

Susquehanna 1

2Q/2003 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance:  May 16, 2003

Identified By: NRC

Item Type: NCV NonCited Violation

RHR Soft Fill after LOOP

A non-cited violation of 10 CFR 50, Appendix B, Criterion V, was identified regarding inadequate procedural guidance for placing the residual heat removal system (RHR) suppression pool cooling in service during a condition of low RHR loop pressure. The finding was determined to be greater than minor because it affected the mitigating systems and barrier integrity objectives of the suppression pool cooling (SPC) function. The procedural method could have challenged the integrity of the affected RHR loop components by creating the potential for a significant water hammer condition. The finding was determined to be of very low safety significance through a SDP, Phase 3 analysis because only one train of RHR was in suppression pool cooling for a limited time period over a year, and the remaining train would be unaffected. This issue also covers Barrier Integrity

Inspection Report# : [2003006\(pdf\)](#)

Significance:  May 16, 2003

Identified By: NRC

Item Type: NCV NonCited Violation

RHR Hard Card vs Procedural Difference

A non-cited violation of 10 CFR 50, Appendix B, Criterion V, was identified regarding inadequate procedural guidance for operation of RHR in the suppression pool cooling (SPC) mode with a low pressure coolant injection (LPCI) signal present. The finding was determined to be greater than minor because it affected the mitigating systems and barrier integrity objectives of the suppression pool cooling function, in that the hard card, a procedure attachment that summarizes the detailed steps of the procedure, associated with the SPC procedure contained steps which would have resulted in an incorrect valve alignment resulting in no flow through the RHR heat exchangers. The finding was determined to be of very low safety significance through a SDP, Phase 3 analysis because the operating procedure was correct and the operators had extensive training and practice at SPC operation. This issue also covers barrier integrity.

Inspection Report# : [2003006\(pdf\)](#)

Significance:  Dec 28, 2002

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Demonstrate the Effectiveness of Preventative Maintenance Nor Set Goals and Monitor the Unit 1 and 2 Emergency Lighting Systems

The inspectors identified a non-cited violation of 10 CFR 50.65 (a)(2), the Maintenance Rule, because PPL did not demonstrate the effectiveness of preventative maintenance for the emergency lighting systems and did not place the systems in a 50.65(a)(1) category and monitor against established goals. As a result, a progressive degradation of the 125 VDC emergency lighting systems occurred that caused the lighting systems to not be capable of performing their intended function. This finding was more than minor because PPL's maintenance rule 10 CFR 50.65 (a)(2) demonstration became invalid when the lighting system degradation resulted in a loss of the system's function. This finding was only of very low safety significance because the finding did not contribute to a loss of mitigation equipment functions, and did not increase the likelihood of a fire or flooding event. In addition, during the period that the emergency lights were unavailable, there was no actual loss of normal lighting. A contributing cause of this finding was related to the Problem Identification and Resolution cross-cutting area. Plant personnel did not identify and report numerous emergency lights which had burnt out. The lack of problem identification contributed to the systems' progressive degradation. The causal relationship between this finding and the cross-cutting area was that plant personnel did not identify that numerous emergency lights were not functional and, as a result, the systems degraded to a point where they could not perform their intended functions.

Inspection Report# : [2002006\(pdf\)](#)

G

Significance: Dec 28, 2002

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Implement Written Procedures for Control of Plant Equipment and the Fire Protection Program

The inspectors identified a non-cited violation of Technical Specification 5.4.1, with two examples, because PPL did not implement their written procedures for the fire protection program and the control of plant equipment. The removal of the Unit 1 emergency lighting system was not adequately communicated to the control room (failure to control plant equipment). As a result, during replacement of the Unit 1 emergency lighting system 125 VDC battery, PPL did not perform required compensatory actions to provide portable sealed beam hand lights throughout the plant. This finding was more than minor because it affected the mitigating systems cornerstone objective. A lack of emergency lights had a direct relationship to the cornerstone's objective because the performance deficiency affected the cornerstone's human performance attribute, in that post-event human errors could reasonably increase. This finding was only of very low safety significance because it did not represent an actual loss of a safety function for Technical Specification equipment, or an actual loss of non-Technical Specification equipment designated as risk significant. In addition, during the period that the emergency lights were unavailable, there was no actual loss of normal lighting. A contributing cause of this finding was related to the Human Performance cross-cutting area. The causal relationship between this finding and the cross-cutting area was that plant operators did not follow procedures to monitor system status and control plant equipment, and, as a result, did not perform required compensatory actions.

Inspection Report# : [2002006\(pdf\)](#)

G

Significance: Aug 30, 2002

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate Fire Barrier Surveillance

The inspectors identified a Green non-cited violation of License Condition 2.C(6) of operating license NPF-14 (Unit 1) and License Condition 2.C.3 of operating license NPF-22 (Unit 2) because PPL failed to identify and correct degraded gypsum board during the surveillance of the upper cable spreading room (UCSR) structural fire barriers. This surveillance was conducted on April 30, 2002, in accordance with Procedure SE-013-007, "24 Month Inspection of Unit Common Fire Barriers," and the provisions of section 1.4.2, "Compliance," of the approved fire protection program described in the Susquehanna Steam Electric Station (SSES) Fire Protection Review Report (FPRR). The failure to identify and correct degraded fire barriers could result in a fire impacting multiple fire areas thereby having an adverse impact on safety. This finding was of very low safety significance (Green) because the likelihood of

occurrence of a fire that could damage safety-related equipment in this area and propagate to other areas is small, and because equipment and procedures were available to shutdown the plants from the control room.

Inspection Report# : [2002008\(pdf\)](#)

Significance:  Aug 30, 2002

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate UCSR Under-Floor CO2 Suppression System

The inspectors identified a Green non-cited violation of License Condition 2.C(6) of operating license NPF-14 (Unit 1) and License Condition 2.C.3 of operating license NPF-22 (Unit 2) because PPL could not demonstrate that the Units 1 and 2 total flooding CO2 system would be able to reach and maintain the required concentration of CO2 to extinguish a deep seated fire affecting the Units UCSR under-floor area. The need to reach and maintain the required CO2 concentrations are established by NFPA 12 "Standard on Carbon Dioxide Extinguishing Systems," (1973 Edition) and required by the SSES FPRR. The failure to ensure the design adequacy of the CO2 systems could result in a more challenging fire which would stress the remaining defense-in-depth elements and, thereby, have an adverse impact on safety. This finding was of very low safety significance (Green) because the likelihood of occurrence of a fire that could damage safety-related equipment in the UCSRs under-floor area is small, and equipment and procedures were available to shutdown the plants from the control room.

Inspection Report# : [2002008\(pdf\)](#)

Significance:  Aug 30, 2002

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate UCSR and LCSR Pre-Action Sprinkler System

The inspectors identified a Green non-cited violation of License Condition 2.C(6) of operating license NPF-14 (Unit 1) and License Condition 2.C.3 of operating license NPF-22 (Unit 2) because PPL could not demonstrate that the pre-action sprinkler system in the Units 1 and 2 UCSRs and lower cable spreading rooms (LCSR) met the requirements of NFPA 13, "Standard for the Installation of Sprinkler Systems" with regard to the placement of the sprinkler heads, area of sprinkler head coverage and obstruction of the sprinkler heads. NFPA 13 (1974 Edition) is the SSES code of record for the pre-action sprinkler system and required by the SSES FPRR. The failure to ensure the design adequacy of the pre-action sprinkler systems could result in a more challenging fire which would stress the remaining defense-in-depth elements and thereby have an adverse impact on safety. This finding was of very low safety significance (Green) because the likelihood of occurrence of a fire that could damage safety-related equipment in the affected areas is small, and equipment and procedures were available to shutdown the plants from the control room.

Inspection Report# : [2002008\(pdf\)](#)

Barrier Integrity

Significance:  Jun 28, 2003

Identified By: NRC

Item Type: NCV NonCited Violation

Standby Gas Treatment System Damper Failure

A self-revealing non-cited violation of very low safety significance of Technical Specification 5.4.1 was identified, because PPL did not adequately implement their written procedures for post maintenance testing of a standby gas

treatment system (SGTS) damper. On November 19, 2002, maintenance was performed on the damper and the damper was returned to an operable status without performing an adequate post maintenance or operational test. The inadequate test did not verify that the damper could perform its safety function after completion of maintenance activities. Four months later, PPL discovered that the damper could not perform its safety function. PPL corrected the condition and restored the damper to an operable condition. This finding is more than minor because it is similar to examples 1.a and 5.b in NRC Inspection Manual 0612 Appendix E, "Examples of Minor Issues." This violation is of very low safety significance because the finding only represented a degradation of the radiological barrier function provided by the SGTS. During the 4 month period, there were no events that required a SGTS actuation. A contributing cause of this finding was related to the Human Performance cross-cutting area, in that maintenance technicians and operators did not follow procedures to perform an adequate post maintenance test. As a result, the component was returned to service while in a degraded condition and was unable to perform its safety function.

Inspection Report# : [2003003\(pdf\)](#)

Emergency Preparedness

Significance:  Dec 28, 2002

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Adequately Implement Emergency Plan Procedures for Event Classification During an Actual Event (Declared Unusual Event)

The inspectors identified a non-cited violation of 10 CFR 50.54(q), "Conditions of Licenses for Emergency Plans," because PPL did not follow their written procedures for their Emergency Plan, Section 5.1, "Classification System." As a result, PPL did not obtain sufficient information, available from security and other plant personnel, related to a transformer failure (explosion and fire), to adequately evaluate plant conditions against the appropriate Emergency Plan classification criteria. This finding was more than minor because it affected the Emergency Preparedness cornerstone objective, to ensure that PPL is capable of implementing adequate measures to protect public health and safety in response to an actual event. The inadequate assessment of all available plant information could lead to an incorrect or missed event classification. In addition, it could result in delayed activation of the on-shift emergency response organization and delayed notification to off-site agencies. This finding was only of very low safety significance, and was not greater than very low safety significance, because the performance issue occurred during an actual Unusual Event and did not occur during an event of a higher emergency classification.

Inspection Report# : [2002006\(pdf\)](#)

Significance:  Dec 28, 2002

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Implement Emergency Plan Procedures to Use a Trained Individual for Control Room Communicator During an Actual Event (Declared Unusual Event)

The inspectors identified a non-cited violation of 10 CFR 50.54(q), "Conditions of Licenses for Emergency Plans," because PPL did not follow their written procedures for their Emergency Plan, Section 6.0, "Organizational Control of Emergencies." As a result, during a declared Unusual Event, PPL used an individual who was not pre-assigned or trained, per procedure, to perform the control room communicator function. This contributed to PPL's inadequate communication to the NRC on the cause of the event classification. This finding was more than minor because it affected the Emergency Preparedness cornerstone objective, to ensure that PPL is capable of implementing adequate measures to protect public health and safety in response to an actual event. Contrary to plant procedures, PPL did not

use a trained person to perform the control room communicator function during an actual event. This performance deficiency had a direct relationship to the cornerstone's emergency response organization performance attribute, in that the untrained individual provided the wrong reason for the event classification to an off-site agency. This finding was only of very low safety significance, and was not greater than very low safety significance, because the performance issue occurred during an actual Unusual Event and did not occur during an event of a higher emergency classification. A contributing cause of this finding was related to the Human Performance cross-cutting area. The causal relationship between this finding and the cross-cutting area was that plant operators did not follow procedures to use a trained individual as the control room communicator.

Inspection Report# : [2002006\(pdf\)](#)



Significance: Oct 11, 2002

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Identify Performance Deficiencies by an In-Plant Repair Team

The inspectors identified a finding of very low safety significance (Green) that is also a non-cited violation of 10 CFR 50.47(b)(14) and Appendix E.IV.F.2.g., formal critiques shall identify weak or deficient areas that need correction. The licensee failed to identify an exercise deficiency regarding the inadequate performance of an in-plant repair team in performing a critical task to stop the off-site release during the biennial full scale exercise. Consequently, the repair team was exposed to a higher (simulated) dose than necessary and an opportunity to stop the off-site release was significantly delayed. This finding was determined to be of very low safety significance (Green) by the using the Emergency Preparedness (EP) SDP, Manual Chapter 0609, EP Risk Determination Flow Chart, Sheet 1, Second Column because the finding was identified during an EP exercise with simulated activities and is associated with the failure to identify a problem associated with a non-risk significant planning standard. This finding is more than minor because it could be reasonably viewed as a precursor to a significant event in that had this been an actual event, PPL could have missed an opportunity to quickly stop a radiological release to the public and to minimize the dose exposure to their emergency workers.

Inspection Report# : [2002011\(pdf\)](#)

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Miscellaneous



Significance: Sep 28, 2002

Identified By: NRC

Item Type: NCV NonCited Violation

Excessive Worker Overtime

The inspectors identified a non-cited violation of Technical Specification 5.2.2.e for failure to maintain adequate shift coverage without routine heavy use of overtime to meet the objective of operating personnel working a nominal 40 hour week while both units are operating. A majority of operations personnel have routinely worked in excess of approximately 50 hours per week (25% overtime) to provide adequate shift coverage while both units are operating. This violation of Technical Specification Section 5.2.2.e, "Administrative Controls - Unit Staff," is greater than minor because if left uncorrected the excessive work hours would contribute to an increased likelihood of human performance errors during normal operation and plant events. The finding is not suitable for SDP evaluation, but has been reviewed by NRC management and is determined to be a Green finding of very low significance, and is not greater than very low significance because there were no significant events or human performance issues that were linked directly to personnel fatigue as a result of the hours worked.

Inspection Report# : [2002005\(pdf\)](#)

Significance: SL-III Sep 28, 2002

Identified By: NRC

Item Type: VIO Violation

Spent Fuel Cannister Filled with Wrong Gas

An apparent violation (severity level yet to be determined) was identified that resulted in an unanalyzed condition for the spent fuel dry storage system. PPL filled a spent fuel storage cannister with Argon and Helium gases instead of using all Helium gas as required by the Certificate of Compliance No. 1004 for the NUHOMS-52B Dry Cask Fuel Storage System. The 10 CFR Part 72 Technical Specification 1.2.3, "24P and 52B DSC Helium Backfill Pressure," requires a helium backfill pressure of 2.5 pounds per square inch (psig) +/- 2.5 psig (stable for 30 minutes after filling). This issue is considered an apparent violation that resulted in an unanalyzed condition for a storage system designed to prevent or mitigate a serious safety event being degraded to the extent that a detailed evaluation was required to determine its operability. The issue is being considered for escalated enforcement in accordance with the NRC Enforcement Policy, NUREG 1600, Supplement VI, "Fuel Cycle and Materials Operations."

Inspection Report# : [2002005\(pdf\)](#)

Last modified : September 04, 2003