

# Peach Bottom 3

## 4Q/2011 Plant Inspection Findings

---

### Initiating Events

---

### Mitigating Systems

**Significance:**  Aug 12, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

#### **Inadequate Corrective Actions Associated with Safety Relief Valve Lift Setpoint Drift.**

The inspectors identified a finding of very low safety significance (Green) involving a NCV of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," because Exelon staff did not implement timely corrective action associated with safety relief valve (SRV)/safety valve (SV) lift setpoint drift in excess of Technical Specification (TS) 3.4.3, "Safety Relief Valves and Safety Valves" requirements. Specifically, Exelon staff did not implement timely or adequate actions to correct SRV lift setpoint drift that, on four occasions since 2004, has exceeded TS acceptance criteria and resulted in repeat TS violations. The station entered this issue into their corrective action program (CAP) as issue report (tR) 1250472 to evaluate the corrective actions needed to address this issue including evaluation of the proposed revision to the Peach Bottom licensing basis through a TS amendment.

The inspectors determined that the finding was more than minor because it was associated with the equipment performance attribute of the Mitigating Systems cornerstone and affected the cornerstone objective of ensuring the capability and reliability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, SRVs continue to experience reliability challenges regarding SRV/SV lift setpoint drift and the station remains vulnerable to future TS compliance issues. The inspectors evaluated the significance of this finding using IMC 0609.04, "Phase 1 - Initial Screening and Characterization of Findings." The inspectors determined that this finding was of very low safety significance (Green) because the finding was not a design or qualification deficiency, did not represent a loss of safety system function, and did not screen as potentially risk-significant due to external initiating events. The inspectors' review did not identify a loss of SRV/SV safety function with regard to SRVs/SVs being able to lift within the necessary pressure range to maintain margin to design pressure and stress limits. The finding has a cross-cutting aspect in the area of problem identification and resolution, corrective action program, because Exelon personnel did not implement timely corrective actions to address a longstanding SRV tolerance setpoint condition that has resulted in multiple TS compliance violations. [P. 1 . (d)] [Section 4OAZ. 1 .c.(1 )]

Inspection Report# : [2011010](#) (*pdf*)

**Significance:**  Mar 11, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

#### **Failure to Demonstrate the Capability of the EDG Fuel Oil Transfer Pumps to Fulfill Their Safety Functions Under all Conditions**

The team identified a finding of very low safety significance involving a non-cited violation of 10 CFR 50, Appendix B, Criterion III, "Design Control," in that, Exelon did not ensure the ability to transfer fuel oil between underground fuel oil storage tanks. Specifically, Exelon had not performed adequate analyses or testing to demonstrate adequate net

positive suction head available (NPSHn) for the EDG fuel oil transfer pumps. In response, Exelon entered this issue into their corrective action program and performed an evaluation to assure the fuel oil transfer pump NPSHA was adequate.

The finding was more than minor because it was 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 team 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 or qualification deficiency confirmed not to result in loss of operability or functionality. This finding does not have a crosscutting aspect because the most significant contributor of the performance deficiency is not reflective of current licensee performance. (1R21 .2.1.1)

Inspection Report# : [2011007](#) (pdf)

**Significance:**  Mar 11, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

#### **Temporary Battery Cart Seismic Configuration Deficiency**

The team identified a finding of very low safety significance involving a non-cited violation of 10 CFR 50, Appendix B, Criterion III, "Design Control," in that Exelon did not verify the adequacy of the seismic design for temporary battery cells that had been placed in-service in safety-related station batteries that were required to be operable. Specifically, Exelon did not evaluate whether mechanical stress could be transferred from one temporary battery cell to another via rigid bus bars attached to the cell terminal posts and, as a consequence, did not verify that damage to a cell post or cell case would not result during a seismic event. During the inspection period, the temporary battery cells were not in-service and were not required to be operable. In response, Exelon entered this issue into the corrective action program and performed a preliminary calculation to verify seismic adequacy.

This finding was more than minor because it was 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 team 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 or qualification deficiency confirmed not to result in loss of operability or functionality.

This finding had a cross-cutting aspect in the area of Problem Identification and Resolution, Corrective Action Program, because Exelon did not thoroughly evaluate the problem such that the resolution addressed the cause. Specifically, a 2009 issue report identified that the battery cells on the cart did not have seismic spacers between the cells and did not have steel tie-rods installed for a cell clamp assembly, similar to the station battery. The issue report incorrectly determined that plastic tubes in between the two cells would provide an adequate seismic restraint. IMC 0310, Aspect P.1(c)] (1R21.2.1.2)

Inspection Report# : [2011007](#) (pdf)

**Significance:**  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)

---

## Barrier Integrity

**Significance:**  Dec 31, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

**Untimely Corrective Action to Correct MOV Degraded Stem Lubrication**

The inspectors determined that PBAPS's failure to promptly correct a condition adverse to quality associated with a safety-related MOV constituted a Green, self-revealing NCV of 10 CFR, Appendix B, Criterion XVI, "Corrective Action." Specifically, corrective actions to prevent recurrence of MOV program testing failures due to degraded stem lubrication in 2009 were not performed in a timely manner to prevent the inoperability of a safety-related MOV due to degraded lubrication, as identified on September 22. [P.1(d)]

10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," states, in part, that measures shall be established to assure that conditions adverse to quality are promptly identified and corrected. Contrary to the above, Exelon failed to promptly correct a condition adverse to quality associated with degraded stem lubrication on RWCU outboard isolation valve MO-3-12-018. Specifically, root cause evaluation 892191-08 required Exelon to change MOV stem lubrication from Exxon Nebula EP-1 to MOV Long Life, as a corrective action to prevent recurrence of multiple MOV program testing failures due to degraded stem lubrication identified in 2009. As a consequence of Exelon's failure to promptly correct this condition adverse to quality, MO-3-12-018 failed diagnostic testing due to degraded Exxon Nebula EP-1 stem lubrication on September 22, 2011. Because this finding is of very low safety significance and has been entered into Exelon's CAP under IRs 1266600 and 1266604, this violation is being treated as a Green NCV consistent with the NRC Enforcement Policy. (NCV 05000277/2011005-01 and NCV 05000278/2011005-01, Untimely Corrective Action to Correct MOV Degraded Stem Lubrication)

**Significance:**  Mar 31, 2011

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

### **Fuel Handling Procedures Were Inadequate to Prevent Fuel from Contacting an Obstruction**

A Green self-revealing NCV of Technical Specification (TS) 5.4.1 "Procedures" was identified, because PBAPS's procedures for refueling equipment operation and core alterations were inadequate to prevent a fuel bundle from contacting a core spray inspection (CSI) submarine device while the fuel bundle was being transported from the core to the spent fuel pool (SPF). In particular, system operating (SO) procedure 18.1.A-2, "Operation of Refueling Platform," and fuel handling (FH) procedure 6C, "Core Component – Core Transfers," did not provide sufficient procedure steps, precautions, or human performance tools to prevent contact while the refueling platform was operated in the automatic mode and when core components were in close proximity to obstructions and interferences.

The inspectors determined that the finding was more than minor because the finding was associated with the Procedure Quality attribute of the Barrier Integrity cornerstone and adversely affected the cornerstone's objective to provide reasonable assurance that physical design barriers (i.e., fuel cladding) protect the public from radionuclide releases caused by accidents or events. Although no fuel damage occurred during this event, the inadequate procedure resulted in a FH event that could have impacted the cladding and affected the cornerstone's objective to provide reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. IMC 0609, "SDP," Attachment 0609.04, "Phase 1-Initial Screening and Characterization of Findings," was used to evaluate the significance of the finding. Attachment 0609.04, Table 4a, was used to evaluate the impact of the finding on fuel clad integrity. Appendix G was considered for the evaluation, but was not used because it does not directly address fuel clad integrity. Based on the results of fuel sipping done in February 2011, PBAPS concluded that there was no damage to the clad integrity of the impacted fuel bundle that was permanently discharged to the SFP. Since the finding did not affect SFP cooling or inventory and since there was no damage to fuel clad integrity from the impact with the CSI submarine, the finding was determined to be of very low safety significance (Green).

The finding has a cross-cutting aspect in Human Error Prevention Techniques in the Work Practices component of the Human Performance area. Specifically, PBAPS FH procedures did not require human error prevention techniques that were commensurate with the risk of moving fuel in close proximity to obstructions and interferences. (Section 40A5.1) [H.4(a)]

---

## **Emergency Preparedness**

**Significance:** SL-IV Aug 31, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

### **(Traditional Enforcement) Changes to EAL Basis Decreased the Effectiveness of the Plan without Prior NRC approval**

Severity Level IV/Green: The inspector identified a finding of very low safety significance involving a Severity Level IV NCV of 10 CFR 50.5a(q) for failing to obtain prior approval for an emergency plan change which decreased the effectiveness of the plan. Specifically, the licensee modified the Emergency Action Level (EAL) Basis in EAL HU6 which indefinitely extended the start of the 15-minute emergency classification clock beyond a credible notification that a fire is occurring or indication of a valid fire detection system alarm. This change decreased the effectiveness of the emergency plan by reducing the capability to perform a risk significant planning function in a timely manner. The violation affected the NRC's ability to perform its regulatory function because it involved implementing a change that decreased the effectiveness of the emergency plan without NRC approval. Therefore, this issue was evaluated using Traditional Enforcement. The NRC determined that a Severity Level IV violation was appropriate due to the reduction of the capability to perform a risk significant planning standard function in a timely manner. The licensee entered this issue into its corrective action program and

revised the EAL basis to restore compliance. The finding was more than minor using IMC 0612, because it is associated with the emergency preparedness cornerstone attribute of procedure quality for EAL and emergency plan changes, and it adversely affected the cornerstone objective of ensuring that the licensee is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. Therefore, the performance deficiency was a finding. Using IMC 0609, Appendix B, the inspector determined that the finding had a very low safety significance because the finding is a failure to comply with 10 CFR 50.5a(q) involving the risk significant planning standard 50.47(bX4), which, in this case, met the example of a Green finding because it involved one Unusual Event classification (EAL HU6).

Due to the age of this issue, it was not determined to be reflective of current licensee performance and therefore a cross-cutting aspect was not assigned to this finding. (Section 1EP4)

Inspection Report# : [2011502](#) (*pdf*)

**Significance: SL-IV** Aug 31, 2011

Identified By: NRC

Item Type: FIN Finding

### **Changes to EAL Basis Decreased the Effectiveness of the Plan without Prior NRC Approval**

Severity Level IV/Green: The inspector identified a finding of very low safety significance involving a Severity Level IV NCV of 10 CFR 50.5a(q) for failing to obtain prior approval for an emergency plan change which decreased the effectiveness of the plan. Specifically, the licensee modified the Emergency Action Level (EAL) Basis in EAL HU6 which indefinitely extended the start of the 15-minute emergency classification clock beyond a credible notification that a fire is occurring or indication of a valid fire detection system alarm. This change decreased the effectiveness of the emergency plan by reducing the capability to perform a risk significant planning function in a timely manner.

The violation affected the NRC's ability to perform its regulatory function because it involved implementing a change that decreased the effectiveness of the emergency plan without NRC approval. Therefore, this issue was evaluated using Traditional Enforcement. The NRC determined that a Severity Level IV violation was appropriate due to the reduction of the capability to perform a risk significant planning standard function in a timely manner. The licensee entered this issue into its corrective action program and revised the EAL basis to restore compliance. The finding was more than minor using IMC 0612, because it is associated with the emergency preparedness cornerstone attribute of procedure quality for EAL and emergency plan changes, and it adversely affected the cornerstone objective of ensuring that the licensee is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. Therefore, the performance deficiency was a finding. Using IMC 0609, Appendix B, the inspector determined that the finding had a very low safety significance because the finding is a failure to comply with 10 CFR 50.5a(q) involving the risk significant planning standard 50.47(bX4), which, in this case, met the example of a Green finding because it involved one Unusual Event classification (EAL HU6). Due to the age of this issue, it was not determined to be reflective of current licensee performance and therefore a cross-cutting aspect was not assigned to this finding. (Section 1EP4)

Inspection Report# : [2011502](#) (*pdf*)

---

## **Occupational Radiation Safety**

---

## **Public Radiation Safety**

**Significance:**  Dec 31, 2011

Identified By: NRC

Item Type: FIN Finding

### **Failure to Establish, Implement, and Maintain Adequate Quality Assurance for Effluent and Environmental Monitoring**

The inspector identified a Green finding associated with failure to establish, implement, and maintain adequate quality assurance program elements in the area of effluent and environmental monitoring as required by Peach Bottom Unit 2

and 3 TS Section 5.4.1. Specifically, Exelon's quality assurance program for effluent and environmental monitoring was not sufficient to ensure: 1) that both adequate and timely evaluation and assessment of changes described in the Public Land Use Census were conducted for purposes of dose validation and sampling program modification; 2) that changes in meteorological parameters, used for public dose projections and assessment, were promptly and adequately evaluated; and 3) that laboratory quality assurance programs for effluent and environmental sample analysis measurement systems were adequate and implemented.

Inspection Report# : [2011005](#) (*pdf*)

---

## 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 : March 02, 2012