an appropriate evaluation was performed, and the appropriate corrective actions were specified and prioritized. The inspector evaluated the report against the requirements of the licensee’s Corrective Action Program as delineated in the Site Administration Procedure LS-AA-125, "Corrective Action Program (CAP) Procedure," and 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action."

b. Findings and Observations

No findings of significance were identified.

Observations. The root cause report considered fifteen events that were identified from the NRC August 30, 2004, mid-cycle assessment letter, the NRC March 3, 2004, annual assessment letter and significant level two events involving potential ineffective corrective actions at the station during 2003-2004. The station root cause team adequately implemented appropriate investigation methodologies. However, the inspector identified that the corrective actions were not fully developed to effectively direct staff behavior change beyond the reinforcement of human performance fundamentals. The interviews conducted for the causal factor of "Reinforcement of Technical Human Performance Practices and Fundamentals," identified that although management has implemented and reinforced the fundamentals, some skepticism exists regarding the organization's commitment to consistently adhering to these principles. The inspector identified that there was no specific corrective action developed to correct this attitude.

Further, a causal factor analysis identified three Corrective Action Program Coordinator (CAPCO) responsibilities that were not being met for performance expectations. These three responsibilities were the review of condition reports to ensure issue class/significance/recommended actions are appropriate, the administrative review of investigations and completed assignments for quality and adequacy, and the review of completed investigations and condition report data for potential department trends. The

inspector considers these responsibilities to be critical and fundamental to the implementation of an effective corrective action program. The inspector identified that there was no specific corrective action developed with urgency to implement the three CAPCO responsibilities. The licensee stated that supervision over the process will be improved and additional oversight will be implemented to increase effectiveness in this area.

In addition, the corrective action of "Proper Workload Management" is to relieve workloads from appropriate system managers and to interview each system manager to set/reinforce expectations and important responsibilities. In accordance with ER-AA-2030, Conduct of Plant Engineering (COPE) Manual, approximately 50% of the system manager's time should be spent in the proactive mode in performing reviews. The data collected suggest that only 10-20% of the system manager's time is spent in this mode. The inspector determined the effectiveness potential of the corrective action to achieve the desired time in the proactive mode is unknown. The inspector stated that the effectiveness of these actions will continue to be examined during future inspections.

.5 Load Reduction Due to Ice Build-Up on Outer Screens

a. Inspection Scope

The inspectors reviewed the corrective actions associated with a load reduction that occurred on January 17, 2004, due to ice-buildup on the outer screen structure that caused a lowering of the intake canal level and a reduction in condenser vacuum. The inspectors performed a review to ensure that Exelon identified the full extent of the issues, completed appropriate evaluations, and implemented appropriate corrective actions. This review included an evaluation of issue report 195915, action requests, and an apparent cause report, as well as interviews with station personnel.

b. Findings and Observations

No findings of significance were identified.

.6 Maintenance Rule Limit of Unavailability Exceeded for RBCCW Heat Exchanger

a. Inspection Scope

The inspector reviewed corrective actions, documented in IR 197249, taken to reduce the unavailability of the reactor building closed-cooling water (RBCCW) heat exchangers. The inspector discussed equipment monitoring, preventive and corrective maintenance with the responsible system engineer. Interim and long term corrective actions were reviewed.

b. Findings and Observations

No findings of significance were identified.

Observations: The inspectors noted that the RBCCW heat exchangers were placed in a maintenance rule (a)(1) status due to exceeding the unavailability limit. Repairs to the 2A RBCCW heat exchanger in December 2003 took a longer time to complete than was originally planned. Some of the heat exchanger tubes were degraded to the point of needing to be stabilized, and not all parts were readily available. The two percent unavailability limit was exceeded. Corrective actions from the (a)(1) action plan included sampling heat exchanger tubes for failure mechanism, stocking proper repair parts, elevating the priority of heat exchanger repairs, and evaluating proper long term corrective actions to correct repeat heat exchanger tube failures. Sample analysis revealed that the tube erosion/corrosion of the outside diameter of the tube has caused deep flaws in many of the heat exchanger tubes. These flawed tubes are susceptible to failure. Exelon engineering has recommended replacement of the heat exchangers as the long term corrective action. Replacement of these heat exchangers has not yet been scheduled. Interim corrective actions of stocking the correct parts and elevating the priority of work to repair the heat exchangers has reduced unavailability to below established limits. The interim corrective actions have been effective in improving availability of the RBCCW heat exchanger trains.

2. Semi-Annual Trend Review

a. Inspection Scope

The inspectors reviewed a list of over 1000 issue reports that Exelon initiated at Peach Bottom from July 1, 2004, through December 31, 2004. The review was performed as part of the semi-annual Problem and Identification trend review of the Peach Bottom corrective action program. Approximately 20 of the CRs were reviewed in detail to verify whether the full extent of the issues were adequately identified, and the appropriate level of evaluation and corrective actions were performed. The inspectors evaluated the CRs 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 1 semi-annual PI&R trend review.

b. Findings and Observations

No findings of significance were identified.

Observations: The inspectors noted a potential adverse trend of minor human performance deficiencies in the maintenance and instrumentation & controls areas. Examples included working on the wrong reactor feed pump rupture disk (IR 256833), inadvertently actuating a core spray excess flow check valve due to improper work practices (IR 237061), and performing actions outside of work instructions in a non-safety related system (254751). This trend observation is consistent with Exelon self assessment information documented in the corrective action program and with Exelon Nuclear Oversight assessments. The Maintenance Department completed a common cause analysis (IR 271482) and has initiated corrective actions.

3. Issue Reports Reviewed - Occupational Radiation Safety (71121.01, 71121.02, 71121.03)

a. Inspection Scope

The inspector reviewed Issue Reports (IRs) 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. (IRs 258233, 258284, 256491, 266821, 264117, 256777, 262809, 271714, 264020). The inspector also reviewed the third quarter Nuclear Oversight Quarterly Report.

This review was against the criteria contained in 10 CFR 20, Technical Specifications, and station procedures.

b. Findings and Observations

No findings of significance were identified.

4OA3 Event Followup (71153)

1. (Closed) Licensee Event Report (LER) 0500277/2004002-00, Technical Specification Non-Compliance Due To Inoperable Primary Containment Isolation Valve

On September 8, 2004, at approximately 1700, the Unit 2 high pressure coolant injection (HPCI) turbine exhaust drain line inboard isolation air operated valve (AO-2-23-137) failed to close during routine surveillance testing and was declared inoperable. Actions to isolate the primary containment penetration in accordance with Technical Specification 3.6.1.3 were completed by 2100 on September 8. On September 23, 2004, maintenance technicians discovered foreign material in the valve body of AO-2-23-137. The foreign material was determined to have entered the valve body during the last HPCI system run on September 7 at approximately 1400. Because the Technical Specification 4-hour required action to isolate the penetration was not completed until September 8, this event was determined to be condition prohibited by technical specifications. Exelon documented this issue in their corrective action program under CR 256390, and conducted an extent of conditions review. This issue constitutes a violation of minor significance that is not subject to enforcement action in accordance with Section IV of the NRC's Enforcement Policy. This LER is closed.

2. (Closed) Licensee Event Report (LER) 05000278/2004002-00, Loss of High Pressure Coolant Injection System Automatic High Level Trip As a Result of Lifted Lead

This event was previously reviewed and documented in Inspection Report 0500277,278/2004004, Section 1R19 item 1, and the NRC issued an NCV 0500278/2004004-01," High Pressure Coolant Injection System High Reactor Vessel Automatic Trip Disabled". The inspectors reviewed the LER and noted an additional minor, licensee-identified violation. Exelon's root cause analysis team identified that

Procedure SI-3L-2-72-C1FQ, “Functional Test of Emergency Core Cooling System ‘C’ Channel Compensated Trip System,” did not contain an independent verification step. Independent verification is required when restoring technical specification manipulated equipment by station procedure AD-AA-102-1001,”Station Qualified Reviewer’s Guide.” This issue constitutes a minor violation of 10 CFR 50 Appendix B, Criterion 5, that is not subject to enforcement action in accordance with Section IV of the NRC’s Enforcement Policy. This issue has been entered into Exelon’s corrective action program under CR 252501. This LER is closed.

3. (Closed) Licensee Event Report (LER) 05000278/2004003-00, Technical Specification Non-Compliance Due to Loose Wire on a High Pressure Coolant Injection Suction Valve Logic Relay

This issue was documented in section 1R22 of this report. The LER was reviewed by the inspectors and no new findings of significance were identified. This issue has been entered into Exelon’s corrective action program under CR 261852. This LER is closed.

4OA5 Other Activities

.1 Review of Institute of Nuclear Power Operations (INPO) Evaluation Report

The inspectors reviewed the final report of an INPO Evaluation conducted in December 2003.

4OA6 Meetings, Including Exit

Exit Meeting

On January 10, 2005, the resident inspectors presented the inspection results to Mr. Grimes and members of his staff, who acknowledged the findings. The inspectors confirmed that proprietary information was not provided or examined during the inspection.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Exelon Generation Company

R. Braun, Site Vice President
J. Grimes, Plant Manager
P. Davidson, Engineering Director
C. Jordan, Chemistry Manager
D. Lewis, Operations Director
R. Norris, Radiation Protection Manager
G. Stathes, Maintenance Director

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

None

Opened and Closed

05000278/2004005-01	NCV	High Pressure Coolant Injection Condensate Storage Tank Suction Valve Resulted in HPCI Inoperability (Section 1R22)
05000277/2004005-02	NCV	Exelon Did Not Adhere to Radiation Protection Procedures for Control of Radioactive Material Within the Radiologically Controlled Area (Section 2OS1)

Closed

05000277/2004002-00	LER	Technical Specification Non-Compliance Due To Inoperable Primary Containment Isolation Valve
05000278/2004002-00	LER	Loss of High Pressure Coolant Injection System Automatic High Level Trip As a Result of Lifted Lead
05000278/2004003-00	LER	Technical Specification Non-Compliance Due to Loose Wire on a High Pressure Coolant Injection Suction Valve Logic Relay

Discussed

None

LIST OF DOCUMENTS REVIEWED

Section 1R05: Fire Protection

RT-F-101-922-2, Fire Drill
PF-81, Pre-Fire Strategy Plan, Unit 3 H Seal Oil Unit
FF-01, Fire Fighting and Pre-fire Strategy Plan
OP-AA-201-003, Attachment 1, Fire Drill Record

Section 1R06: Flood Protection Measures

ARC 004. 00C226C, A-4, 'B' ESW Pump Room Flooded
ARC 004, 00C226C. A-3, 'A' ESW Pump Room Flooded
ECR PB 01-01116 000, Clarify Design Basis for Pump Structure Internal Flooding
P-T-09, Internal Hazards
A-C-134, Control of Hazard Barriers
Exhibit A-C-134-6, Control of Hazard Doors/Hatches and Penetrations at Peach Bottom Atomic Power Station

Section 1R11: Licensed Operator Requalification

ON-118, "Loss of Turbine Building Closed Cooling Water System"
T-101, "RPV Control"
POP-20, Licensed Operator Training Program Plan

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

AR 285024 EHC Pressure Setpoint Failed Low Causing Unit 2 Reactor Scram
SO 23,7,A-2, HPCI System Automatic Initiation Response
SO 2A.1.A-2, Starting the First Recirculation Pump
GP-4, Manual Reactor Scram
GP-8A, PCIS Isolation - Group 1
GP-3, Normal Plant Shutdown

Section 1R15: Operability Evaluations

Work Order C0209796
ECR PB 02-00738002
AR 199832
A1453490
A1450013
Work Order C0208197

Section 1R17: Post-Maintenance Testing

ST/LLRT 20.10.11, LLRT 'B' Containment Spray
AR 260077
ST-O-080-682-2, Reactor Pressure Vessel (Class 1) Hydrostatic Pressure Test

Section 1R22: Surveillance Testing

ST-O-023-200-2, HPCI Flow Rate at #175 psig Steam Pressure

Section 1R23: Temporary Plant Modifications

Work Order CO 211815
ECR #04-00634
Dwg # 368, Sheet 1, Rev. 36

Section 1EP4: Emergency Action Level (EAL) and Emergency Plan Changes

Exelon Standard Emergency Plan and Implementing Procedures
Peach Bottom Annex Emergency Plant

Section 1EP6: Drill Evaluation

SE-12 Injury Response
EP-AA-112-206 ATT1 RPM Checklist
RP-AA-350 Personnel Containment Monitoring
RP-AA-376 Radiological Posting, Labeling and Marking

Section 4OA2: Problem Identification and Resolution

Condition Reports (CRs)

106364	175897	236168	266636
118451	176081	254751	271482
168622	199135	256541	279073
175886	233873	263078	
175894	236165		

Action Requests (ARs)

A1436873	A1434231
A1434140	A1442552
A1434217	

Station Work Orders

C0206707	C0206710

Miscellaneous Documents
Root Cause Report for Failure of RV-3-02-071D to Close on Demand
Safety Relief Valve Reliability Project Plan, November 13, 2003
TR Model 7367F MSRV Air Operator Packing Instructions, Revision 10/10/03
TR Model 7467F MSRV Air Operator Packing Instructions, Revision 10/10/03
LS-AA-125, Revision 8, Exelon Nuclear Corrective Action Program Procedure
LS-AA-125-1001, Revision 4, Exelon Nuclear Root Cause Analysis Manual
Safety Relief Valve Schematic
Target Rock Safety Relief Valve 65 Micron Filter Illustration
Failure Modes and Effects Analysis Diagram for RV-3-02-071D Failure to Close
Peach Bottom Atomic Power Station Updated Final Safety Analysis Report
NRC Inspection Report 05000277/2003013 and 05000278/2003013
IR 209136 dated 3/18/04, Inadvertent operation of RCIC Controller by I&C Personnel
Root cause Analysis report for CR 209136 dated 5/28/04
IR 271482 dated 11/08/04, Maintenance Performance reflects Erosion in Standards

Procedure HU-AA-101, Revision 2, Human Performance Tools and Verification Practices
ST-I-07G-102-3, Rev. 14, Primary Containment Isolation Systems Group II Logic System Functional Test dated 11/03/04
Operational Standing Order dated 12/31/04, Operations and Craft Interface in the Main Control Room
IR216811 dated 4/25/04, loss of power / trip 343 SU-E and 3435 Breakers
Prompt Investigation Report , Revision 1 dated 5/06/04 of CR 216811
IR256497 dated 9/24/04, 343SU Corrective actions not completed
AR1421113 dated June 2003 requesting the area around the fence be regarded to eliminate a washout area.
IR 180566 dated 11/18/03, Evaluate the once / 3 year electrical inspection vs. once/ 1 year inspection PM tasks
IR 237659 dated 10/23/04, Review Vegetation Management Program
IR 216811 dated 11/27/04, Review 3SU and 343SU for animal guard design review the 3 SU and 343 SU cable terminations in the N sub for animal guard design changes and present any recommendations to PHC
E-1023, Sh. 3, Rev. 0, Electrical layout #2 & # SU Transformer & Switchgear Areas
FSAR Figure 8.3.2, Rev. 14, Aerial Transmission and Startup Feeds Units 2 & 3

LIST OF ACRONYMS

ALARA	as low as is reasonably achievable
AR	action request
CR	condition report
CRD	control rod drive
CS	core spray
CST	condensate storage tank
EAL	emergency action level
ECCS	emergency core cooling system
EDG	emergency diesel generator
EP	emergency preparedness
ERO	emergency response organization
HPCI	high pressure coolant injection
HPSW	high pressure service water
IR	issue report
LHRA	locked high radiation area
NCV	non-cited violation
RBCCW	reactor building closed-cooling water
RCA	radiologically controlled area
RCIC	reactor core isolation cooling
RHR	residual heat removal
RSPS	risk significant planning standard
RWP	radiation work permit
SBGT	standby gas treatment
SSCs	structures, systems, and components
TS	Technical Specification