

# Peach Bottom 2

## 3Q/2008 Plant Inspection Findings

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### Initiating Events

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### Mitigating Systems

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**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 extend 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 40A3.1)

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

**G**

**Significance:** Jun 30, 2008

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

#### **Foreign Material Discovered in Fire Valve**

Green. A self-revealing NCV of PBAPS's Unit 2 License Condition 2.C (4), "Fire Protection Program," was identified when maintenance personnel discovered foreign material inside a supply valve to an automatic 13KV switchgear sprinkler system installed because there is a one-hour rated raceway encapsulated in the 13KV switchgear area. The Fire Protection Program requires automatic suppression when one-hour rated raceway encapsulation is used. PBAPS has removed the foreign material, replaced the affected valve, and entered this issue into their CAP for appropriate action. The inspectors determined that there was no cross-cutting aspect to this finding.

The finding is more than minor because it is associated with the Mitigating Systems Cornerstone attribute of protection against external

factors (i.e., fire), and it affects the objective of ensuring reliability and capability of systems that respond to initiating events. The finding was of very low significance because PBAPS demonstrated that the core damage frequency (CDF) associated with a fire in this area was in the 1 E-7 range for all assumed fires. (Section 1R12)

Inspection Report# : [2008003](#) (*pdf*)

**G**

**Significance:** May 21, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

#### **Inadequate Battery Connection Resistance Testing**

The team identified a finding of very low safety significance involving a non-cited violation of Technical Specification (TS) 3.8.4.5, in that Exelon did not verify certain battery connection resistances were within the TS limit. Specifically, Exelon did not verify the inter-tier connection resistances to be within the TS 3.8.4.5 limit of less than or equal to 40 micro-ohms every 12 months. The team determined that Exelon exempted the inter-tier connections from the testing requirement. In response, Exelon performed the required testing and identified a connection in the 2B battery that was greater than the TS limit. Exelon restored the degraded connection and initiated actions to revise the surveillance test procedures to incorporate all battery connections.

This issue was more than minor because it was associated with the procedure quality 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. The team determined the finding was of very low safety significance (Green) because it did not result in a loss of safety system function. Because the licensee had previously identified a similar inadequacy in the test procedure, the finding had a cross-cutting aspect in the area of Problem Identification and Resolution - Corrective Actions. (IMC 0305, aspect P.1(d)) (1R21.2.1.1)

Inspection Report# : [2008007](#) (*pdf*)

**G**

**Significance:** May 16, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

#### **B..5.b Phase 2 and 3 Mitigating Strategy**

This finding, affecting the Mitigating Systems Cornerstone, is related to mitigative measures developed to cope with losses of large areas of the plant; in response to Section B.5.b. of the February 25, 2002, Interim Compensatory Measures (ICM) Order (EA-02-026) and related NRC guidance. This finding has been designated as "Official Use Only - Security-Related Information;" therefore, the details of this finding are being withheld from public disclosure. This finding has a cross-cutting aspect in the area of Human Performance (Resources). [H.2(c)]. See inspection report for more details.

Inspection Report# : [2008006](#) (*pdf*)

**G**

**Significance:** Apr 11, 2008

Identified By: NRC

Item Type: FIN Finding

#### **Non-conservative Inputs Used in Design Calculations for Offsite Power Operability**

The team identified a finding of very low safety significance, in that Exelon failed to use appropriate inputs in design calculations as required by Exelon Procedure CC-AA-102 - Design Input and Configuration Change Impact Screening. The requirements of the procedure include ensuring performance requirements are the "maximum or minimum numerical values of specific design parameters," specifically, the "Maximum time to automatically initiate a system action." The team determined the response speed used by Exelon for the automatic load tap changer (LTC) controller and mechanism for the station's startup transformers, in the calculation to determine offsite power availability, was non-conservative. This assumption resulted in the grid voltage limit, used to assess technical specification offsite power supply operability, to be non-conservative. In response, Exelon performed preliminary calculations with revised LTC times, which showed that the offsite grid remained operable at the specified voltage limits. Exelon entered the issue into the corrective action program to re-perform the calculation and raise the allowed offsite grid voltage level.

This finding was more than minor because it is associated with 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. The team determined the finding was of very low safety significance (Green) because it was design deficiency that did not result in a loss of offsite power operability. Because the licensee had recently performed this calculation with the non-conservative inputs, the finding has a cross-cutting aspect in the area of Human Performance - Resources. (IMC 0305, aspect H.2.(c)) (1R21.2.1.4)

Inspection Report# : [2008007](#) (*pdf*)

**G**

**Significance:** Mar 31, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to Identify and Document Fire Brigade Deficiencies**

The inspectors identified a non-cited violation (NCV) of Technical Specification (TS) 5.4.1, which requires that written procedures be implemented covering the Fire Protection Program. The Fire Drill Performance procedure was inadequately implemented because numerous fire brigade deficiencies were not discussed at the post-drill critique or documented in the fire drill record. The licensee has entered this problem into their CAP for action.

This finding is more than minor because it affects the impairment or degradation of a fire protection feature, specifically, on the ability of the fire brigade to effectively carry out the defense-in-depth attribute of manual fire fighting and is associated with the Mitigating Systems Cornerstone and its respective attribute of human performance. This finding is of very low safety significance because the observed crew was only one of five crews of the site fire brigade team, the other crews had no known problems, and the overall condition of the fire detection and suppression systems had been satisfactory. The finding has a cross-cutting aspect in the area of Problem Identification and Resolution because Peach Bottom Atomic Power Station personnel did not properly identify and assess deficiencies with the fire brigade's performance. (IMC 0305, aspect P.3 (a)) (Section 1R05.2).

Inspection Report# : [2008002](#) (*pdf*)



**Significance:** Dec 31, 2007

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to Include Reactor Building Drain System Into the Scope of the Maintenance Rule Program**

A Green non-cited violation (NCV) of 10 CFR 50.65, "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," was identified for PBAPS's failure to include the reactor building equipment and floor drain plugs in the scope of the Maintenance Rule (MR) program and, therefore, the station did not recognize that appropriate preventative maintenance was not being performed. PBAPS entered this issue into the corrective action program and took action to assess the scoping of the reactor building floor and equipment drain systems into the preventive maintenance program.

The inspectors determined that this finding was more than minor because it was associated with the Mitigating Systems Cornerstone attribute of protection against external factors, and impacted the cornerstone objective of ensuring the availability of systems that respond to initiating events to prevent undesirable consequences. The inspectors determined that this finding is of very low safety significance because the condition was not a design or qualification deficiency confirmed not to result in a loss of operability, did not represent a loss of system safety function, did not represent an actual loss of safety function of a single train for greater than its TS allowed outage time, did not represent an actual loss of one or more risk-significant non-TS trains of equipment for greater than 24 hours, and did not screen as potentially risk-significant due to seismic, flooding, or severe weather. The inspectors also determined that this finding had a cross-cutting aspect in the area of problem identification and resolution (PI&R) because the licensee's procedure did not appropriately contain lessons learned from a similar event that had occurred in February 2007 (IMC 0305, P.2(b)).

Inspection Report# : [2007005](#) (*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

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**Significance:** May 16, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

### **B.5.b Phase 2 and 3 Mitigating Strategy**

This finding, affecting the Barrier Integrity Cornerstone, is related to mitigative measures developed to cope with losses of large areas of the plant; in response to Section B.5.b. of the February 25, 2002, Interim Compensatory Measures (ICM) Order (EA-02-026) and related NRC guidance. This finding has been designated as "Official Use Only - Security-Related Information;" therefore, the details of this finding are being withheld from public disclosure. This finding has a cross-cutting aspect in the area of Human Performance (Resources). [H.2(c)]. See inspection report for more details.

Inspection Report# : [2008006](#) (*pdf*)

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**Significance:** May 16, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

### **B.5.b Phase 2 and 3 Mitigating Strategy**

This finding, affecting the Barrier Integrity Cornerstone, is related to mitigative measures developed to cope with losses of large areas of the plant; in response to Section B.5.b. of the February 25, 2002, Interim Compensatory Measures (ICM) Order (EA-02-026) and related NRC guidance. This finding has been designated as "Official Use Only - Security-Related Information;" therefore, the details of this finding are being withheld from public disclosure. This finding has a cross-cutting aspect in the area of Human Performance (Resources). [H.2(c)]. See inspection report for more details.

Inspection Report# : [2008006](#) (*pdf*)

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## Emergency Preparedness

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**Significance:** Apr 30, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

### **Failure of the Peach Bottom Dose Assessment Program to Meet the Requirements of 10 CFR 50.47(b)(9)**

A NRC-identified non-cited violation (NCV) of 10 CFR 50.47(b)(9) and 10 CFR Part 50, Appendix E, Section IV.B, was identified for failure of the licensee's dose assessment program to provide for the means for continually assessing the impact of the release of radioactive materials. The licensee's procedures limited the use of the dose assessment procedure and program to only those conditions in which the fuel clad barrier was considered lost or potentially lost. The licensee entered the issue into their corrective action program and immediately corrected their procedures.

This finding is greater than minor because it is associated with the Emergency Response Organization Performance attribute and affected the objective of the Emergency Preparedness Cornerstone to ensure 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. In accordance with the Emergency Preparedness Significance Determination Process, this finding is of very low safety significance because licensee expectations and training have, despite the procedural limitations, resulted in licensee personnel performing dose assessments across the full range of reactor events, and the procedure deficiencies did not degrade the risk significant planning standard, nor did they adversely affect the outcome of protecting the health and safety of the public.

## Occupational Radiation Safety

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## Public Radiation Safety

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**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

Last modified : November 26, 2008