Peach Bottom 2
3Q/2003 Plant Inspection Findings

Initiating Events

Significance: G Jun 27, 2003
Identified By: NRC
Item Type: FIN Finding
Inadequate Corrective Action for Equipment Performance Problems with a Reactor Feed Pump Turbine Overspeed Solenoid
Green. A self-revealing finding was identified because Exelon did not identify and correct a mis-wired solenoid during troubleshooting and maintenance activities conducted in September 1999 and November 2001. This resulted in a reactor feed pump trip and plant transient following a subsequent solenoid failure on November 4, 2002.

This finding is greater than minor because it was associated with an attribute and affected the objective of the Initiating Events Cornerstone in that the equipment deficiency resulted in a plant transient. The finding is of very low safety significance (Green) because, although it caused a plant perturbation, it did not increase the likelihood of a primary or secondary system loss of coolant accident initiator, did not contribute to a combination of a reactor trip and loss of mitigation equipment functions, and did not increase the likelihood of a fire or internal/external flood
Inspection Report# : 2003012*(pdf)*

Mitigating Systems

Significance: G Sep 27, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
Did Not Meet 10 CFR 55.53(f)(2) When Reactivating Senior Operators to Support Fuel Handling
The inspector identified a non-cited violation (NCV) of 10 CFR 55.53(f)(2) regarding the licensee's method used to reactivate senior operator licenses to support refueling. The operators were reactivated without the required direct supervision being present during the shift under-instruction time.

This finding is more than minor but of very low safety significance because it is similar to example 2h in Appendix E of MC 0612. The performance deficiency is related to operator license conditions. The performance deficiency indicates more than 20% of the senior operator license reactivations to support refueling operations did not meet the requirements of 10 CFR 55.53(f)(2). Accordingly, the performance deficiency was determined to be of very low safety significance.
Inspection Report# : 2003004*(pdf)*

Significance: G Sep 27, 2003
Identified By: NRC

Item Type: NCV NonCited Violation
Inadequate Corrective Actions on Unit 2 Reactor Core Isolation Cooling Pump for Automatic Flow Control
The inspectors identified a non-cited violation (NCV) of 10 CFR 50, Appendix B, Criterion XVI, because Exelon did not adequately correct a significant condition adverse to quality, identified during a December 21, 2002 scram, associated with the inoperabiity of the Unit 2 reactor core isolation cooling (RCIC) pump in the automatic flow control mode. As a result of not adequately correcting this significant condition adverse to quality, the Unit 2 RCIC pump was not able to deliver the Technical Specification required 600 gpm flow rate into the reactor vessel in the automatic flow control mode during a July 22, 2003 scram.

This finding is considered more than minor because it is associated with the design control attribute of the Mitigating Systems Cornerstone and adversely affects the objective, in that, the capability of RCIC was degraded to respond to initiating events to prevent undesirable consequences. This finding is of very low safety significance (Green) using Phase 1 of the Significance Determination Process (SDP) for Reactor Inspection Findings for At-Power Situations. This issue is of very low safety significance because there was no loss of safety function for RCIC and the finding is not risk significant because of seismic, flood, fire or severe weather. Unit 2 RCIC pump flow was high enough (i.e., a nominal flow rate of approximately 560 gpm), in the automatic flow control mode to maintain reactor vessel water level. Additionally, RCIC pump flow in the manual flow control mode was able to reach 600 gpm.

Inspection Report# : 2003004*(pdf)*

Significance: G Sep 27, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
Deenergized Unit 3 HPCI Alternate Control Station Power Supply
The inspectors identified a non-cited violation (NCV) of Condition 2.C.4 of the Unit 3 operating license. This finding occurred because Exelon instrumentation and control (I&C) technicians did not follow work order instructions for conducting testing on the Unit 3 high pressure coolant injection (HPCI) alternate control station following maintenance activities. Consequently, the HPCI alternate control station power supply remained de-energized for approximately nine days, resulting in the control station being inoperable for safe shutdown of Unit 3 during specific scenarios, a violation of Condition 2.C.4 of the Unit 3 operating license.

This finding is more than minor because it was associated with the human performance attribute of the Mitigating Systems Cornerstone and adversely affected the cornerstone objective. Operations did not have the ability to use the alternate control station for operation of HPCI and lost the ability to monitor some important reactor parameters. A Phase 3 SDP was performed due to the results of the Phase 2 determination because in case of fire in the control room or emergency shutdown panel, level control using HPCI at the control station was unavailable and the loss of reactor instrumentation at the control station would have affected operators' ability to perform depressurization and containment cooling functions. The Phase 3 SDP determined this issue to be of very low safety significance.

A contributing cause of the Inoperable HPCI alternative control station was related to the Human Performance cross-cutting area. Specifically, I&C technicians did not follow procedures to perform the post-maintenance test specified in a maintenance work order. As a result, the control station was returned to service while in a degraded condition and was unavailable for operation of HPCI and monitoring of important reactor parameters for safe shutdown of Unit 3 in certain fire scenarios.
Inspection Report# : 2003004*(pdf)*

Significance: G Jun 28, 2003
Identified By: Self Disclosing

Item Type: NCV NonCited Violation
Inadequate E2 Emergency Diesel Generator Maintenance Procedure Resulted in a Lube Oil Leak that Caused a Small Fire on the Exhaust Manifold
The inspectors identified a non-cited violation (NCV) of very low safety significance (Green) of Technical Specification 5.4.1 because Exelon did not adequately establish and maintain torque values for the engine top cover flange joint bolts in an emergency diesel generator (EDG) maintenance procedure. The lack of torque values resulted in lube oil leakage from an improperly torqued joint which led to a small fire on the E2 EDG exhaust manifold during surveillance testing.

This finding was considered more than minor, since it was associated with an attribute and affected the objective of the Mitigating System cornerstone. The applicable attribute was maintenance procedure quality and affected the objective of the cornerstone to ensure the reliability of emergency electrical systems to respond to initiating events to prevent undesirable consequences. The finding was determined to be of very low safety significance because all four EDGs remained available with the loose top cover flange bolts.
Inspection Report# : 2003003*(pdf)*

Significance: G Apr 25, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
Failure To Provide Cable Protection in Accordance With 10 CFR Part 50, Appendix R, Section III.G.2
The team identified a non-cited violation of 10 CFR Part 50, Appendix R, Section III.G.2. Exelon included manual actions in Table A-1 of Specification NE-00296, Post-Fire Safe Shutdown Program Requirements, November 23, 1999, to operate equipment necessary for achieving and maintaining hot shutdown. Several of these manual actions did not meet the requirements of Appendix R, Section III.G.2 and the NRC had not granted exemptions to allow these actions.

In accordance with the guidance provided in Inspection Procedure 71111.05, "Fire Protection," (Revision dated 3/6/03) this finding is greater than minor. The finding is of very low safety significance because the manual actions are reasonable and are expected to meet the criteria outlined in Enclosure 2 of Inspection Procedure 71111.05.
Inspection Report# : 2003009*(pdf)*

Significance: G Mar 29, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
Failure To Adequately Maintain Fire Safe Shutdown Emergency Lighting Units
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.

Inspection Report# : 2003002*(pdf)*

Significance: G Mar 29, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
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
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.
Inspection Report# : 2003002*(pdf)*

Significance: G Jan 31, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
Reactor Core Isolation Cooling Pump Inoperable in the Automatic Flow Control Mode Since 1994
The inspectors identified a non-cited violation (NCV) of very low safety significance (Green). The non-cited violation of Technical Specification (TS) 3.5.3 is due to the inoperability of the Unit 2 reactor core isolation cooling (RCIC) pump in the automatic flow control mode since March 1994. In 1994, a modification to the RCIC pump flow controller was performed involving replacement of the controller and subsequent increase in the controller gain setting. This gain-set adjustment rendered the RCIC pump incapable, in automatic flow control, of delivering 600 gpm at reactor pressure, as required by TS 3.5.3.

This NCV was determined to be of very low safety significance. The flow rate for Unit 2 RCIC pump in the automatic mode, although degraded, was sufficient to meet the reactor decay heat requirements and provide make-up water to the reactor vessel during transient events. Additionally, the RCIC pump met design and licensing flow requirements with the pump flow controller in manual.

Inspection Report# : 2003007*(pdf)*

Significance: N/A Jun 08, 2000
Identified By: NRC
Item Type: AV Apparent Violation
Assoc Circuit - Mechanical Damage from Fire Induced Cable Faults not evaluated.
PECO adopted a licensing position that mechanical damage to alternative shutdown equipment resulting from fire-induced cable faults, as described in Information Notice 92-18, was outside the scope of the licensing and design bases of the facility. As a result, PECO did not evaluate the control circuits of the alternative shutdown equipment to determine if it was susceptible to this problem. Since a detailed review of the alternative shutdown capability at PBAPS was not performed as part of the scope of this inspection, the risk associated with this issue was not established.

This issue is being treated as an apparent violation of Condition 2.C.4 of the operating licenses for both Unit 2 and Unit 3, which requires PECO to implement and maintain the fire protection program described in the NRC Safety Evaluation Reports. PECO has entered this issue into their corrective action program and has implemented reasonable compensatory measures pending final resolution of the issue. However, the issue of mechanical damage to safe shutdown equipment due to fire-induced cable faults is in contention between the NRC and the nuclear industry. As such, any further enforcement action will be deferred pending final resolution of this issue by the Nuclear Energy Institute and the NRC staff, in accordance with Enforcement Guidance Memorandum 98-02, Revision 2, issued February 2, 2000.
Inspection Report# : 2000003*(pdf)*

Significance: G Jun 08, 2000
Identified By: NRC
Item Type: AV Apparent Violation
Assoc Circuit - Reliance on signal spurious assumption of one per system per fire.
PECO's specification for performing circuit analyses of post-fire safe shutdown equipment stipulates that only one spurious actuation for each system affected by any one fire be analyzed. For the areas inspected, the team determined that PECO adequately protected against fire-induced spurious actuations. The team did not identify any additional spurious actuations which would have prevented achieving safe shutdown conditions in the post-fire operating environment.

The assumption that only a single spurious actuation need be considered for any one system for any one fire is an apparent violation of the requirements of Section III.G. and III.L. of Appendix R to 10 CFR 50. PECO entered this issue into their corrective action program and have implemented reasonable compensatory measures. However, the issue of multiple spurious actuations of equipment in a post-fire environment is in contention between the NRC and the nuclear industry. As such, any further enforcement action will be deferred pending final resolution of this issue by the Nuclear Energy Institute and the NRC staff, in accordance with Enforcement Guidance Memorandum 98-02, Revision 2, issued February 2, 2000.
Inspection Report# : 2000003*(pdf)*

Barrier Integrity

Significance: G Jun 28, 2003
Identified By: Self Disclosing

Item Type: NCV NonCited Violation
"A" Train of Standby Gas Treatment System Inoperable for Greater Than 7 Days
The inspectors identified a non-cited violation (NCV) of very low safety significance (Green) of Technical Specification 3.6.4.3 due to the inoperability of one train of the standby gas treatment (SBGT) for greater than seven days. Around November 2002, the charcoal and HEPA filters on the 'A' train were sprayed with water from the deluge system. The 'A' train of SBGT was unable to perform its safety function for greater than seven days, due to the wetting of the charcoal filters.

This finding was considered more than minor since it is associated with the Containment Barrier performance attribute of the Barrier integrity cornerstone. The finding affected the cornerstone objective to provide reasonable assurance that physical design barriers provide protection against a radiological release caused by accidents or events. The finding was determined to be of very low safety significance because the SBGT system was not required to mitigate a radiological release while the 'A' train was unavailable and the 'B' train of SBGT was operable while the 'A' train was unavailable.
Inspection Report# : 2003003*(pdf)*

Significance:  Dec 28, 2002
Identified By: NRC
Item Type: NCV NonCited Violation
Lack of Preventative Maintenance on Critical Ventilation Dampers
The inspectors identified a non-cited violation of very low safety significance. The non-cited violation of Technical Specification 5.4.1 is due to the licensee's failure to adequately establish or maintain preventive maintenance activities and procedures on critical, safety-related ventilation dampers for the Control Room Emergency Ventilation (CREV), Standby Gas Treatment (SBGT), and reactor building ventilation systems. Peach Bottom procedure, A-C-28, "Preventative Maintenance Program" requires preventative maintenance activities on critical equipment, such as these dampers. The licensee discontinued preventive maintenance on critical, safety-related ventilation dampers in 1988.

This NCV was determined to be of very low safety significance because individual damper failures, to date, have not impacted CREV, SBGT or other safety-related systems due to damper and system redundancy.

A contributing cause to the length of time that Exelon did not identify this issue was related to the Problem Identification and Resolution cross-cutting area. Peach Bottom plant personnel did not identify the lack of preventative maintenance for safety-related dampers following several damper failures at Peach Bottom and a 1999 generic issue related to these dampers identified to the Peach Bottom staff by the licensee's Limerick Generating Station. The causal relationship between this finding and the cross-cutting area was that plant personnel did not identify that preventative maintenance was not being performed on safety-related dampers and, as a result, some individual dampers degraded to a point where they could not perform their intended functions.
Inspection Report# : 2002006*(pdf)*

Emergency Preparedness

Significance: SL-IV Jan 17, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
10 CFR 50.54(q) Violation For Decreasing the Effectiveness of the Plan By Changing EALs that Address Toxic Gas Without Prior NRC Approval
Severity Level IV. The licensee changed its emergency action level schemes such that there would be a reduction in

declarable events as the emphasis shifted from personnel safety to equipment status. The changes were determined to be a decrease in the effectiveness of the emergency plans. Decreases in the effectiveness of an emergency plan must receive NRC review prior to implementation. The changes were implemented without NRC approval.

The finding was determined to be more than minor as its significance was related to the impact it would have on the mobilization of the emergency response organization and preclude offsite agencies from being aware of adverse conditions on site. The licensee accepted the NRC's position and entered this issue into its corrective action program (Condition Report 139997) and will change the emergency action levels back to the original wording. The implementation of the changes which decreased the effectiveness of the emergency plans, without NRC review, is being treated as a non-cited violations consistent with Section VI.A of the Enforcement Policy, issued on May 1, 2000 (65 FR 25388). (NCV 50-277; 50-278/03-008-01 & 50-352; 50-353/03-006)

Inspection Report# : 2003008*(pdf)*

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Miscellaneous

Significance: SL-IV Sep 27, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Emergency Plan Change Documentation, 10 CFR 50.54(q)
The inspector identified a Severity Level IV non-cited violation of 10 CFR 50.54(q). During the implementation of a new Standard Emergency Plan, Exelon did not retain a record that determined whether a decrease-in-effectiveness had or had not occurred when Exelon generated the new Standard Emergency Plan that deleted portions of the previous Combined Limerick/Peach Bottom Emergency Plan.

Changing emergency plan commitments without documentation impacts the NRC's ability to perform its regulatory function and is, therefore, processed through traditional enforcement as specified in Section IV.A.3 of the Enforcement Policy, issued May 1, 2000 (65 CFR 25388). According to Supplement VIII of the Enforcement Policy, this finding was determined to be a Severity Level IV because it involved a failure to meet a requirement not directly related to assessment and notification.

Inspection Report# : 2003004*(pdf)*

Last modified : December 01, 2003