

# Peach Bottom 2

## 2Q/2007 Plant Inspection Findings

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### Initiating Events

**Significance:**  Sep 30, 2006

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

#### **Failure to Implement Procedures by Performing Equipment Manipulations Without Instructions**

A self-revealing non-cited violation of Technical Specification (TS) 5.4.1.a, "Procedures," occurred when, during a pre-job walk down, a senior reactor operator (SRO) inappropriately operated an instrument valve without a procedure. This inappropriate valve manipulation resulted in a half Group 1 primary containment isolation logic signal. PBAPS has entered this issue into their corrective action program (CAP) for resolution.

This finding is greater than minor because it is associated with the Initiating Events Cornerstone attribute of human performance and affects the cornerstone objective of limiting the likelihood of those events that upset plant stability and challenge critical safety functions during power operations. Inappropriate operation of the instrument valve increased the likelihood of the main steam isolation valve's (MSIV) closing, and a reactor scram with loss of normal heat removal. The finding was of very low safety significance because it did not contribute to both the likelihood of a reactor scram and the likelihood that mitigation equipment or functions would not be available.

A contributing cause of the finding has a cross-cutting aspect in the area of human performance work practices because operations personnel did not follow procedures when manipulating a main steam pressure switch instrument vent valve without the use of procedures. (IMC 0305 aspect H.4(b)). (Section 4OA3).

Inspection Report# : [2006004](#) (*pdf*)

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### Mitigating Systems

**Significance:**  Jun 30, 2007

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

#### **Missed Procedure Step Resulted in Unplanned Overloading of the E-3 EDG**

A self-revealing NCV of Technical Specification (TS) 5.4.1, was identified when operators inadequately implemented a surveillance procedure by missing a procedure step. The missed step placed the E-3 emergency diesel generator (EDG) in the isochronous mode of operation while it was synchronized to off-site power and resulted in an unexpected over-loading of the E-3 EDG.

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 availability of the E-3 EDG to respond to initiating events. This finding is of very low safety significance (Green) because all other EDGs remained operable and the actual loss of safety function of the E-3 EDG was less than the TS allowed outage time of seven days. This finding had a cross-cutting aspect in the area of human performance (work practices component) because PBAPS personnel did not follow procedure steps when transferring the E-3 EDG to the isochronous load control mode with the E-3 EDG synchronized to the off-site power source (IMC 0305 aspect H.4(b)). (Section 4OA3.2)

Inspection Report# : [2007003](#) (*pdf*)

**G****Significance:** Jun 30, 2007

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

**Procedural Compliance Issues Result in Damage to the Diesel Driven Fire Pump**

A self-revealing NCV of TS 5.4.1, was identified when operators manipulated a diesel-driven fire pump (DDFP) cooling water valve outside of procedure guidance. The improper manipulation led to misalignment of the DDFP cooling water that subsequently damaged the engine during operations without cooling water.

The failure to use a procedure for cleaning and restoring the DDFP cooling water strainer was a more than minor finding because it was associated with the degradation of a fire protection feature, in that, the DDFP was rendered inoperable by damage to the engine. Using the Fire Protection SDP, the finding was determined to be of very low safety significance due to the motor-driven fire pump remaining operable during the five days the DDFP was inoperable, and the small number of fire scenarios which would impact the power supply to the motor-driven fire pump. This finding had a cross-cutting aspect in the area of human performance (resources component) because procedure ST-O-37D-340-2 did not provide complete and accurate instructions for cleaning the DDFP cooling water strainer (IMC 0305 aspect H.2(c)). (Section 4OA3.3)

Inspection Report# : [2007003](#) (*pdf*)**G****Significance:** May 18, 2007

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to Correct a 2006 NRC-Identified NCV in a Timely Manner - Quarterly Surveillance Test with Non-Conservative Acceptance Criteria for the HPCI Pump**

The NRC identified a Green NCV of 10CFR50, Appendix B, Criterion XVI, "Corrective Actions," related to the failure to correct the March 2006 deficiency identified in NCV 05000277,278/2006009-01, related to less than adequate acceptance criteria in a quarterly surveillance test procedure for the HPCI pumps. The team identified that Exelon had not revised the procedure and had continued to conduct the surveillance test, thirteen times since the issue was discovered by the NRC. Exelon performed an evaluation of the recent HPCI pump surveillance test results and concluded that the pumps currently met the design basis requirements, and had remained operable.

The performance deficiency has a cross-cutting aspect in the area of Problem Identification and Resolution, Corrective Action Program, because Exelon failed to take prompt corrective actions to address a safety issue in a timely manner, commensurate with safety significance and complexity. [P.1.(d)]

The finding is more than minor because it affects the procedure quality attribute associated with the Mitigating Systems Cornerstone objective to ensure the capability of HPCI, a mitigating system. The finding is of very low safety significance because the finding was not a design or qualification deficiency, did not represent a loss of system safety function, and was not risk significant due to external initiating events. (Section 4OA2.a(3)(a))

Inspection Report# : [2007006](#) (*pdf*)**G****Significance:** May 18, 2007

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to Correct a 2005 NRC-Identified NCV in a Timely Manner - Failure to Follow a Site Procedure Resulted in a Delayed Operability Determination**

The NRC identified a Green NCV of 10CFR50, Appendix B, Criterion XVI, "Corrective Action," for failure to correct a condition adverse to quality for approximately 22 months, associated with Class 1, 2, and 3 pressure boundary leakage. Specifically, NCV 05000277/2005003-02, issued in July 2005, documented a delayed operability determination due to the station not promptly evaluating a steam leak on a HPCI valve, in accordance with the site procedures. A contributing cause was the inconsistent guidance provided by the Technical Requirements Manual (TRM) and the Operability Determination procedure. The TRM allowed 72 hours to evaluate the structural integrity of the boundary, while the procedure required that the system be declared inoperable immediately. In July 2005, the

licensee initiated a condition report to evaluate the difference, and determined that one of the corrective actions was to revise the TRM to be consistent with the procedure. During this inspection, the team determined the TRM had not been revised.

The performance deficiency has a cross-cutting aspect in the area of Problem Identification and Resolution, Corrective Action Program, because Exelon did not take appropriate corrective actions to address a safety issue in a timely manner, commensurate with its safety significance and complexity. [P.1(d)]

The finding is more than minor because it affects the procedure quality attribute associated with the Mitigating Systems Cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events; in that, operators were provided with conflicting guidance for response to Class 1, 2, and 3 component pressure boundary leaks. The finding is of very low safety significance because the finding was not a design or qualification deficiency, did not represent a loss of system safety function, and was not risk significant due to external initiating events. (Section 40A2.a(3)(b))

Inspection Report# : [2007006](#) (*pdf*)

**Significance:**  Mar 31, 2007

Identified By: NRC

Item Type: NCV NonCited Violation

#### **Non-Technical Specifications Position Incorrectly Credited for Active License Maintenance**

The inspectors identified a NCV of 10 CFR 55.53(e), "Conditions of Licenses," for incorrectly credited individuals with actively performing the functions of a senior operator (SO) while that individual was staffing a position that was not specified in PBAPS's Technical Specifications (TSs). Specifically, PBAPS incorrectly credited individuals with actively performing the functions of a SO while that individual was staffing the work execution control supervisor (WECS) position. The WECS position is not required by PBAPS's TSs. Corrective actions included issuing a cease and desist order to licensed operators to stop crediting time in the WECS position as active time for maintaining their licenses.

The finding is greater than minor because if left uncorrected, it would become a more safety significant safety concern. Specifically, although the WECS performs activities important to safety, the active time credited was not in a position defined by TSs that involved directing the licensed activities of licensed operators. The finding was related to operator license conditions and was determined to be of very low safety significance (Green) because more than 20 percent of the records reviewed had deficiencies. (Section 1R11.1)

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

**Significance:**  Dec 31, 2006

Identified By: NRC

Item Type: NCV NonCited Violation

#### **Failure to Follow Operability Determinations Procedure**

The inspectors identified a non-cited violation of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures and Drawings," for a failure to follow administrative procedures for conducting operability evaluations of nonconforming equipment which resulted in an operability determination (OD) that did not demonstrate a reasonable expectation of standby liquid control (SLC) system operability and reliability. Specifically, PBAPS personnel did not address issues regarding pressure pulsations to SLC systems with degraded relief valves.

This finding is more than minor because it is associated with the equipment performance attribute of the Mitigating Systems cornerstone and affects the cornerstone objective of ensuring the reliability of systems that respond to initiating events. The finding is related to an OD for a qualification deficiency and the OD did not confirm a reasonable expectation of operability per "Part 9900, Technical Guidance, Operability Determination Process for Operability and Functional Assessment." However, the finding was determined to be of very low safety significance (Green), based on a Phase 1 screening in Appendix A of IMC 0609, "Determining the Significance of Reactor Inspection Findings for At-Power Situations," because it did not: (1) represent a loss of system safety function; (2) did not represent an actual loss of safety function of a single train; (3) the finding did not result in a loss of safety function

for risk significant non-Technical Specification trains of equipment; and, (4) did not screen as potentially risk significant due to external events.

This finding has a cross-cutting aspect in the area of human performance because PBAPS personnel did not use conservative assumptions in the operability determination process decision making. This finding was entered into the PBAPS's CAP. (IMC 0305 aspect H.1(b)) (Section 1R15)

This NCV was discussed in IR 2007006, Section 4OA2.a(2), dated June 26, 2007.

Inspection Report# : [2006005](#) (*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*)

**G****Significance:** Mar 31, 2007

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

**Failure to Develop and Implement HPCI Surveillance Testing in a Manner Consistent with Vendor Specified Test Instructions**

A self-revealing NCV of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was identified for inadequate surveillance procedure development that changed the use of a common high pressure coolant injection (HPCI)\reactor core isolation cooling (RCIC) line to the torus from its original design purpose as a partial flow flush line to a full flow test line. The cracked piping to the torus was replaced and this issue was placed into the CAP for resolution.

The finding is more than minor because it is associated with the design control attribute of the Barrier Integrity Cornerstone and affected the objective to provide reasonable assurance that physical design barriers (primary containment) protect the public from radio nuclide releases caused by accidents or events. The SDP Phase 1 screening identified that a Phase 2 analysis was needed because the finding affected two Cornerstones, Mitigating Systems and Barrier Integrity. However, the senior reactor analysts (SRAs) conducted a Phase 3 evaluation because the issue was too complex to evaluate using the Plant Specific Phase 2 Notebook. For events (large or medium break loss-of-coolant accidents ) with the greatest potential consequence, the SRAs determined that the probability of a large early release remained very low because existing emergency operating procedures direct reactor operators (ROs) to maintain torus level and prevent an increase in core damage frequency by injecting high pressure service water (HPSW) through the residual heat removal (RHR) system. Specifically, the Phase 3 SDP evaluation concluded that this finding was of very low safety significance (Green), represented a very low change in delta core damage frequency (CDF) (low to mid E-8), and a very low change of high E-8 in large early release frequency (LERF) (delta LERF). (Section 4OA3.2)

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

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## Emergency Preparedness

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## Occupational Radiation Safety

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## Public Radiation Safety

**G****Significance:** Mar 31, 2007

Identified By: NRC

Item Type: NCV NonCited Violation

**Exelon Did Not Establish and Implement Adequate Procedures for Quality Assurance of Effluent Monitoring as Required by Technical Specification 5.4.1.**

The inspectors identified a NCV of TS 5.4.1.C for inadequately establishing and maintaining procedures for effluent monitoring. Specifically, the quality assurance (QA) required procedures for effluent monitoring were inadequate to detect non-representative sampling of the 'B' train of the main stack particulate effluents sampling system. This issue was placed in the CAP for resolution.

This finding is greater than minor because it affected the Public Radiation Safety Cornerstone objective to ensure adequate protection of public health and safety. This finding was determined to be of very low safety significance because: 1) it was not a radioactive material control issue, 2) it did involve the effluent release program, 3) there was an impaired ability to assess dose, and 4) public radiation doses did not exceed 10 CFR 50, Appendix I values.

The finding has a cross-cutting aspect in the human performance area, resources component because the procedures and training of personnel were inadequate to detect the sample bypass. (IMC 0305 aspct H.2(c)) Section 2PS1)

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