

Peach Bottom 2

3Q/2005 Plant Inspection Findings

Initiating Events

Significance: G Sep 30, 2005

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

Inadequate Procedure Adherence During Surveillance Testing of the Unit 2 Main Turbine Mechanical Trip Valve

A self-revealing non-cited violation (NCV) of Technical Specification (TS) 5.4.1.a was identified because a reactor trip resulted when operators did not implement established procedure adherence standards during recovery from an aborted routine test. The licensee entered the deficiency with procedure adherence into their corrective action program for resolution. A contributing cause of the finding is related to the cross-cutting element of human performance, in that operators did not perform the appropriate portions of the restoration section, did not initiate a temporary procedure change and did not seek technical support after receiving an unexpected result.

The finding is greater than minor because it resulted in a reactor trip and is associated with the Initiating Events Cornerstone and the respective attribute of human performance. Although the finding contributed to a reactor trip, the inspectors determined that it was of very low safety significance (Green) because the likelihood that mitigation equipment or functions were not available did not increase.

Inspection Report# : [2005004\(pdf\)](#)

Significance: G Mar 31, 2005

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Scope Outer Intake Structure Trash Racks Into The Maintenance Rule Program Based on Site Specific Operating Experience

The inspectors identified a very low safety significance (Green), NCV of 10 CFR 50.65, paragraph b(2)(iii). Specifically, Peach Bottom Atomic Power Station (PBAPS) did not scope the outer intake structure trash racks into the Maintenance Rule when past station events showed elevated levels of debris blockage on the trash racks would upset plant stability and increased the likelihood of a scram on both units due to loss of main condenser vacuum.

This finding is greater than minor because it was associated with the protection against external factors attribute of the Initiating Events cornerstone and affected the cornerstone objective of limiting the likelihood of those events that upset plant stability during power operations. The finding is of very low safety significance (Green) because it did not affect both the likelihood of a plant transient and unavailability of mitigation equipment or functions. Specifically, PBAPS personnel were able to recover intake basin level during the January 2004 and January 2005 icing events prior to a scram being procedurally required.

A contributing cause to the failure is related to the identification subcategory of the Problem Identification and Resolution cross-cutting area because PBAPS did not identify the requirement to scope the intake structure trash racks into the Maintenance Rule.

Inspection Report# : [2005002\(pdf\)](#)

Significance: N/A Dec 03, 2004

Identified By: Self-Revealing

Item Type: FIN Finding

Supplemental Inspection of Exelon's Evaluation of the White PI Associated with the Peach Bottom Unit 2 Scrams

Overall, the inspectors concluded that Exelon adequately addressed the problem identification attributes of IP 95001. Regarding the problem resolution attributes of IP 95001, the inspector did not identify any common root causes for the five scrams; however, there were some common contributing causes including: not entering or resolving equipment failures in the corrective action process; not implementing timely corrective measures; not appropriately assessing potential safety risk associated with equipment anomalies and problems. Some examples of these problems were discussed in the licensee's common cause analysis and the inspector identified additional examples that are discussed in the body of this report.

The inspector independently evaluated the cause analysis for each of the five scrams and identified an overall weakness in the area of problem resolution. Specifically, Exelon's cause evaluations for the scrams were not always thorough in that some of the conclusions were not supported by available information and two of the root cause evaluations did not identify the underlying causes. In most cases there was little evidence of the use of credited evaluation methods and some conclusions did not appear to be supported by these evaluation methods. Additionally, the extent of condition and cause reviews were not always appropriately focused and there were problems with the adequacy and implementation of some corrective actions. Nonetheless, the inspector concluded that although Exelon missed some opportunities to identify the underlying causes of events and that some of the root cause analysis were not thorough, the evaluations did identify and the licensee did implement corrective actions sufficient to prevent recurrence of similar events. This conclusion is also supported by the fact that there were no additional

scrams as of the conclusion of this inspection. We plan to review your actions to address these weaknesses during subsequent baseline inspections such as our problem identification and resolution (PI&R) biennial team inspection and PI&R sample inspections.

Inspection Report# : [2004011\(pdf\)](#)

Mitigating Systems

Significance:  Apr 21, 2005

Identified By: NRC

Item Type: NCV NonCited Violation

Delayed Inoperability Declaration When Activities Affecting Quality Were Not Accomplished in Accordance with Site Procedures.

Green. A self-revealing (Green) NCV of 10 CFR 50 Appendix B, 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was identified because the PBAPS staff did not accomplish activities affecting quality in accordance with the prescribed station procedure, LS-AA-105, "Operability Determinations." Specifically, procedure instructions to declare a component inoperable upon discovery of leakage from a Class 2 component pressure boundary was not accomplished in a timely manner.

This finding is greater than minor because it is associated with the Equipment Performance attributes of reliability and availability and the finding affected the Mitigating Systems cornerstone objectives to ensure the availability, reliability, and capability of systems to respond to initiating events to prevent undesirable consequences. Although the finding represented an actual loss of safety function of a single train system, a Phase 2 SDP analysis determined that this find was of very low safety significance because the Unit 2 HPCI system was unavailable for less than three days as a result of this issue.

One contributing cause to the failure was related to the identification subcategory of the Problem Identification and Resolution cross-cutting area because PBAPS did not identify and document timely in the issue reporting system that the steam leak was a through-wall leak and not a packing leak as originally suspected (IR 348745). A second contributing cause for the delay in declaring the 2-MO-14 valve and the Unit 2 HPCI system inoperable was related to the resources subcategory in the Human Performance cross-cutting area because PBAPS personnel sufficiently knowledgeable to address ASME Code pressure boundary leakage were not available and because the technical requirements manual specifications were non-conservative relative to established regulatory standards and corporate administrative procedure requirements addressing operational leakage (Section 1R15)

Inspection Report# : [2005003\(pdf\)](#)

Significance:  Mar 31, 2005

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

Failure to Recognize the Loss of Function of the Station Blackout Transformer Tap Changer and the Impact on the SBO Power Supply to the Emergency Buses following a SBO

A self-revealing Green NCV of 10 CFR 50.63, "Loss of All Alternating Current Power," was identified for PBAPS's inadequate station blackout coping analysis for the configuration that existed from September 14 until December 1, 2004. Lack of design documentation and administrative controls resulted in inadequate configuration control of the SBO system that would have de-energized the power feed to its control power circuit following a station blackout event.

This finding is greater than minor because it was associated with the configuration control attribute of the Mitigating Systems cornerstone and affected the cornerstone objective of ensuring the availability, reliability, and capability of safe shutdown systems to respond to a station blackout event. The finding is of very low safety significance (Green) because the issue was a design deficiency of a defense in depth support system to long-term heat removal that was subsequently verified not to represent an actual loss of safety function.

A contributing cause for the inadequate configuration control was related to the organization subcategory in the Human Performance cross-cutting area, in that procedure and design documents did not support maintaining SBO system operability.

Inspection Report# : [2005002\(pdf\)](#)

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\(pdf\)](#)

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\(pdf\)](#)

Barrier Integrity

Emergency Preparedness

Significance:  Sep 30, 2005

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Maintain Respiratory Equipment Qualifications Current

The inspectors identified an NCV of 10 CFR 50.47(b)(10) because emergency workers required to use respiratory equipment had not maintained their qualifications. The licensee entered the deficiency of not having at least half the operations support center respirator qualified into the corrective action program.

This finding is greater than minor because it affects the readiness attribute of the Emergency Preparedness (EP) Cornerstone. Not maintaining respiratory qualifications current for emergency response organization personnel could impact the EP Cornerstone objective of ensuring that the licensee is capable of implementing adequate measures to protect the public health and safety during a radiological emergency. This finding was determined to be of very low safety significance because it did not constitute a failure to meet a risk significant planning standard.

Inspection Report# : [2005004\(pdf\)](#)

Occupational Radiation Safety

Significance:  Dec 31, 2004

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

Exelon Did Not Adhere to Radiation Protection Procedures for Control of Radioactive Material Within the Radiologically Controlled Area

A self-revealing non-cited violation of Technical Specification 5.4 associated with implementation of Regulatory Guide 1.33 procedures for control of radioactivity was identified. Specifically, positive control was not maintained of an unlabeled bucket containing elevated levels of residual radioactive materials on November 8, 2004. The material was unknowingly spilled in a non-contaminated area resulting in personnel

and area contamination. Exelon conducted a clean-up of the contamination, evaluated potential personnel exposures, reviewed extent of condition, and placed this issue into the corrective action program. No significant occupational dose was identified.

The finding was greater than minor because it affected the Occupational Radiation Safety cornerstone attributes of program and processes for exposure control and monitoring in that Exelon did not maintain control of radioactive materials to ensure adequate protection of worker health and safety from exposure to radioactive materials. This finding was determined to be of very low safety significance (Green), in that: 1) it did not involve an ALARA finding, 2) it did not involve an overexposure, 3) there was no substantial potential of an overexposure and, 4) the ability to assess dose was not compromised.

Inspection Report# : [2004005\(pdf\)](#)

Public Radiation Safety

Significance:  Sep 30, 2005

Identified By: NRC

Item Type: NCV NonCited Violation

The Licensee Did Not Implement Certain Aspects of its Offsite Dose Calculation Manual Associated with Airborne Radioactivity Sampling and Broad Leaf Vegetation Sampling

The inspectors identified a NCV of TS 5.5.1 for inadequate implementation of provisions in the Offsite Dose Calculation Manual (ODCM). Specifically, one of three airborne radioiodine and particulate samplers, required to be in one of the three highest annual average ground level D/Q areas, in accordance with the ODCM, was not sampling correctly. Alternatively, Exelon did not conduct vegetation or milk sampling at the nearest offsite garden of highest calculated annual average ground level D/Q in accordance with the ODCM. The finding was entered into the licensee's corrective action program.

This finding is greater than minor because it affects the Public Radiation Safety Cornerstone objective to ensure adequate protection of public health and safety from exposure to radioactive materials released into the public domain. Specifically, these conditions resulted in an impaired ability to assess environmental impact. This finding was determined to be of very low safety significance because calculations of public dose commitments did not identify any significant public dose or environment impacts.

Inspection Report# : [2005004\(pdf\)](#)

Physical Protection

[Physical Protection](#) information not publicly available.

Miscellaneous

Significance: N/A Jul 29, 2005

Identified By: NRC

Item Type: FIN Finding

Identification and Resolution of Problems

The team determined that the corrective action program at Peach Bottom was adequate. The team determined that Exelon was effective at identifying problems and entering them into the corrective action program (CAP). Once entered into the system, the items were generally screened and prioritized in a timely manner using established criteria. Items entered into the CAP were properly evaluated commensurate with their safety significance. The causal evaluations for equipment issues and events reasonably identified the causes of the problem and developed appropriate corrective actions. However, for some of the issues affecting human performance, the evaluations were not of sufficient depth to identify the base root cause; therefore, the corrective actions did not prevent further human performance errors of a similar nature. In two cases, operability determinations did not consider all the applicable information to support the final conclusion that the equipment was operable. Corrective actions were typically implemented in a timely manner, but the team found that in one case, corrective actions were not adequate to correct the problem, and did not prevent recurrence. Many of the problems the team reviewed were long standing and had been previously identified by internal and external organizations.

Inspection Report# : [2005006\(pdf\)](#)

Last modified : November 30, 2005