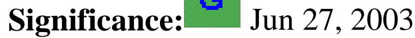
Peach Bottom 2
2Q/2003 Plant Inspection Findings

Initiating Events



Significance: 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)*

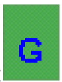
Significance: Sep 28, 2002
Identified By: NRC
Item Type: FIN Finding
Failure to Identify that the 2BH003 Rigging Hoist Had Not Been Adequately Load Tested Prior to Initially Lifting the 'B' Recirculation Pump Motor
The inspectors identified a finding of very low safety significance because Exelon failed to identify that the 2BH003 rigging hoist had not been adequately load tested prior to initial use. During the 2R14 refueling outage, on September 21, 2002, a chain broke in the 2BH003 rigging hoist and the 2 'B' recirculation pump motor, weighing approximately 48,000 pounds, fell approximately ten inches onto the pump/motor stand. Exelon committed to meet the requirements of ANSI B30.2-1967, that required 2BH003 be tested to at least 125 per cent of rated load prior to initial use. The 2BH003 rigging hoist had only been tested to 100 per cent of rated load prior to initial use. The finding was determined to be of very low safety significance because the 2 'B' reactor coolant system barrier and the permanent reactor coolant system piping and component supports were not damaged when the motor fell. Also, the 'B' subsystem of shutdown cooling was in-service; the reactor vessel level was greater than 22 feet above the top of the vessel flange; and the reactor coolant system time-to-boil was approximately 36 hours during this event.
Inspection Report# : 2002005*(pdf)*

Mitigating Systems

Significance: 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: 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:  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: 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: 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: Sep 28, 2002
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Rigging Procedure for the 'B' Recirculation Pump Motor Lift
The inspectors identified a non-cited violation (NCV) of very low safety significance of Technical Specification 5.4.1, "Procedures." Maintenance procedure M-C-700-332, "Rigging and Handling Heavy Loads," used for lifting the 2 ‘B' recirculation pump motor, did not contain any instructions requiring that the ‘A' subsystem of residual heat removal

shutdown cooling to be operable during the motor lifts. The licensee's analysis of NUREG-0612, "Control of Heavy Loads at Nuclear Power Plants," noted the need for 'A' subsystem of shutdown cooling to be operable when lifting the 'B' recirculation pump motor. During the 2R14 refueling outage, a chain broke in the 2BH003 rigging hoist and the 2 'B' motor, weighing approximately 48,000 pounds, fell approximately ten inches onto the pump/motor stand. The 'A' subsystem of residual heat removal was inoperable during this event. This NCV was determined to be of very low safety significance because the 'B' subsystem of shutdown cooling remained in-service during this event.
Inspection Report# : 2002005*(pdf)*

Significance: N/A Jun 08, 2000
Identified By: NRC
Item Type: AV Apparent Violation
POST-FIRE SAFE SHUTDOWN CIRCUIT ANALYSES
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: Jun 08, 2000
Identified By: NRC
Item Type: AV Apparent Violation
POST-FIRE SAFE SHUTDOWN CIRCUIT ANALYSES
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: 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)*

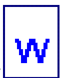
Significance: Dec 28, 2002
Identified By: NRC
Item Type: NCV NonCited Violation
Lack of Preventative Maintenance on Critical Ventilation Dampers
The inspectors identified a non-cited violation of very low safety significance. The non-cited violation of Technical Specification 5.4.1 is due to the licensee's 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)*

Significance: Jul 01, 2002
Identified By: NRC
Item Type: NCV NonCited Violation
EXELON'S FORMAL CRITIQUE OF THE FEBRUARY 14, 2002, EMERGENCY PREPAREDNESS EXERCISE FAILED TO IDENTIFY AND CORRECT PERFORMANCE DEFICIENCIES
(By letter dated November 26, 2002 Final Significance Determination for Green and White Findings and A Notice of Violation at Peach Bottom.) The inspector identified a non-cited violation of of 10 CFR 50, Appendix E, IV.F.2.g because the critique did not identify all relevant weaknesses and performance lapses during the emergency preparedness exercise on February 14, 2002. Crew performance lapses in communicating reactor water level information to the ED were relevant to the ED's responsibilities in classifying the event. Specifically, information that reactor water level had gone below the top of the fuel should have been provided to shift management and the ED to be considered in conjunction with contemporaneous changes in plant radiological conditions that were being interpreted. Nonetheless, the NRC concludes that, even without the reactor water level information, the ED made a proper classification of General Emergency Conditions in an acceptable time frame. Hence, the critique inadequacies did not involve failures to identify problems with any RSPS and are properly classified as a Green issue.
Inspection Report# : 2002007*(pdf)*

Significance:  Jul 01, 2002
Identified By: NRC
Item Type: VIO Violation
EXELON DID NOT PROPERLY USE THE CLASSIFICATION SCHEME DURING AN ALERT WHEN CARBON DIOXIDE WAS DISCHARGED INTO AN EMERGENCY DIESEL GENERATOR ROOM ON JUNE 2, 2002
(By letter dated July 11, 2003 Supplemental Inspection Report - Violation - White Significance). The NRC performed this supplemental inspection in accordance with Inspection Procedure 95001, to assess the licensee's evaluation and corrective actions regarding the delayed Alert declaration during the June 2, 2002, carbon dioxide discharge event. During this inspection, the inspector determined that Exelon performed a comprehensive evaluation of the circumstances contributing to the delayed classification. Exelon's evaluation identified the primary root cause of this issue to be that ERP-101, Classification of Emergencies, was not promptly reviewed to determine the EAL classification because EP training learning objectives for licensed operators for recognizing EALs was inadequate. Other contributing causes were identified. Corrective actions and effectiveness reviews were appropriate. Given the licensee's acceptable performance in addressing the delayed emergency classification, the White finding associated with this issue will only be considered in assessing plant performance through the period concluding at the end of the second calendar quarter of 2003, in accordance with the guidance in IMC 0305, "Operating Reactor Assessment Program." (By letter dated November 26, 2003 Final Significance for White Finding and Notice of Violation) The NRC issued a violation of low to moderate safety significance of 10 CFR 50.54(q), 10 CFR 50.47(b)(2), 10 CFR 50.47(b)(4),

and the Exelon Nuclear Emergency Response Plan. Section 2.0 of this Emergency Response Plan states, in part, that the classification system provided in Emergency Response Procedure (ERP)-101, provides for implementation of certain actions immediately applicable to a specific condition, and indicates that the Emergency Director determines the emergency classification and the actions to be taken. On June 2, 2002, the standard emergency classification and action level scheme was not properly used by the operations crew. Specifically, at 12:31 a.m., a condition occurred that warranted an ALERT declaration in accordance with ERP-101 when the fire suppression system inadvertently discharged carbon dioxide, a life threatening gas, into the No. 3 emergency diesel generator room, a plant vital structure. After the shift manager completed actions to assure safe plant conditions and personnel accountability, the shift manager did not then carry out his responsibility to review emergency action levels, classify the event and assume the duties of Emergency Director. In particular, between 12:39 a.m. and 12:47 a.m., the shift manager was engaged in non-emergency response related activities implementing an administrative procedure for calling the licensee's corporate duty officer in order to inform licensee senior management of plant conditions. As a result, there was an undue delay in properly classifying the event and the ALERT classification was not made until 1:02 a.m. Per the emergency preparedness SDP (during an actual event), significance is based on the event classification level, and whether or not there was a failure to implement a risk significant planning standard. During the time period noted above, the shift manager exhibited a performance deficiency that involved a failure to implement a risk significant planning standard during an Alert condition. Such a finding is considered White in accordance with IMC 0609, Appendix B, and has low to moderate importance to safety.
Inspection Report# : 2002007*(pdf)*
Inspection Report# : 2003011*(pdf)*

Significance:

Jul 01, 2002
Identified By: NRC
Item Type: NCV NonCited Violation
EXELON DID NOT ACTIVATE THE TSC WITHIN 60 MINUTES FOLLOWING DECLARATION OF AN ALERT ON JUNE 2, 2002
The inspector identified a non-cited violation of 10 CFR 50.47(b)(2) because during a declared Alert on June 2, 2002, Exelon failed to activate their Technical Support Center (TSC) within 60 minutes as stated in their Nuclear Emergency Plan. Exelon's failure to activate an emergency facility in a timely manner is associated with a significant planning standard and determined to be a violation of very low safety significance using Manual Chapter 0609, Appendix B, "Emergency Preparedness Significance Determination Process," Sheet 2.
Inspection Report# : 2002007*(pdf)*

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Miscellaneous

Last modified : September 04, 2003