October 13, 2000

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

SUBJECT: NRC'S SUSQUEHANNA STEAM ELECTRIC STATION INTEGRATED REPORT 05000387/2000-007, 05000388/2000-007

Dear Mr.Byram:

On September 30, 2000, the NRC completed an inspection at the Susquehanna Steam Electric Station Nuclear Power Plant. The enclosed report presents the results of that inspection. The results of this inspection were discussed on October 10, 2000, with Mr. B. Shriver and other members of your staff.

This inspection was an examination of activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. Within these areas, the inspection consisted of a selected examination of procedures and representative records, observations of activities, and interviews with personnel.

Based on the results of this inspection, the NRC identified two violations that were evaluated under the significance determination process, and were determined to be of very low safety significance (Green). These violations were entered into your corrective action program, and are discussed in the summary of findings and in the body of the attached inspection report. These issues were determined to involve violations of NRC requirements, but because of their very low safety significance, the violations are not cited. If you contest these non-cited violations, 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 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/NRC/ADAMS/index.html (the Public Electronic Reading Room).

If you have any questions please contact me at 610-337-5233.

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 05000387/2000-007, 05000388/2000-007

cc w/encl:
B. L. Shriver, Vice President - Nuclear Site Operations
G. T. Jones, Vice President - Nuclear Engineering and Support
R. Ceravolo, General Manager - SSES
R. M. Peal, Manager, Nuclear Training
G. D. Miller, General Manager - Nuclear Assurance
R. R. Wehry, Nuclear Licensing - SSES
M. M. Golden, Manager - Nuclear Security
P. Nederostek, Nuclear Services Manager, General Electric
J. McCarthy, Manager, Nuclear Plant Services
A. M. Male, Manager, Quality Assurance
H. D. Woodeshick, Special Assistant to the President
G. DallaPalu, PP&L Nuclear Records
R. W. Osborne, Vice President, Supply & Engineering
Allegheny Electric Cooperative, Inc.
Commonwealth of Pennsylvania

Distribution w/encl: (**via E-mail)**
Region I Docket Room (with concurrences)
S. Hansell, DRP - NRC Resident Inspector
H. Miller, RA
J. Wiggins, DRA
C. Cowgill, DRP
D. Florek, DRP
C. O'Daniell, DRP
J. Shea, OEDO
E. Adensam, NRR
R. Schaaf, NRR

DOCUMENT NAME: C:\Sus07h.wpd
After declaring this document "An Official Agency Record" it **will** be released to the Public.
To receive a copy of this document, indicate in the box: "**C**" = Copy without attachment/enclosure "**E**" = Copy with attachment/enclosure "**N**" = No copy

OFFICE	RI/DRP		RI/DRP		/				
NAME	SHansell		CCowgill						
DATE	10/10/00		10/13/00		10/ /00		10/ /00		10/ /00

OFFICIAL RECORD COPY

U.S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket Nos.:	05000387, 05000388
License Nos.:	NPF-14, NPF-22
Report No.:	2000-007
Licensee:	PPL Susquehanna, LLC
Facility:	Susquehanna Steam Electric Station
Location:	Post Office Box 35 Berwick, PA 18603
Dates:	August 13, 2000 to September 30, 2000
Inspectors:	S. Hansell, Senior Resident Inspector J. Richmond, Resident Inspector A. Blamey, Resident Inspector D. Silk, Senior Emergency Preparedness Inspector
Approved by:	Curtis Cowgill, Chief Projects Branch 4 Division of Reactor Projects

SUMMARY OF FINDINGS

IR 05000387/2000-007, 5000388/2000-007, on 08/13-09/30/2000; PPL Susquehanna, LLC; Susquehanna Steam Electric Station; Units 1&2. Surveillance Testing, Emergency Action Level and Emergency Plan Changes.

The report covered a seven week period of resident inspection and announced inspections by a regional emergency preparedness inspector. The inspection identified two non-cited violations, both green. The significance of issues is indicated by their color (green, white, yellow, red) and was determined by the Significance Determination Process (Attachment 1).

Cornerstone: Barrier Integrity

- Green. PPL determined that the "as-found" maximum pathway leakage for the inboard MSIV on the "C" steam line and the outboard MSIV on the "A" steam line were in excess of the limit specified in TS 3.6.1.3, "Primary Containment Isolation Valves." This finding affects the Barrier Integrity Cornerstone and is considered to have very low safety significance using the Significance Determination Process because the redundant valve in the "A" and "C" line functioned and would have limited the leak rate to less than the leakage assumed in the offsite dose limit calculation for MSIV leakage. The failure to satisfy Technical Specification 3.6.1.3 "Primary Containment Isolation Valves," leakage limits is a violation of NRC requirements. (Section 4OA3)

Cornerstone: Emergency Preparedness

- Green. In 1984, PPL departed from the guidance in NUREG-0654, Criteria for Preparation and Evaluation of Radiological Response Plans and Preparedness in Support of Nuclear Power Plants. According to NUREG-0654, an initiating condition for an alert would be "primary coolant leakage rate greater than 50 gpm." PPL originally used that criteria but later added the phrase "for greater than four hours." There was no 10 CFR 50.54(q) evaluation documentation to support the licensee's change nor documentation of NRC approval of the change. Although, licensee's expectation is for an alert to be declared as soon as a greater than 50 gpm leak is identified, the wording of the initiating conditions allows for a four hour delay in declaration and thus decreases the effectiveness of the emergency plan and is contrary to 10 CFR 50.54(q). (Section 1EP4)

TABLE OF CONTENTS

SUMMARY OF FINDINGS ii

TABLE OF CONTENTS iii

Summary of Plant Status 1

1. REACTOR SAFETY 1
1R04 Equipment Alignments 1
.1 Partial System Walkdowns 1
.2 Complete System Walkdown 1
1R05 Fire Protection 2
1R11 Licensed Operator Re-qualification 2
1R12 Maintenance Rule Implementation 3
1R13 Maintenance Risk Assessment and Emergent Work 3
1R14 Personnel Performance During Nonroutine Plant Evolutions and Events 4
1R15 Operability Evaluations 4
1R19 Post Maintenance Testing 5
1R20 Unit 2 Maintenance Activities 5
.1 Shutdown Risk and System Configuration Management 5
.2 Reactor Plant Startup Activities 6
1R22 Surveillance Testing 6
.1 Routine Surveillance Test Observations 6
1R23 Temporary Plant Modifications 7
1EP2 Alert and Notification System Testing 7
1EP3 Emergency Response Organization Augmentation Testing 7
1EP4 Emergency Action Level and Emergency Plan Changes 8
1EP5 Correction of Emergency Preparedness Weaknesses and Deficiencies 9

4. OTHER ACTIVITIES 9
4OA1 Performance Indicator Verification 9
.1 Safety System Unavailability, Emergency AC Power, Unplanned Scrams per 7000 Critical Hours, Scrams With Loss of Normal Heat Removal, and Unplanned Power Changes per 7000 Critical Hours 9
4OA3 Event Follow-up 10
.1 Unit 2 Service Air Compressor Unloader Valves Found Out-of-Position 10
.2 (Closed) LER 05000387/2000-002-00 Main Steam Isolation Valve Total Leakage Exceeded Technical Specification Limit 10
.3 (Closed) LER 05000387/2000-008-00 Operation Prohibited by Technical Specifications due to Inoperable Reactor Vessel Level Switch (LIS-B21-1N031A) 10
.4 (Closed) LER 05000388/2000-001-00 Entry into Technical Specification 3.0.3 for LOCA/LOOP Testing 11
.5 (Closed) LER 05000387/2000-010-00 Both Trains of Control Room Ventilation Inoperable due to Operation of the Control Room Smoke removal Fans 11
.6 (Closed) LER 05000388/2000-002-00 Inadvertent Containment Radiation Monitor Isolation Valve Closure During Maintenance Activities 11

4OA5 Other 12
.1 Invalid Local Leak Rate Tests For Testable Spectacle Flanges and Notice of Enforcement Discretion 12
.2 Performance Indicator Data Collecting & Reporting Process 12
4OA6 Meetings 13
.1 Exit Meeting Summary 13

DOCUMENTS REVIEWED 14

ITEMS OPENED, CLOSED, AND DISCUSSED 15

LIST OF ACRONYMS USED 16

ATTACHMENT 1 17

Report Details

Summary of Plant Status

Susquehanna Steam Electric Station (SSES) Unit 1 began the period at full power and operated at or near full power for the entire report period with exceptions for testing and control rod pattern adjustments.

Unit 2 began the period at full power. On August 17, the unit was taken off-line to repair a water leak on a one inch reactor recirculation pump seal pipe weld. The unit returned to full power on August 28, and operated at or near full power for the remainder of the report period.

1. REACTOR SAFETY
Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity, Emergency Preparedness

1R04 Equipment Alignments (71111.04)

.1 Partial System Walkdowns

a. Inspection Scope

The inspectors performed partial system walkdowns to verify system and component alignment and note any discrepancies that would impact system operability on the following:

- Unit 1 and Unit 2 Instrument Air Compressors, Service Air Compressors, Service Air to Instrument Air Cross-tie, Unit 1 to Unit 2 Instrument Air Cross-tie, and Unit 1 to Unit 2 Service Air Cross-tie (following identification that both Unit 2 service air compressors had been inadvertently removed from service, see section 4OA3.1)
- Unit 1 and Unit 2 Reactor Protection System Motor Generators and Electronic Protection Assembly (EPA) circuit breakers
- Unit 2 Reactor Core Isolation Cooling (RCIC) system

b. Issues and Findings

There were no findings identified.

.2 Complete System Walkdown

a. Inspection Scope

The inspectors performed a complete system walkdown on the Unit 2 high pressure coolant injection (HPCI) system to verify equipment alignment. In addition, the review included, but was not limited to the Final Safety Analysis Report sections 3.6.1.2.3, High Pressure Coolant Injection System; 3.9, HPCI turbine and pump; 5.2.5.1.3, Detection of Abnormal Leakage Outside the Primary Containment; 6.2.1, Primary Containment Functional Design; 15, Accident Analysis; HPCI system Design Drawings and issues

tracked by the system health report (condition reports, work orders and other issues) to identify discrepancies that would impact system operability.

b. Issues and Findings

There were no findings identified.

1R05 Fire Protection (71111.05)

a. Inspection Scope

The inspectors performed walkdowns of various plant areas to assess PPL's control of transient combustible material and ignition sources, fire detection and suppression capabilities, fire barriers, and any related compensatory measures. The areas included:

- Unit 2 Reactor Feed Pump and Reactor Feed Pump Turbine Areas
- Unit 2 Primary Containment (drywell), following outage maintenance activities
- "E" Emergency Diesel Generator Building, during maintenance on the "D" Emergency Diesel Generator

b. Issues and Findings

There were no findings identified.

1R11 Licensed Operator Re-qualification (71111.11)

a. Inspection Scope

On August 16, 2000, the inspectors observed the licensed operator "Just in Time" training prior to the Unit 2 shutdown. The review included operating experience shutdown events at Susquehanna and similar boiling water reactors, high risk evolutions, and corrective action report reviews related to previous shutdown problems. The plant simulator was used to provide hands on training to the licensed operators who would perform the plant shutdown.

On September 26, 2000, the inspectors observed the licensed operator performance in the simulator during an emergency preparedness exercise. The review assessed the operator performance and emergency plan implementation. The inspectors reviewed the emergency response organization's evaluation of the crew's performance.

b. Issues and Findings

There were no findings identified.

1R12 Maintenance Rule Implementation (71111.12)

a. Inspection Scope

The inspectors reviewed PPL's follow-up actions for selected structure, system, or component (SSC) issues, to assess the effectiveness of PPL's maintenance activities. The inspectors reviewed the performance of selected SSCs to verify that problem identification and resolution of Maintenance Rule related issues had been appropriately monitored, evaluated, and dispositioned in accordance with the requirements of 10 CFR 50.65, "Requirements for Monitoring the Effectiveness of Maintenance," and PPL procedure NDAP-QA-0413, "SSES Maintenance Rule Program." In addition, the inspectors reviewed selected SSC classification, performance criteria, goals, and corrective actions to verify that the actions were reasonable and appropriate. The specific issues included:

- Scram Discharge Volume (SDV) vent and drain valves and solenoid valve failures (CR 98-0359, CR 246527, CR 186283)
- Reactor Protection System SDV high water level input switch failures (CR 91463, CR 236492)
- Containment Instrument Gas check valve failures, purge solenoid valve failures, and compressor trips (CR’s 237049, 251266, 233494,76485, and 76264)
- Reactor Protection System motor-generator voltage regulator failure (PCWO 275207)

b. Issues and Findings

There were no findings identified.

1R13 Maintenance Risk Assessment and Emergent Work (71111.13)

a. Inspection Scope

The inspectors observed selected portions of planned and emergent maintenance work activities to assess PPL's risk management. The inspectors attended planning meetings and discussed the risk management aspect of the activities with maintenance personnel, operators, system engineers, and work coordinators for the following issues:

- Unit 1 "B" Instrument Air Compressor Overhaul (PCWO 227097)
- Fire Protection System Modifications in "A" and "C" Emergency Diesel Generator Rooms, during Unit 2 maintenance outage with "B" loop of shutdown cooling inoperable (PCWO 221956, DCP 214699, SPWO 244469)
- Unit 2 high pressure coolant injection (HPCI) system outage coincident with Unit 2 “B" control rod drive train degraded pump motor bearing and sticking pump discharge check valve (CRs 284859, 286438)
- Unit 2 HPCI system outage coincident with a Unit 2 “B" turbine closed cooling water pump discharge check valve problem (CR 287211)

b. Issues and Findings

There were no findings identified.

1R14 Personnel Performance During Nonroutine Plant Evolutions and Events (71111.14)

c. Inspection Scope

The inspectors reviewed PPL's response to a report of fumes in the Sodium Bisulfite building while receiving a shipment of Sodium Bisulfite. PPL was initially unable to enter the building due to an unexpected high concentration of Sodium Bisulfite fumes. The offload was completed and the building vented without further incident.

b. Issues and Findings

There were no findings identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

The inspectors reviewed selected operability determinations to assess the adequacy of the evaluations, the use and control of compensatory measures, compliance with the Technical Specifications, and the risk significance of the issue. The inspectors verified that the operability determinations were performed as required by procedure NDAP-QA-0703, Operability Assessments. The inspectors used the Technical Specifications, Technical Requirements Manual, Final Safety Analysis Report, and associated Design Basis Documents as references. The specific issues reviewed included:

- Unit 1 “C” Average Power Range Monitor low voltage monitoring circuit (CR 285490)
- Unit 1 and 2 Control Room Emergency Outside Air Supply System due to smoke exhaust fan operation (CR 279975)
- "D" Emergency Diesel Generator reverse power trip

b. Issues and Findings

There were no findings identified.

1R19 Post Maintenance Testing (71111.19)

a. Inspection Scope

The inspectors observed post-maintenance testing activities and reviewed the PPL test data. The inspectors verified the test success criteria addressed in the procedures was in compliance with Technical Specification requirements. The specific issues reviewed included:

- Replacement of Eroded Emergency Service Water Piping Downstream of the “D” Emergency Diesel Generator Jacket Water Cooler and Intercooler (PCWO 196361 and 196556)
- Unit 1 "A" Reactor Recirculation Pump Speed Controller, following a controller failure (PCWO 278578, CR 278587)
- "D" Emergency Diesel Generator, following replacement of mechanical and electronic governors (TP-024-161, SE-024-D01, OP-024-001)
- Unit 1 High Pressure Coolant Injection System cooling water pressure control valve functional check, PCV-156F035 (PCWO 203274)
- “A” Emergency Service Water pump and motor vibration checks following planned maintenance
- Unit 2 replacement of the “B” reactor protection system motor generator voltage regulator (PCWO 275207)

b. Issues and Findings

There were no findings identified.

1R20 Unit 2 Maintenance Activities (71111.20)

.1 Shutdown Risk and System Configuration Management

a. Inspection Scope

The inspectors observed selected portions of equipment and system testing and reviewed selected portions of equipment restoration and test procedures to verify that shutdown risk was adequately considered during system configuration changes and post maintenance test activities. Specifically, the inspectors verified that shutdown cooling flow paths, electrical power alignment, and emergency core cooling systems and makeup water source availability were operated in accordance with NRC requirements and PPL procedures.

.2 Reactor Plant Startup Activities

a. Inspection Scope

The inspectors verified that secondary containment was maintained as required by Technical Specifications, and performed a post-maintenance walkdown of the primary containment (drywell), prior to containment closure. The inspectors reviewed selected portions of PPL's in-service inspection for reactor recirculation system modifications.

The inspectors observed selected portions of the reactor plant startup from the control room to verify that Technical Specifications, license conditions, and administrative requirements were satisfied. The observed activities included startup preparations for mode change, control rod withdrawals, reactor criticality, reactor coolant system heatup, and transition from the startup to power operation mode. The inspectors reviewed the Estimated Critical Position calculation and verified that reactor criticality occurred within the estimated control rod positions predicted by the core design.

b. Issues and Findings

There were no findings identified.

1R22 Surveillance Testing (71111.22)

.1 Routine Surveillance Test Observations

a. Inspection Scope

The inspectors observed the performance of selected portions of surveillance tests and reviewed portions of the test results to verify that the tested systems and components were capable of performing their safety functions, including:

- Unit 2 “B” Control Rod Drive pump 4kV breaker DC control power automatic transfer logic test (SE-255-001)
- Unit 1 “C” Average Power Range Monitor Functional Test (SI-178-209C)
- Unit 2 “A” Residual Heat Removal Flow Verification Test (SO-249-A02)
- Unit 2 High Pressure Coolant Injection Overspeed Trip test using Auxiliary Steam (TP-252-006)
- Unit 2 High Pressure Coolant Injection Quarterly Surveillance Test (SO-252-002)

b. Issues and Findings

There were no findings identified.

1R23 Temporary Plant Modifications (71111.23)

a. Inspection Scope

The inspectors reviewed selected temporary modifications to ensure that the temporary changes did not adversely affect system availability or the operability of a function important to safety. The inspectors reviewed the associated system design bases, including the Final Safety Analysis Report and Technical Specifications, and assessed the adequacy of the 10 CFR 50.59 safety evaluations. The inspectors verified that configuration control of the temporary changes were adequate by reviewing the affected drawings and procedures to ensure that appropriate updates had been made. The inspectors verified that the installations were consistent with the temporary modification documentation and reviewed selected post installation test results to confirm that the actual impact of the temporary changes had been adequately verified by test. The specific temporary modifications included:

- Unit 1 "C"-Average Power Range Monitor C51-K24 power monitor relay replacement with a modified relay to defeat the +20 volt power monitor function (T-MOD 280482)

b. Issues and Findings

There were no findings identified.

1EP2 Alert and Notification System Testing (71114.02)

a. Inspection Scope

The inspector reviewed siren description manuals to understand the system components and capability. PPL personnel responsible for testing and maintaining the sirens were interviewed about the testing and maintenance process. The timeliness of the test data collection and corrective maintenance was reviewed, as well as, trends of siren problems. Emergency plan commitments regarding the sirens were reviewed.

b. Issues and Findings

There were no findings identified.

1EP3 Emergency Response Organization Augmentation Testing (71114.03)

a. Inspection Scope

The inspector reviewed PPL's commitments for facility staffing and activation. The qualification records were reviewed to ensure that sufficient numbers of responders were available. The procedure for initiating Emergency Response Organization (ERO) call-in and its back up procedure were reviewed and walked-through with PPL personnel responsible for implementing those procedures. Results for monthly call-in tests were reviewed for timeliness and consistency. Data from the 1996 off hours response drill (when ERO members came to the site) were reviewed.

2. Issues and Findings

There were no findings identified.

1EP4 Emergency Action Level and Emergency Plan Changes (71114.04)

a. Inspection Scope

The inspector reviewed recent emergency plan and emergency action level (EAL) changes to determine if the changes resulted in a decrease of effectiveness of the emergency plan. The documentation for an EAL change made in 1984 related to reactor coolant system leakage was reviewed. PPL's 10 CFR 50.54(q) review process was assessed.

b. Issues and Findings

During an observation of operator simulator training in February 2000, the NRC identified an issue regarding the EAL pertaining to reactor coolant system (RCS) leakage. The inspector noted an inconsistent application of the EAL as some operators and trainers would declare an alert as soon as they determined that an RCS leak greater than 50 gallons per minute (gpm) existed whereas others understood that they had four hours to make the declaration.

The inspectors determined that PPL made a change to their emergency plan that decreased the effectiveness of the emergency plan. In 1984, PPL made a change to their emergency plan which departed from their commitment to the guidance in NUREG-0654, Criteria for Preparation and Evaluation of Radiological Response Plans and Preparedness in Support of Nuclear Power Plants. According to NUREG-0654, an initiating condition for an alert would be "primary coolant leakage rate greater than 50 gpm." PPL originally used that criteria but later added the phrase "for greater than four hours." Adding the phrase "for greater than four hours" decreased the effectiveness of PPL's emergency plan.

10 CFR 50.54(q) states in part that the licensee may make changes to these plans without Commission approval only if the changes do not decrease the effectiveness of the plans. PPL was not able to provide documentation of their 10 CFR 50.54(q) evaluation nor documentation of NRC approval of the change to support the change. Although, PPL's expectation is for an alert to be declared as soon as a greater than 50 gpm leak is identified, the wording of the initiating conditions allows for a four hour delay in declaration and thus decreases the effectiveness of the emergency plan and is contrary to 10 CFR 50.54(q).

This issue was entered into PPL's corrective action program. This issue was considered to be more than minor because if left uncorrected it could delay entry into the emergency plan and it therefore effects the emergency planning cornerstone. This issue was evaluated under the SDP process as a failure to meet a regulatory requirement but not a failure to meet a planning standard. Therefore, the issue was determined to be of very low safety significance (Green) and is a non-cited violation. **(NCV 05000387,388/2000007-02)**

1EP5 Correction of Emergency Preparedness Weaknesses and Deficiencies (71114.05)

a. Inspection Scope

The inspector reviewed corrective actions associated with the siren system and the ERO notification system. Condition Reports assigned to the EP department were also reviewed to determine significance of the issues and to determine if repeat problems were occurring. The inspector reviewed the reports for the 1999 and 2000 10 CFR 50.54(t) reviews to assess that the reviews met the requirements and if any repeat issues were identified.

b. Issues and Findings

There were no significant findings identified in this area.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification

.1 Safety System Unavailability, Emergency AC Power, Unplanned Scrams per 7000 Critical Hours, Scrams With Loss of Normal Heat Removal, and Unplanned Power Changes per 7000 Critical Hours (71151)

a. Inspection Scope

The inspectors reviewed PPL records to assess the accuracy and completeness of the Safety System Unavailability Emergency AC Power, Unplanned Scrams per 7000 Critical Hours, Scrams With Loss of Normal Heat Removal, and Unplanned Power Changes per 7000 Critical Hours performance indicators. The records reviewed included selected Technical Specification limiting condition for operation logs, emergency diesel generator start logs, and condition reports for the previous 36 months.

b. Issues and Findings

The inspectors identified that PPL used a method to determine emergency diesel generator (EDG) unavailability time that did not include all of the time periods when an EDG was unable to perform its intended safety function. This was considered a minor issue because the additional unavailability time was small in comparison to the total EDG unavailability time, and did not cause the PI to exceed a performance threshold. PPL entered this issue into their corrective action program as condition report 271151.

4OA3 Event Follow-up (71153)

.1 Unit 2 Service Air Compressor Unloader Valves Found Out-of-Position

a. Inspection Scope

On August 16, the inspectors observed PPL's initial investigation of a status control event, for the Unit 2 service air compressor unloader valves that were found out-of-position on the service air compressor control panels. PPL's investigation included an evaluation for potential tampering, and a partial plant panel walkdown. The inspectors verified that the investigation was performed in accordance with operations procedure OP-AD-001, "Conduct of Operations." PPL entered this issue into their corrective action program as condition report 277874.

b. Issues and Findings

There were no findings identified.

.2 (Closed) LER 05000387/2000-002-00 Main Steam Isolation Valve Total Leakage Exceeded Technical Specification Limit

On March 24, PPL determined that the "as-found" maximum pathway leakage for the MSIVs was in excess of the limit specified in TS 3.6.1.3, "Primary Containment Isolation Valves." PPL determined that the excessive leakage resulted from a misaligned poppet to body valve seat on the inboard MSIV on the "C" steam line and a protrusion in the guide surface for the poppet on the outboard MSIV on the "A" steam line. The total "as-left" MSIV maximum pathway leakage was 18 standard cubic feet per hour (SCFH), and was within the TS requirement of less than 300 SCFH.

This finding effects the Barrier Integrity Cornerstone and is considered to have very low safety significance (green) using the Significance Determination Process, because the redundant valves in the "A" and "C" steam lines functioned and would have limited the leak rate to 135 SCFH. This value is less than the leakage assumed in the offsite dose limit calculation for MSIV leakage. This finding is more than minor because if left uncorrected the maximum pathway leakage would further degrade. The failure to satisfy TS 3.6.1.3 "Primary Containment Isolation Valves," leakage limits is a violation of NRC requirements. The violation is being treated as a Non-Cited Violation, consistent with Section VI.A of the NRC Enforcement Policy, issued on May 1, 2000 (65 FR 25368). This LER is closed. **(NCV 05000387/2000007-01)**

.3 (Closed) LER 05000387/2000-008-00 Operation Prohibited by Technical Specifications due to Inoperable Reactor Vessel Level Switch (LIS-B21-1N031A)

PPL determined that Technical Specifications (TS) 3.3.5.1 and 3.3.5.2 required actions, to place an inoperable instrument in the tripped condition within 24 hours, were not performed within the required time because Operations did not ensure that a follow-up operability evaluation was completed within the allowed TS action time of 24 hours. Specifically, plant operators identified that a reactor vessel water level indicating-switch had moisture inside of the instrument and concluded that the instrument was operable based on the analog gauge indication on the instrument. Two days later, as-found test data demonstrated that the switches inside the instrument were not able to perform their function. The instrument was immediately replaced. A follow-up engineering evaluation determined that the instrument switches had been inoperable since the moisture was originally detected.

The inspectors determined that this issue was an isolated example of a TS non-compliance, and constituted a violation of minor significance that is not subject to formal enforcement action in accordance with Section IV of the NRC Enforcement Policy, issued on May 1, 2000 (65 FR 25368). This issue was documented in PPL's corrective action program as condition reports 271373 and 271929. This LER is Closed.

.4 (Closed) LER 05000388/2000-001-00 Entry into Technical Specification 3.0.3 for LOCA/LOOP Testing

Unit 2 entered Technical Specification (TS) 3.0.3 for a planned 24 month Loss of Coolant Accident (LOCA)/Loss of Offsite Power (LOOP) surveillance test on Unit 1. The TS was entered because, during the test, PPL determined that both control room chillers, common to both units, were de-energized for a period of 10 seconds during the LOCA/LOOP test. The test was completed satisfactorily and TS 3.0.3 was exited before a plant shutdown was required.

A subsequent review of the control room chiller logic determined that the test could be performed without disabling both chillers. No new issues were identified in this review; no violations of NRC requirements were identified. This issue was documented in PPL's corrective action program as condition report 251695. This LER is Closed.

.5 (Closed) LER 05000387/2000-010-00 Both Trains of Control Room Ventilation Inoperable due to Operation of the Control Room Smoke removal Fans

PPL entered the plant shutdown Technical Specification (TS) 3.0.3, due to a condition that rendered both trains of the Control Room Emergency Outside Air Supply System (CREOASS) inoperable. The CREOASS was determined to be inoperable when a smoke removal system was operated for 2 hours. The smoke removal fan operation resulted in the inability to maintain the TS required positive pressure in the control room structure. When operators noticed the negative control room differential pressure, they secured the smoke removal fans. The control room ventilation system was restored to normal operation before completion of the TS 3.0.3 plant shutdown would have been required. This LER is Closed.

.6 (Closed) LER 05000388/2000-002-00 Inadvertent Containment Radiation Monitor Isolation Valve Closure During Maintenance Activities

Both inboard primary containment isolation valves for the Unit 2 containment radiation monitor closed inadvertently during maintenance. During planned relay replacement, the technicians bumped a loose wire which de-energized the valve control circuit and caused the valves to close. The wire was tightened and the valves were opened to restore the system to a normal alignment. No new issues were identified in this review; no violations of NRC requirements were identified. This issue was documented in PPL's corrective action program as condition report 252024. This LER is Closed.

4OA5 Other

.1 Invalid Local Leak Rate Tests For Testable Spectacle Flanges and Notice of Enforcement Discretion (TAC NO. MA8621; NOED NO. 00-6-005)

a. Inspection Scope (71111.22)

In Inspection Report 05000387/2000-003, 05000388/2000-003, the NRC discussed an invalid local leak rate test for testable spectacle flanges 1(2)S299A and 1(2)S299B. PPL correctly tested the Unit 1 spectacle flanges prior to startup from the refueling outage in May 2000. The NRC issued a notice of enforcement discretion (NOED 00-6-005) which allowed PPL a one time deferral of testing on the Unit 2 flanges from April 8, 2000, until the next outage when Unit 2 will be placed in cold shutdown, not to exceed the next Unit 2 refueling outage.

On August 17, Unit 2 was shutdown. During this maintenance outage PPL restored spectacle flanges 2S299A and 2S299B to the correct design configuration and performed local leak rate testing on the flanges. The inspectors reviewed the work performed under work orders PCWO 247402 and 247404, “Perform O-Ring Configuration Check and Change If Necessary.” The inspectors also reviewed the local leak rate testing performed in accordance with SE-259-106, “Local Leak Rate Test of 2S299A O-Rings” and SE-259-107, “Local Leak Rate Test of 2S299B O-Rings.” NOED 00-6-005, Deferral of TS Testing on the Unit 2 Testable Spectacle Flanges 2S299A and 2S299B is closed.

b. Issues and Findings

There were no findings identified.

.2 Performance Indicator Data Collecting & Reporting Process (TI 2515/144)

a. Inspection Scope

The inspectors reviewed PPL's performance indicator (PI) data collecting and reporting process to assess whether PPL had a clear understanding of the indicator definitions, data reporting elements, calculational methods, definitions of terms, and clarifying notes, consistent with the guidance contained in Nuclear Energy Institute (NEI) document 99-02, revision 0, "Regulatory Assessment Performance Indicator Guideline." The inspectors also reviewed PPL's performance indicator program implementing procedure NDAP-QA-0737, "Regulatory Performance Assessment," and the program's most recent Quality Assurance audit, No. 2000-015, "NRC-PI Verification Audit," dated July 5, 2000. The following indicators were included in the review:

- Safety System Unavailability, Emergency AC Power

b. Issues and Findings

The inspectors identified a potential weakness in PPL’s data collecting and reporting process. Specifically, there were no detailed implementing procedures or instructions at the functional unit level. PPL relied on individual worker interpretation of NEI and NRC indicator definitions, definitions of terms, and clarifying notes. The methods used to produce the date reporting elements were not documented. The inspectors determined

that the data reporting elements were reviewed and approved at the manager level based on a data source summary and a verbal report of the methods utilized. The inspectors identified a minor issue relating to the definition of terms and clarifying notes for emergency diesel generator unavailable hours (see section 4OA1.1).

4OA6 Meetings

.1 Exit Meeting Summary

On October 10, 2000, the resident inspectors presented the inspection results to Mr. B. Shriver and other members of your staff who acknowledged the findings.

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

DOCUMENTS REVIEWED
(not listed in the body of the inspection report)

CR 271373	Moisture under gauge face of LIS-B21-1N031A
CR 271929	LIS-B21-1N031A failed SI-180-303 acceptance criteria
CR 98-0359	SDV vent and drain solenoid valve failure
CR 246527	SDV vent and drain valves did not open as expected, following scram
CR 186283	SDV vent and drain valves did not open for 16 minutes after scram reset
CR 91463	LSH-C12-2N013B out of tolerance during SI-258-302
CR 236492	LSH-C12-1N013D failed to reset during SI-158-202
CR 285490	APRM inoperative trip function, discrepancy between TS basis and FSAR
CR 286258	Maintenance Rule Program needs revision to add SDV vent and drain valve function
CR 276487	Unit 1 Unexpected half scram from "C" APRM
PCWO 271418	Replace and calibrate LIS-B21-1N031A
WA V98610	Replace LSH-C12-2N013B
PCWO 236835	Replace LSH-C12-1N013D
RTSV 255234	SI-180-303, partial surveillance on LIS-B21-1N031A
PCWO 282829	Install T-MOD 280482, 1C-APRM power monitor relay
EC-RISK-0528	Risk Significant Systems, Structures, and Components for the Maintenance Rule and Generic Letter 89-10 Components
EC-RISK-1054	SSC Availability Performance Criteria for the Maintenance Rule
EC-RISK-1060	Acceptable Number of Failures for Risk Significant SSCs in the Maintenance Rule
GO-200-002	Plant Startup, Heatup, and Power Operations
OP-AD-001	Conduct of Operations
OI-AD-0301	Protected Equipment Program
NDAP-QA-0737	Regulatory Performance Assessment
NDAP-QA-0413	SSES Maintenance Rule Program
NDAP-QA-1218	Temporary Modifications

Quality Assurance Audit 2000-015, "NRC-PI Verification Audit"
NEI 99-02, revision 0, "Regulatory Assessment Performance Indicator Guideline"
SSES Maintenance Rule Basis Document - System 55, Control Rod Drive Hydraulics
SSES Maintenance Rule Basis Document - System 58, Reactor Protection System

TS	Section 3.3.1.1.2.d
TS Basis	Section 3.3.1.1.2.d
SSES FSAR	Sections 7.2, "Reactor Protection System Instrumentation
SSES FSAR	Sections 7.6.1a.5.6, "Average Power Range Monitor System"
Safety Evaluation	LDCN 3208, revise TS Basis 3.3.1.1.2.d
Safety Evaluation	T-MOD 280482, 1C-APRM power monitor relay

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

None

Opened and Closed

05000387,388/2000007-01	NCV	Main Steam Isolation Valve Total Leakage Exceeded Technical Specification Limit (section 1R22.2)
05000387,388/2000007-02	NCV	Emergency Action Level for Reactor Coolant System Leakage Change Without NRC Approval (section 1EP4)
05000387/2000-002-00	LER	Main Steam Isolation Valve Total Leakage Exceeded Technical Specification Limit (section 4AO3.2)
05000388/2000-001-00	LER	Entry into Technical Specification 3.0.3 for LOCA/LOOP Testing (section 4AO3.4)
05000387/2000-010-00	LER	Both Trains of Control Room Ventilation Inoperable due to Operation of the Control Room Smoke removal Fans (section 4AO3.5)
05000388/2000-002-00	LER	Inadvertent Containment Radiation Monitor Isolation Valve Closure During Maintenance Activities (section 4AO3.6)
05000387/2000-008-00	LER	Operation Prohibited by Technical Specifications due to Inoperable Reactor Vessel Level Switch (LIS-B21-1N031A) (section 4AO3.3)

Closed

05000387,388/00-6-005	NOED	Deferral of TS Testing on the Unit 2 Testable Spectacle Flanges 2S299A and 2S299B (section 4OA5.1)

LIST OF ACRONYMS USED

ALARA	As-Low-As-Reasonably-Achievable
ANS	Alert and Notification System
APRM	Average Power Range Monitor
CFR	Code of Federal Regulations
CR	Condition Report
CREOASS	Control Room Emergency Outside Air Supply System
EAL	Emergency Action Level
EDG	Emergency Diesel Generator
EPA	Electronic Protection Assembly
ERO	Emergency Response Organization
ESW	Emergency Service Water
FR	Federal Register
FSAR	[SSES] Final Safety Analysis Report
GPM	Gallons Per Minute
H2O2	Hydrogen/Oxygen Analyzer
HP	Health Physics
HPCI	High Pressure Coolant Injection
LER	Licensee Event Report
MR	Maintenance Rule
MRFF	Maintenance Rule Functional Failure
MSIV	main Steam Isolation Valves
NCV	Non-Cited Violation
NOED	Notice of Enforcement Discretion
NRC	Nuclear Regulatory Commission
PASS	Post Accident Sampling System
PI	Performance Indicator
PPL	PPL Susquehanna, LLC
PRA	probabilistic risk assessment
QA	Quality Assurance
RCIC	Reactor Core Isolation Cooling
RCS	Reactor Coolant System
RPS	Reactor Protection System
SCFH	Standard Cubic Feet per Hour
SDP	[NRC] Significance Determination Process
SDV	Scram Discharge Volume
SSC	Structure, System, or Component
SSES	Susquehanna Steam Electric Station
TBCCW	Turbine Building Closed Cooling Water
TS	Technical Specification
URI	Unresolved Item
WO	Work Order

ATTACHMENT 1

NRC's REACTOR OVERSIGHT PROCESS

The federal Nuclear Regulatory Commission (NRC) recently revamped its inspection, assessment, and enforcement programs for commercial nuclear power plants. The new process takes into account improvements in the performance of the nuclear industry over the past 25 years and improved approaches of inspecting and assessing safety performance at NRC licensed plants.

The new process monitors licensee performance in three broad areas (called strategic performance areas): reactor safety (avoiding accidents and reducing the consequences of accidents if they occur), radiation safety (protecting plant employees and the public during routine operations), and safeguards (protecting the plant against sabotage or other security threats). The process focuses on licensee performance within each of seven cornerstones of safety in the three areas:

Reactor Safety	Radiation Safety	Safeguards
● Initiating Events	● Occupational	● Physical Protection
● Mitigating Systems	● Public	
● Barrier Integrity		
● Emergency Preparedness		

To monitor these seven cornerstones of safety, the NRC uses two processes that generate information about the safety significance of plant operations: inspections and performance indicators. Inspection findings will be evaluated according to their potential significance for safety, using the Significance Determination Process, and assigned colors of GREEN, WHITE, YELLOW or RED. GREEN findings are indicative of issues that, while they may not be desirable, represent very low safety significance. WHITE findings indicate issues that are of low to moderate safety significance. YELLOW findings are issues that are of substantial safety significance. RED findings represent issues that are of high safety significance with a significant reduction in safety margin.

Performance indicator data will be compared to established criteria for measuring licensee performance in terms of potential safety. Based on prescribed thresholds, the indicators will be classified by color representing varying levels of performance and incremental degradation in safety: GREEN, WHITE, YELLOW, and RED. GREEN indicators represent performance at a level requiring no additional NRC oversight beyond the baseline inspections. WHITE corresponds to performance that may result in increased NRC oversight. YELLOW represents performance that minimally reduces safety margin and requires even more NRC oversight. And RED indicates performance that represents a significant reduction in safety margin but still provides adequate protection to public health and safety.

The assessment process integrates performance indicators and inspection so the agency can reach objective conclusions regarding overall plant performance. The agency will use an Action Matrix to determine in a systematic, predictable manner which regulatory actions should be taken based on a licensee's performance. The NRC's actions in response to the significance (as represented by the color) of issues will be the same for performance indicators as for inspection findings. As a licensee's safety performance degrades, the NRC will take more and increasingly significant action, which can include shutting down a plant, as described in the Action Matrix.

More information can be found at: http://www.nrc.gov/NRR/OVERSIGHT/index.html.