

# Susquehanna 2

## 3Q/2006 Plant Inspection Findings

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### Initiating Events

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### Mitigating Systems

**Significance:**  Sep 30, 2006

Identified By: NRC

Item Type: NCV NonCited Violation

#### **Inadequate Risk Assessment**

The inspectors identified a non-cited violation (NCV) of 10 CFR 50.65 (a)(4), for an inadequate risk assessment. PPL did not correctly assess the risk associated with planned maintenance activities on the "A" emergency service water pump and the diesel fire pump on August 25, 2006. PPL entered this deficiency into their corrective action program and revised the risk assessment to correctly assess plant risk.

The finding is greater than minor because it was similar to Example 7.e in IMC 0612, Appendix E, "Examples of Minor Issues," and because PPL underestimated the cumulative increase in core damage probability for ongoing planned maintenance which when correctly assessed placed Unit 2 into a higher risk category. The finding was determined to be of very low safety significance (Green) using Appendix K of Inspection Manual Chapter 0609, "Maintenance Risk Assessment and Risk Management Significance Determination Process," using Flowchart 1, because the incremental core damage probability deficit was determined to be less than 1.0 E-6 and the incremental large early release probability deficit was determined to be less than 1.0 E-7. The finding has a cross-cutting aspect in the area of human performance because PPL's planned work activities did not effectively incorporate risk insights. (Section 1R13)

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

**Significance:**  Jun 30, 2006

Identified By: NRC

Item Type: NCV NonCited Violation

#### **Failure to Identify Material Degradation Which Resulted in a Failure of the "C" ESW Pump Breaker**

A self-revealing non-cited violation of 10 CFR 50 Appendix B, Criterion XVI, Corrective Action was identified because PPL failed to adequately evaluate and correct degraded material in the "C" Emergency Service Water (ESW) pump breaker that caused a failure on April 5, 2006. PPL's corrective action for this failure included replacing the breaker with a new style breaker.

The finding was more than minor because the condition affected the Equipment Performance attribute of the Mitigating Systems Cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events. This 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, did not represent an actual loss of safety function of a single train for greater than its Technical Specification Allowed Outage Time, did not represent an actual loss of safety function of one or more non-Technical Specification trains of equipment designated as risk significant per 10 CFR 50.65, for greater than 24 hours, and did not screen as potentially risk significant due to external events. This finding has a PI&R (evaluation) cross-cutting aspect because PPL did not perform a thorough evaluation of the problem so that the resolution addressed causes and extent of condition as necessary to prevent the subsequent failure of the 4Kv breaker due to material degradation.

Inspection Report# : [2006003\(pdf\)](#)

**Significance:**  Jun 30, 2006

Identified By: NRC

Item Type: NCV NonCited Violation

#### **Ineffective Corrective Actions to Assure Training and Qualification of Workers as Required by 10 CFR 50**

**Appendix B, Criterion XVI**

The inspectors identified a non-cited violation of 10 CFR 50 Appendix B, Criterion XVI, "Corrective Action" because PPL did not correct long standing issues related to worker qualifications. This resulted in unqualified workers performing tasks important to safety as described by the Quality Assurance (QA) program. Inspectors observed that over a four year period, PPL took action to reconcile the qualification of the individuals involved in each event. PPL has developed a plan to address this issue and an effectiveness review of the implemented actions is scheduled for November 2006.

This finding is more than minor because if left uncorrected, the tasks being performed by unqualified workers will become a more significant safety concern. An unqualified worker calibrating safety-related equipment affected the Equipment Performance attribute of the mitigating systems cornerstone and unqualified fire brigade members affect the Protection Against External Factors attribute of the same cornerstone. The finding affects the cornerstone objective of ensuring the availability and reliability of systems that respond to initiating events. This finding is of very low safety significance because the work performed by the unqualified individual performing the recirculation flow calibration did not result in a loss of system safety function, and did not represent an actual loss of safety function of any single train of equipment. The Significance Determination Process (SDP), Appendix F, does not specifically address fire brigade issues and allows for management discretion to determine issue significance. This performance issue was reviewed by NRC management and is determined to be a finding of very low safety significance.

Inspection Report# : [2006003\(pdf\)](#)

**Significance:**  Mar 31, 2006

Identified By: NRC

Item Type: FIN Finding

**Incomplete Corrective Actions contribute to CRD Flow control failure.**

The inspectors identified a finding for not implementing Corrective Action procedure, NDAP-QA-702, which requires all actions to correct and prevent recurrence be completed before the closure of a condition report. Following electrolytic capacitor failures at Susquehanna corrective actions were not completed which directly contributed to loss of control rod drive hydraulic flow on February 22, 2006. PPL has entered this issue into their corrective action program.

This finding is greater than minor because it is associated with the equipment performance attribute of the Mitigating Systems Cornerstone. The finding negatively affected the cornerstone objective to ensure the availability, reliability and capability of systems that respond to initiating events to prevent undesirable consequences because the failure resulted in increased scram times on 20 control rods. The finding was determined to be of very low significance (Green) since the finding does not represent a loss of safety function and is not potentially risk significant due to external events. The cause of the problem is related to the Problem Identification and Resolution cross-cutting area. (Section 1R12)

Inspection Report# : [2006002\(pdf\)](#)

**Significance:**  Feb 10, 2006

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to Identify Scaffolding that Affected the Safety-Related RHR Discharge Pressure Instrument Tubing Input to Automatic Depressurization System**

The inspectors identified a NCV of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," for failure to identify, for greater than a year, that a scaffold was constructed contacting a safety-related instrument sensing line which provided an input to the automatic depressurization system (ADS). The affected system was declared inoperable until the scaffold was removed. The licensee took prompt corrective action to remove the subject scaffold and entered the issue into the corrective action program. The licensee conducted an extensive plant walk-down that identified other scaffolds which were not properly constructed. The licensee subsequently determined that ADS was operable but degraded.

This finding was greater than minor because it is associated with the equipment performance attribute of the Mitigating Systems Cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of the ADS system that responds to initiating events to prevent undesirable consequences. The inspectors noted the issue was also greater than minor, based on a review of NRC Inspection Manual Chapter (IMC) 0612, Appendix E, "Examples of Minor Issues and Cross-Cutting Aspects," Example 4.a - the issue is not minor if later evaluation determined that safety-related equipment was adversely affected. The finding was determined to be of very low safety significance (Green) because the performance deficiency did not represent a design deficiency and did not result in the loss of a safety function. The finding had a cross-cutting aspect related to the area of Problem Identification and Resolution; specifically, station personnel did not identify that the incorrect construction of the scaffolding was a condition adverse to quality. (Section 4OA2.1.b.(1))

Inspection Report# : [2006006\(pdf\)](#)

**Significance:**  Dec 31, 2005

Identified By: NRC

Item Type: NCV NonCited Violation

### **Inadequate Foreign Material Exclusion Procedural Instructions Associated with EDG Work**

A Green, self-revealing non-cited violation (NCV) of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was identified because PPL failed to provide adequate procedural instructions associated with foreign material controls when working in emergency diesel generator (EDG) bays or work areas. As a result, foreign material caused a failure of the "C" EDG turbocharger during its biennial 24 hour endurance run and the associated inoperability of the "C" EDG. PPL entered this issue for resolution in their corrective action program and have incorporated Foreign Material Exclusion (FME) controls for all EDG work areas in station procedures.

The finding is more than minor because it is associated with the Mitigating System cornerstone attribute of equipment reliability and availability and affected the cornerstone's objective of ensuring that safety-related equipment is capable of responding to initiating events to prevent undesirable consequences. This finding was considered to have very low safety significance (Green) using Phase 1 of the significance determination process because it did not result in a actual loss of safety function and it was not potentially risk-significant due to external events.

Inspection Report# : [2005005\(pdf\)](#)

**Significance:**  Dec 02, 2005

Identified By: NRC

Item Type: FIN Finding

### **Fire Brigade Drill Program Not Consistent With Regulatory Guidance and Industry Standards**

The inspectors identified a Green finding regarding the implementation of the fire brigade drill program. The finding involves practices that are not consistent with regulatory guidance (Branch Technical Position (BTP) SPLB 9.5.1 and Regulatory Guide (RG) 1.189) and industry standards for the performance and crediting of fire brigade drills. Specifically, the program does not result in the five member, on-shift, fire brigade practicing as a team during drills and consequently does not allow for an effective assessment of the brigade's performance during drills. In addition, two examples were identified where the licensee failed to implement specific drill program requirements. The licensee has entered these issues into their corrective action program for review and resolution.

The finding is more than minor because it affected the Protection Against External Factors attribute of the Mitigating Systems Cornerstone, in that it impacted manual fire suppression (fire brigade) capability; and affected the cornerstone objective of ensuring the availability of systems that respond to initiating events. This finding has been reviewed by NRC management and is determined to be a finding of very low safety significance (Green). (Section 1R05.04)

Inspection Report# : [2005009\(pdf\)](#)

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## **Barrier Integrity**

**Significance:**  Jun 30, 2006

Identified By: NRC

Item Type: NCV NonCited Violation

### **Inadequate Procedure Results in Elevated Reactor Coolant System Leakage**

A self-revealing non-cited violation of 10 CFR 50 Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was identified for failure to have adequate work instructions prescribed in a maintenance procedure, which resulted in a reactor coolant system mechanical joint leak. PPL entered this condition into the corrective action program and properly reassembled the mechanical joint during the Unit 2 Spring maintenance outage.

This finding is greater than minor because the condition affected the Procedure Quality attribute of the Barrier Integrity Cornerstone and affected the cornerstone objective of providing reasonable assurance that physical design barriers (reactor coolant system) protect the public from radionuclide releases caused by accidents or events. The finding was determined to be of very low safety significance because the reactor coolant system leak would not have resulted in exceeding the Technical Specification limit for identified leakage, nor would it have likely effect other mitigation systems resulting in a

total loss of their safety function.

Inspection Report# : [2006003\(pdf\)](#)

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## Emergency Preparedness

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## Occupational Radiation Safety

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## Public Radiation Safety

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## Physical Protection

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

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## Miscellaneous

**Significance:** N/A Feb 10, 2006

Identified By: NRC

Item Type: FIN Finding

### PI&R Inspection Summary

The team concluded that the implementation of the corrective action program (CAP) at Susquehanna was generally good. The team determined that Susquehanna was effective at identifying problems and entering them in the CAP. However, while the identification of equipment deficiencies was acceptable, the team identified one finding and several minor issues where there appeared to be an attitude of acceptance of deficiencies and abnormal conditions. Once entered into the system, the items were 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 reasonably identified the causes of the problems and developed appropriate corrective actions. The team noted a trend over the last two years of a lack of rigor with regard to operability evaluations. Corrective actions were typically implemented in a timely manner and appropriately addressed the root causes. However, the team identified one example where the corrective actions to prevent repetition for a NRC identified NCV were implemented in an ineffective manner constituting a minor violation. Licensee audits and self-assessments were generally adequate. The team also noted that the licensee's efforts to reduce human performance error rates were continuing. On the basis of interviews conducted during the inspection, the team concluded that workers at the site felt free to input safety concerns into the CAP.

Inspection Report# : [2006006\(pdf\)](#)

Last modified : December 21, 2006