

# Peach Bottom 3

## 2Q/2009 Plant Inspection Findings

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### Initiating Events

**Significance:**  Mar 31, 2009

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

#### **Inoperable 'A' Wide-Range Neutron Monitoring (WRNM) Results in a Condition Prohibited by Technical Specifications**

A self-revealing, Green NCV of Unit 3 TS 3.0.4 was identified by the inspectors on January 26, 2009, when a half-scam occurred on Unit 3, shortly after Unit 3 entered Mode 2 for plant startup. Specifically, the 'A' Wide-Range Neutron Monitoring (WRNM) was inoperable as a result of inadequate procedural guidance regarding adjustments made to the mean square voltage (MSV) offset during the outage (prior to the January 26, 2009, startup). The inadequate procedural guidance allowed adjustments to be made which resulted in the WRNM not making a smooth transition from the counting region to the MSV region of operation, causing the 'A' WRNM to be inoperable and resulting in an unexpected half-scam when the WRNM transitioned from the counting region to the MSV region of operation. As a result, TS 3.3.1.1 requirements for the number of available channels of WRNM short period RPS trip in Mode 2 had not been met. TS 3.0.4 requires that when a LCO is not met, entry into a mode or other specified condition shall only be made when the associated actions to be entered permit continued operation in the mode or other condition specified for an unlimited period of time. Corrective actions included entering the issue into the CAP, conducting an event review, and submitting a License Event Report (LER) to the NRC, and revising the WRNM adjustment procedure.

The finding is more than minor because it is associated with the procedure quality attribute and adversely affected the Initiating Events Cornerstone objective of limiting the likelihood of those events that upset plant stability and challenge critical safety functions. The finding was of very low safety significance because it did not contribute to the likelihood that both a reactor trip would occur and that mitigation equipment would not be available. This finding has a cross-cutting aspect in the area of human performance (resources) because the licensee's procedure did not provide adequate guidance to prevent adjusting the MSV offset to an unacceptable value. [IMC 0305 aspect: H.2(c)] (Section 1R15)

Inspection Report# : [2009002](#) (*pdf*)

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### Mitigating Systems

**Significance:**  Jun 30, 2009

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

#### **MOV Program Procedures Were Inadequate with Regard to periodicity of preventive Maintenance Activities for Stem Lubrication.**

A self-revealing NCV of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was identified. Specifically, Exelon's Motor Operated Valve (MOV) Program procedures lacked specific instructions to prescribe an acceptable frequency for performing valve stem lubrication, which resulted in test failures of safety-related MOVs and affected the reliability of the MOVs' safety functions.

On Unit 2, 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 availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). In accordance with IMC 0609, Attachment 4, the inspectors determined that the finding was of very low safety significance (Green) because it was not a design or qualification deficiency, did not represent a loss of system safety function, and was not associated with any external events. On Unit 3, the inspectors determined that the finding was more than minor because it was associated with the configuration control attribute of the Barrier Integrity Cornerstone and affected the cornerstone objective of providing reasonable assurance that physical design barriers (e.g., containment) protect the public from radionuclide releases caused by accidents or events. In accordance with IMC 0609, Attachment 4, the inspectors determined that the finding was of very low safety significance (Green) because it did not represent an actual open pathway in the physical integrity of reactor containment. For both units, this finding has a cross-cutting aspect in the area of Problem Identification and Resolution (PI&R), Corrective Action Program, because PBAPS did not thoroughly evaluate problems such that the resolutions addressed the causes and extent of condition [P.1(c)]. Specifically, PBAPS failed to thoroughly evaluate previous conditions of degraded and hardened grease on safety-related valves, such that the extent of the condition was considered and the cause was resolved. (Section 40A2)

Inspection Report# : [2009003](#) (pdf)

**Significance:**  Dec 30, 2008

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

**Incorrect Performance of Procedure Step Resulted in Inoperability of a DC Bus for Longer than the TS Allowed Outage Time**

A self-revealing (Green) NCV of Technical Specification (TS) 5.4.1 was identified when operators inadequately implemented an abnormal operating (AO) procedure on two occasions. Specifically, an event where the Unit 2 Division II direct current (DC) electrical power subsystem was inoperable for longer than the allowed outage time specified in Unit 3 TS 3.8.4, resulted from PBAPS personnel not recognizing the existence of conflicting procedure guidance and the improper removal of a configuration control tool.

This finding is more than minor because it was associated with the human performance attribute of the Mitigating Systems Cornerstone, and impacted the cornerstone objective of ensuring the reliability of the Unit 2, Division II, DC electrical power subsystem to respond to initiating events, in that, one of its associated battery chargers was being supplied from a non-qualified alternating current (AC) power source. The inspectors concluded that this finding affected the Mitigating Systems Cornerstone and answered "No" to all relevant questions. Specifically, the supply of a non qualified AC power source to the Unit 2, Division II DC electrical power system was a qualification issue confirmed not to result in a loss of functionality. Although the Unit 2, Division II DC electrical power system was inoperable for longer than its 12 hour TS allowed outage time, this qualification issue did not result in an actual loss of safety function. Therefore, this finding was considered to be of very low safety significance (Green).

The inspectors determined that this finding had a cross-cutting aspect in the area of human performance (work control component) because PBAPS personnel did not adequately coordinate work activities by incorporating actions to address: the impact of changes to the work scope or activity on the plant and human performance; nor the need to keep personnel apprised of the operational impact of work activities; and plant conditions that may affect work when conflicting procedures led to inadequate procedure adherence and the unplanned inoperability of the Unit 2 Division II DC electrical subsystem. [IMC 0305 aspect: H.3(b)]. (Section 40A3.1)

Inspection Report# : [2008005](#) (pdf)

**Significance:**  Sep 29, 2008

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

**Inadequate EOC Review Results in Delay in Discovery of ESW Leaks**

A self-revealing NCV of 10 CFR Part 50, Appendix B, Criteria V, "Instructions, Procedures and Drawings," was identified for a failure to follow procedure, WC-PB-2000, "Outage Control Center (OCC) Emergent Issue Response,"

that resulted in an inadequate extent of condition (EOC) evaluation being performed for an emergency service water (ESW) leak that was discovered on the E-1 emergency diesel generator (EDG). Specifically, Operations personnel failed to look at similar ESW locations on the E-2, E-3, and E-4 EDGs. This resulted in a nine-day delay in discovering a similar leak on the E-4 EDG.

This finding is greater than minor because it is similar to the example 4a., “Insignificant Procedural Errors,” in Manual Chapter 0612, Appendix E, in that, the later evaluation of the ESW leak discovered on the E-4 EDG resulted in safety-related equipment being adversely affected. Using the Phase 1 worksheet in Manual Chapter 0609, “Significance Determination Process,” the finding was of very low safety significance (Green) since it did not represent an actual loss of system safety function for the ESW system. This finding has a cross-cutting aspect in the area of Problem Identification and Resolution (PI&R), Corrective Action Program (CAP) because the licensee failed to thoroughly evaluate the EOC of the leak on the E-1 EDG and it resulted in a nine-day delay in discovering additional leaks associated with the E-3 and E-4 EDGs. [IMC 0305, aspect P.1(c)]. (Section 1R15)

Inspection Report# : [2008004](#) (*pdf*)

**Significance:** SL-IV Sep 29, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to Make a 10 CFR 50.72(b)(2)(xi) Notification**

Severity Level IV. The inspectors identified a NCV of 10 CFR 50.72(b)(2)(xi) because the NRC Operations Center was not notified of a reportable event. Specifically, PBAPS did not formally report, to the NRC Operations Center, a planned press release and the notification of other government agencies regarding a transformer fire and petroleum product spill event that occurred on July 23 and 24, 2008.

This deficiency was evaluated using the traditional enforcement process since the failure to make a required report could adversely impact the NRC’s ability to carry out its regulatory mission. This event was related to public health and safety because it involved a fire emergency that contributed to the loss of two of the plant’s three offsite power sources. This event was related to protection of the environment because it involved the spill of a more than minor quantity of oil that required reporting to the State of Pennsylvania. While reviewing this finding, the inspectors considered the fact that the NRC was informally notified. The inspectors considered the above and evaluated the severity of this violation using the criteria contained in Supplement I – “Reactor Operations” and Section VI.A.1 of the NRC’s Enforcement Policy and determined that this finding met the criteria for disposition as a NCV. (Section 4OA3.1)

Inspection Report# : [2008004](#) (*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)

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## Barrier Integrity

**Significance:**  Mar 31, 2009

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

**Inadequate Work Instructions Result in Inadvertent ESF Actuation**

A self-revealing NCV of 10 CFR 50 Appendix B, Criteria V, "Instructions, Procedures and Drawings" was identified when inadequate work instructions resulted in a momentary shorting of a terminal lead during maintenance, which caused an inadvertent Unit 3, primary containment isolation valve (PCIV) signal and entry into a one-hour shutdown Technical Specification (TS) Action Statement on March 3, 2009. Specifically, the work instructions allowed the technicians to lift and manipulate energized leads on a safety-related pressure switch without providing any guidance as to the risk and consequences that inadvertent grounding of those energized leads could cause. Because the risk and consequences were not considered and an inadvertent grounding occurred, a PCIV signal resulted that closed normally open valves on both the containment atmosphere control (CAC) system and the instrument nitrogen system containment penetrations. In addition, both PCIV valves on containment atmosphere dilution (CAD) system were rendered inoperable which required the operators to enter an unplanned one-hour TS Action Statement (3.6.1.3.B) and would have required a plant shutdown within the following 12 hours. Corrective actions included replacing the blown fuse, entering the issue into the CAP, and making a required 60 day verbal report to the NRC.

The finding is more than minor because it could reasonably be viewed as a precursor to a significant event. Specifically, the failure to assess the risk of inadvertent grounding of energized leads on safety equipment could pose a credible hazard as an initiating event during plant operation. The finding was of very low safety significance because the valves in question failed closed and did not represent an actual open pathway in the physical integrity of reactor containment. This finding has a cross-cutting aspect in the area of human performance (work control) because the licensee's work instructions did not provide appropriate risk insights regarding the risks associated with potential grounding of the energized leads. [H.3(a)]  
(Section 1R13)

Inspection Report# : [2009002](#) (pdf)

**Significance: SL-IV** Mar 31, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

### **Departure from a Method of Evaluation Without Prior NRC Approval**

Severity Level IV. An inspector identified Severity Level IV NCV of 10 CFR 50.59 was identified when PBAPS made a safety analyses change that departed from a method of evaluation described in the UFSAR without obtaining prior NRC approval and a license amendment. Specifically, PBAPS used a spent fuel pool criticality analysis methodology that was not previously approved by the NRC, and did not adopt an NRC approved methodology en toto and apply it consistent with applicable terms, conditions, and limitations. Corrective actions for this problem included entering the issue into the CAP and making plans to develop a technical evaluation that would demonstrate, using methodologies approved for PBAPS, that adequate margin to criticality exists for the nonconforming condition presented by the degraded Boraflex in the SFP storage racks. Additionally, PBAPS has submitted a LAR, to use alternative SFP criticality analyses, to the NRC on June 25, 2008.

This deficiency was evaluated using the traditional enforcement process since it potentially adversely impacts or impedes the NRC's ability to carry out its regulatory mission, in that, PBAPS did not request and receive prior NRC approval for changes in licensed activities. The finding is more than minor and a Severity Level IV violation because it is similar to example D.5 of Supplement I, "Reactor Operations," to the NRC's Enforcement Policy. Specifically, the finding involved a violation of 10 CFR 50.59 that resulted in conditions evaluated as having very low safety significance (i.e., Green) by the SDP. Using the Phase 1 SDP, the inspectors determined that the condition resulting from the violation of 10 CFR 50.59 screened to Green because it could affect the functionality of the fuel barrier (cladding). (Section 1R18.1)

Inspection Report# : [2009002](#) (pdf)

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## **Emergency Preparedness**

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## **Occupational Radiation Safety**

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## **Public Radiation Safety**

**Significance:**  Sep 29, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

### **Failure to Comply with 10 CFR 20 Appendix G**

The inspectors identified a NCV of 10 CFR 20, Appendix G, Section III.C. 5. Specifically, the licensee did not conduct a Quality Assurance Program sufficient to assure conformance with 10 CFR 61.55, in that, the program was not adequate to identify incorrect gamma spectroscopy analyses of a principal gamma emitting radionuclide used to scale hard-to detect radionuclides for purposes of waste classification in accordance with 10 CFR 61.55. The licensee entered the deficiency into its CAP (IR799894).

The failure to conduct a sufficiently robust 10 CFR 61 Quality Assurance Program, to assure conformance with 10 CFR 61.55, is a performance deficiency that was reasonably within the licensee's ability to foresee and correct, and which should have been prevented. The finding is more than minor because it affected the associated cornerstone

objective in that the licensee's 10 CFR 61 Quality Assurance Program did not identify incorrectly analyzed waste samples used to classify radioactive waste for land disposal. This finding was determined to be of very low safety significance because no radiation limits were exceeded, there was no breach of packaging, there was no certificate of compliance finding, there was no low level burial ground non-conformance, and lastly, there was no failure to make notifications or provide emergency notification information. The cause of this finding was related to the cross-cutting area of PI&R, self and independent assessments component, in that, although actions were taken to coordinate and communicate results from assessments to affected personnel, corrective actions were not sufficiently comprehensive to identify incorrect vendor analyses [IMC 0305, aspect P.3(c)]. (Section 2PS2)

Inspection Report# : [2008004](#) (*pdf*)

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## 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.

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## Miscellaneous

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