

Susquehanna 1

3Q/2006 Plant Inspection Findings

Initiating Events

Significance:  Jun 30, 2006

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate Design Review of PRNMS Modification Resulted in a Reactor Scram

A self-revealing non-cited violation was identified for failure to comply with 10 CFR 50 Appendix B, Criterion III, Design Control. PPL did not correctly verify that the Power Range Neutron Monitoring System (PRNMS) modification would not adversely affect the design bases of the reactor protection system. This resulted in a Unit 1 reactor automatic shutdown (scram) on June 15, 2006, when the division II reactor protection system power supply was transferred to the alternate supply. PPL entered the issue into the corrective action program and installed a modification to prevent recurrence. The finding was more than minor because the condition affected the Design Control attribute of the Initiating Events Cornerstone and affected the cornerstone objective of limiting the likelihood of events that upset plant stability and challenge critical safety functions during power operations. The finding is of very low safety significance because all mitigating systems were available and responded appropriately to the reactor scram. This finding is also related to the human performance cross-cutting area because PPL did not ensure supervisory and management oversight of work activities, including contractors such that there would be no adverse system interface issues in the PRNMS design which supports nuclear safety.

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

Mitigating Systems

Significance:  Jun 30, 2006

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate Procedures Resulted in Motor Operated Valve Failures

A self-revealing non-cited violation was identified for failure to have adequate work instructions in accordance with 10 CFR 50 Appendix B, Criterion V, "Instructions, Procedures, and Drawings." This resulted in not identifying stem nut degradation prior to the failure of two Unit 1 residual heat removal (RHR) valves. PPL entered the issue into the corrective action program and has replaced the stem nuts on the two failed RHR valves, as well as other valves, that had degraded stem nuts.

The finding was more than minor because the condition affected the Procedure Quality attribute of the Mitigating Systems Cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The valves failed to stroke during the Spring 2006 refueling outage. The finding is of very low safety significance because the finding was determined to not require a quantitative assessment using Manual Chapter 0609, Appendix G, "Shutdown Operations Significant Determination Process."

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

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: NCV NonCited Violation

Equipment Hatch Plugs are not Watertight as Indicated in the FSAR

A self-revealing non-cited violation was identified for not complying with 10 CFR 50, Appendix B, Criterion III, "Design Control." PPL did not assure that the emergency core cooling system (ECCS) compartments were water tight as described in the Final Safety Analysis Report (FSAR). This resulted in water intrusion into two ECCS compartments simultaneously during an unexpected overflow of the reactor water cleanup backwash receiving tank on August 18, 2004. PPL entered this issue into the corrective action program, re-performed numerous internal flood analysis and concluded that the hatch plugs do not have to be leak tight. In addition, PPL sealed the gaps around the equipment hatch plugs.

This finding is greater than minor because it is associated with the Mitigating Systems Cornerstone of design control and affects the cornerstone's objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e. core damage). The water intrusion reduced the capability of the division II core spray system because the system auto start feature was manually disabled for approximately two hours. The inspectors performed a Phase 1 screening using IMC 0609, Appendix A, "Determining the Significance of Reactor Inspection Findings for At-Power Situations." The finding was determined to be of very low safety significance (Green) because this design deficiency did not result in a loss of function in accordance with Generic Letter 91-18.

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

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\(pdf\)](#)

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

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

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