

March 14, 2000

Mr. Robert G. Byram
Senior Vice President, Nuclear
PPL, Inc.
Susquehanna Steam Electric Station
2 North Ninth Street
Allentown, PA 18101

**SUBJECT: NRC INTEGRATED INSPECTION REPORT 05000387/2000001 and
05000388/2000001**

Dear Mr. Byram:

On February 12, 2000, the NRC completed an inspection at the Susquehanna Steam Electric Station (SSES) Unit 1& 2 reactor facilities. The enclosed report covered routine activities by the resident inspectors and announced inspections of your licensed operator requalification training program by Region I specialists. The inspectors discussed the findings of these inspections with Mr. B. Shriver, Vice President Nuclear Operations, and other members of your staff, at an exit meeting at the completion of the inspections.

Overall, your staff safely operated the facility during this period. During this period we found additional examples in which your staff did not effectively use your corrective action system. These examples were similar to the findings in our recent corrective action program inspection. We understand that you have an ongoing effort to strengthen the effectiveness of the program. We will continue to closely monitor your progress.

In addition, based on the results of this inspection, the NRC has determined that one violation of NRC requirements occurred. The Severity Level IV violation is being treated as a Non-Cited Violation (NCV), consistent with Section VII.B.1.a of the Enforcement Policy (November 9, 1999; (64 FR 61142)). The NCV is described in the enclosed inspection report and involved fire watch duties for inoperable fire suppression systems. If you contest the violation or severity level of the NCV, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN.: Document Control Desk, Washington DC 20555-0001, with copies to the Regional Administrator, Region I, the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001 and the NRC Resident Inspector at the Susquehanna Steam Electric Station.

In accordance with 10CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter, its enclosure(s), and your response will be placed in the NRC Public Document Room (PDR).

Mr. Robert G. Byram

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A reply to this letter is not required, but should you have any questions regarding this please contact me at 610-337-5322.

Sincerely,

/RA/

Curtis J. Cowgill, Chief
Projects Branch 4
Division of Reactor Projects

Docket Nos: 05000387, 05000388
License Nos: NPF-14, NPF-22

Enclosure: Inspection Report 05000387/2000001, 05000388/2000001

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Mr. Robert G. Byram

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REGION I

Docket Nos: 05000387, 05000388
License Nos: NPF-14, NPF-22

Report No. 05000387/2000001, 05000388/2000001

Licensee: PPL, Inc.
2 North Ninth Street
Allentown, PA 19101

Facility: Susquehanna Steam Electric Station

Location: P.O. Box 35
Berwick, PA 18603-0035

Dates: January 2, 2000 through February 12, 2000

Inspectors: S. Hansell, Senior Resident Inspector
J. Richmond, Resident Inspector
A. Blamey, Resident Inspector
P. Bonnett, Resident Inspector - Limerick
G. Smith, Senior Physical Security Inspector
J. D'Antonio, Operations Engineer
S. Dennis, Operations Engineer

Approved by: Curtis J. Cowgill, Chief
Projects Branch 4
Division of Reactor Projects

EXECUTIVE SUMMARY

Susquehanna Steam Electric Station (SSES), Units 1 & 2
NRC Inspection Report 05000387/2000001, 05000388/2000001

This inspection included aspects of PPL's operations, maintenance, engineering and plant support at SSES. The report covers a six-week period of routine resident inspection activities and announced inspections by regional specialists.

Operations

- During this inspection period, the inspectors observed additional examples where a problem reoccurred because adequate corrective actions had not been implemented. These missed opportunities challenged your staff and were similar to those identified in the recent corrective action inspection, report number 05000387, 05000388/1999013. Most notable examples were the unplanned hydrogen water chemistry isolations and the unplanned reactor protection system half-scrams. (section O2.1).
- The inspectors observed six simulator scenarios and PPL's evaluations. During this testing cycle, the observed evaluations were thorough and identified performance weaknesses, which included two operating shift and two individual failures. The personnel involved with the failures were removed from licensed duties, as required by the training program, and will be remediated and retested satisfactorily prior to resuming licensed duties. (section O5.1)

Maintenance

- We identified that a corrective maintenance activity was performed in conjunction with a surveillance activity without performing the required technical specifications action for an inoperable instrument. This occurred because the Unit Supervisor did not fully understand the activity work scope. This missed technical specification action is considered a violation of minor significance and was documented in PPL's corrective action program. (section M1.2)
- On January 3, 2000, PPL experienced a spurious reactor protection system half scram. The corrective actions for two similar half scrams in November 1999 did not prevent the third half scram. After the third half scram, a barrier was installed at the reactor protection system instrument racks in the Reactor Building. (section M4.1)

Executive Summary

Plant Support

- The NRC identified that, over a 3 month period, PPL had not implemented a continuous fire watch when a fire suppression system was removed from service to support modification activities. Once identified, PPL took immediate and effective corrective actions. This Severity Level IV violation is being treated as a Non-Cited Violation, consistent with section VII.B.1.a of the NRC Enforcement Policy. This violation was documented in PPL's corrective action program as condition report 230084. (section F1.1)
- In December 1999, PPL identified that a flashing light barricade had been used, within a locked high radiation area, to control local access to areas with dose rates greater than 1 rem/hour, without the approval of the Radiological Operations Supervisor. The inspectors observed that PPL entered this item into the corrective actions program 3 weeks after the condition was identified. In addition, PPL's initial corrective actions were narrowly focused and did not identify that the same condition existed in Unit 2. (section R1.1)

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Report Details

Summary of Plant Status

Susquehanna Steam Electric Station (SSES) Unit 1 operated at 100% power throughout the inspection period with the following exceptions.

- | | |
|-------------|--|
| January 7 | Power was reduced to 90% to perform a control rod pattern adjustment and then returned to 100% power on January 7, 2000. |
| January 14 | Power was reduced to 75% to repair an oil leak on the "A" reactor feedwater pump. Power was restored to 100% on January 16, 2000. |
| January 29 | Power was reduced to 75% to perform a control rod sequence exchange and control rod testing. Power was restored to 100% on January 30, 2000. |
| February 11 | Power was reduced to 80% to perform a control rod pattern adjustment and then returned to 100% power on January 12, 2000. |

SSES Unit 2 operated at 100% power throughout the inspection period with one exception. On February 12, power was reduced to 80% for a control rod pattern adjustment and then returned to 100% power on February 13, 2000.

I. Operations

O1 Conduct of Operations¹

O1.1 Unit Operations and Operator Activities (71707)

The inspectors determined routine operator activities were satisfactorily established, communicated and conservatively performed in accordance with SSES procedures with one noted exception. During the removal of the Unit 2 "D" residual heat removal (RHR) pump from service, the Unit 2 non licensed operator entered the Unit 1 Reactor Building and inadvertently removed the Unit 1 "D" RHR pump from service. The operator immediately noted that he had removed the wrong RHR pump from service and restored the Unit 1 "D" RHR pump. PPL determined that verbal communications did not specify the unit and appropriate self checking was not performed. PPL reviewed the appropriate method of self check with the individual involved in this event. Other control room activities were well performed and control room logs accurately reflected plant activities.

¹ Topical headings such as O1, M8, etc., are used in accordance with the NRC standardized reactor inspection report outline. Individual reports are not expected to address all outline topics.

O2 Operational Status of Facilities and Equipment

O2.1 Overall Operational Status of Facilities and Equipment Observations (71707, 40500)

During this inspection period, the inspectors observed additional examples where a problem reoccurred because corrective actions had not been implemented. These examples were similar to those identified in the recent corrective action inspection, report number 05000387, 05000388/1999013. Most notable examples were the unplanned hydrogen water chemistry isolations (section O2.4) and unplanned reactor protection system half-scrams (section M4.1).

O2.2 Operational Safety System Alignment (71707)

During routine plant tours, the proper alignment and operability of various safety systems, engineered safety features, and on-site power sources were verified. Partial walkdowns were performed for the containment hydrogen and oxygen monitors, standby liquid control system, Unit 2 safety related batteries, the "D" emergency diesel generator (EDG), Unit 1 and 2 reactor water cleanup systems, and the Unit 2 reactor instrumentation racks.

O2.3 Unit 1 and Unit 2 Primary Containment Determined to be Inoperable Due to Inadequate Hydrogen and Oxygen (H₂O₂) Monitor Testing (71707, 93702)

On February 2, 2000, during an engineering review of a 1997 condition report, PPL determined that the H₂O₂ piping is considered an extension of containment and was not tested after maintenance was performed on the system. PPL isolated the containment isolation valves for the H₂O₂ monitors to maintain primary containment integrity on both units and then entered TS 3.3.3.1, "Post Accident Monitoring (PAM) Instrumentation." This TS required restoration of the H₂O₂ monitors within 7 days. The monitors were tested and the TS exited within 7 days.

O2.4 Unplanned Hydrogen Water Chemistry (HWC) System Isolations (71707, 40500)

PPL has experienced a number of HWC system automatic isolations that resulted in reactor water chemistry transients. In the two most recent cases, on December 2, 1999, and January 24, 2000, improper pressurization of oxygen storage tanks resulted in an automatic HWC system isolation. These isolations resulted in an increase in the reactor water conductivity. During both events, the Unit 1 operators entered the Technical Requirement Manual (TRM) requirement 3.4.1, "Reactor Coolant System Chemistry," due to reactor water conductivity exceeding the action limit of 1.0 µmho/cm. PPL restored reactor water chemistry as required by the TRM.

During review of the December 1999 condition report (CR 217997), PPL's management review team (MRT) assigned this CR to operations to evaluate if interim actions were required before completion of the condition report. PPL determined that no interim actions were required and this condition report was transferred to PPL procurement to correct the condition. On January 24, 2000, improper pressurization of oxygen storage tanks resulted in an automatic HWC system isolation. The inspectors noted that PPL

had not implemented corrective actions from a HWC system automatic shutdown in early December 1999. This issue was documented in PPL condition reporting program in condition reports 217997 and 228858. No violation of NRC requirements was noted.

O5 Operator Training and Qualifications

05.1 Licensed Operator Regualification Training Program

a. Inspection Scope (71001)

The inspectors reviewed PPL's licensed operator regualification training program (LORT) during the week of February 7-11, 2000. The following areas were evaluated with respect to 10CFR55.59 (and 55.53): LORT program content including facility operating history; written and operating test content; operating test administration; training program feedback effectiveness; and conformance with license conditions.

b. Observations and Findings

LORT Program Content

PPL's training program material and plant operating history were reviewed to assess the facility's evaluation of plant and industry events for presentation in training. Additionally, the program material was reviewed to ensure it met PPL's procedural requirements.

The inspectors found that PPL's procedural requirements regarding program content were met and that "just-in-time" training was given as appropriate for infrequent evolutions or in response to plant and industry events.

Written and Operating Test Content and Administration

The written, job performance measures (JPM), and simulator examinations were acceptable. Overlap from week to week of the written examinations administered the prior year was reviewed, and was found to be acceptable.

The inspectors observed the administration of six simulator scenarios to three different operating shifts. Scenario critiques were detailed with individual and operating shift performance in each competency discussed. During this testing cycle, PPL determined that two crews and two individual had failed to perform a critical task. The individuals were removed from licensed duties and will be remediated and satisfactorily retested prior to resuming licensed duties. The inspectors agreed with PPL management's assessments and corrective actions.

The inspectors observed 14 of the JPM examinations administered in the plant and simulator. The administration and overall results of all the JPM examinations identified no deficiencies.

Use of Risk Insights

PPL indicated that by training on all emergency operating procedures (EOP) actions during a two year requalification cycle, all significant operator actions identified in the probabilistic risk assessment (PRA) / individual plant evaluation (IPE) will be addressed. PPL's PRA identified significant operator actions. The inspectors reviewed a sampling of these significant operator actions against the facility JPM and simulator scenario banks and found no omissions.

Remediation Practices

The inspectors reviewed PPL's remediation practices and examples of evaluation and remediation for crews and individuals who had failed or achieved low grades in some aspect of requalification in the preceding two years. In all cases, these individuals had been evaluated and remediated appropriately in accordance with PPL's program.

Use of Training Feedback

The inspectors interviewed shift operations personnel and reviewed training material to assess PPL's response to trainee identified problems. In interviews, operators cited specific examples of comments to which the training department had responded and believed the training department was responsive to their needs and comments.

Compliance with License Conditions

A review of records and discussions with PPL personnel found that PPL was meeting the requirements of:

- 10 CFR 55.53 for conditions of operator licenses.
- 10 CFR 55.21 for medical examinations of operators.
- 10 CFR 55.49 for licensed operator examination security.

c. Conclusions

The inspectors determined that PPL evaluations of operator performance in the licensed operator requalification examination were thorough and identified performance weaknesses, which included two crew and two individual failures. The personnel involved with the failures were removed from licensed duties, as required by the training program, and will be remediated and retested satisfactorily prior to resuming licensed duties.

PPL's training program included trainee feedback, analyzed plant and industry events, and provided "just-in-time" training for infrequent evolutions and met their procedural requirements. Written and operating exam content and exam security practices were acceptable and in accordance with the PPL program requirements. Remediation and re-examination practices were acceptable. PPL monitored training program attendance and ensured missed training was made up in accordance with program requirements.

Risk insights in the training program, based on significant operator actions identified in the PRA, were included in the facility JPM and simulator scenario banks.

PPL requirements including medical exams, license activations, and license renewals were met and the licensee was found, on a sampling basis, to be meeting the regulatory requirements associated with the licensed operator training program.

O8 Miscellaneous Operations Issues

O8.1 Licensee Event Report (LER) Review (37551, 40500, 61726, 71707, 92700)

The inspectors reviewed LERs

LER 05000387/92-015-01, 02	Fire Barriers Not Surveilled and Not Installed per Specification
LER 05000388/97-002-01	Loss of Both Loops of Containment Radiation Monitors
LERs 05000388/93-008-00, 01	Condition Prohibited by Plant Technical Specification (TS) Sections 3.0.3 and 4.3.3 for the 93% Degraded Grid Auxiliary Load Shed Signal

These are old LERs that had not previously been reviewed. No violations were identified and these LERs are not reflective of current PPL performance. These LERs are closed.

(Closed) LER 05000387/99-006-00

“C” and “D” ESW Pumps Inoperable Greater Than 7 Days Due To Interaction With the “A” and “B” Pumps.

This event was reviewed in NRC Inspection Report 050000387/1999010 and 050000388/1999010. No additional violations or issues were identified. This LER is closed.

II. Maintenance

M1 Conduct of Maintenance

M1.1 Surveillance and Pre-Planned Maintenance Activity Review

a. Inspection Scope (61726,62707,40500)

The inspectors observed and reviewed selected portions of pre-planned maintenance and surveillance activities, to determine whether the activities were conducted in accordance with NRC requirements and SSES procedures.

b. Observations and Findings

The inspectors observed portions of the following work activities and surveillances:

RTPM 102216	Unit 1 "A" SLC Pump 3-year Overhaul
PCWO 105342	Unit 1 "A" SLC Packing Leak Rework
PCWO 200555	Riley Temperature Module Bench Testing
PCWO 211336	Unit 2 "A" RHRSW Pump Discharge Check Valve Rework
PCWO 105774	Dry Fuel Storage Canister No. 5 Processing
RTPM 101285	HV-152-F015A MOV Overhaul
RTPM 202754	Unit 1 "A" Core Spray Pump Protective Relay Calibrations
SP-00-0309	Site Accountability Exercise
OP-0RF-004	Unit 2 Refuel Platform Pre-service Checkout
PCWO 107633	LIS-B21-2N031A Test Connection Fitting Replacement
PCWO 208910	TP-202-010, 2D630 Battery Replacement
PCWO 208912	Temporary Installation of 15 Battery Cells for 2D630
PCWO 230306	Unit 2 HPCI Out-of-Service/Loss-of-Power Alarm Investigation
SI-280-303	Unit 2 Wide Range Reactor Water Level Switch Calibrations
PCWO 103084	RHR Pump Room Unit Cooler Heat Exchanger Cleaning and Inspection
RTPM 103130 - 'A'	Core Spray Unit Cooler Cleaning and Inspection.
RTPM 103274 - 'C'	Core Spray Unit Cooler Cleaning and Inspection.
SO-151-A02	Quarterly Core Spray Flow Verification Division I

In addition, selected portions of procedures and drawings associated with the maintenance and surveillance activities were also reviewed and determined to be acceptable. In general, maintenance personnel were knowledgeable of their assigned activities.

M1.2 Control of Surveillance Test Activities

a. Inspection Scope (61726)

The inspectors observed selected portions of Instrument and Controls (I&C) surveillance tests to determine whether the activities were conducted in accordance with NRC requirements and SSES procedures.

b. Observations and Findings

On January 27, the inspectors observed that I&C technicians performed a corrective maintenance activity on LIS-B21-2N031A while performing SI-280-303 (quarterly calibration checks of LIS-B21-2N031A-D). The work instructions for the corrective maintenance work order (WO), WO 107633, required the instrument to be taken out of service "under the surveillance" for the replacement of test tap fittings. The Unit Supervisor (US) who authorized the WO was unaware that the corrective maintenance activity required the instrument to be taken out of service.

The Unit Supervisor had been briefed on the scope of the work by the technicians, and mistakenly believed that the work would be performed with the instrument in-service, prior to the start of the surveillance. The WO did not identify that the maintenance activity required the instrument out of service (that information was contained in the work instructions). The inspectors noted that the work control center, and the station work schedule also did not identify this activity as requiring the instrument out of service.

Technical Specifications (TS) stated that when an instrument is placed in an inoperable status "solely for the performance of surveillances," entry into the TS required actions may be delayed for 6 hours. The TS action, for an inoperable instrument, had not been taken as required. The corrective maintenance activity was short, relative to the duration of the surveillance activity, and was not safety significant. Therefore, this instance of a missed TS action is considered a violation of minor significance that is not subject to formal enforcement action. This violation was documented in PPL's corrective action program as Condition Report 231669.

c. Conclusions

The inspectors identified that a corrective maintenance activity was performed in conjunction with a surveillance activity without performing the required Technical Specifications (TS) actions for an inoperable instrument. This occurred because the Unit Supervisor did not fully understand the activity work scope. This missed TS action is considered a violation of minor significance and was documented in PPL's corrective action program.

M4 Maintenance Staff Knowledge and Performance

M4.1 Control of Work in the Reactor Protection System Instrument Rack Area

a. Inspection Scope (62707,71707)

On January 3, 2000, Unit 2 received a reactor protection system (RPS) actuation (half-scam). The half scam was similar to previous half scrams that occurred on November 5, and on November 17. The inspectors reviewed PPL's response to determine whether the work activities were conducted in accordance with NRC requirements and SSES procedures.

b. Observations and Findings

PPL determined that the two half scrams in November were caused by contract maintenance workers installing thermo-lag insulation on cables and erecting scaffolding for thermo-lag work in the Reactor Building. In both cases the workers inadvertently bumped sensitive equipment connected to the RPS scram instrument rack 1C004. NRC Inspection Report No. 05000387,388/1999011, documented the NRC's assessment of the two half scrams and concluded that PPL's corrective actions for the November 5 event were narrowly focused and did not prevent a similar event on November 17.

Plant management stated that operators were assigned to monitor the work in the area of the RPS instrument racks. Nevertheless, a third spurious half scam occurred and was most probably caused by an instrument and control technician bumping the instrument rack. The inspectors determined that the limited response to the previous two half scrams contributed to the third challenge to the RPS system and the plant operators.

After the third RPS half scram PPL issued a condition report, No. 223671, to document the problem. PPL added a sign and yellow rope in front of the instrument racks on both units to state the sensitivity of the equipment and provide a continuous reminder to all personnel. In addition, on February 9, 2000, PPL issued a written description of the issue to all station personnel. The letter noted that actions are in progress to provide a permanent modification around the RPS instrument racks.

The inspectors determined that PPL's response to the third half scram was appropriate. No violation of NRC requirements was identified.

c. Conclusion

On January 3, 2000, PPL experienced a spurious RPS half scram. The corrective actions for two similar half scrams in November 1999 did not prevent the third half scram. After the third half scram, a barrier was installed at the RPS instrument racks in the Reactor Building.

III. Engineering

E3 Engineering Procedures and Documentation

E3.1 Review of 10 CFR 50.59 Safety Evaluations

a. Inspection Scope (37001)

The inspectors reviewed the PPL safety evaluation procedure and application related to a main steam line radiation monitor (MSLRM) trip setpoint change package (SCP) No. J97-2013, for the hydrogen water chemistry modification. The design change was evaluated and performed using Nuclear Department Administrative Procedure NDAP-QA-0726, "10CFR50.59 Evaluations."

b. Observations and Findings

PPL staff evaluated the MSLRM high radiation reactor protection system (RPS) trip setpoint change against screening criteria contained in NDAP-QA-0726. PPL staff determined that this change did not involve a change to the facility as described in the safety analysis report (SAR) and did not require a written safety evaluation.

The MSLRM RPS trip setpoint was documented in the Technical Requirements Manual (TRM). The Susquehanna Safety Analysis Report section 16.3, represented the Unit 1 and 2 TRMs. Therefore, the inspectors determined that the change should have been documented in a written 50.59 safety evaluation as required by procedure. This error is similar to findings of your Nuclear Assessment Services.

The failure to document the MSLRM RPS setpoint change in a safety evaluation, as required by PPL procedures, constitutes a violation of minor significance that is not subject to formal enforcement action. The consequences of not using a safety

evaluation to document the change were minimal because the MSLRM high radiation trip setpoint change was submitted to and approved by the NRC.

c. Conclusions

The MSLRM RPS trip setpoint change was not documented in a safety evaluation as required by procedure. The failure to document the setpoint change in a safety evaluation constitutes a violation of minor significance that is not subject to formal enforcement action. The consequences of not using a safety evaluation to document the change were minimal because the MSLRM high radiation trip setpoint change was submitted to and approved by the NRC.

IV. Plant Support

F1 Control of Fire Protection Activities

F1.1 Fire Watch Duties for Inoperable Fire Suppression Systems

a. Inspection Scope (71750)

The inspectors reviewed fire watch duties for plant areas with inoperable fire suppression systems, to determine whether the activities were conducted in accordance with NRC requirements and SSES procedures.

b. Observations and Findings

On January 27, 2000, the inspectors observed a fire watch patrol and reviewed the fire watch log sheets for fire zones 2-5A and 2-5B (Unit 2 elevation 749). The fire watch log sheet identified the fire watch patrol as "continuous" to compensate for pre-action system PA-251 being disabled. The fire watch explained his duties to the inspector, and stated that the "continuous" check on the log sheets meant that he was required to be in the area, but only had to perform a patrol once an hour. The inspector observed that the fire watch routinely sat out of visual sight of the affected fire zones. During a routine patrol, the inspector observed that the fire watch did not perform an adequate inspection, in that he did not enter a high radiation area or verify the door temperature to that area, and did not utilize an available camera in the high radiation area to verify room conditions. In addition, he did not enter an area where modification work was in-progress, located above the 4-KV switchgear rooms. Once identified, PPL took immediate and effective corrective actions.

The inspectors determined that fire suppression system PA-251 had been removed from service, on a daily basis, to support thermo-lag modification work, from October 1999 thru January 2000. PCWO 204799 authorized disabling fire suppression for PA-251 and required a continuous fire watch, as a compensatory action. The inspectors reviewed the fire watch log sheets for the PCWO from October 11, 1999 to January 27, 2000, and determined that, although the log sheets were checked "continuous," hourly fire watch patrols were documented on the log sheets.

The inspectors noted that station procedure NDAP-QA-0443, "Firewatch Procedure," required the fire watch log sheets to be reviewed by operations once every 4 hours. The procedure contained a note that for continuous fire watches the review can be made by phone, and in this case the reviews were made using that option. In discussions with the inspector, the Unit Supervisors and an Auxiliary Unit Supervisor (AUS) stated that there was no PPL management expectation for the AUS to review the logs. The inspector determined that by not having a visual observation, a problem associated with the continuous firewatch was not detected for an extended period of time.

Technical Specification (TS) 5.4.1(d) required written procedures be established and implemented for the Fire Protection Program. Technical Requirements Manual 3.7.3.2 required a continuous fire watch be provided during the periods when PA-251 was inoperable. NDAP-QA-0441, "Fire Protection System Status Control," required a continuous fire watch when PA-251 could not perform its intended function. NDAP-QA-0443, "Fire Watch Procedure," stated that the duties of a continuous fire watch were to perform an area tour every 15 minutes and document each 15 minute tour on the log sheet. NDAP-QA-0443 also required the use of a camera to verify room conditions (e.g., no smoke or fire) for high radiation areas. Contrary to this, on October 11, 1999 through January 27, 2000, fire watch tours were conducted hourly when pre-action system PA-251 was inoperable. This Severity Level IV violation is being treated as a Non-Cited Violation, consistent with section VII.B.1.a of the NRC Enforcement Policy. This violation was documented in PPL's corrective action program as Condition Report 230084. **(NCV 50-388/00-01-01)**

c. Conclusions

The NRC identified that, over a 3 month period, PPL had not implemented a continuous fire watch when a fire suppression system was removed from service to support modification activities. Once identified, PPL took immediate and effective corrective actions. This Severity Level IV violation is being treated as a Non-Cited Violation, consistent with section VII.B.1.a of the NRC Enforcement Policy. This violation was documented in PPL's corrective action program as Condition Report 230084.

R1 Radiological Protection and Chemistry (RP&C) Controls**R1.1 Radiological Controls for Locked High Radiation Areas****a. Inspection Scope (71750)**

The inspectors performed field inspections of selected locked high radiation areas and reviewed PPL's administrative controls for personnel access control to areas with radiation dose rates greater than 1 rem/hour, where such areas are within a larger area that is controlled as a high radiation area, to determine whether the activities were conducted in accordance with NRC requirements and SSES procedures.

b. Observations and Findings

In December 1999, PPL identified that a "flashing light and rope barricade" had been used to control personnel access to areas with dose rates greater than 1 rem/hour without the approval of the Radiological Operations Supervisor (ROS). The flashing light barricade had been installed in the Unit 1 reactor water cleanup (RWCU) room complex between the pump room and the heat exchanger and valve rooms. The flashing light barricade had been approved, in writing by the ROS, to be used for a 7 day period in August 1999, but had not been removed at the end of the approved usage period. The flashing light barricade continued to be used until December, when a health physics (HP) technician questioned the continued usage without written ROS approval, as required by SSES procedure. On December 17, the flashing light barricade was removed. This issue was documented and entered into the corrective action program on January 7, 2000 (Condition Report 224987).

On January 11, 2000, the inspector performed a walkdown in the Unit 1 and Unit 2 RWCU room complexes, and observed that a flashing light barricade was in-place in the Unit 2 RWCU room complex. The inspectors determined that the use of a flashing light barricade had been approved for use in Unit 2 for a 30 day period in July 1999, and had been used during maintenance activities from July 27 to August 17. By review of radiation area surveys and radiation work permits, the inspectors concluded that the flashing light barricade had not been used as a high radiation area barrier between August and January, but had been abandoned in-place in the room. PPL entered the failure to remove the flashing light barricade in their corrective action program on Condition Report 225712.

The inspectors observed several examples of poor radiological housekeeping conditions in the locked high radiation areas. The NRC documented similar observations of poor housekeeping practices in locked high radiation areas during the last inspection period.

The inspectors verified that flashing light barricades were documented on radiation area surveys. Based on technician interviews, the inspectors concluded that HP technicians provided adequate constant control point coverage and maintained control of the locked high radiation area room complex door keys. The inspectors determined that HP technicians provided appropriate pre-job briefings of radiological conditions within the RWCU room complex, including instructions to workers on the flashing light barricades.

Therefore, the inspectors concluded that the flashing light barricades, used in the RWCU room complexes, were adequate to prevent inadvertent personnel access to radiation areas greater than 1 rem/hour. Although the flashing light barricades were not promptly removed, as required by procedure, and in one case remained in use over a four month period without any additional review or approval, no reduction in worker radiological safety occurred.

Technical Specification (TS) 5.7.2 allows the use of a flashing light barricade, in lieu of a physical barrier, locked door, or locked gate. TS 5.4.1 requires written procedures be established and implemented for activities listed in Regulatory Guide 1.33 Appendix A. SSES procedure NDAP-00-0626, "Radiologically Controlled Area Access and Radiation Permit System," requires the ROS approval on written evaluation checklist, with an expiration date, before a flashing light barricade can be installed. On one occasion, PPL failed to remove the barricade and continued to use it during a 4 month period, without any further review or approval. On a second occasion, PPL failed to remove the barricade at the end of its approved period. The failure to follow written procedures for the removal of temporary barricades to high radiation areas constitutes a violation of minor significance that is not subject to formal enforcement action.

c. Conclusion

In December 1999, PPL identified that a flashing light barricade had been used, within a locked high radiation area, to control local access to areas with dose rates greater than 1 rem/hour, without the approval of the Radiological Operations Supervisor. The inspectors observed that PPL entered this item into the corrective actions program 3 weeks after the condition was identified. In addition, PPL's initial corrective actions were narrowly focused and did not identify that the same condition existed in Unit 2.

S3 Security Program Plans

a. Inspection Scope (81700)

The inspectors performed an in-office review of changes to the PPL Security Program Plans.

b. Observations and Findings

An in-office review was conducted of changes to the Susquehanna Physical Security Plan, identified as Revisions NN and OO, submitted to the NRC on June 4, 1999 and August 24, 1999, respectively, in accordance with the provisions of 10 CFR 50.54(p).

c. Conclusion

Based on a limited review of the changes, as described in the plan revisions, no NRC approval of these changes is required, in accordance with 50.54(p). These changes will be subject to future inspection to confirm that the changes, as implemented, have not decreased the overall effectiveness of the security plan.

V. Management Meetings

X1 Exit Meeting Summary

Region I specialist presented the results of the licensed operator requalification training program inspection to members of PPL management at the conclusion of the inspection on February 11, 2000. PPL acknowledged the findings presented.

The inspectors presented the inspection results to members of PPL management at the conclusion of the inspection period, on February 22, 2000. PPL acknowledged the findings presented.

The inspectors asked PPL whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

INSPECTION PROCEDURES USED

IP 37551	Onsite Engineering Observations
IP 40500	Effectiveness of Licensee Controls in Identifying, Resolving, and Preventing Problems
IP 61726	Surveillance Observations
IP 62700	Maintenance Program Implementation
IP 62707	Maintenance Observations
IP 71707	Plant Operations
IP 71750	Plant Support Activities
IP 81700	Physical Security Program for Power Reactors
IP 83750	Occupational Radiation Exposure
IP 92700	On Site Followup of Reports
IP 93702	Prompt Onsite Response to Events at Operating Power Reactors

ITEMS OPENED, CLOSED, AND DISCUSSED

<u>Opened</u>	NONE
<u>Opened/Closed</u>	
50-388/00-01-01	NCV Fire Watch Duties for Inoperable Fire Suppression Systems
<u>Updated</u>	NONE
<u>Closed</u>	
50-387/92-015-01 / 02	LER Fire Barriers Not Surveilled and Not Installed per Specification
50-388/93-008-00 / 01	LER Condition Prohibited by Plant Technical Specification (TS) Sections 3.0.3 and 4.3.3 for the 93% Degraded Grid Auxiliary Load Shed Signal
50-388/97-002-01	LER Loss of Both Loops of Containment Radiation Monitors
50-387/99-006-00	LER "C" and "D" ESW Pumps Inoperable Greater Than 7 Days Due To Interaction With the "A" and "B" Pumps.

LIST OF ACRONYMS USED

CFR	Code of Federal Regulations
CR	Condition Report
CS	Core Spray
DCP	Design Change Package
EAL	Emergency Plan Action Level
EDG	Emergency Diesel Generator
° F	Fahrenheit
FSAR	Final Safety Analysis Report
H ₂ O ₂	Hydrogen and Oxygen (monitor)
HWC	Hydrogen Water Chemistry
I&C	Instrument and Controls
IPE	Individual Plant Evaluation
IR	[NRC] Inspection Report
JPM	Job Performance Measure
LCO	Limiting Condition for Operation
LER	Licensee Event Report
LLRT	Local Leak Rate Test
LPCI	Low Pressure Coolant Injection
LORT	Licensed Operator Requalification Program
MRT	Management Review Team (PPL)
MSIV	Main Steam Isolation Valve
MSLRM	Main Steam Line Radiation Monitor
NCV	Non-Cited Violation
NDAP	Nuclear Department Administrative Procedure
NOV	[NRC] Notice of Violation
NRC	Nuclear Regulatory Commission
NUMARC	Nuclear Management and Resources Council
OD	Operability Determination
OSHA	Occupational Safety and Health Administration
PAM	Post Accident Monitoring
PCO	Plant Control Operator
PCPR	Plant Component Problem Report
PPL	Pennsylvania Power and Light Company
PRA	Probabilistic Risk Assessment
RCIC	Reactor Core Isolation Cooling
RHR	Residual Heat Removal
ROS	Radiological Operations Supervisor
RPS	Reactor Protection System
RP&C	Radiological Protection and Chemistry
RWCU	Reactor Water Cleanup
scfh	Standard Cubic Feet per Hour
SCP	Setpoint Change Package
SSCs	Structures, Systems, and Components
SSES	Susquehanna Steam Electric Station
TS	Technical Specification
US	Unit Supervisor