

Peach Bottom 2

3Q/2010 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance:  Sep 30, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Ensure Adequate Voltage was Available to Safety-Related Equipment

The inspectors identified a finding of very low safety significance involving a NCV of 10 CFR 50, Appendix B, Criterion III, "Design Control," in that Exelon did not assure that applicable regulatory requirements and the design basis were correctly translated into specifications, drawings, procedures, and instructions. Specifically, Exelon did not use the safety-related Function 4 degraded grid relay trip setpoint specified in the Technical Specifications (TS) as a design input in calculations to ensure adequate voltage was available to all safety-related components required to respond to a design basis loss-of-coolant accident (LOCA). Instead, Exelon used the results from calculation PE 0121, "Voltage Regulation Study," to establish the voltage level for system operability. The study credited the use of non-safety related equipment to raise the voltage level. This allowed higher voltages to be used in the design calculations for components than would be allowed by the TS setpoint. The team verified the licensing basis via Task Interface Agreement (TIA) 2009 07 and informed Exelon that the degraded grid relay setpoint must be used for design basis calculations. Exelon entered the issue into the CAP (IR 1119440), performed operability assessments, and established some compensatory measures to restore PBAPS to an operable but non-conforming condition.

The finding is more than minor because it is associated with the design control attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The finding was also similar to example 3j in IMC 0612, Appendix E, in that there was reasonable doubt as to the operability of safety-related components and Exelon was required to perform operability determinations to address potentially inadequate voltage to several safety-related components. The inspectors, including the Region I Senior Reactor Analysts (SRAs), performed a Phase 1 SDP screening, in accordance with NRC IMC 0609, Attachment 4, "Phase 1 - Initial Screening and Characterization of Findings," and determined the finding was of very low safety significance (Green) because it was a design deficiency that impacted operability but not functionality, did not represent a loss of system safety

Inspection Report# : [2010004](#) (*pdf*)

Significance:  Apr 02, 2010

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

Inadequate Corrective Action to Address Multiple Slow Control Rods with Adverse Scram Pilot Solenoid Valve Diaphragms

A self-revealing, Green NCV of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," occurred when PBAPS failed to identify and correct a condition adverse to the quality. Specifically, an issue related to control rod drive scram solenoid pilot valve (SSPV) diaphragms, as described in vendor documents and NRC generic communication, was not corrected after several slow control rods were identified during scram time testing between 2004 and 2010. Consequently, 21 slow rods were identified during Unit 2 scram time testing that was conducted from January 30 to January 31, 2010. PBAPS immediately performed maintenance to replace the defective SSPV Diaphragms on all 21 Unit 2 slow control rods by February 1, 2010, and successfully performed post-maintenance scram time testing.

Additionally, the issues were entered into the PBAPS CAP.

This finding was more than minor because it was associated with the equipment performance attribute of the Mitigating Systems (MS) cornerstone, and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Using the phase 1 worksheet in Attachment 4 of IMC 0609, "Significance Determination Process," the inspectors determined that the finding affected the MS cornerstone and was of very low safety significance (Green) because it was not a design or qualification deficiency, did not represent a loss of safety system function, and was not associated with any external events. The inspectors determined that this finding had a cross-cutting aspect in the area of problem identification & resolution (PI&R), CAP, because PBAPS did not thoroughly evaluate previously identified conditions adverse to the quality of the SSPV diaphragms, such that the resolution addressed the cause and extent-of-condition (EOC). (Section 1R12) [P.1(c)]

Inspection Report# : [2010002](#) (pdf)

Significance:  Dec 31, 2009

Identified By: NRC

Item Type: FIN Finding

Failure to Follow Procedures and Implement the Exelon Nuclear Cable Condition Monitoring Program For Non Safety Related Control And Power Cables Within The Scope Of The Maintenance Rule.

The inspectors identified a finding for the failure to follow the Exelon fleet procedure for cable monitoring (ER-AA-3003) of non-safety-related cables within the scope of the 10 CFR 50.65 (the Maintenance Rule). Specifically, PBAPS had reported to the NRC that they were implementing this procedure for cables within the scope of GL 2007-01; however, actions were not specified to identify or remediate the cause of repetitive flooding and restore the function of the degraded electrical manhole/vault drain systems. PBAPS initiated IR 1016075 to enter the issues associated with this finding into the CAP.

This finding was more than minor because it affected the equipment performance attribute of the Mitigating Systems cornerstone and the associated cornerstone objective of ensuring the reliability of systems that respond to initiating events to prevent undesirable consequences. This finding was evaluated in accordance with IMC 0609.04, Phase 1 – "Initial Screening and Characterization of Findings" and was determined to be of very low safety significance because it did not represent an actual loss of safety function or contribute to external event core damage sequences. This finding had a cross-cutting aspect in the area of PI&R, Operating Experience, because Exelon did not adequately implement and institutionalize industry operating experience through changes to station processes and procedures [P.2 (b)]. Specifically, work order instructions were inadequately scoped in that they were limited to manholes with safety-related cables and did not include all manholes with Maintenance Rule power cables contrary to the scope identified in ER-AA-3003 or GL 2007 01.

Inspection Report# : [2009005](#) (pdf)

Significance:  Dec 31, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

Continuously Submerged Cables Design Deficiency

The inspectors identified an NCV of 10 CFR, Part 50, Appendix B, Criterion III, "Design Control," because PBAPS has not maintained safety-related power cables (including low voltage cables) in an environment for which they were designed and tested. Specifically, PBAPS did not adequately select and review for suitability of application of materials a 480 volt ac power cable feeding a safety-related motor control center (E424 O A) that has been in a submerged environment in manhole 35 for an extended period of time and at least since 2002. Additionally, PBAPS personnel did not take actions to properly evaluate and mitigate the effects of long term submergence of these safety-related electrical power cables.

This finding is more than minor because it affected the equipment performance attribute of the Mitigating Systems cornerstone and the associated cornerstone objective of ensuring the reliability of systems that respond to initiating events to prevent undesirable consequences. This finding was evaluated in accordance with IMC 0609.04, Phase 1 –

“Initial Screening and Characterization of Findings” and was determined to be of very low safety significance because it did not represent an actual loss of safety function nor contribute to external event core damage sequences. This finding had a cross-cutting aspect in the area of Problem Identification and Resolution, Corrective Action Program, because Exelon did not thoroughly evaluate problems such that the resolutions addressed causes including evaluating for operability conditions adverse to quality. Specifically, station personnel did not adequately evaluate the impacts on operability and service life of operating the cables submerged in water for an extended period of time [P.1(c)].

Inspection Report# : [2009005](#) (*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*)

Inspection Report# : [2007002](#) (*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*)

Inspection Report# : [2007002](#) (*pdf*)

Significance: **G** Dec 31, 2009

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

Inadequate Verification Practices while Handling Fuel and Fuel Components

A Green self-revealing NCV of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was identified when PBAPS inadequately implemented human performance tools and verification practices for fuel handling and fuel component handling activities, resulting in a dropped fuel channel in the spent fuel pool (SFP) and a mispositioned fuel bundle in the reactor core during the P3R17 refueling outage (RFO). The inspectors verified that corrective actions were promptly performed, including an operability evaluation and video inspection of the SFP racks, and reactor engineering evaluation for the mis-positioned fuel bundle. Additionally, the issues were entered into the PBAPS CAP.

This finding was more than minor because it was associated with the human performance attribute of the Barrier Integrity cornerstone, and adversely affected the cornerstone objective of providing reasonable assurance that physical design barriers protect the public from radionuclide release cause by accidents or transients. This finding was determined to be of very low safety significance (Green) in accordance with IMC 0609, Appendix M, "SDP Using Qualitative Criteria," because evaluations performed by PBAPS, and verified by the inspectors, determined that there was no actual degradation to the physical barrier integrity. This finding had a cross-cutting aspect in the area of Human Performance, Work Practices, because PBAPS management and personnel did not effectively communicate human error prevention techniques commensurate with the risk of the assigned tasks, such that the work activities were performed safely [H.4(a)]. Specifically, PBAPS management and personnel did not adequately reinforce the importance of using human performance tools and verification practices, including self-check (STAR), concurrent verification, and independent verification, prior to performance of activities involving fuel component handling.

Inspection Report# : [2009005](#) (*pdf*)

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Although the NRC is actively overseeing the Security cornerstone, the Commission has decided that certain findings pertaining to security cornerstone will not be publicly available to ensure that potentially useful information is not provided to a possible adversary. Therefore, the [cover letters](#) to security inspection reports may be viewed.

Miscellaneous

Last modified : November 29, 2010