

## Susquehanna 1

### Initiating Events

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**Significance:** May 11, 2002

Identified By: NRC

Item Type: NCV NonCited Violation

#### **Written Procedures were not Maintained to Provide Plant Operators with Clear Direction in Response to a Single Reactor Recirculation Pump Trip at Low Reactor Power Conditions**

The inspectors identified a Green non-cited violation of Technical Specification section 5.4.1, because Off Normal procedure ON-164-002, "Loss of Reactor Recirculation Flow," did not provide adequate directions to the operators to adequately determine total core flow following a single reactor recirculation pump trip at low reactor power conditions and, based on the total core flow readings, take the appropriate actions. The inadequacy of the procedure contributed to an actual impact on safety in that the reactor protection system was manually actuated. This finding was considered to have very low safety significance because the finding did not increase likelihood of a primary or secondary system LOCA initiator, did not contribute to the likelihood that mitigating equipment would not be available, and did not increase the likelihood of a fire or flood. In addition the reactor protection system and other plant systems responded as expected to the manual reactor shutdown and there were no indications of reactor core oscillations at the time of the reactor recirculation pump trip.

Inspection Report# : [2002003\(pdf\)](#)

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**Significance:** May 11, 2002

Identified By: Licensee

Item Type: NCV NonCited Violation

#### **The Unit 1 "A" Service Water Pump Discharge Valve was Found in the Closed Position with the Pump in the Automatic Standby Configuration**

The Unit 1 "A" service water pump was not placed in a automatic standby configuration as required by procedure. Technical Specification 5.4.1 stated, in part, "written procedures shall be established, implemented, and maintained" that meet the requirements of NRC Regulatory Guide 1.33, revision 2, Appendix A, February 1978. Operations procedure OP-111-001, "Service Water System," section 3.2.12.g requires, in part, that the third service water pump be placed in automatic standby with the pump discharge valve open, after the second pump had been started. On May 4, 2002, with the "B" and "C" service pumps in operation, the third service water pump ("A") was not in automatic standby because the discharge valve (109004) for the "A" pump was found in the closed position. A violation of very low safety significance which was identified by PPL has been reviewed by the inspectors. Corrective actions taken or planned by PPL have been entered into PPL's corrective action program.

Inspection Report# : [2002003\(pdf\)](#)

### Mitigating Systems

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**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\(pdf\)](#)



**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\(pdf\)](#)



**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\(pdf\)](#)

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**Significance:** May 11, 2002

Identified By: NRC

Item Type: NCV NonCited Violation

#### **Written Procedures were not Implemented to Control a Temporary Plant Alteration**

The inspectors identified a Green non-cited violation of Technical Specification section 5.4.1, with two examples, because PPL did not implement their written procedures to control a temporary plant alteration associated with the use of blank flanges in the ESW system supply and return lines to the Unit 1 "A" TBCCW and "A" RBCCW heat exchangers. As a result, PPL did not remove the blank flange prior to the Unit 1 restart from the refueling outage. This violation was of very low safety significance because there was no actual loss of cooling to the Unit 1 "A" TBCCW and "A" RBCCW heat exchangers.

Inspection Report# : [2002003\(pdf\)](#)

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## Barrier Integrity

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**Significance:** Mar 30, 2002

Identified By: Licensee

Item Type: NCV NonCited Violation

#### **Control room emergency outside air supply system inoperable due to Unit 1 4kV emergency bus breakers not seismically restrained**

During this inspection NPOs did not install seismic restraints during racking out of two 4 kV breakers which resulted in two Unit 1 4kV emergency buses becoming inoperable but still available. NPOs did not perform a section in an operations procedure regarding installing of seismic restraints. (Licensee identified NCV affecting the Mitigating System and Barrier Integrity Cornerstones) Violations of very low safety significance (Green) which were identified by PPL have been reviewed by the inspectors. Corrective actions taken or planned by PPL have been entered into PPL's corrective action program. This issue also covers Mitigating Systems.

Inspection Report# : [2002002\(pdf\)](#)

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**Significance:** Feb 09, 2002

Identified By: Licensee

Item Type: NCV NonCited Violation

#### **Unit 1 reactor water cleanup overflow and floor contamination due to the failure to follow a plant operating procedure**

Technical Specification section 5.4.1 states: "Written procedures shall be established and implemented that meet the requirements of NRC's Regulatory Guide 1.33, Rev. 2, February 1978. Operations procedure OP-161-002, "RWCU Filter Demineralizers," Rev. 22. Section 3.3.3, states "If backwashing "1B" filter, CLOSE reactor water cleanup (RWCU) filter demineralizer "B" effluent isolation valve 145041B. On January 21, 2002, a plant operator failed to close the RWCU 14541B manual isolation valve. The error resulted in overflow of radioactive water and contamination in the Unit 1 Reactor Building on the 670 foot elevation. The issue was documented in condition report 379343.

Inspection Report# : [2001012\(pdf\)](#)

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## Emergency Preparedness

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**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\(pdf\)](#)

G**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\(pdf\)](#)G**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\(pdf\)](#)G**Significance:** Feb 04, 2002

Identified By: NRC

Item Type: NCV NonCited Violation

**E-Plan changes decreased the effectiveness of the plan**

The inspectors identified a non-cited violation of 10 CFR 50.54(q) because PPL made changes in the E-Plan which eliminated some on-shift emergency positions which decreased the effectiveness of the E-Plan without obtaining prior NRC approval. The finding was of very low safety significance because the change was administrative in nature since individuals on-shift could have performed the functions of those eliminated positions had they been needed for emergency response.

Inspection Report# : [2002009\(pdf\)](#)

## Public Radiation Safety

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### Physical Protection

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### Miscellaneous



**Significance:** G 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\(pdf\)](#)

**Significance:** N/A Mar 30, 2002

Identified By: NRC

Item Type: FIN Finding

#### **A performance trend which appears to have developed in the barrier integrity and mitigating systems safety cornerstone areas with plant equipment operator errors being the common element**

The inspector identified a finding regarding a performance trend which appears to have developed in the barrier integrity and mitigating systems safety cornerstone areas with non-licensed plant operator errors being the common element.

Inspection Report# : [2002002\(pdf\)](#)

**Significance:** N/A Feb 01, 2002

Identified By: NRC

Item Type: FIN Finding

#### **Biennial Problem Identification and Resolution**

The team concluded that, based on the samples reviewed, the overall implementation of the corrective action program at Susquehanna was acceptable. The licensee was identifying problems at an appropriate threshold and entering them into their corrective action program. The backlog of corrective actions was adequately managed, however, corrective action due dates were frequently extended. The actions taken for identified problems were adequate to correct the problem and prevent recurrence. The licensee's evaluations of problems were of adequate depth to identify the causes and appropriately broad in considering the extent of condition. However, the team noted a number of personnel errors at both units within the last year. The type of errors included wrong unit, wrong equipment, and missed procedure steps. While PPL management recognized that a performance issue was apparent in this area and initiated several efforts to decrease the errors, the team noted that these efforts to date have not been fully effective.

Inspection Report# : [2001013\(pdf\)](#)

Last modified : March 25, 2003