UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
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May 13, 2009

Mr. William H. Spence
Senior Vice President and
PPL Susquehanna, LLC
Chief Nuclear Officer
2 North Ninth Street – GENTW16
Allentown, PA 18101

SUBJECT: SUSQUEHANNA STEAM ELECTRIC STATION – NRC INTEGRATED INSPECTION REPORT 05000387/2009002 AND 05000388/2009002.

Dear Mr. Spence:

On March 31, 2009, the U. S. Nuclear Regulatory Commission (NRC) completed an inspection at your Susquehanna Steam Electric Station Units 1 and 2. The enclosed integrated inspection report presents the inspection results, which were discussed on April 15, 2009, with you and other members of your staff.

This inspection examined activities completed under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

Based on the results of this inspection, no findings of significance were identified.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any), will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of the NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/

Paul G. Krohn, Chief
Projects Branch 4
Division of Reactor Projects

Docket Nos. 50-387; 50-388
License Nos. NPF-14, NPF-22

Enclosures: Inspection Report 05000387/2009002 and 05000388/2009002
Attachment: Supplemental Information

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REGION I

Docket No:	50-387, 50-388
License No:	NPF-14, NPF-22
Report No:	05000387/2009002 and 05000388/2009002
Licensee:	PPL Susquehanna, LLC
Facility:	Susquehanna Steam Electric Station, Units 1 and 2
Location:	Berwick, Pennsylvania
Dates:	January 1, 2009 through March 31, 2009
Inspectors:	F. Jaxheimer, Senior Resident Inspector P. Finney, Resident Inspector F. Arner, Senior Reactor Inspector D. Orr, Senior Reactor Inspector M. Balazik, Reactor Inspector
Approved By:	Paul G. Krohn, Chief Projects Branch 4 Division of Reactor Projects

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SUMMARY OF FINDINGS

IR 05000387/2009002, 05000388/2009002; 01/01/2009 – 03/31/2009; Susquehanna Steam Electric Station, Units 1 and 2

The report covered a 3-month period of inspection by resident inspectors and announced inspections by regional reactor inspectors. No findings were identified. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4, dated December 2006.

A. NRC-Identified and Self-Revealing Findings

No findings of significance were identified.

B. Licensee Identified Violations

None

REPORT DETAILS

Summary of Plant Status

Susquehanna Steam Electric Station (SSES) Unit 1 began the inspection period at the authorized licensed power level of 94.4 percent rated reactor thermal power (RTP). On January 3, Unit 1 was reduced to 80 percent RTP over 20 hours for circulation water waterbox repairs. During the recovery from that evolution, the unit experienced a reactor recirculation pump runback associated with a circulation water pump trip signal. The runback reduced power to 72 percent RTP and was restored over 8 hours. On January 23, Unit 1 was reduced to 90 percent RTP over 5 hours for hydraulic control unit maintenance. On January 25, Unit 1 was reduced to 71 percent RTP over 13 hours for a rod sequence exchange. Unit 1 remained at 94.4 percent power for the remainder of the inspection period.

Unit 2 began the inspection period at full RTP. On January 17, Unit 2 was reduced to 79 percent RTP over 10 hours for a rod pattern adjustment. On February 15, Unit 2 was reduced to 74 percent RTP over 15 hours for a rod pattern adjustment. On February 28, Unit 2 was reduced to 76 percent RTP over 13 hours for a rod pattern adjustment. Unit 2 remained at full RTP until March 8, when the unit commenced an end of fuel cycle coast down ending the period at 90 percent RTP.

Note: The licensed RTP for Unit 1 is 3952 megawatts thermal. The Extended Power Uprate (EPU) License Amendment for SSES was approved on January 30, 2008, and was implemented for Unit 1 in accordance with the issued license conditions. For the current operating cycle, the Unit 1 authorized power level is 94.4 percent of the EPU licensed power limit. For the purposes of this report, full RTP for Unit 2 remains at 3489 megawatts thermal since EPU power level increases have not yet been implemented on that unit.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R01 Adverse Weather Protection (71111.01 – 1 Sample)

.1 Adverse Weather – Readiness for Seasonal Susceptibilities

a. Inspection Scope

During the week of January 13, the inspectors reviewed system operations and preparations for extreme cold weather. Plant walkdowns for condensate tank supply line and ultimate heat sink (UHS) systems were performed to determine the adequacy of PPL's weather protection features. Inspectors reviewed operator actions to address failures of equipment due to freezing and compensatory actions during the adverse cold weather conditions. The inspectors also reviewed and evaluated considerations in PPL's Maintenance Rule station risk assessment. Additional documents that were reviewed are listed in the attachment.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment (71111.04Q – 3 Samples)

.1 Partial Walkdown

a. Inspection Scope

The inspectors performed partial walkdowns to verify system and component alignment and to identify any discrepancies that would impact system operability. The inspectors verified that selected portions of redundant or backup systems or trains were available while certain system components were out-of-service (OOS). The inspectors reviewed control room indications, selected valve positions, electrical power availability, and the general condition of major system components. The walkdowns included the following systems:

- Unit 1, reactor building (RB) Zone III unfiltered exhaust during Unit 2 RB Zone III unfiltered exhaust outage;
- Unit 2, 250 Volt Direct Current (DC) buses, batteries and chargers; and
- Control room emergency outside air supply (CREOAS) system fans, filters, and control room indications.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05Q – 6 Samples)

.1 Fire Protection – Tours

a. Inspection Scope

The inspectors reviewed PPL's fire protection program to evaluate the specified fire protection design features, fire area boundaries, and combustible loading requirements for selected areas. The inspectors walked down those 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 to assess PPL's fire protection program in those areas. The inspected areas included:

- Unit 1, core spray rooms and high pressure coolant injection (HPCI) room FP-113-103, FP-113-102;
- Unit 1, reactor core isolation cooling (RCIC) pump room FP-113-104;
- Unit 2, control rod drive (CRD) hydraulic control units, FP-213-248;
- Unit 2, HPCI and residual heat removal (RHR) rooms, FP-213-238, FP-213-240, and FP-213-241;
- Emergency safeguards service water (ESSW) pump house loss of offsite power (LOOP) "B" pump room, FP-013-201; and
- Standby gas treatment area FP-013-187 and access corridor FP-113-110.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification Program (71111.11 – 1 Sample)

.1 Resident Inspector Quarterly Review

a. Inspection Scope

On February 26, the inspectors observed licensed operator simulator training during routine operator requalification training. The inspectors compared their observations to Technical Specifications (TSs), emergency plan implementation, and the use of system operating procedures. Inspectors reviewed operating and off-normal procedure changes to lock scoop tubes for uncontrolled changes in reactor recirculation flow that resulted from Condition Report (CR) 1038458.

The inspectors also evaluated PPL's critique of the operators' performance to identify discrepancies and deficiencies in operator training. The following training was observed:

- Reactor recirculation flow control, reactor control, steam leak isolation, ED-100-105, ED-100-104, fuel failure, high main steam line radiation, and secondary containment control.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12 – 3 Samples)

a. Inspection Scope

The inspectors evaluated PPL's work practices and followup corrective actions for selected safety structures, systems, and component (SSC) issues to assess the effectiveness of PPL's maintenance activities. The inspectors reviewed the performance history of those SSCs and assessed PPL's extent of condition determinations for these issues with potential common cause or generic implications to evaluate the adequacy of PPL's corrective actions. The inspectors reviewed PPL's problem identification and resolution actions for these issues to evaluate whether PPL had appropriately monitored, evaluated, and dispositioned the issues in accordance with PPL procedures and the requirements of 10 CFR 50.65, "Requirements for Monitoring the Effectiveness of Maintenance." In addition, the inspectors reviewed selected SSC classification, performance criteria and goals, and PPL's corrective actions that were taken or planned, to determine whether the actions were reasonable and appropriate. The following issues were reviewed:

- Units 1 and 2, RB and turbine building ventilation equipment and systems including several inoperable and emergency use only supply and exhaust fans;
- Unit 2, plant computer and vital uninterrupted power supply (UPS) following capacitor failures, CR 1128533; and
- Instrumentation and controls (I&C) maintenance practices resulting in overtightening of swage-lock fittings and I&C support of main steam Barton gage replacement.

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13 – 5 Samples)

a. Inspection Scope

The inspectors reviewed the assessment and management of selected maintenance activities to evaluate the effectiveness of PPL's risk management for planned and emergent work. The inspectors compared the risk assessments and risk management actions to the requirements of 10 CFR Part 50.65(a)(4) and the recommendations of NUMARC 93-01, Section 11, "Assessment of Risk Resulting from Performance of Maintenance Activities." The inspectors evaluated the selected activities to determine whether risk assessments were performed when specified and appropriate risk management actions were identified.

The inspectors reviewed scheduled and emergent work activities with licensed operators and work-coordination personnel to evaluate whether risk management action threshold levels were correctly identified. In addition, the inspectors compared the assessed risk configuration to the actual plant conditions and any in-progress evolutions or external events to evaluate whether the assessment was accurate, complete, and appropriate for the emergent work activities. The inspectors performed control room and field walkdowns to evaluate whether the compensatory measures identified by the risk assessments were appropriately performed. The selected maintenance activities included:

- Units 1 and 2, quarterly functional test of levels 1 and 2 isolations;
- Unit 2, missed surveillance for LI-25776AZ, suppression pool level indication at remote shutdown panel, SR 3.0.3 entry, risk evaluation and surveillance performance;
- Swap of “E” emergency diesel generator (EDG) for “B” EDG overhaul following “E” EDG jacket water repair;
- Emergent work, inoperability of diesel driven fire pump (OP511) due to coolant tank corrosion – cap; and
- Post-maintenance test (PMT) of “B” EDG following timer replacement and master trip and B-8 annunciator for “E” EDG during that replacement.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15 – 6 Samples)

a. Inspection Scope

The inspectors reviewed operability determinations that were selected based on risk insights, to assess the adequacy of the evaluations, the use and control of compensatory measures, and compliance with TSs. In addition, the inspectors reviewed the selected operability determinations to evaluate whether the determinations were performed in accordance with NDAP-QA-0703, "Operability Assessments." The

inspectors used the TSs, Technical Requirements Manual, Final Safety Analysis Report (FSAR), and associated Design Basis Documents as references during these reviews. The issues reviewed included:

- Unit 1, troubleshooting and preventative maintenance for main turbine control intercept valve 6 following inability to test;
- Unit 2, 2V414 drywell unit cooler failure to stop during PMT (SO-260-001) loading included "D" EDG diesel operation;
- Failure of voltage regulator on "B" EDG during PMT and potential common cause failure, AR 1114122;
- Low differential pressure on "A" emergency service water (ESW) pump measured during inservice testing (IST) surveillance, OFR 1121082;
- "B" EDG failure to run for 5 minute cooldown at completion of monthly surveillance, CR 1128702; and
- "A" control structure chiller, chilled water head tank pressure band and leak, OFR 1130257.

b. Findings

No findings of significance were identified

1R19 Post-Maintenance Testing (71111.19 – 5 Samples)

a. Inspection Scope

The inspectors observed portions of PMT activities in the field to determine whether the tests were performed in accordance with the approved procedures. The inspectors assessed the test adequacy by comparing the test methodology to the scope of maintenance work performed. In addition, the inspectors evaluated acceptance criteria to determine whether the test demonstrated that components satisfied the applicable design and licensing bases and TS requirements. The inspectors reviewed the recorded test data to determine whether the acceptance criteria was satisfied. The PMT activities reviewed included:

- Unit 1, standby liquid control (SLC) flow verification following flow element and transmitter replacement;
- Unit 2, Zone 2 ventilation PMT following rebuild of damper HDM 27601A;
- Unit 2, valve inspections and VT-2 pipe examinations following ESW piping modification for 2B RHR pump;
- Unit 2, ESW flow balance following ESW piping modification for 2D RHR pump; and
- Demonstrate operability of "E" EDG following jacket water circulating pump discharge repairs.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22 – 5 Samples)

a. Inspection Scope

The inspectors observed portions of selected surveillance test activities in the control room and in the field and reviewed test data results. The inspectors compared the test results to the established acceptance criteria and the applicable TS or Technical Requirements Manual operability and surveillance requirements to evaluate whether the systems were capable of performing their intended safety functions. The observed or reviewed surveillance tests included:

- Unit 2, RCIC remote shutdown panel test, SE-250-004, Revision 2, RCIC functional test at 2C201A;
- Unit 2, RCIC pump and flow quarterly surveillance and Inservice Test;
- Unit 2, reactor pressure vessel water level fuel zone range calibration;
- Unit 2, RHR division logic system functional and remote shutdown testing, SE-249-009; and
- "D" EDG surveillance run, January 6, 2009, A1105864 SO-024-001D, Revision 4.

b. Findings

No findings of significance were identified.

Cornerstone: Emergency Preparedness

1EP6 Drill Evaluation (71114.06 – 1 Sample)

a. Inspection Scope

The inspectors reviewed the combined facility functional drill scenario (2009 Green Team Emergency Drill) that was conducted on January 27, 2009, and observed selected portions of the drill at the simulator control room and technical support center. The inspection focused on PPL's ability to properly conduct emergency action level classification, notification, and protective action recommendation activities and on the evaluators' ability to identify observed weaknesses and/or deficiencies within these areas. Ten performance indicator (PI) opportunities were included in the scenario. The inspectors attended the evaluators' post-drill critique and compared identified weaknesses and deficiencies including missed performance indicator opportunities against those identified by PPL to determine whether PPL was properly identifying weaknesses and failures in these areas. The drill observation samples included:

- 2009 Green Team Health Physics Drill, Emergency Preparedness Drill simulating a radiological accident, January 27, 2009.

b. Findings

No findings of significance were identified.

1EP7 Force-On-Force Exercise Evaluation (71114.07 - 1 Sample)

a. Inspection Scope

The inspectors observed PPL's performance during the site emergency preparedness component of the FOF exercise. The inspectors observed communications between operations and security supervision, including the flow of information for

decision-making. The inspectors observed event classification, event notification activities by the participating shift manager (Emergency Director), and the other operations staff participating in the drills. The inspectors also observed the post-exercise critiques to determine whether their observations were also identified by PPL drill evaluators or participants. The inspectors verified that issues identified during this inspection were entered into PPL's corrective action program (CAP).

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA2 Identification and Resolution of Problems (71152 – 2 Samples)

.1 Review of Items Entered into the Corrective Action Program

a. Inspection Scope

As specified by Inspection Procedure (IP) 71152, Identification and Resolution of Problems (PI&R), and in order to help identify repetitive equipment failures or specific human performance issues for followup, the inspectors performed screening of all items entered into PPL's CAP. This was accomplished by reviewing the description of each new action request/condition report and attending daily management meetings.

b. Findings

No findings of significance were identified.

.2 Annual Sample: Review of Recent Reactor Recirculation Pump Runback Events

a. Inspection Scope

The inspectors reviewed PPL's evaluation and corrective actions associated with multiple reactor recirculation pump (RRP) runback events that occurred between June 2008 and January 2009 as a PI&R sample for a detailed follow-up review. Specifically, the inspectors reviewed the CRs, evaluations, and associated actions for the RRP runback events that occurred on June 9, 2008; October 10, 2008; November 3, 2008; and January 4, 2009. The inspectors performed this review to verify the events were appropriately identified and evaluated as specified in PPL's CAP, NDAP-QA-0702, Revision 22, "Action Request and Condition Report Process."

The inspectors assessed the adequacy of the information PPL used to identify each event and evaluation, the adequacy of the extent-of-condition reviews, and the appropriateness of the prioritization and timeliness of corrective actions associated with the multiple runbacks. This review was focused on determining whether PPL was completing corrective actions that were appropriate to address the deficiencies that had resulted in plant transients. The inspectors reviewed health reports for both the reactor recirculation system as well as the circulating water system to assess the overall system condition. Additionally, the inspectors interviewed cognizant plant personnel regarding each event. Specific documents reviewed are listed in the attachment to this report.

b. Findings and Observations

No findings of significance were identified.

The inspectors concluded that the corrective actions associated with the RRP runback events were reasonable, deficiencies were addressed, and the classification level was appropriate in accordance with PPL's CAP. Additionally, the inspectors noted good detail in the final root cause analyses (RCA) associated with the June 9 event. Specifically, PPL performed two independent RCAs to address both the work management aspect and the control room response to the event. An independent technical review of each RCA by the Quality Assurance Organization provided valuable insights in identifying issues not identified in the original RCAs. With respect to the October 9 event, the component engineer provided a detailed analysis of the 2C circulating water pump (CWP) motor failure.

The inspectors identified a weakness associated with the November 3 event where PPL did not implement a corrective action designed to address potential RRP runbacks and associated plant transients. Specifically, PPL failed to incorporate an Action Request (AR 1091191) into operation procedure OP-242-001, Revision 35, "Circulating Water System and Cooling Tower Operation." The AR was closed without the proposed corrective action being completed. The intent of the AR was a revision to OP-242-001 to ensure that the RRP runback interlock was electrically bypassed prior to any start of the CWP to prevent transients on the reactor plant if the CWP trips on start. The procedure has been previously revised to bypass the RRP runback interlock only after post-maintenance (PM) events.

In response to the inspector's questions, PPL reviewed historical information over a period of the last five years to ensure that a trend of CWP trips during normal, non-PM starts did not exist. The inspectors did not identify a concern with CWPs tripping off during normal starts over the last several years and, therefore, the potential safety impact of not performing the procedure revision was minimal. The issue was, therefore, considered to be of minor safety significance. The issue was entered into PPL's CAP (CR 1129286), which addressed both Unit 1 and Unit 2.

.3 Annual Sample: Review of PPL's Actions to Address Existing Safety Conscious Work Environment (SCWE) Concerns to Preclude a Chilled Work Environment

Background

On January 28, 2009, the NRC issued a Potential Chilling Effect letter advising PPL of concerns related to the safety conscious work environment (SCWE) at Susquehanna and requested PPL provide: (1) a description of PPL's current action plans to address existing SCWE concerns to preclude a chilled work environment at Susquehanna; (2) PPL plans for further evaluating the health of the SCWE at Susquehanna; and (3) the metrics PPL intended to monitor to determine the effectiveness of their actions and ensure a safety conscious work environment at the Susquehanna site (ML090280115). Also, on January 28, 2009, the NRC issued Susquehanna Steam Electric Station – NRC Integrated Inspection Report 05000387/2008005 and 05000388/2008005 (ML090230434) which described the SCWE concerns at PPL and provided additional background.

This inspection was conducted to review the adequacy of PPL's action plans and to monitor progress in addressing SCWE issues to preclude a chilled work environment at Susquehanna through the first quarter of 2009. The inspection sample was performed March 23 – 31, 2009, and was initiated shortly after PPL provided their action plan to the NRC as requested in the January 28, 2009 NRC letter. The PPL Work Environment Improvement Plan was provided to the NRC on February 27, 2009 (ML090710864) and a supplement to the plan was provided on March 13, 2009 (ML090760146). The supplement provided additional details regarding the planned actions, milestones, and the list of the metrics PPL intended to use to monitor the effectiveness of their actions.

a Inspection Scope

The inspectors completed several activities to evaluate PPL's completed and ongoing actions to address the existing SCWE concerns to preclude a chilled work environment at Susquehanna. All items in the action plan were reviewed by the inspectors for completeness, accuracy, and progress. Those actions that were indicated as complete or in progress in the action plan were validated by document reviews, interviews, or material observation. The inspectors also assessed PPL's commitment to longer term action plan items by verifying that these items were entered into the corrective action process for completion and through interviews of responsible personnel.

The inspectors also reviewed the current SCWE and alignment of station personnel to improve the SCWE by performing several interviews and observing plant activity meetings. Specifically, the inspectors:

- Conducted 8 focus group interviews. Each focus group was made up of peers to facilitate open dialogue and together the groups represented a cross-section of Susquehanna employees and contract workforce. On average, each focus group included 5 interviewees;
- Conducted 6 individual interviews of managers and senior managers;
- Observed 5 plant activity meetings including a: weekly second line supervisor meeting; daily management review committee meeting; station leadership focus meeting; employee concerns oversight team meeting; and a root cause evaluation (for the SCWE concerns) team meeting; and
- Conducted 4 small group interviews. The small group interviewees were selected by the inspectors to review PPL's progress regarding specific action plan elements.

b. Findings and Observations

No findings of significance were identified.

All NRC interviewees indicated that they would raise an actual safety concern and all indicated that they were not aware of any individual that would not raise a safety concern for fear of retaliation or discrimination. The inspectors did not identify any compromise of individual's identity regarding PPL's alternative process for raising safety issues or resolving differing professional opinions. However, several interviewees described some negative perceptions about the Susquehanna SCWE. The negative perceptions were in regards to the environment for raising concerns, and in some cases, specifically in regards to alternative processes for raising safety issues or resolving differing professional opinions.

Over the course of the first quarter, the inspectors noted, as compared to 2008, some progress in obtaining better alignment between supervision and management regarding work environment improvement initiatives. However, the inspectors noted a continued need to obtain alignment throughout the site organization. This was most notable among the First Line Supervisor and worker levels.

The inspectors also noted improved communication practices to site personnel regarding work environment issues. Examples included All-Hands meetings, the establishment of communication centers, and more frequent written information bulletins and emails regarding work environment initiatives.

Environment for Raising Concerns

Several interviewees indicated that they were reluctant to raise low-level plant issues and their reluctance was influenced by several negative perceptions of the SCWE. Those negative perceptions included:

- Inability of the work management system to correct repeat or long-standing equipment issues;
- An ineffective plant modification process to correct long-standing or aging equipment issues;
- Reporting an issue may also require the identifier to correct or solve the problem;
- A high workload that takes priority over reporting or dealing with low level issues; and
- A perceived lower standard for reliability of balance of plant (BOP) equipment compared to plant safety equipment. The interviewees also expressed views that the lower reliability standards for BOP equipment may increase the frequency of plant transients or challenges to operators.

Some interviewees also expressed the opinion to the inspectors that they perceived first line supervisors as being too overloaded with work activities to be able to effectively handle low-level issues. Some interviewees also perceived that first line supervisors may be less interested in effectively handling low-level issues because of recent adjustments to their overtime compensation.

The inspectors believed that the handling of low-level plant issues as described was related to SCWE because individuals were performing independent reviews of low-level plant issues. Specifically, without the collective benefit of the organization or rigor of quality assurance programs such as the corrective action program to review low-level issues and trends, potential safety issues may not receive the appropriate level of review by the wider organization.

On March 25, 2009, the inspectors became aware that a very small number of individuals indicated to the PPL SCWE root cause evaluation team that they may be reluctant to raise safety issues. The inspectors observed that the root cause evaluation team immediately understood the significance of this information, sought to understand from the concerned individuals if any existing safety issues were unreported, and entered the issue into the corrective action program (CR 1129570).

On March 27, 2009, in response to the issue, PPL completed a site wide communication to all employees to emphasize each individual's responsibility, encouraged them to identify and raise nuclear safety concerns, and provided several means to do so including alternative processes and anonymous methods. PPL site leadership also emphasized the communication to all operations shift personnel and conducted briefings to all operators within 24 hours. Finally, PPL sought input from an independent, third-party consultant on the issue to understand if additional immediate actions were necessary to address this recent SCWE concern. The inspectors determined that PPL took appropriate and timely actions to ensure that no safety concerns were unreported and captured the issue in the corrective action program.

Alternative Process for Raising Safety Issues or Resolving Differing Professional Opinions

PPL maintained employee concerns and ombuds programs and an anonymous condition report process as alternative processes for raising safety issues or resolving differing professional opinions. Several interviewees indicated that they would prefer to use the NRC allegation process in contrast to PPL's alternate methods to raise or elevate concerns and their reluctance was influenced by several negative perceptions. Those negative perceptions included:

- A lack of confidence in the PPL alternate resolution processes to be objective or provide any action other than the original PPL resolution;
- Perceived conflict of interest issues with the new Ombuds program; and
- Perceived credibility issues with Employee Concerns Program (ECP)/Ombuds personnel based on past experiences with these personnel outside the ECP/Ombuds programs.

Some interviewees also indicated to the inspectors that they perceived some employees as utilizing the NRC allegation process as a means to create challenges for PPL management. The inspectors considered that utilizing the NRC allegation process as a means to leverage an issue or site impact management was an issue that was counterproductive to developing and maintaining a healthy SCWE at the site.

Assessment

No individuals indicated to the inspectors that they would not raise a nuclear safety concern nor did any individuals indicate that they were aware of those that would not raise nuclear safety concerns. However, several negative perceptions about the safety conscious work environment continue to exist amongst a significant portion of the workforce. The inspectors determined that PPL has initiated actions to address the SCWE concerns and negative perceptions, consistent with its action plan most recently described in their March 13, 2009, letter to the NRC (ML090760146).

Considering that PPL is in the early stages of execution of its action plan, it is too early to make a determination about the overall effectiveness of PPL corrective actions to address work environment and SCWE issues. As a result, the NRC will remain vigilant and will continue to monitor PPL's progress and effectiveness to ensure employees remain willing to raise safety issues at the site.

4OA5 Other Activities

.1 Quarterly Resident Inspector Observations of Security Personnel and Activities

a. Inspection Scope

During the inspection period, the inspectors conducted observations of security force personnel and activities to ensure that the activities were consistent with PPL security procedures and regulatory requirements relating to nuclear plant security. These observations took place during both normal and off-normal plant working hours.

b. Findings

The inspectors identified one or more issues. All identified issues were promptly corrected or compensated for by PPL. These issues will be discussed and their significance determined in a separate security inspection report (IR 05000387/2009403 and 05000388/2009403).

4OA6 Meetings, Including Exit

On April 15, 2009, the resident inspectors presented the inspection results to Mr. B. Spence and other members of his staff. The inspectors confirmed that proprietary information was not provided or examined during the inspection.

4OA7 Licensee-Identified Violations

None

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

D. Borger, Operations Shift Manager
D. Brophy, Regulatory Affairs
D Coffin, Supervisor, Nuclear Emergency Planning
J. Fallbright, System Engineer
A. Fitch, Manager, Work Management
S. Kudrick, System Engineer
G. Maertz, Supervisor, Station Engineer
B. Spence, Senior Vice President and Chief Nuclear Officer

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

None.

Opened/Closed

None.

Closed

None.

LIST OF DOCUMENTS REVIEWED
(Not Referenced in the Report)

Section 1R01: Adverse Weather Protection

Condition Report:

1115839

Section 1R04: Equipment Alignment

Procedures:

OP-134-002, RB HVAC Zones 1 and 3, Revision 38
TS 3.6.4.2, TS Bases 3.6.4.2
UFSAR 9.4.2

Drawings:
M-175 sheet 1, Unit 1 RB Air Flow Diagram Zone III, Revision 31
M-165 sheet 1, Common Building Vent Stalk Monitoring System, Revision 20

Other:

CALC EC-RADN-0319, "Isolation Damper Closing Time," Revision 1

Section 1R05: Fire Protection

Action Requests:

1127715 and 1127732

Procedures:

FP-113-102, Core Spray Room B, Fire Zone 1-1B, Revision 4
FP-113-103, HPCI Pump Room, Fire zone 1-1C, Revision 5
FP-113-104, RCIC Pump Room (1-12) Fire Zone 1-1D elevation 645'-0", Revision 4
FP-113-110, RB Closed Cooling Water (RBCCW) Heat Exchanger and Pump Area (1-203) Fire Zone 1-3A, elevation 683'-0", Revision 4
FP-013-187, Standby Gas Treatment Filter Area (C-900 through C-912) Fire Zone 0-30A elevation 806'-0", Revision 7
FP-013-201, "ESSW Pump House LOOP "B" Pump Room (E-2) Fire Zone 0-52 elevation 685', Revision 4
Fire Protection Review Report Units 1 and 2, Revision 20;
EC 899048, Provide Supplemental Heating and Ventilation Flow Path for ESSW Pump House
FP-213-248, "Containment Access Area (11-401) Decontamination Stations (11-404, 405) Fire Zones 2-4A-N, 2-4A-W, 2-4A-S Elevation 719'-1", Revision 5

Section 1R11: Operator Re-qualification Program

Action Request:

1038458

Procedures:

EO-100-104, Secondary Containment Control, Revision 9
EO-100-105, Radioactivity Release Control, Revision 6
ON-156-001, Unanticipated Reactivity Change, Revision 20

Section 1R12: Maintenance Effectiveness

Condition Report:

1130097

Section 1R13: Maintenance Risk Assessments and Emergent Work Control

Condition Report:

1124484

Action Requests:

1128702, 1128054, and 1128057

Procedures:

TS Tracking Record 2-TS-09-0074
TS SR 3.0.3
SI-259-307, 24 Month Calibration of Suppression Pool Water Level Channels, T-25776 A & B Wide range, Revision 19
SI-280-206, "Quarterly Functional Test of reactor water cleanup (RWCU), PCIS, SCIS Isolation and CREOAS Initiation on Reactor Vessel Water Level 2 and MSIV Isolation on Level 1 Channels LITS-B21-2N026A,B,C,D," Revision 18
CL-264-00114, "Checkoff List Unit 2 Reactor Vessel Instrumentation Mechanical," Revision 19
SI-180-206, "Quarterly Functional Test of RWCU, PCIS, SCIS Isolation and CREOAS Initiation on Reactor Vessel Water Level 2 and MSIV Isolation on Level 1 Channels LITS-B21-1N026A,B,C,D, Revision 15

Drawing:

M1-B21-101, Sheet 10, "Nuclear Steam Supply Shutoff System," Revision 26

Work Order

PCWO 1128736

Other:

EOOS Risk Profile Results for Unit 1 and unit 2 for January 9, 2009 through January 18, 2009

Section 1R15: Operability Evaluations

Condition Reports:

1128702 and 1128358

Action Request:

1130150

Other:

EWR 1116735
EWR 1116749
OP-030-001

Section 1R19: Post-Maintenance Testing

Procedures:

SO-153-004, Quarterly SBLC Flow Verification, Revision 37
TP-153-012, ECO 690268 (Unit 1 Boron Enrichment) Post MOD Test, Revision 0

Work Order:

PCWO 843803

Other:

RIE 1053344
ACE for CR 1046630
EC-053-0507, Calculation of Maximum ATWS Inspection Pressure, Revision 2

Section 1R22: Surveillance Testing

Action Request:

892762

Procedures:

A1105864
SO-024-001D, Revision 4
SE-250-004, "RCIC Functional Test at 20201A (On-line)" Revision 2,
NDAP-QA-0027, "Station Component Verification Requirements," Revision 6,
SO-250-006, Revision 4, "Reactor Core Isolation Cooling (RCIC) Comprehensive Flow Verification" performed January 22, 2009
SI-262-305, 24 Month Calibration – Reactor Vessel Water Level Channels (Accident Monitoring-Fuel Zone), March 24, 2007, Revision 4
SI-262-305, 24 Month Calibration – Reactor Vessel Water Level Channels (Accident Monitoring-Fuel Zone), March 24, 2007, Revision 5
SI-262-305, 24 Month Calibration – Reactor Vessel Water Level Channels (Accident Monitoring-Fuel Zone), March 24, 2007, Revision 6
SO-024-001B, January 11, 2009, Revision 5

Drawing:

M-2142, "Unit 2 P & ID Vessel Instrumentation," Revision 45

Other:

Calculation EC-INST-1871, "I & C Maintenance Calculation for LT 24202A," Revision 0
EC-INST-2299, I & C Maintenance Calculation for LT 14202A, LT 14202B, Revision 0
RTSV 879531

Section 1EP6 Drill Evaluation

2009 Green Team HP Drill Exercise Manual (controller notebook) printed December 17, 2008

Section 4OA2: Identification and Resolution of Problems

Condition Reports:

1038458, 1039036, 827115, 190120, 1105574, 1081438, 1088292, 1088718, 1105555, 1129286*, 1122324*, 1121154*, 1127715*, 1127732*, 1130060*, and 1128054*

* CR written as a result of the inspection

Action Requests:

1105635, 1091191, 1039238, 1039067

Apparent Cause Evaluation:

1081435 and 1088292

Procedures:

MT-242-002, Defeat Unit 2 Circ Water Pump Reactor Runback Pump Runback Interlock, Revision 2 and 3
MT-142-002, Defeat Unit 1 Circ Water Pump Reactor Runback Pump Runback Interlock, Revision 1 and 2
OP-242-001, Circulating Water system and Cooling Tower Operation, Revision 35
TP-242-003, Initial Start and Run-In of Rebuilt Circulating Water Pump/Motor, Revision 3
NDAP-QA-0702, Action Request and Condition Report Process, Revision 22

Miscellaneous:

PPL's Plan to Address the Work Environment and Ensure a Strong Nuclear Safety Culture at Susquehanna, December 08, Revision 1
Unit 1 Reactor Recirculation System Health Report, 3rd Period 2008
Unit 1 Circulating Water System Health Report, 3rd Period 2008
Unit 2 Reactor Recirculation System Health Report, 3rd Period 2008
Unit 2 Circulating Water System Health Report, 3rd Period 2008
PCWO 1087156, U2 Circulating Water Pump C Suction Valve Will Not Open or Attempt to Open when Depressing the Run Full Button on 2C668, dated October 30, 2008
PCWO 1088840, U2 Implement Setpoint Changes for 2C Circulating Pump Breaker Relays, dated November 4, 2008
OE Report for U2 Reactor Recirculating Runback, Revision 1, dated November 3, 2008
Investigation of 1B Reactor Recirculating Pump Speed Excursion and Resultant Pump Trip, EWR 1038537 Response
SSES Emergent Issue Response Checklist-Trip of 2C Circ Water Pump, dated October 9, 2008
Failure Analysis of 2P501C CWP Motor CRA 1085016, dated December 4, 2008
Electric Motor & Contracting Co-Failure Analysis of Circ Water Pump Motor, Job Number 13850
Long Term Motor Plan (2007-2013), Revision 10
MRFF Evaluation Summary 1081435/CRA 1083256, dated 01/13/2009

PCWO 1081427, 2P501C-Replace Pump Motor and Capacitors, dated 10/09/2008
PCWO 1081434, Investigate 2C Circ Water Pump Trip, dated 10/09/2008
PCWO 1081649, Remove/Reinstall RTD's for 2P501C and Support Motor Run TP, dated October 10, 2008
Event Number 1-08-01, Post Event Review Report for 06/09/2008 Event
QA Independent Evaluation of Evaluation of U1 Recirculation Pump Event - June 9, 2008, dated September 5, 2008
PCWO 789110, Replace or Refurbish RHR Instrument Power Supply ES-E11-1K603B, dated June 22, 2006
PCWO 1038461, Investigation of Rx Recirculation Transient That Occurred on June 06, 2008, dated June 9, 2008

LIST OF ACRONYMS

ADAMS	Agencywide Document and Access Management System
AR	Action Report
ASME	American Society of Mechanical Engineers
BOP	Balance of Plant
CAP	Corrective Action Program
CFR	Code of Federal Regulations
CR	Condition Report
CRD	Control Rod Drive
CREOAS	Control Room Emergency Outside Air Supply
CWP	Circulating Water Pump
EDG	Emergency Diesel Generator
EPU	Extended Power Uprate
ESSW	Emergency Safeguards Service Water
ESW	Emergency Service Water
EWR	Engineering Work Request
FOF	Force-on-Force
FSAR	[SSES] Final Safety Analysis Report
HPCI	High Pressure Coolant Injection
I&C	Instrumentation and Controls
IMC	Inspection Manual Chapter
IP	Inspection Procedure
IST	Inservice Testing
kV	Kilovolts
LOOP	Loss of Offsite Power
LOR	Licensed Operator Requalification
NDAP	Nuclear Department Administrative Procedure
NEI	Nuclear Energy Institute
NRC	Nuclear Regulatory Commission
OA	Other Activities
OOS	Out-of-Service
PARS	Publicly Available Records
PI	[NRC] Performance Indicator
PI&R	Problem Identification and Resolution
PIM	Plant Issues Matrix
PM	Post-Maintenance
PMT	Post-Maintenance Test

PPL	PPL Susquehanna, LLC
QA	Quality Assurance
RB	Reactor Building
RBCCW	Reactor Building Closed Cooling Water
RCA	Root Cause Analyses
RCIC	Reactor Core Isolation Cooling
RG	[NRC] Regulatory Guide
RHR	Residual Heat Removal
ROP	Reactor Oversight Process
RRP	Reactor Recirculation Pump
RTP	Rated Thermal Power
RWCU	Reactor Water Cleanup
SLC	Standby Liquid Control
SSC	Structures, Systems and Components
SSES	Susquehanna Steam Electric Station
SCWE	Safety Conscious Work Environment
TS	Technical Specifications
UHS	Ultimate Heat Sink
UPS	Uninterrupted Power Supply
WO	Work Order