April 23, 2003

Mr. John L. Skolds
Chief Operating Officer
Exelon Generation Company, LLC
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: PEACH BOTTOM ATOMIC POWER STATION - NRC INTEGRATED INSPECTION REPORT 50-277/03-02, 50-278/03-02

Dear Mr. Skolds:

On March 29, 2003, the NRC completed an inspection at the Peach Bottom Atomic Power Station. The enclosed report documents the inspection findings which were discussed on April 3, 2003, with Mr. Gordon Johnston and other members of your staff.

This inspection was an examination of 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.

Based on the results of this inspection, the inspectors identified two issues of very low safety significance (Green). These issues were determined to involve violations of NRC requirements. However, because of the very low safety significance and because they have been entered into your corrective actions program, the NRC is treating these issues as non-cited violations, in accordance with Section VI.A.1 of the NRC's Enforcement Policy. If you deny the non-cited violations noted 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.

Since the terrorist attacks on September 11, 2001, the NRC has issued two Orders (dated February 25, 2002, and January 7, 2003) and several threat advisories to licensees of commercial power reactors to strengthen licensee capabilities, improve security force readiness, and enhance controls over personnel access authorization. The NRC also issued Temporary Instruction 2515/148 on August 28, 2002, that provided guidance to inspectors to audit and inspect licensee implementation of the interim compensatory measures (ICMs) required by the February 25th Order. Phase 1 of TI 2515/148 was completed at all commercial nuclear power plants during calendar year (CY) '02, and the remaining inspections are scheduled for completion in CY '03. Additionally, table-top security drills were conducted at several licensees to evaluate the impact of expanded adversary characteristics and the ICMs on licensee protection and mitigative strategies. Information gained and discrepancies identified during the audits and drills were reviewed and dispositioned by the Office of Nuclear

Security and Incident Response. For CY '03, the NRC will continue to monitor overall safeguards and security controls, conduct inspections, and resume force-on-force exercises at selected power plants. Should threat conditions change, the USNRC may issue additional Orders, advisories, and temporary instructions to ensure adequate safety is being maintained at all commercial power reactors.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of 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 No. 50-277/03-02 and 50-278/03-02

Attachment: (1) Supplemental Information

cc w/encl: Senior Vice President, Mid-Atlantic Regional Operating Group
President and CNO, Exelon Generation Company, LLC
Senior Vice President, Operations Support
Vice President, Mid-Atlantic Operations Support
Senior Vice President, Nuclear Services
Site Vice President, Peach Bottom Atomic Power Station
Plant Manager, Peach Bottom Atomic Power Station
Vice President - Licensing
Director, Licensing, Mid-Atlantic Regional Operating Group
Director, Nuclear Oversight
Regulatory Assurance Manager - Exelon Generation Company, LLC
Vice President and General Counsel
D. Quinlan, Manager, Financial Control, PSEG
R. McLean, Power Plant Siting, Nuclear Evaluations
D. Levin, Acting Secretary of Harford County Council
R. Ochs, Maryland Safe Energy Coalition
Mr. & Mrs. Dennis Hiebert, Peach Bottom Alliance
Mr. & Mrs. Kip Adams
D. Allard, Director, Pennsylvania Bureau of Radiation Protection
R. Janati, Chief, Division of Nuclear Safety, Pennsylvania Bureau of Radiation Protection
Correspondence Control Desk
Commonwealth of Pennsylvania
State of Maryland
TMI - Alert (TMIA)
Board of Supervisors, Peach Bottom Township
R. Fletcher, Department of Environment, Radiological Health Program
J. Johnsrud, National Energy Committee, Sierra Club
Public Service Commission of Maryland, Engineering Division
Manager, Licensing - Limerick and Peach Bottom
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Region I Docket Room (with concurrences)

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OFFICE	RI/DRP			RI/DRP	
NAME	AMcMurtray/DF for*			MShanbaky/MS	
DATE	04/22/03			04/23/03	

*M. Buckley via telecon OFFICIAL RECORD COPY

U. S. NUCLEAR REGULATORY COMMISSION
REGION I

Docket Nos:	50-277, 50-278
License Nos:	DPR-44, DPR-56
Report Nos:	50-277/03-02, 50-278/03-02
Licensee:	Exelon Generation Company, LLC Correspondence Control Desk 200 Exelon Way, KSA 1-N-1 Kennett Square, PA 19348
Facility:	Peach Bottom Atomic Power Station Units 2 and 3
Location:	1848 Lay Road Delta, Pennsylvania
Inspection Period:	December 29, 2002 through March 29, 2003
Inspectors:	A. McMurtray, Senior Resident Inspector M. Buckley, Resident Inspector G. Morris, Reactor Inspector L. Scholl, Senior Reactor Inspector M. Modes, Senior Reactor Inspector H. Williams, Senior Operations Engineer G. Johnson, Operations Engineer T. Moslak, Senior Health Physicist
Approved by:	Mohamed M. Shanbaky, Chief Projects Branch 4 Division of Reactor Projects

SUMMARY OF FINDINGS

IR 05000277-03-02, IR 05000278-03-02; Exelon Generation Company; on 12/29/2002 - 03/29/2003; Peach Bottom Atomic Power Station; Units 2 and 3. Maintenance Rule Implementation and Maintenance Risk Assessments and Emergent Work Evaluation.

This inspection was conducted by resident inspectors, senior reactor inspectors, a reactor inspector, a senior operations engineer, an operations engineer, and a senior health physicist. Two findings of very low safety significance were identified during the inspection. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter 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. Inspector Identified Findings

Cornerstone: Mitigating Systems

- **Green**. The inspectors identified a non-cited violation of very low safety significance (Green). The non-cited violation of Condition 2.C.4 of the operating licenses for both Units 2 and 3 was identified because Exelon did not adequately maintain emergency lighting units with at least an 8-hour battery power supply in three areas needed for operation of safe shutdown equipment. The Peach Bottom Fire Protection Plan (FPP) required emergency lighting for safe shutdown and emergency response in the event of fire.

  This NCV was determined to be of very low safety significance because the finding did not contribute to a loss of mitigation equipment functions and did not increase the likelihood of a fire event. In addition, during the period that the emergency lights were unavailable, there was no actual loss of lighting and portable seal beamed lights, that could be used as alternative lighting, were staged in three separate areas in the plant.

  A contributing cause of the failed emergency lighting in the three areas was related to the Problem Identification and Resolution cross-cutting area. Peach Bottom plant personnel identified in July 1996 that emergency lighting units were failing prematurely (CR # 060005). Although station personnel documented the lighting deficiencies in A/Rs and corrected each of the degraded lighting units until the summer of 2002, plant personnel did not implement effective corrective actions to prevent these problems from reoccurring. (Section 1R12)

- **Green**. The inspectors identified a non-cited violation of very low safety significance (Green) of 10 CFR 50, Appendix B, Criterion XVI because Exelon did not adequately correct a condition adverse to quality, namely, emergency diesel generator (EDG) trips caused by electrical trip and lock-out signals from the cardox injection fire protection system due to loose foreign material or failed

circuit cards. Specifically, between June 2002 and January 19, 2003, Exelon did not disable the electrical trip and lock-out signals from the cardox injection fire protection system that will trip the EDG. The E2 EDG tripped during a 24-hour endurance run on January 18, 2003, because of an electrical trip signal from the cardox injection fire protection system due to loose foreign material.

This NCV was of very low safety significance because the E1, E3 and E4 EDGs remained operable during the entire time that the E2 EDG was unavailable and the E2 EDG was unavailable for only a short amount of time (less than three days).

A contributing cause of this finding was related to the Problem Identification and Resolution crossing-cutting area. Exelon did not evaluate in a prompt manner whether it was appropriate to disable the electrical trips of the EDGs from the cardox injection fire protection system after NRC inspectors identified that the trips were still active with the EDG cardox system isolated. After station personnel isolated the cardox injection following the inadvertent cardox injection in June 2002, inspectors documented in NRC Inspection Report 50-277/02-04, 50-278/02-04, dated July 23, 2002, that the electrical portion of the cardox system that generated the EDG trip and lock-outs was not isolated. Although, in response to the NRC inspection, station personnel had generated an assignment in CR # 110334 to evaluate removing the cardox system EDG trips and lock-outs while the cardox system was isolated, plant personnel had not completed this evaluation until after the E2 EDG tripped during the January 2003 endurance test run. (Section 1R13)

Report Details

SUMMARY OF PLANT STATUS

UNIT 2

Unit 2 began this inspection period operating at 100 percent power. On February 17, 2003, Unit 2 power was reduced to approximately 37 percent due to the trip of the 2B recirculation pump. Following repairs, the Unit 2 power was increased and reached 100 percent on February 20, 2003. Unit 2 operated at approximately 100 percent power throughout the remainder of the inspection period except for scheduled power changes to support routine maintenance activities and rod pattern adjustments.

UNIT 3

Unit 3 operated at approximately 100 percent power throughout the inspection period except for scheduled power changes to support routine maintenance activities and rod pattern adjustments.

1. REACTOR SAFETY [R]
Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R01 Adverse Weather Protection

a. Inspection Scope

The inspectors reviewed Exelon's procedure, AG-108, Revision 6, "Preparation for Severe Weather" to assess the station's preparations for several snowstorms and heavy rainfall that occurred during February 2002. During these reviews, the inspectors analyzed the removal of any critical equipment for planned maintenance and the possible impact on plant risk with severe weather expected. The inspectors discussed these severe weather preparations with station engineering, operations, and work management personnel. The inspectors specifically reviewed preparations and actions taken to address the snowstorm on February 15-17, 2003, that resulted in more than two feet of snow at the plant.

b. Findings

No findings of significance were identified.

1R02 Evaluations of Changes, Tests, or Experiments

a. Inspection Scope

The inspectors reviewed samples of safety evaluations for the initiating events, barrier integrity and mitigating systems cornerstones to verify that changes and tests were reviewed and documented in accordance with 10 CFR 50.59 and, if required, prior NRC approval was obtained prior to implementation. The samples included safety evaluations for engineering change request (ECRs) changes. The inspectors assessed the adequacy of the safety evaluations through interviews with the cognizant plant staff

and review of supporting information, such as calculations, engineering analyses, design change documentation, the Updated Final Safety Analysis Report (UFSAR), technical specifications (TSs) and plant drawings. In addition, the inspectors reviewed the administrative procedures and training that control the screening, preparation, and issuance of the safety evaluations to ensure that the procedures adequately implemented the requirements of 10 CFR 50.59, "Changes, Tests, and Experiments."

The inspectors also reviewed a sample of changes that Exelon had evaluated (using a screening process) and determined to be outside of the scope of 10 CFR 50.59, therefore, not requiring a full safety evaluation. The inspectors performed this review to assess if Exelon's conclusions with respect to 10 CFR 50.59 applicability were appropriate. The sample of issues that were screened out included design changes, equivalency changes and set point changes.

The inspectors reviewed issues that had been entered into the corrective action program to determine if Exelon had been effective in identifying problems associated with the 10 CFR 50.59 safety evaluation process. A sample of these issues was selected for further review during which the inspectors assessed the adequacy of the corrective actions which had been implemented for the selected issues.

The safety evaluations and screens were selected based on the safety significance of the affected structures, systems and components (SSCs). A listing of the safety evaluations, safety evaluation screens and other documents reviewed is provided in Attachment 1.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignments

.1 Partial System Walkdowns

a. Inspection Scope

The inspectors performed three partial system walkdowns to verify system and component alignments and note any discrepancies that would 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. The walkdowns involved the following systems:

- 3D residual heat removal (RHR) system
- Unit 2 control rod drive hydraulic system
- Electrical offsite power sources for the onsite Class 1E AC electrical power distribution system, including alignment of the 13 kilovolt and 4160 volt breakers, while the 3 startup (3SU) offsite power was unavailable due to scheduled maintenance

b. Findings

No findings of significance were identified.

.2 Complete System Walkdown

b. Inspection Scope

The inspectors also performed a complete system walkdown to verify that the selected system was properly aligned for operation. The inspectors reviewed valve positions, electrical power availability, and general condition of major system components. In addition, the inspectors reviewed the UFSAR, system design drawings, and issues tracked by the system health report (condition reports, work orders, action requests and maintenance rule issues). These reviews were conducted to identify discrepancies that could impact system operability. The complete system walkdown was performed on the following:

- Unit 2 high pressure coolant injection (HPCI)

b. Findings

No findings of significance were identified.

1R05 Fire Protection

.1 Routine Plant Area Tours

a. Inspection Scope

The inspectors reviewed the Fire Protection Plan, Technical Requirements Manual (TRM), and the respective Pre-Fire Action Plan procedures to determine the required fire protection design features, fire area boundaries, and combustible loading requirements for the areas examined during this inspection. The inspectors then performed walkdowns of these areas to assess control of transient combustible material and ignition sources, fire detection and suppression capabilities, fire barriers, and any related compensatory measures. The fire areas included:

- Unit 2 control rod drive equipment area and corridor, drywell access and isolation valve room compartment
- Unit 3 turbine building wing areas
- Units 2 and 3 13 kilovolt switchgear areas
- Units 2 and 3 emergency switchgear rooms
- Main control room, cable spreading room, fan room
- Circulating water structure, including motor driven and diesel driven fire pump areas

b. Findings

No findings of significance were identified.

1R07 Heat Sink Performance

a. Inspection Scope

The inspectors observed heat exchanger performance testing for the 3A residual heat removal (RHR) system heat exchanger. The testing involved two separate routine tests: RT-O010-660-3, "RHR Heat Exchanger Performance Test," for gathering of the data and RT-X-010-661-3, "RHR Heat Exchanger Performance Calculations Test," heat capacity and performance test results. These tests were used to determine if the heat removal capability of the heat exchanger met design requirements. The inspectors reviewed documentation for potential deficiencies which could mask degraded performance or common cause performance problems.

The inspector also reviewed the previous maintenance and test records associated with all RHR heat exchangers to assess whether Exelon was meeting their commitments to Generic Letter (GL) 89-13, "Service Water System Problems Affecting Safety-Related Equipment."

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification

.1 Biennial Review by Regional Specialist

Operator Licensing Examination

a. Inspection Scope

The following inspection activities were performed using NUREG-1021, Rev. 8, "Operator Licensing Examination Standards for Power Reactors," Inspection Procedure Attachment 71111.11, "Licensed Operator Requalification Program," and NRC Manual Chapter 0609, Appendix I, "Operator Requalification Human Performance Significance Determination Process (SDP)," as acceptance criteria. These inspection activities were performed for both units.

The inspectors reviewed documentation of operating history since the last requalification program inspection. Documents reviewed included NRC inspection reports and Exelon deficiency reports. The inspectors also discussed facility operating events with the resident staff to identify any operational events that were indicative of possible training deficiencies.

The inspector reviewed a sample of the comprehensive written exams and operating tests and observed the administration of annual operating tests to determine if the quality of the written exams, the annual operating tests, and the administration and

evaluation of the operating tests met the criteria of the Examination Standards and 10 CFR 55.59.

The inspectors observed simulator performance during the conduct of the examinations, reviewed simulator performance tests and discrepancy reports to verify compliance with the requirements of 10CFR55.46.

The inspectors reviewed a sample of operators' records related to requalification training attendance, remediation of failures, exam performance, license reactivations, and medical examinations to determine if the operators were in compliance with license conditions and NRC regulations.

Licensed operators were interviewed for feedback regarding the implementation of the licensed operator requalification program.

The inspectors reviewed corrective actions related to requalification training associated with an emergency preparedness drill conducted on February 14, 2002.

On March 21, 2003, the inspectors conducted an in-office review of Exelon's annual operating tests' results for 2003. The inspection assessed whether pass rates were consistent with the guidance of NRC Manual Chapter 0609, Appendix I, "Operator Requalification Human Performance Significance Determination Process (SDP)." The inspectors verified that:

- Crew pass rate was greater than 80%.
  Individual pass rate on the dynamic simulator test was greater than or equal to 80%.
- Individual pass rate on the walk-through test was greater than or equal to 80%.
- Individual pass rate on the comprehensive biennial written exam was greater than or equal to 80%.
- Overall pass rate among individuals for all portions of the exam was greater than or equal to 75%.

b. Findings

No significant findings were identified.

.2 Routine Resident Licensed Operator Training Activities Review

Integrated Drill with Fire Brigade and Simulator Crew

a. Inspection Scope

On February 4, 2003, the inspectors observed licensed operators' performance during an integrated training drill with a fire brigade and a simulator crew in response to a fire in a 13 kilovolt, nonsafety-related, balance-of-plant, electrical bus. The inspectors observed and evaluated usage of Emergency Planning procedures by operations personnel. This observation included evaluating the critiques of the operators' performance to ensure that any operator performance errors were detected and corrected. The inspectors focused on the operating crew's satisfactory completion of critical tasks, including proper and timely identifications and classifications of emergencies. The inspectors also evaluated whether the operators adhered to Technical Specifications, emergency plan implementation and the use of the emergency operating procedures. The inspectors discussed the training drill, simulator performance and critique with operators, shift supervision, operations management and training instructors.

b. Findings

No findings of significance were identified.

1R12 Maintenance Rule Implementation

a. Inspection Scope

The inspectors reviewed the follow-up actions for issues identified on systems, structures, or components (SSCs) and the performance of these SSCs, to assess the effectiveness of Exelon's maintenance activities. The inspectors verified that problem identification and resolution of these issues had been appropriately monitored, evaluated, and dispositioned in accordance with Exelon's procedures and the requirements of 10 CFR 50.65, "Requirements for Monitoring the Effectiveness of Maintenance." In addition, the inspectors reviewed selected SSC classification, performance criteria and goals, and corrective actions to verify that the actions were reasonable and appropriate. The following systems, equipment problems, and documents were reviewed:

Systems

- Unit 2 reactor water clean-up (RWCU) system
- Emergency lighting system failures resulting in the system being placed in Maintenance Rule (a)(1) status

Procedures and Documents

- Peach Bottom Health Overview Reports
- Peach Bottom Maintenance Rule Bases Documentation
- ER-AA-310, Revision 1, “Implementation of the Maintenance Rule”
- ER-AA-310-1002, Revision 0, “Maintenance Rule - SSC Risk Significance Determination”
- ER-AA-310-1003, Revision 0, “Maintenance Rule - Performance Criteria Selection”
- ER-AA-310-1004, Revision 0, “Maintenance Rule - Performance Monitoring”
- ER-AA-310-100, Rev 0, “Maintenance Rule - Dispositioning between (a)(1) and (a)(2)”
- Condition Report (CR) # 146565 “Maintenance Rule Functional Failure - Emergency Lighting Maintenance Rule Performance is Unacceptable”
- CR # 060005, “Emergency Lighting Batteries are Failing Prematurely (6 Months)”
- CR # 148979, “Failure to Promptly Repair Appendix R Emergency Lights”
- CR # 137621, “U/2 SCRAM: RWCU Isolation on High Temperature”
- CR # 146371, “Reach Rod for 2B RWCU pump room broken since 2000"
- RT-S-037-710-2, “Complete Safe Shutdown Emergency Lighting Battery Pack Inspection,” for February 2000 through February 2003.

b. Findings

Fire Protection Safe Shutdown Emergency Lighting Units

Introduction

The inspectors identified a non-cited violation of very low safety significance (Green). The non-cited violation of Condition 2.C.4 of the operating licenses for both Units 2 and 3 was identified because Exelon did not adequately maintain emergency lighting units with at least an 8-hour battery power supply in three areas needed for operation of safe shutdown equipment. The Peach Bottom Fire Protection Plan (FPP) required emergency lighting for safe shutdown and emergency response in the event of fire.

Description

In July 1996, Exelon identified that 8-hour batteries for individual emergency lighting units, required for safe shutdown activities, were failing prematurely. Although individual batteries that failed were replaced, the replaced batteries were also failing prematurely. The condition report (CR # 060005) for this issue was still open at the end of this current inspection report period.

The quarterly surveillance tests of the emergency lighting units, RT-S-037-710-2, “Complete Safe Shutdown Emergency Lighting Battery Pack Inspection,” for February 2000 through February 2003, demonstrated that for the period November 6, 2002 to February, 2003, the emergency lighting units in three areas in the plant, that contained safe shutdown equipment requiring manipulation in the event of a fire, had failed the surveillance test and there was no other lighting available in these areas. The areas are

the Unit 2 RHR room, the Unit 3 RHR room, and the Unit 3 reactor building south isolation valve room. Exelon had not yet repaired these emergency lighting units as of the end of the inspection period.

Although there were several portable seal beamed lights available in three separate areas of the plant, equipment operators were not required to obtain these lights if they needed to perform safe shutdown equipment manipulations. The inspector noted that equipment operators do not normally carry flashlights during their plant activities. Also, the inspectors noted that the equipment operators were not formally notified about the degraded condition of the emergency lighting units in the plant. Exelon developed a formal notification for operations personnel, regarding the degraded emergency lighting units and when there is a need to have access to portable lights or flashlights, after the inspectors questioned plant personnel about this issue.

Analysis

Not adequately maintaining the emergency lighting units in three areas needed for safe shutdown activities during a fire is a performance deficiency since the Peach Bottom FPP requires that these lights be available to allow safe shutdown of the Unit 2 and 3 reactors. Traditional enforcement does not apply for this issue because it did not have any actual safety consequences or the potential for impacting the NRC's regulatory function and was not the result of any willful violations of NRC requirements.

This finding was considered more than minor because it was associated with the equipment performance availability attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective to ensure the availability, reliability and capability of systems that respond to safe shutdown events to prevent undesirable consequences. This finding was determined to be of very low safety significance (Green) using Phase I of the Significance Determination Process (SDP) for Reactor Inspection Findings for At-Power Situations. This issue was of very low safety significance because the finding did not contribute to a loss of mitigation equipment functions and did not increase the likelihood of a fire event. In addition, during the period that the emergency lights were unavailable, there was no actual loss of lighting and portable seal beamed lights, that could be used as alternative lighting, were staged in three separate areas in the plant. Exelon entered this issue into their corrective action program as CRs # 146565 and 148979.

A contributing cause of the failed emergency lighting in the three areas was related to the Problem Identification and Resolution cross-cutting area. Peach Bottom plant personnel identified in July 1996 that emergency lighting units were failing prematurely (CR # 060005). Although station personnel documented the lighting deficiencies in A/Rs and corrected each of the degraded lighting units until the summer of 2002, plant personnel did not implement effective corrective actions to prevent these problems from reoccurring.

Enforcement

Condition 2.C.4 of the operating licenses for both Units 2 and 3 requires Exelon to implement and maintain the fire protection program described in the NRC Safety Evaluation Reports. Section 3.2.2 of the Peach Bottom FPP requires that "Emergency lighting units with at least an 8-hour battery power supply shall be provided in all areas needed for operation of safe shutdown equipment and in access and egress routes thereto." Section 7.1.1 of the FPP requires that, "when equipment analyzed for Appendix R safe shutdown is not functional or is indeterminate, troubleshooting, repair and return to service shall be performed on a high priority basis using existing procedures and planning methods." Contrary to the above, from November 6, 2002, to the end of this inspection period, March 30, 2003, the emergency lighting units in three areas (Unit 2 RHR room, Unit 3 RHR room, and Unit 3 reactor building south isolation valve room) required to support safe shutdown procedures did not have an 8-hour battery supply. This violation of license condition 2.C.4 is being treated as a non-cited violation consistent with Section VI.A.1 of the NRC Enforcement Policy. **(NCV 50-277;50-278/03-02-01)**

1R13 Maintenance Risk Assessments and Emergent Work Evaluation

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.

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:

- Stroke of reactor ventilation area exhaust fan inlet damper, AO-2-40B-20463, that required the reactor building ventilation system to be out of service
- Computer protective trip card replacement after half high reactor feedwater pump and main turbine trip signal was received
- E2 emergency diesel generator (EDG) trip during 24-hour endurance run testing
- Repair and brush replacement on the 2B recirculation pump motor-generator set
- Adjustment of the Unit 2 #1 turbine bypass valve bias setpoint
- Standby gas treatment (SBGT) inlet damper, AO-0-09A-00476-1, declared inoperable due to slow opening time (limit switch problem)

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

E2 EDG Trip during a 24-Hour Endurance Run Test

Introduction

The inspectors identified a non-cited violation of very low safety significance (Green) of 10 CFR 50, Appendix B, Criterion XVI because Exelon did not adequately correct a condition adverse to quality, namely, emergency diesel generator (EDG) trips caused by electrical trip and lock-out signals from the cardox injection fire protection system due to loose foreign material or failed circuit cards. Specifically, between June 2002 and January 19, 2003, Exelon did not disable the electrical trip and lock-out signals from the cardox injection fire protection system that will trip the EDG. The E2 EDG tripped during a 24-hour endurance run on January 18, 2003, because of an electrical trip signal from the cardox injection fire protection system due to loose foreign material.

Description

On January 18, 2003, shortly after the start of an E2 EDG 24-hour endurance test run, a cardox system manual pushbutton circuit card failed due to foreign material on the circuit card. This resulted in a cardox injection signal and an electrical signal from the cardox injection system which caused the EDG to trip. Foreign material was most likely introduced onto the card during maintenance activities performed on January 16, 2003. Cardox did not inject into the E2 EDG room because the cardox system was isolated.

The E2 EDG was returned to operable status on January 19, 2003, after the EDG trip was reset and a modification was performed on the cardox control system for all of the EDGs. This modification physically disconnected the electrical trip and lock-out signals initiated by the cardox control system.

Foreign material in the E3 cardox control panel also caused a trip of the E3 EDG and cardox injection during EDG testing in June 2002. After the June 2002 cardox injection, operations personnel manually isolated the cardox injection system for all four EDGs. This isolation removed the automatic injection of cardox. Exelon initiated compensatory measures per the TRM requirements and changed plant fire protection procedures to require re-aligning the manually isolated valves to allow cardox injection into an EDG room in case of a fire. The EDGs would trip upon cardox injection from a pneumatic trip; therefore, all automatic electrical trips were unnecessary. Between June 2002 and January 19, 2003, Exelon did not disable the electrical trip and lock-out signals initiated by the cardox control system when the cardox injection was isolated and, as a result, all of the EDGs were susceptible to spurious trips from the cardox system due to loose foreign material or failed circuit cards.

Analysis:

Not adequately correcting a condition adverse to quality by not disabling the electrical trip and lock-out signals of the EDG initiated by the cardox control system after the cardox system was isolated in June 2002, is considered a performance deficiency because the E2 EDG was unnecessarily rendered unavailable when the EDG tripped during a test run. This condition was applicable to the three other site EDGs and could have resulted in a similar trip had similar conditions occurred. Traditional enforcement does not apply for this issue because it did not have any actual safety consequences or potential for impacting the NRC's regulatory function and was not the result in any willful violations of NRC requirements.

This violation is considered more than minor, since it was associated with an attribute and affected the objective of the Mitigating System cornerstone. The applicable attribute was equipment performance of the E2 emergency diesel generator and affected the objective of the cornerstone to ensure the availability of emergency electrical systems to response to initiating events to prevent undesirable consequences. Exelon's inadequate corrective action to prevent unwarranted EDG electrical trips was determined to be of very low safety significance (Green) using Phase 1 of the SDP for Reactor Inspection Findings for At-Power Situations. The finding was of very low safety significance because the E1, E3 and E4 EDGs remained operable during the entire time that the E2 EDG was unavailable and the E2 EDG was unavailable for only a short amount of time (less than three days). Exelon entered this issue into their corrective action program as Condition Report # 140319.

A contributing cause of this finding was related to the Problem Identification and Resolution crossing-cutting area. Exelon did not evaluate in a prompt manner whether it was appropriate to disable the electrical trips of the EDGs from the cardox injection fire protection system after NRC inspectors identified that the trips were still active with the EDG cardox system isolated. After station personnel isolated the cardox injection following the inadvertent cardox injection in June 2002, inspectors documented in NRC Inspection Report 50-277/02-04, 50-278/02-04, dated July 23, 2002, that the electrical portion of the cardox system that generated the EDG trip and lock-outs was not isolated. Although, in response to the NRC inspection, station personnel had generated an assignment in CR # 110334 to evaluate removing the cardox system EDG trips and lock-outs while the cardox system was isolated, plant personnel had not completed this evaluation until after the E2 EDG tripped during the January 2003 endurance test run.

Enforcement:

10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," requires that measures be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, and defective material and equipment and non-conformances be promptly identified and corrected. Contrary to these requirements, Exelon did not adequately correct a condition adverse to quality, namely, EDG trips caused by electrical trip and lock-out signals from the cardox injection fire protection system due to loose foreign material or failed circuit cards. Specifically, between June 2002 and January 19, 2003, Exelon did not disable the electrical trip and lock-out signals from the cardox injection fire protection system that will trip the EDG. The E2 EDG tripped during a 24-hour endurance run on January 18, 2003, because of an electrical trip signal from

the cardox injection fire protection system due to loose foreign material. This violation of 10 CFR 50, Appendix B, Criterion XVI is being treated as a non-cited violation consistent with Section VI.A.1 of the NRC Enforcement Policy. **(NCV 50-277;278/03-02-02)**

1R14 Personnel Performance Related to Non-routine Plant Evolutions and Events

a. Inspection Scope

The inspectors reviewed plant computer and recorder data, operator logs and approved procedures while evaluating the performance of operations and instrument and control personnel in response to 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 instrument and control personnel followed procedures, as required, and were properly trained and briefed prior to performing work evolutions. The following non-routine evolutions were observed or reviewed:

- Operator and equipment response to the trip of the 2B recirculation pump
- Unexpected start of the E2 EDG during Troubleshooting, Rework and Testing (TRT) performance on March 21, 2003

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations

a. Inspection Scope

The inspectors reviewed five 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 LS-AA-105, Rev. 0, "Operability Determinations" and CC-AA-11, Rev. 0, "Nonconformances." The inspectors used the Technical Specifications, Technical Requirements Manuals, the UFSAR and associated Design Basis Documents as references during these reviews. The issues reviewed included:

- Degraded technical support center (TSC) ventilation system
- Leakage from the inner and outer shell side drain isolation valves, HV-3-10-168C and HV-3-10-169C, on the 3C residual heat removal (RHR) heat exchanger
- Jacket coolant leakage on the E1 EDG
- Failure of the 3A RHR discharge check valve to close
- Reliance on manual operation of main control room emergency ventilation system when automatic controls are removed for surveillance testing.

b. Findings

No findings of significance were identified.

1R16 Operator Work-Arounds

a. Inspection Scope

The inspectors reviewed both units for the aggregate effects of operator work-arounds and equipment deficiencies on the reliability, availability, and potential for misoperation of systems. The inspectors evaluated the cumulative effects of these items on the ability of operators to respond in a correct and timely manner to plant transients and accidents. The inspectors also reviewed these 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 items included:

- Out of service recombiner ventilation exhaust radiation monitoring system
- Drywell chiller trips due to service water temperature sensitivity

The following documents were used during the reviews:

- OP-AA-102-103, Rev 0, "Operator Work-Around Program"
- Degraded Equipment Log (DEL) for both Units
- Work Around Board Quarterly Meeting Minutes
- Main Control Room Deficiencies List

b. Findings

No findings of significance were identified.

1R17 Permanent Plant Modifications

a. Inspection Scope

The inspectors reviewed selected permanent plant modification packages to verify that the design bases, licensing bases, and performance capability of risk significant SSCs had not been degraded through plant modifications.

Plant changes were selected for review based on risk insights for the plant and included SSCs associated with the initiating events, barrier integrity and mitigating systems cornerstones. The inspection included interviews with plant staff and the review of applicable documents including procedures, calculations, modification packages, engineering evaluations, drawings, corrective action documents, the UFSAR and TSs.

The inspectors verified that selected attributes were consistent with the design and licensing bases. These attributes included component safety classification, energy requirements supplied by supporting systems, instrument set-points, uncertainty calculations, electrical coordination, electrical loads analysis, and equipment environmental qualification. Design assumptions were reviewed to verify that they were technically appropriate and consistent with the UFSAR. For each modification, the

50.59 screening or evaluation was reviewed as described in section 1R02 of this report. The inspectors verified that procedures, calculations and the UFSAR were properly updated with revised design information and operating guidance. The inspectors also verified that the as-built configuration was accurately reflected in the design documentation and that post-modification testing was adequate to ensure the SSCs would function properly.

The inspectors reviewed issues that had been entered into the corrective action program to determine if Exelon was effective in identifying problems associated with the plant modification process and activities. A sample of these issues was selected for further review during which the inspectors assessed the adequacy of the corrective actions which had been implemented for the selected issues. A listing of documents reviewed is provided in Attachment 1.

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing

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 specific activities reviewed included:

- Emergency service water booster and emergency cooling water pump and valve functional inservice testing (ST-O-033-310-2, Revision 5) following preventive maintenance activities
- Unit 2 high pressure service water (HPSW) pump, valve and flow functional and inservice testing (ST-O-032-301-2, Revision 18) following 2D HPSW pump replacement
- Unit 2 reactor core isolation cooling (RCIC) pump, valve and flow testing (ST-O-013-301-2, Revision) following scheduled work week maintenance
- Unit 3 RCIC pump, valve and flow testing (ST-O-013-301-3, Revision 22 and RT-X-013-230-3, Revision 3) following pump flow controller gain-set adjustment
- E2 EDG slow start and full load test (ST-O-052-202-2, Revision 16) after maintenance activity on cardox fire control system
- E1 EDG testing (RT-O-052-201-2, Revision 13) following replacement of the exhaust manifold gaskets

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing

a. Inspection Scope

The inspectors reviewed and observed portions of following 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 TS requirements, and were capable of performing the design basis functions. The observed or reviewed surveillance tests included:

- ST-O-052-702-2, Revision 11, “E2 Diesel Generator 24 Hour Endurance Test”
- SI2N-60A-APRM-41C2, Revision 3, “Calibration/Functional Check of Average Power Range Monitor (APRM) “4”
- RT-M-40P-950-2, Revision 3, “Technical Support Center (TSC) Ventilation System Test”
- ST-O-013-301-2, Revision 23, “Unit 2 RCIC Pump, Valve, Flow and Unit Cooler Functional and In-Service Test”
- ST-O-094-400-2, Revision 1, “Stroke Time Testing of Valves for Post-Maintenance Testing (Stroke Time Testing of AO-2-40B-20463 and AO-2-40B-20464)”
- ST-O-023-301-2, Revision 33, “Unit 2 HPCI Pump, Valve, Flow and Unit Cooler Functional and In-Service Test”

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications

a. Inspection Scope

The inspectors reviewed two temporary plant modifications during this inspection period. The first modification removed the Unit 3 automatic trips of the motor-generator sets for the 3A and 3B recirculation pumps and the automatic reduction in the electro-hydraulic control (EHC) system load set (generator runback) on the loss of the main generator stator water cooling. This modification was performed to prevent the trips of the Unit 3 recirculation pumps or main generator runback due to an inaccurate pressure switch in the stator water cooling system. The second modification removed electrical leads to the manual cardox trip relays to disabled cardox initiated trips for all four of emergency diesel generators diesel. This was done to prevent recurrence of serious trips due to malfunctions of the manual cardox trip circuit.

These reviews were performed to determine whether the temporary changes adversely affected system or support system availability, or adversely affected a function important to plant safety. The inspectors reviewed the associated system design bases, including the UFSAR and TSs, and assessed the adequacy of the 10 CFR 50.59 safety screening or evaluation for each of these issues. The inspectors also assessed configuration control of the temporary changes by reviewing selected drawings and procedures to verify that appropriate updates had been made, and were in compliance with Exelon Nuclear's procedure, "Temporary Configuration Changes," CC-AA-112, Revision 5. The inspectors reviewed work order documents for these temporary modifications to verify that the implemented changes were consistent with the approved documents. The following temporary modifications and documents were included in these reviews:

Temporary Modification

- Technical review team (TRT) for disabling cardox fire protection EDG electrical trips
- Unit 3 stator water cooling system modification

Procedures and Documents

- Troubleshooting, Rework, and Testing (TRT) Control Manual for Peach Bottom and Limerick, (MA-MA-716-004-1000, Revision 0)
- Configuration Change Control, (CC-AA-103, Revision 4)
- Temporary Configuration Changes, (CC-AA-112, Revision 5)
- Temporary Configuration Change Packages (TCCP), (CC-MA-112-1001, Revision 0)
- E4 (E3) Diesel Generator Cardox Control Panel, AR # A1400992 and A1400993
- Cardox Fire Extinguishing System Control Logic and Schematic Diagram Emergency Diesel Generator Building, (6280-M-46-24, Revision 24)
- Piping and Instrument Diagram Fire Protection System, (6280-M-318, Revision 59)
- Wiring Diagram, Cardox Fire Extinguishing System Secondary and Control Connections, (18247-M-713-8, Revision 6)

- Station Work Order, (C020370), “De-energize PE-2 Relay”
- Engineering Change Request (ECR) PB 02-00848-000
- Install ECR # 02-00848: Recirculation Trip and EHC Runback, Work Order # C0203609
- Electrical Schematic Diagram Recirculation Motor-Generator Set Drive Motor 13.8 Kilovolt Circuit Breaker, (6280-E-171, Revision 35)
- Electrical Schematic Diagram Main Turbine Trip and Alarm Relays, (6280-E-119, Revision 14)
- Schematic Diagram Hydrogen and Stator Cooling Panel 30C084, (6280-M-2-146-K, Revision 23)

b. Findings

No findings of significance were identified.

EMERGENCY PREPAREDNESS [EP]

1EP6 Drill Evaluation

a. Inspection Scope

The inspectors observed emergency preparedness training drills of senior reactor operators conducted by Exelon on March 19, 2003. The inspectors focused on the performance of risk significant evolutions these individuals in a simulated main control room. These risk significant drills tested these individuals adherence to Technical Specifications, satisfactory completion of critical tasks, and timely identification and emergency classification. The inspectors evaluated the individuals recognition of abnormal conditions and proper emergency classification. The inspectors discussed the training, simulator scenarios and critiques with training instructors, shift supervision, and operations management. The inspectors observed Exelon’s critique of personnel performance and verified that any weaknesses or deficiencies observed during these drills were discussed and evaluated.

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY
Cornerstone: Occupational Radiation Safety [OS]

2OS3 Radiation Monitoring Instrumentation and Protective Equipment

a. Inspection Scope

During the period March 17 - 21, 2003, the inspectors conducted the following activities to evaluate the operability and accuracy of radiation monitoring instrumentation, and the adequacy of the respiratory protection program for issuing self-contained breathing apparatus (SCBA) to emergency response personnel. Implementation of these programs was reviewed against the criteria contained in 10CFR20, applicable industry standards, and Exelon's procedures.

- The inspectors observed a technician calibrating an area monitor (DCA-3096-3) and a detector in a personnel contamination monitor (Aptec PMW-2e).

- The inspectors reviewed the operating procedure and current source activity/dose rate characterizations for a Shepard Model 89 calibrator, used for instrument calibrations, and observed a technician perform safety interlock testing of the calibrator.

- The inspectors observed technicians performing radioactive source and functional checks on a variety of instruments, including the FastScan whole body counter, contamination monitors (Aptec PMW-2e, PRM-6), area monitor (DCA-3096-3), and low/high range portable survey instruments (RO-2A and MGP Telepoles).

- The inspectors reviewed the calibration records for selected instruments, including electronic dosimeters (RADOS Nos. 950376, 941632, 941908, 950460), airborne radioactivity monitors (AMS-4 Nos. 334638, 334639), portable neutron survey instrument (ASP-1N No. 2420), and contamination monitors (SAC-4 No. 722).

- The inspectors evaluated the adequacy of the respiratory protection program regarding the maintenance and issuance of self-contained breathing apparatus (SCBA) to emergency response personnel. Training and qualification records were reviewed for three licensed operators from each of the five operating shifts who would be required to wear SCBA's in the event of an emergency. The inspectors observed technicians performing monthly operability checks on four (4) SCBA's staged for use in the control room. The inspectors verified that four (4) spare SCBA bottles, stored in the turbine building, had been hydrostatically tested and had the required air pressure.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES [OA]

4OA1 Performance Indicator Verification

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. The following specific indicators were reviewed:

- Units 2 and 3 residual heat removal safety system unavailability
- Units 2 and 3 unplanned scrams
  Units 2 and 3 scrams with loss of normal heat removal
- Units 2 and 3 unplanned power changes per 7000 critical hours
- Units 2 and 3 reactor coolant specific activity

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems

.1 Selected Issue Follow-up Inspection - Cardox Injection in the E3 Emergency Diesel Generator (EDG) Room During Surveillance: CR #110334

a. Inspection Scope

A Problem Identification and Resolution Inspection for a selected issue was performed for an invalid automatic cardox injection in the E3 EDG room on June 2, 2002. The CR documented that during a surveillance test run, the E3 EDG automatically tripped, as designed, due to a cardox injection system malfunction in the cardox solenoid and timer circuit card caused by a very small, loose light bulb (foreign material) in an electrical cabinet. The inspectors reviewed the root cause analysis, immediate and subsequent actions and assignments within the condition report to ensure that Exelon had taken proper and effective corrective actions. The inspectors also conducted interviews with several individuals, involved with the root cause analysis and corrective actions, in an effort to ensure actions taken and planned were appropriate and would result in effective resolution of this issue.

b. Findings

No findings of significance were identified.

.2 Problem Identification and Resolution Associated with Safety Evaluations (10 CFR 50.59s) and Permanent Plant Modifications

a. Inspection Scope

The inspectors reviewed functional area self assessments, minutes of Quality Review Team (QRT) meetings and corrective action documents associated with 10 CFR 50.59 and plant modification issues. The inspectors verified that Exelon was identifying, evaluating, and correcting problems associated with these areas and that the corrective actions for the issues were appropriate. The inspectors also reviewed quality assurance (QA) audits and self-assessments related to 10 CFR 50.59 and plant modification activities. A listing of documents reviewed is provided in Attachment 1.

b. Findings

No findings of significance were identified.

.3 Problem Identification and Resolution Associated with Radiation Instrumentation and Respiratory Protection Programs

a. Inspection Scope

The inspectors reviewed eleven CRs, two Radiation Protection Department Self-Assessments, and twelve Nuclear Oversight Field Observation reports regarding implementation of the radiation instrumentation and respiratory protection programs. The inspectors evaluated Exelon's threshold for identifying, evaluating, and resolving problems. This review was conducted against the criteria contained in 10 CFR 20, TSs, and Exelon's procedures.

b. Findings

No findings of significance were identified.

.4 References to Problem Identification and Resolution Findings

Sections 1R12 and 1R13 of this report describe two findings where the contributing cause was related to the Problem Identification and Resolution. In the first finding Exelon did not adequately maintain emergency lighting units needed for safe shutdown activities during a fire. Station personnel did not implement effective corrective actions for degraded batteries on emergency lighting units that was initially identified in 1996. In the second finding Exelon did not evaluate in a prompt manner whether it was appropriate to disable the electrical trips of the EDGs from the cardox injection fire protection system after the NRC inspectors identified that the trips were still active with the EDG cardox system isolated.

4OA3 Event Followup

.1 (Closed) LER 2-02-001-00: Circuit Card Failure Results in a Primary Containment Group I Isolation and Plant Scram

On December 21, 2002, Unit 2 automatically shutdown from 100% power when the main steam isolation valves closed due to a Group I Primary Containment Isolation System (PCIS) actuation. This actuation resulted from low main steam line pressure caused by the opening of several of the main steam line bypass valves along with the main turbine control valves going full open due to an EHC system control circuit malfunction.

The NRC performed an on-site, special inspection of this event in January 2003. The results of this inspection are documented in the NRC Special Inspection Report 50-277/03-07. The inspectors reviewed this LER and did not identify any new issues from this event.

4OA6 Meetings

.1 Exit Meeting Summary

The inspectors presented the results of the inspection to Mr. Gordon Johnston and members of Exelon's management on April 3, 2003. Exelon management acknowledged the findings presented. No proprietary information was identified.

.2 Annual Assessment Meeting

On March 26, 2003, the NRC held a meeting with Exelon management, that was open for public observation, to discuss the results of the NRC's assessment of Exelon's performance at Peach Bottom Nuclear Power Station for the period January 1, 2002 through December 31, 2002. The handouts from the meeting are available electronically from the NRC's document system (ADAMS) under accession number ML031040024.

ATTACHMENT 1

SUPPLEMENTAL INFORMATION

a. Key Points of Contact

Exelon Generation Company

R. West, Vice-President
G. Johnston, Plant Manager
B. Hanson, Operations Director
P. Davison, Maintenance Director
G. Stathes, Site Engineering Director
E. Eilola, Acting Site Engineering Director
M. Anthony, Work Management Director
C. Behrend, Senior Manager Plant Engineering
B. Norris, Radiation Protection Manager
S. Beck, Acting Manager, Regulatory Assurance
W. Trump, Nuclear Security Manager
A. Coppa, Emergency Preparedness Manager
A. Sherwood, Acting Training Director
W. Eckman, Acting Nuclear Oversight Manager

b. List of Items Opened, Closed, and Discussed

Closed

2-02-001	LER	Circuit Card Failure Results in a Primary Containment Group I Isolation and Plant Scram

Opened/Closed

50-277;50-278/03-02-01	NCV	Failure to Adequately Maintain Fire Safe Shutdown Emergency Lighting Units
50-277;50-278/03-02-02	NCV	Unexpected Trip of the E2 Emergency Diesel Generator (EDG) due to the Failure to Identify and Disable the EDG Electrical Trips Associated with the Isolated Cardox Injection Fire Protection System

c. List of Documents Reviewed

Section 1R02: Evaluations of Changes, Tests or Experiments

10 CFR 50.59 Safety Evaluations

DCR 90-029560-000	Evaluate Use of 2 TBCCW Heat Exchangers and Correct Documentation for TBBCW
DCR 00-06681	NCR 00-01681 Error in GE long term containment analysis for Power Rerate Peach Bottom Atomic Power Station Unit 2 and 3
ECR 98-02956	TBCCW
ECR 00-00335	SBO Enhancement Project
ECR 00-00806	SBO Enhancement Project
ECR 00-01131	Coordination for 480 Volt Load Centers and MCCs
ECR 01-00275	Asymmetric FW Operations
LS-AA-104	Exelon 50.59 Review Process
MOD P00907	SBO Enhancement Project
NCR 00-00324	Higher Rated Safety Relief Valve

10 CFR 50.59 Safety Evaluation Screens

ECR 01-00112	Removal of HV-2-01A-2205, 22052, and 22053 and replacement with a pipe cap.
ECR 01-00275	Asymetric Feedwater Temperature Operation PBAPS, Units 2 and 3.
ECR 01-00684	HPCI Turbine Gland Carbon Ring Removal
ECR 02-00039	Install Pressure Indicating Valves on the Diesel Generator Cylinders
PB-2001-00060-S	Screen for ECR 01-00403
PB-2001-00207-S	Reactor Head Reduced Pass Tensioning/Detensioning
PB-2001-00273-S	Electrical Calculations for MSRV Solenoid Replacement
PB-2001-00275-S	HPCI Gland Seal Anti-Rotation Screw Repair
PB-2001-00342-S	Increase O/C Relay Setpoints for ESW and ECW Pumps
PB-2002-00023-S	Void Calculations PE-0174 and PE-0175
PB-2002-00173-S	Install Strainers in SW Piping
PB-2002-00212-S	Use of Solenoid Valve (116-13827) for U2 RV-71A thru L
PB-2002-00239-S	ECR 02-00706, Leak Repair for Caldon Spool Pieces

Procedures

LS-AA-104, Rev. 3	Exelon 50.59 Review Process

Section 1R17: Permanent Plant Modifications

Engineering Change Requests (ECR)

98-02956	Evaluate Use of 2 TBCCW Heat Exchangers and Correct Documentation for TBCCW, Rev 0
01-00180	Reactor Head Reduced Pass Tensioning
01-00275	Asymetric Feedwater Operation, Rev 0
01-00533	Evaluate ARI SV for MSRV's, Rev. 0.
01-00561	Install Cable Tray Covers in Room 222
01-00684	Remove One Carbon Ring from HPCI Turbine Gland
01-00946	HPCI Gland Seal Anti-Rotation
01-01128	Increase O/C Relay Setpoints for ESW and ECW Pumps
01-01192	Setpoint Changes for Power Uprate, Rev. 2
02-00205	Use of Solenoid Valve (116-13827) for U/2 RV-71A thru L. Rev. 0
02-00465	Install Strainers in SW Piping

Calculations/Engineering Analyses

PE-0017	125/250 VDC Class 1E Battery Capacity Analysis, Rev. 11A
PE-0088	Attachment 3, ESW Booster Pump Coordination Study, Rev. C.
PM-960	Revise Calculation for Minimum Wall Violations for PBAPS Unit 2, 36" diameter Moisture Separator Cross Around Piping from 2R13 Inspections

Procedures

CC-MA-102, Rev 0	Design Inputs and Impact Screening
CC-MA-103, Rev 0	Configuration Changes
CC-MA-102-1001 Rev 2	Design Inputs and Impact Screening - Implementation
M-710, Rev 7	Pump and Valve Inservice Testing Program Third Year Interval
M-001-006, Rev 9	Main Steam 6" X 10" RV-71 A-L Relief Valve Replacement
SI2N-60A-APRM-41C2,Rev 3,Calibration/Functional Check of Avg. Power Range Monitor "4"	

Condition Reports

CR 076905	Blown fuse for RV-3-02-71A
CR 125933	Steam Leaks on App. K Mod Transducer Housings
CR 144379	Maintenance - Polarity Verification of MSRV Solenoid Valves
CR 144568	Condition report not Generated for LTA Performance of AG-108

Drawings

E-349, Rev. 23	Electrical Schematic Diagram - Emergency Cooling System Pump and Discharge Valve
201B666, Rev. G	Chordal Spool Piece Metering Section, 18" Pipe Component Specification
6280-E-5254,Rev. 20	Relay setting data sheets-Sheet 19.7
6280-M-351, Rev 71	P & I Nuclear Boiler, Sheet 1
6280-M-351, Rev 1	P & I Nuclear Boiler, Sheet 1A
6280-M-351, Rev 66	P & I Nuclear Boiler, Sheet 2
6280-M-351, Rev 1	P & I Nuclear Boiler, Sheet 2A
6280-M-351, Rev 70	P & I Nuclear Boiler, Sheet 3
6280-M-351, Rev 1	P & I Nuclear Boiler, Sheet 3A
6280-M-351, Rev 64	P & I Nuclear Boiler, Sheet 4
6280-M-351, Rev 1	P & I Nuclear Boiler, Sheet 4A
6280-M-366, Rev 40	P & I Diagram HPCI Pump Turbine Details, Sheet 3
729E905, Rev 3	High Pressure Coolant Injection System

Work Orders (WO)

C0199616	E43 - Adjust relay setpoints per ECR., 04/17/02
C0199615	E32 - Adjust relay setpoints per ECR., 01/09/02
C0199611	E22 - Adjust relay setpoints per ECR., 03/29/02
R0023927	RV-2-02-71D: Remove and install reworked valve, (No Date-Library Version)

Vendor Manuals/Documents

ER-314	Caldon, Inc. Engineering Report, LEFM Uncertainty at Peach Bottom Units 2 and 3 Considering Multiple Planes Out of Service, Rev. 1

Licensing Documents

TRM 3.20	Leading Edge Flow Meter (LEFM) System, Rev. 0
TS Table 3.3.1.1-1	Reactor Protection System Instrumentation, Amendment Nol 247.

Reports

NDE Examination Summary Sheet Report 010700
Ultrasonic Calibration Check Sheet 010700
NDE Examination Summary Sheet Report 010715
NDE Examination Summary Sheet Report 010800
Bolting Examination Check List and Report Record Dated 9/12/02
NDE Examination VT-031 Signed 9/12/02
Plant Operations Review Committee Meeting Report 01-33 8/14/01
Reactor Vessel Tensioning Optimization Stress Report Peach Bottom Atomic Power Station Units 2 and 3, R4708 00 2, Rev 0

Miscellaneous Documents

PGN OAA/0757-01-01	Review of NUPIC Audit of CALDON, Inc., 12/21/2001
P-T-18, Rev 7,	Design Basis Documents Reactor Vessel and Internals
P-S-03, Rev 19,	PECO System Design Baseline Document HPCI System
PL350387	Blanket Order for ECR 01-00946
21A068AS, Rev 1	High Pressure Coolant Injection Pump Data Sheet
22A1330, Rev 2	GE System Design Specification
32492-104088	Certification, Anchor Darling/SPS Technologies
85201	Chemical Certification
LER 90-007-00	Voluntary Report - HPCI Potentially Inoperable due to a Design Deficiency Causing an Unanalyzed Environmental Condition

Section 4OA2: Identification and Resolution of Problems

Corrective Action Program Documents

PEP I0010502
PEP I0011035
A/R A091034
A/R A128024
A/R A1311837
CR 060259
CR 091003
CR 091034
CR 092616
CR 092618
CR 092620
CR 092621
CR 092625
CR 108325
CR 135724
CR 139369
CR 141862
CR 142386
CR 142387

Functional Area Self Assessments

091034-03, Rev.2	Focused Area Self Assessment for the PBAPS 10CFR 50.59 Program
128024-05, Rev.0	Focused Area Self Assessment for Design Quality

Quality Review Team Meeting Minutes

23 July, 2002
27 Aug, 2002
22 Oct, 2002
26 Nov, 2002
02 Jan, 2003
29 Jan, 2003

PROCEDURES:

HP-C-413, Rev 0	Calibration of Eberline RO-2 and RO-2A
HP-C-421, Rev 0	Electronic Dosimetry Calibration Verification and Recalibration
HP-C-470, Rev 0	Calibration of the Aptec PMW Personnel Monitor
HP-C-650, Rev 3	Canberra Whole Body Counter Operation
HP-C-405, Rev 0	Calibration of Model 89 Gamma Calibrator
RP-AA-500, Rev 3	Radioactive Material Control
RP-AA-700, Rev 0	Controls for Radiation Protection Instrumentation
IC-C-12-00106, Rev 2	Calibration of Eberline PRM-6 Pulse Rate Meter
IC-C-12-00120, Rev 0	Calibration of 3090-2 and 3096-3 Area Alarm Monitors
RT-H-099-990-2, Rev 5	Scott Air-Pak and Bottle Inspection
RT-H-099-905-2, Rev 3	Laboratory Confirmation of Breathing Air Quality
RP-AA-440, Rev 3	Respiratory Protection Program
RP-PB-441-1010, Rev 0	Issue and Control of Respiratory Protection Equipment
RP-PB-441-1001, Rev 0	Respiratory Field Use and Air Testing
RP-AA-441, Rev 2	Evaluation and Selection Process for Radiological Respirator Use

RADIATION PROTECTION DEPARTMENT SELF-ASSESSMENTS:

AR00101543 Radiation Protection Instrument Program
AR00101003 Radiological Respiratory Protection

NUCLEAR OVERSIGHT FIELD OBSERVATIONS:

Essential Element P1H Closeout evaluation for 2002
Radiation Protection Instrumentation Assessment
Calibration & Maintenance of RP Instrumentation
Control, Inventory, and Leak Testing of Radioactive Sources
Radiation Protection instrument calibrations
Fuel Floor General Area Walk Down
CRD transport to shipping box
Load cask with core plate plugs
Transport ISFSI cask to pad
July 2002 Housekeeping walk down - Area 59
RP coverage for draining the 3D RHR HPSW side
Refuel floor RP walkdown

CONDITION REPORTS

00112092, 00145679, 00142514, 00142721, 00136782, 00135671, 00128317, 00120936, 00110890, 00101513, 00135733

MISCELLANEOUS REPORTS:

Calibration of the Canberra FastScan Whole Body Counter System at Peach Bottom Atomic Power Station dated 10/01/2002

d. List of Acronyms

A/R	action request
CFR	Code of Federal Regulations
CR	condition report
ECR	engineering change request
EDG	emergency diesel generator
EHC	electro-hydraulic control
ESW	emergency service water
FPP	Fire Protection Plan
GL	generic letter
HPCI	high pressure coolant injection
LEFM	leading edge flow meter
MSRV	main steam relief valves
NDE	non-destructive examination
NRC	Nuclear Regulatory Commission
O/C	over-current
PBAPS	Peach Bottom Atomic Power Station
PEP	Performance Enhancement Program
PRM	pulse rate meter
QRT	Quality Review Team
RCIC	reactor core isolation
RHR	residual heat removal

SCBA	self contained breathing apparatus
SSC	structures, systems and components
SW	service water
TBCCW	turbine building closed cooling water
TRM	technical requirements manual
TRT	technical review team
TS	Technical Specifications
TSC	technical support center
UFSAR	Updated Final Safety Analysis Report