UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
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May 12, 2010

Mr. Timothy S. Rausch
Senior Vice President and Chief Nuclear Officer
PPL Susquehanna, LLC
769 Salem Boulevard, NUCSB3
Berwick, PA 18603

SUBJECT: SUSQUEHANNA STEAM ELECTRIC STATION – NRC INTEGRATED INSPECTION REPORT 05000387/2010002 AND 05000388/2010002

Dear Mr. Rausch:

On March 31, 2010, 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 20, 2010, 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. However, a licensee-identified violation which was determined to be of very low safety significance is listed in this report. The NRC is treating this violation as non-cited violation (NCV) consistent with Section VI.A.1 of the NRC Enforcement Policy because of the very low safety significance of the violation and because it is entered into your corrective action program. If you contest this non-cited violation, 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 2.390 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 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,

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

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

Enclosure: Inspection Report 05000387/2010002 and 05000388/2010002
Attachment: Supplemental Information

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/RA/

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U.S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket No:	50-387, 50-388
License No:	NPF-14, NPF-22
Report No:	05000387/2010002 and 05000388/2010002
Licensee:	PPL Susquehanna, LLC
Facility:	Susquehanna Steam Electric Station, Units 1 and 2
Location:	Berwick, Pennsylvania
Dates:	January 1, 2010 through March 31, 2010
Inspectors:	P. Finney, Senior Resident Inspector A. Patel, Acting Senior Resident Inspector J. Bream, Acting Resident Inspector P. Kaufman, Senior Reactor Inspector L. Scholl, Senior Reactor Inspector F. Arner, Senior Reactor Inspector A. Rosebrook, Senior Project Engineer E. Burkett, Reactor Inspector J. Furia, Senior Health Physicist T. Burns, Reactor Inspector
Approved By:	Paul G. Krohn, Chief Projects Branch 4 Division of Reactor Projects

TABLE OF CONTENTS

SUMMARY OF FINDINGS 3

REPORT DETAILS 4

1. REACTOR SAFETY 4
1R01 Adverse Weather Protection 4
1R04 Equipment Alignment 5
1R05 Fire Protection 6
1R06 Flood Protection Measures 6
1R07 Heat Sink Performance 7
1R08 Inservice Inspection Activities 7
1R11 Licensed Operator Requalification Program 9
1R12 Maintenance Effectiveness 9
1R13 Maintenance Risk Assessments and Emergent Work Control 10
1R15 Operability Evaluations 11
1R18 Plant Modifications 11
1R19 Post-Maintenance Testing 12
1R20 Refueling and Other Outage Activities 12
1R22 Surveillance Testing 13
1EP6 Drill Evaluation 13

2. RADIATION SAFETY 14
2RS1 Radiological Hazard Assessment and Exposure Controls 14
2RS2 Occupational ALARA Planning and Controls 16

4. OTHER ACTIVITIES 17
4OA1 Performance Indicator Verification 17
4OA2 Identification and Resolution of Problems 18
4OA5 Other Activities 18
4OA6 Meetings, Including Exit 22
4OA7 Licensee-Identified Violations 22

ATTACHMENT: SUPPLEMENTAL INFORMATION 23
SUPPLEMENTAL INFORMATION A-1
KEY POINTS OF CONTACT A-1
LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED A-1
LIST OF DOCUMENTS REVIEWED A-2

SUMMARY OF FINDINGS

IR 05000387/2010002, 05000388/2010002, 01/01/2010 – 03/31/2010; Susquehanna Steam Electric Station, Units 1 and 2; Integrated Inspection Report.

The report covered a three month period of inspection by resident inspectors, and announced inspections by regional reactor inspectors. No findings of significance 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.

No findings of significance were identified.

Other Findings

A violation of very low safety significance, identified by PPL, was reviewed by the inspectors. Corrective actions taken or planned by PPL have been entered into PPL's CAP. This violation and corrective action tracking numbers are listed in Section 4OA7 of this report.

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 thermal power (RTP). On January 9, power was reduced to 73 percent over 14 hours for a control rod pattern adjustment. On January 15, power was reduced to 70 percent over 14 hours for a control rod pattern adjustment. Unit 1 commenced its power coastdown to the refuel outage (RFO) on January 24. The reactor was shutdown from 82 percent for a scheduled maintenance and refueling outage on March 2 and remained shutdown for the remainder of the inspection period.

Unit 2 began the inspection period at the authorized licensed power level of 94.4 percent RTP. On January 13, power was reduced to 85 percent over 20 hours for condenser tube leak repairs. On February 6, power was reduced to 73 percent over 16 hours for a control rod sequence exchange. Unit 2 returned to 94.4 percent RTP for the remainder of the inspection period.

Note: The licensed RTP for both units is 3952 megawatts thermal. The Extended Power Uprate (EPU) License Amendment for SSES was approved on January 30, 2008, and was implemented for both units in accordance with the issued license conditions. For the current operating cycle, the authorized power level for both units is 94.4 percent of the EPU licensed power limit.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R01 Adverse Weather Protection

Readiness for Seasonal Extreme Weather Conditions (71111.01 - 1 sample)

a. Inspection Scope

During the week of January 4, the inspectors reviewed system operations and readiness 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. Documents reviewed are listed in the Attachment.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment

.1 Partial Walkdown (71111.04Q - 4 samples)

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 selected valve positions, electrical power availability, and the general condition of major system components. Documents reviewed are listed in the Attachment. The walkdowns included the following systems:

- Unit 2, high pressure coolant injection (HPCI);
- Units 1 and 2, residual heat removal (RHR) Division II during Unit 1 RHR Division I outage;
- Units 1 and 2, "A" through "D" emergency diesel generators (EDG) while "E" EDG OOS on January 13, 2010; and
- Units 1 and 2, "D" EDG restoration and Division I electrical distribution while 1B bus was OOS.

b. Findings

No findings of significance were identified.

.2 Complete Walkdown (71111.04S - 1 sample)

a. Inspection Scope

The inspectors performed a detailed review of the alignment and condition of the supplemental decay heat removal (SDHR) system. The inspectors reviewed operating procedures, checkoff lists, and system piping and instrumentation drawings. Walkdowns of accessible portions of the systems were performed to verify components were in their correct positions and to assess the material condition of systems and components. The inspectors evaluated recent maintenance and outstanding condition reports (CRs) associated with the SDHR to determine the effect on system health and reliability. The inspectors verified proper system alignment and reviewed system operating parameters. Documents reviewed are listed in the Attachment.

- Units 1 and 2, SDHR system while in recirculation mode with 1 pump (start of RFO).

b Findings

No findings of significance were identified.

1R05 Fire Protection

Fire Protection – Tours (71111.05Q - 5 samples)

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 these 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. Documents reviewed are listed in the Attachment. The inspected areas included:

- Unit 1, drywell;
- Unit 1, containment access area 719', reactor building;
- Unit 2, Reactor Building elevation 645';
- Units 1 and 2, access area elevation 779'; and
- Common, north and center cable chase fire zones.

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures

Internal Flooding (71111.06 - 1 sample)

a. Inspection Scope

The inspectors reviewed documents, interviewed plant personnel, and walked down structures, systems and components (SSCs) to evaluate the adequacy of PPL's internal flood protection measures. The inspection focused on verifying that PPL's flooding mitigation plans and equipment were consistent with the design requirements and risk analysis assumptions. The material condition of credited components such as watertight plugs, floor drains, flood detection equipment, and alarms were also assessed to determine whether the components were capable of performing their intended function. The inspectors also verified that adequate procedures were in place to identify and respond to floods. Documents reviewed are listed in the Attachment. The following risk significant area was reviewed:

- Common, Control Structure (CS) floor drains 714' and 754' and CS 771'.

b. Findings

No findings of significance were identified.

1R07 Heat Sink Performance

Heat Sink Annual Review (71111.07A – 2 samples)

a. Inspection Scope

The inspectors reviewed documents associated with maintenance for the 2B RHR heat exchanger (HX) along with the residual heat removal service water (RHRSW) comprehensive flow verification surveillance procedure. This review was performed to ensure the performance capability for the 2B RHR heat exchanger was consistent with design assumptions. The inspectors reviewed EPU design calculations and analysis to confirm that design assumptions for the heat exchanger capability were consistent with actual performance capability of the heat exchanger. The review considered the most limiting conditions such as maximum cooling water temperature, maximum assumed delay in initiating suppression pool cooling, and EPU heat loads. Additionally, the inspectors reviewed the work order (WO) associated with the latest as-found maintenance inspection for the 2B RHR HX to evaluate whether maintenance procedures were adequate to ensure the minimum assumed design heat removal capability. Documents reviewed are listed in the Attachment.

During the planned RFO at Unit 1, inspectors performed a walkdown of the 1A RHR HX. The inspectors verified the heat exchanger was inspected in accordance with the applicable procedures. The inspectors reviewed documents associated with system performance and classification to verify it was appropriately categorized in accordance with the Maintenance Rule. The inspectors interviewed the system engineer and discussed biofouling controls and the chemistry results from the sample taken upon opening the HX. The annual heat sink performance samples included:

- Unit 1, 1A RHR HX; and
- Unit 2, 2B RHR HX, inspection and capability review.

b. Findings

No findings of significance were identified.

1R08 Inservice Inspection Activities

Inservice Inspection (71111.08 – 1 sample)

a. Inspection Scope

The purpose of this inspection was to assess the effectiveness of PPL's inservice inspection (ISI) program for monitoring degradation of reactor pressure vessel internals, reactor coolant system (RCS) boundary, risk significant piping system boundaries, and the containment boundary. The inspector assessed the ISI activities using requirements and acceptance criteria for component examination specified in the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section XI and applicable NRC Regulatory Requirements.

The inspector selected a sample of nondestructive examination (NDE) activities for observation and also performed a documentation review of additional NDE activities for

compliance with the requirements of ASME Section XI. The sample selection was based on the inspection procedure objectives, sample availability, and risk priority of those components and systems where degradation could result in a significant increase in the risk of core damage. The inspector verified by documentation review that test procedures and examiner qualifications were current and in accordance with the ASME Code requirements. Also, the inspector reviewed examiner qualifications for use of the performance demonstration initiative (PDI) manual ultrasonic test (UT) procedures to examine welds. The inspector selected a sample of customer notification forms (CNF), CRs, and action requests to evaluate PPL's effectiveness in the identification and resolution of relevant indications discovered during the observed ISI activities. The inspector's observations and documentation review of non-destructive testing included the following:

- UT, manual PDI-UT of pipe to elbow weld HBB-1012-4A-B, Reactor Core Isolation Cooling (RCIC) System, carbon steel, 10" diameter, 0.356" wall thickness;
- Magnetic particle test of integral welded attachment of four lugs, GBB1151-HW 5A through 5D to the RHR carbon steel piping;
- Visual examination (VT-1) of the main wedges, wedge restrainer brackets, set screws and rods of 10 jet pumps (JP). In-vessel visual inspection (IVVI) was performed remotely to assess structural integrity of the individual JP and supporting components; and
- Liquid penetrant test of field weld DCB1021-HW-2. The field weld is an integral structural attachment of a support lug to a pipe in the RHR system (head spray line).

The inspector reviewed the visual inspection results of various in-vessel components including JP structural members and base materials to evaluate the level of examiner skill, test equipment performance, examination technique, and inspection environment (water clarity). The inspector selected component non-conforming conditions identified in CR's 1240628, 1244107, 1241275, 1243274, 1243254 and others shown on the Attachment to this report. In addition, Customer Notification Report IVVI-10-60 was initiated to report cracking in the steam dryer base metal and heat affected zone of the vertical weld at the 45 degree weld skirt location. The cracks identified were new since the Unit 1 steam dryer was newly fabricated and had been in service for one cycle (2 year duration). PPL undertook a cause evaluation and structural analysis to confirm component integrity for continued operation. The evaluation had not been completed at the time of the inspector departure from the site.

The inspector selected three ASME Section XI repair/replacement plans for review where welding on a pressure boundary was scheduled to be performed. The review was performed to evaluate specification and control of the welding process detailed in the WO, determine that weld procedures and welders were qualified in accordance with the requirements of ASME Section IX and that specified weld examinations the ASME code requirements. The three ASME Section XI repair/replacement WOs reviewed were:

- WO 888499, apply weld overlay to the "B" RHR small bore pipe weld SPDCA 110-2-1, pipe to valve weld, RHR LOOP "B" and check valve bypass SPDCA 110-4-FW-8, RHR LOOP "B" drain upstream of F050B;

- WO 984794, replace XV143F057B excess flow check valve "1" X 3/8", system 149, RHR. Installation by welding using weld procedure specification (WPS) N-IA-MA-11, Rev. 8B; and
- WO 984099, Replace XV14411B excess flow check valve, reactor water cleanup (RWCU), system 161B, using WPS N-A-IA-MA-88, Revision 4B, P8 to P8, gas tungsten arc and shielded metal arc either single or dual process welded.

Also, the inspector performed a visual evaluation of the primary containment liner and additional structural members attached to the liner to assess the condition of the protective coating. The evaluation included accessible locations on elevations 704' thru 752'. The inspector performed this visual evaluation to determine the extent of any peeling, blistering, coating loss or other damage as a result of corrosion, foreign material impact or lack of maintenance.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification Program

Resident Inspector Quarterly Review (71111.11Q – 1 sample)

a. Inspection Scope

On January 21, February 18, and March 1, 2010, the inspectors observed licensed operator simulator requalification examinations and Just-In-Time training. The inspectors compared their observations to Technical Specifications (TSs), emergency plan implementation, and the use of system operating procedures. Inspectors reviewed startup data specific to the configuration for the current reactor cycle. The inspectors also evaluated PPL's critique of the operators' performance to identify discrepancies and deficiencies in operator training. The following training was observed:

- Common, ATWS, ICS RFPT trip and recovery, ICS runback and recovery, Just-In-Time training for reactor shutdown, OP002-10-03-02.

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 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 those 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 verify whether the actions were reasonable and appropriate. Documents reviewed are listed in the Attachment. The following systems were reviewed:

- Unit 2, HPCI;
- Unit 2, 480 volt load centers; and
- Common, ESW and RHRSW discharge check valves failing to fully close.

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13 – 6 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. Documents reviewed are listed in the Attachment. The selected maintenance activities included:

- Unit 1, yellow risk during Division I RHR preventive maintenance;
- Unit 1, HPCI lube oil moisture increase resulting from HPCI steam admission valve leak;
- Unit 1, Division II electrical while Division 1 OOS during outage;
- Unit 1, Division I protected equipment while 1D electrical bus OOS;
- Unit 2, remote shutdown panel troubleshooting after 2A RHRSW pump inadvertent start; and
- Common, dual unit yellow risk during 1B 4kV bus outage.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15 – 8 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 (TRM), Final Safety Analysis Report (FSAR), and associated Design Basis Documents as references during these reviews. Documents reviewed are listed in the Attachment. The issues reviewed included:

- Unit 2, "E" transverse incore probe containment isolation ball valve;
- Unit 2, 480 volt load center transformer 2X240 loud noise;
- Unit 2, 2A RHRSW pump 2P506A;
- Unit 2, HPCI system response time preconditioning review;
- Unit 2, 2A RHRSW discharge check valve;
- Units 1 and 2, RCIC/HPCI controller operability;
- Units 1 and 2, HPCI flow controller settings and response to Information Notice 2009-09; and
- Common, 'B' control structure chiller emergency condenser circulating water pump inservice testing.

b. Findings

No findings of significance were identified

1R18 Plant Modifications

Temporary Plant Modifications (71111.18 - 1 sample)

a. Inspection Scope

The inspectors reviewed a temporary plant modification to determine whether the changes adversely affected system or support system availability, or adversely affected a function important to plant safety. The inspectors reviewed the associated system design bases, including the FSAR, TSs, and assessed the adequacy of the safety determination screening and evaluation. The inspectors also assessed configuration control of the changes by reviewing selected drawings and procedures to verify that appropriate updates had been made. The inspectors compared the actual installation to the modification documents to determine whether the implemented change was consistent with the approved documents. The inspectors reviewed selected post-installation or removal test results as appropriate to evaluate whether the actual impact of the change or removal had been adequately demonstrated by the test. Documents reviewed are listed in the Attachment. The following modification and document was included in the review:

- Unit 1, temporary thermocouple reader in 1C007.

b. Findings

No findings of significance were identified.

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

a. Inspection Scope

The inspectors observed portions of post-maintenance test (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. Documents reviewed are listed in the Attachment. The PMT activities reviewed included:

- Unit 1, "B" reactor protection system after under-frequency relay failure;
- Unit 2, 2A RHRSW pump – remote shutdown panel;
- Unit 2, 2A RHRSW discharge check valve after preventative maintenance (PM);
- Units 1 and 2, HPCI PM on the HPCI auxiliary oil pump; and
- Units 1 and 2, "B" ESW check valve after repacking the valve.

b. Findings

No findings of significance were identified.

1R20 Refueling and Other Outage Activities (71111.20 – 1 sample)

.1 Unit 2 Refueling Outage

a. Inspection Scope

The Unit 1 RFO (1R16) was conducted from March 02, 2010, through the end of the inspection period. Prior to or during the outage, as appropriate, inspectors performed the activities below to verify PPL's controls over outage activities:

- Outage Plan – reviewed the outage risk plan and work schedules for staff on both the operating unit and the shutdown unit;
- Shutdown activities – monitored the shutdown, cooldown, and transfer to the shutdown cooling mode of decay heat removal;
- Outage activity control – monitored or verified the following:
  1) Clearance activities
  2) RCS Instrumentation
  3) Electrical power
  4) Decay heat removal and Spent Fuel Pool cooling
  5) Inventory and Reactivity control
  6) Containment closure

7) Fatigue management;
- Drywell and suppression chamber – walkdowns after shutdown;
- Refueling activities – independent review of core alterations; and
- Identification and Resolution of Problems – reviewed corrective action program (CAP) entries to verify an adequate threshold for issues and appropriate corrective actions.

During the conduct of the refueling inspection activities, the inspectors reviewed the associated documentation to ensure that the tasks were performed safely and in accordance with plant TS requirements and operating procedures. Documents reviewed are listed in the Attachment.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22 – 7 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 TRM operability and surveillance requirements to evaluate whether the systems were capable of performing their intended safety functions. Documents reviewed are listed in the Attachment. The observed or reviewed surveillance tests included:

- Unit 1, 92 day Division II core spray flow verification;
- Unit 1, "B" EDG integrated surveillance test;
- Unit 1, 2 year calibration of suppression pool water temperature channel;
- Unit 1, RHR cold shutdown valve exercising;
- Unit 1, Local leak rate test of main steam isolation valve penetration X-X-7D;
- Unit 2, RCIC flow verification; and
- Unit 2, standby liquid control pump surveillance.

b. Findings

No findings of significance were identified.

1EP6 Drill Evaluation (71114.06 - 1 sample)

a. Inspection Scope

The inspectors reviewed the combined functional drill scenario (2010 Green Team Emergency Drill) that was conducted on January 26, 2010, and observed selected portions of the drill in the 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 post-drill critique and compared identified weaknesses and deficiencies including missed PI opportunities against those identified by PPL to determine whether PPL was properly identifying weaknesses and failures in these areas. Documents reviewed are listed in the Attachment. The drill evaluation sample included:

- Green Team HP drill, January 26, 2010.

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY

Cornerstone: Occupational/Public Radiation Safety (PS)

2RS1 Radiological Hazard Assessment and Exposure Controls (71124.01)

a. Inspection Scope

Radiological Hazard Assessment

The inspector determined if, since the last inspection, there have been changes to plant operations that may result in a significant new radiological hazard for onsite workers or members of the public. The inspector verified that PPL has assessed the potential impact of these changes and has implemented periodic monitoring, as appropriate, to detect and quantify the radiological hazard.

The inspector reviewed the last two radiological surveys from three to six selected plant areas. The inspector verified that the thoroughness and frequency of the surveys were appropriate for the given radiological hazard.

The inspector conducted walkdowns of the facility, including radioactive waste processing, storage, and handling areas to evaluate material conditions and potential radiological conditions (radiological control area, protected area, controlled area, contaminated tool storage, or contaminated machine shops).

The inspector selected radiologically risk-significant work activities that involved exposure to radiation. The inspector verified that appropriate pre-work surveys were performed which were appropriate to identify and quantify the radiological hazard and to establish adequate protective measures. The inspector evaluated the radiological survey program to determine if hazards were properly identified, including the following:

- identification of hot particles;
- the presence of alpha emitters;
- the potential for airborne radioactive materials, including the potential presence of transuranics and/or other hard-to-detect radioactive materials;

- the hazards associated with work activities that could suddenly and severely increase radiological conditions; and
- severe radiation field dose gradients that can result in non-uniform exposures of the body.

The activities selected included dryer diving, IVVI, control rod drive (CRD) exchanges, drywell in-service inspection, and turbine maintenance.

The inspector selected air sample survey records and verified that samples were collected and counted in accordance with PPL procedures. The inspector observed work in potential airborne areas, and verified that air samples were representative of the breathing air zone. The inspector verified that PPL has a program for monitoring levels of loose surface contamination in areas of the plant with the potential for the contamination to become airborne.

Radiological Hazards Control and Work Coverage

During tours of the facility and review of ongoing work selected above, the inspector evaluated ambient radiological conditions. The inspector verified that existing conditions were consistent with posted surveys, radiation work permits (RWPs), and worker briefings, as applicable.

During job performance observations, the inspector verified the adequacy of radiological controls, such as required surveys, radiation protection (RP) job coverage, and contamination controls. The inspector evaluated PPL's means of using electronic personnel dosimeters in high noise areas as HRA monitoring devices.

The inspector verified that radiation monitoring devices were placed on the individual's body consistent with the method that PPL was employing to monitor dose from external radiation sources. The inspector verified that the dosimeter was placed in the location of highest expected dose or that PPL was properly employing an NRC-approved method of determining effective dose equivalent.

For high-radiation work areas with significant dose rate gradients (a factor of 5 or more), the inspector reviewed the application of dosimetry to effectively monitor exposure to personnel. The inspector verified that PPL controls were adequate.

The inspector reviewed RWPs for work within airborne radioactivity areas with the potential for individual worker internal exposures. The inspector evaluated airborne radioactive controls and monitoring, including potentials for significant airborne contamination. For these selected airborne radioactive material areas, the inspector verified barrier integrity and temporary high-efficiency particulate air ventilation system operation.

The inspector examined PPL's physical and programmatic controls for highly activated or contaminated materials stored within spent fuel and other storage pools. The inspector verified that appropriate controls were in place to preclude inadvertent removal of these materials from the pool.

The inspector conducted selective inspection of posting and physical controls for high radiation areas (HRA) and very HRA, to the extent necessary to verify conformance with the Occupational Radiation Exposure performance indicator (PI).

Radiation Worker Performance

During job performance observations, the inspector observed radiation worker performance with respect to stated RP work requirements. The inspector determined that workers were aware of the significant radiological conditions in their workplace and the RWP controls/limits in place and that their performance reflected the level of radiological hazards present.

The inspector reviewed radiological problem reports since the last inspection that found the cause of the event to be human performance errors. The inspector determined that there was no observable pattern traceable to a similar cause. The inspector determined that this perspective matched the corrective action approach taken by PPL to resolve the reported problems. The inspector discussed with the radiation protection manager any problems with the corrective actions planned or taken.

Radiation Protection Technician Proficiency

During job performance observations, the inspector observed the performance of radiation protection technicians (RPTs) with respect to RP work requirements. The inspector determined that technicians were aware of the radiological conditions in their workplace and the RWP controls/limits and that their performance was consistent with their training and qualifications with respect to the radiological hazards and work activities.

The inspector reviewed radiological problem reports since the last inspection that found the cause of the event to be RPT error. The inspector determined that there was no observable pattern traceable to a similar cause. The inspector determined that this perspective matched the corrective action approach taken by PPL to resolve the reported problems.

b. Findings

No findings of significance were identified.

2RS2 Occupational ALARA Planning and Controls (71124.02)

a. Inspection Scope

Radiological Work Planning

The inspector obtained from PPL a list of work activities ranked by actual or estimated exposure that were in progress and select work activities of the highest exposure significance. The work activities included dryer diving, IVVI, CRD exchanges, drywell in-service inspection, and turbine maintenance.

The inspector reviewed the as low as is reasonably achievable (ALARA) work activity evaluations, exposure estimates, and exposure mitigation requirements. The inspector determined that PPL had reasonably grouped the radiological work into work activities, based on historical precedence, industry norms, and/or special circumstances.

The inspector verified that PPL's planning identified appropriate dose mitigation features; considered, commensurate with the risk of the work activity, alternate mitigation features; and defined reasonable dose goals. The inspector verified that PPL's ALARA assessment had taken into account decreased worker efficiency from use of respiratory protective devices and or heat stress mitigation equipment. The inspector determined that PPL's work planning considered the use of remote technologies as a means to reduce dose and the use of dose reduction insights from industry operating experience and plant-specific lessons learned. The inspector verified the integration of ALARA requirements into work procedure and RWP documents.

The inspector compared the results achieved with the intended dose established in PPL's ALARA planning for these work activities. The inspector compared the person-hour estimates provided by maintenance planning and other groups to the RP group with the actual work activity time requirements, and evaluated the accuracy of these time estimates. The inspector determined the reasons for any inconsistencies between intended and actual work activity doses. The inspector focused on those work activities with planned or accrued exposure greater than 5 person-rem.

The inspector determined that post-job reviews were conducted and that identified problems were entered into PPL's CAP.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification

.1 Initiating Events (71151 - 6 samples)

a. Inspection Scope

The inspectors reviewed PPL's PI data for the period of September through December 2009 to determine whether the PI data was accurate and complete. The inspectors examined selected samples of PI data, PI data summary reports, and plant records. The inspectors compared the PI data against the guidance contained in Nuclear Energy Institute (NEI) 99-02, "Regulatory Assessment Performance Indicator Guideline." The following performance indicators were included in this review:

- Units 1 and 2, unplanned scrams per 7000 critical hours (IE01);
- Units 1 and 2, unplanned power changes per 7000 critical hours (IE03);
- Units 1 and 2, unplanned scrams with complications (IE04).

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems (71152)

.1 Review of Items Entered into the Corrective Action Program

a. Inspection Scope

As specified by Inspection Procedure 71152, "Identification and Resolution of Problems," and in order to help identify risk significant, repetitive, long-term or latent equipment failures, cross-cutting components or adverse performance trends for followup, the inspectors performed screening of all items entered into PPL's CAP. This was accomplished by reviewing the description of each new CR, attending management committee meetings, and viewing computerized CAP entries.

b. Findings

No findings of significance were identified.

.2 Identification and Resolution of Problems – Inservice Inspection Activities

a. Inspection Scope

The inspector reviewed a sample of non-conforming conditions identified during ISI examinations during the Unit 1 refueling outage to evaluate the effectiveness of PPL in identification and resolution of problems. The inspector selected CNF IVVI-10-60 for evaluation of flaw identification, characterization and placement into PPL's CAP using CR 1245549. The remote VT-1 of the reactor steam dryer welds revealed crack-like indications at the 45 degree vertical weld joining one dryer skirt segment to a support member. The flaws were characterized as linear, located in the base material with extension to the weld heat affected zone and determined to be not through wall. The inspector reviewed the materials of construction, weld metal, flaw location, weld metal profile and condition of the adjacent base material. The inspector determined that the flaws identified were characterized appropriately and transmitted to PPL for disposition in the corrective action process.

b. Findings

No findings of significance were identified.

4OA5 Other Activities

.1 Temporary Instruction (TI) 2515/173 – Review of the Implementation of the Industry Ground Water Protection Voluntary Initiative

a. Inspection Scope

On February 8-12, 2010, the inspector assessed PPL's ground water protection program to determine whether PPL had implemented the voluntary industry Ground Water

Protection Initiative (GPI). The GPI was unanimously approved by a formal vote of the NEI member utility chief nuclear officers, which established the industry's commitment to implement the initiative. The GPI identifies the actions the industry deems necessary for implementation of a timely and effective ground water protection program.

The inspector verified that the following objectives for the GPI were contained in PPL's program:

1.1 Site Hydrology and Geology
1.2 Site Risk Management
1.3 On-Site Ground Water Monitoring
1.4 Remediation Process
1.5 Record Keeping
2.1 Stakeholder Briefing
2.2 Voluntary Communication
2.3 Thirty-Day Reports
2.4 Annual Reporting
3.1 Perform a Self-Assessment
3.2 Review the Program Under the Auspices of NEI

The inspector determined that all of the above referenced attributes were contained in the Susquehanna Radiological Ground Water Protection plan. The inspector also conducted direct observation of the quarterly sampling of well MW-2 on February 9, 2010.

b. Findings and Observations

No findings of significance were identified.

.2 Institute of Nuclear Power Operations (INPO) Plant Assessment Report Review

a. Inspection Scope

The inspectors reviewed the interim report for the INPO plant assessment of SSES conducted in September 2009. The inspectors reviewed the report to ensure that issues identified were consistent with the NRC perspectives of licensee performance and to verify if any significant safety issues were identified that required further NRC followup.

b. Findings and Observations

No findings of significance were identified.

.3 Unit 2 Extended Power Uprate and Heat Sink Performance

a. Inspection Scope

The inspector reviewed the impact of the Unit 2 EPU on the ability of the 2B RHR HX to perform its design function. During the inspection performed and described in section 1R07 of this report, the inspector concluded that the heat exchanger's performance was appropriately evaluated for the analyzed EPU conditions.

b. Findings

No findings of significance were identified.

.5 NRC review of PPL's Response to Notices of Violation EA-09-248

a. Inspection Scope:

On January 28, 2010, the NRC transmitted a Notice of Violation (NOV) (ML100280714) to PPL related to two instances of failures by PPL Susquehanna, LLC (PPL) to obtain NRC approval for two senior reactor operators (SROs) to continue to conduct NRC-licensed activities after each SRO did not meet a specific medical prerequisite for performing the duties of a licensed operator, as required by 10 CFR 55.3. The apparent violation was described in detail in NRC inspection report dated November 13, 2009 (Inspection Report Nos. 05000387/2009004, 05000388-2009004; ADAMS Accession Number ML093170375).

With respect to the first instance, during August 2009, a medical examination for an SRO identified a disqualifying condition, namely, that the SRO's vision did not meet the health requirements stated in ANSI/ANS 3.4-1983, Section 5.4.5, "Eyes." Nonetheless, the SRO continued to perform licensed watchstanding duties on three different occasions following the examination, without the NRC first being informed to ensure that the individual's license was conditioned to require corrective lenses. This was determined to be a SLIII NOV. With respect to the second instance, another SRO had not received the required biennial medical examination, which was due by April 1, 2009, until July 22, 2009. During that time, the SRO performed licensed operator duties 52 times. This was determined to be a SLIV NOV.

In response to the apparent violation, on December 10, 2009, PPL submitted a written response (ML100150702) describing the action taken to restore compliance and prevent recurrence and to provide items for consideration for the enforcement process in lieu of a Predecisional Enforcement Conference. As stated in the final enforcement action issued January 28, 2010, an additional response was not required due to the information previously provided on the docket; however, PPL could submit a response if desired. PPL did not elect to submit an additional response.

The inspectors re-reviewed the PPL's December 10, 2009, written response in accordance with IP 92702 to review the actions taken by the licensee to reestablish compliance and prevent recurrence for these violations.

b. Findings and Observations:

There were no findings of significance. The inspectors determined that PPL's response and corrective actions were reasonable and appropriate to address the NOV and underlying performance deficiency. The NRC does not require any additional information for these issues and considers these issues to be closed.

.6 NRC review of PPL's Response to a Licensee-Identified Green NCV involving Willful Misconduct. (EA-09-006)

a. Inspection Scope:

NRC Inspection Procedure 92702 directs the NRC to review all findings involving deliberate or willful misconduct. This inspection activity documents the review of a licensee-identified NCV which occurred in 2007. This issue was previously dispositioned as a licensee-identified NCV in an NRC letter to PPL dated June 17, 2009 (ML091680573).

The NRC Office of Investigations (OI) Investigation (Report 1-2008-031) was initiated on March 7, 2008, at PPL's Susquehanna Steam Electric Station (SSES). The purpose of the investigation was to determine if a SSES Operations Support Clerk (OSC) deliberately falsified weld rod oven temperature verification logs between June 8, 2007, and February 1, 2008. Based on evidence developed during the OI investigation, the NRC concluded that the SSES OSC deliberately falsified the Weld Rod Oven Temperature Logs for four dates, specifically, January 29, 2008, through February 1, 2008. The creation of a false record material to the NRC constituted a violation of 10 CFR 50.9,

Because the licensee is responsible for the actions of its employees, and because the violation was willful, the violation of 10 CFR 50.9 was evaluated under the NRC traditional enforcement process as set forth in Section IV.A.4 of the NRC Enforcement Policy. The NRC considered that the violation, absent willfulness, would be of minor safety significance because subsequent evaluation by PPL of the oven temperature recorders (separate from the logs) determined that the temperatures for this time frame were all satisfactory for the issuance of weld rods. However, the NRC increased the significance of the violation to Severity Level IV because the violation involved a deliberate act.

The NRC considered issuance of a Notice of Violation for this issue. However, after considering the factors set forth in Section VI.A.1 of the Enforcement Policy, the NRC determined that although the violation was willful, a non-cited violation (NCV) was appropriate in this case because: (1) PPL identified the violation; (2) the violation involved the acts of a non-supervisory individual who was not a licensee official in the context of the NRC Enforcement Policy; (3) the violation resulted from the isolated actions of a single individual without management involvement; and, (4) PPL took significant remedial action.

The NRC also recognized that PPL did identify this issue on January 28, 2008 during a QA audit of the SSES Tool Room. As such, this violation was characterized as a licensee-identified, SLIV NCV of 10 CFR 50.9. Because it is a licensee-identified issue, it was not entered into the Plant Issues Matrix; and in accordance with NRC Inspection Manual Chapter 0305, "Plant Assessment" was not directly considered in the plant assessment process.

The inspectors re-reviewed PPL's investigation into this issue and the corrective actions taken to restore compliance and to prevent recurrence in accordance with IP 92702.

b. Findings and Observations:

There were no findings of significance. The inspectors determined that PPL's response and corrective actions were reasonable and appropriate to address the NCV and underlying performance deficiency. The NRC does not require any additional information for this issue and considers this issue to be closed.

4OA6 Meetings, Including Exit

On February 12, 2010, an inspector presented inspection results to Mr. J. Helsel and other members of his staff. PPL acknowledged the findings.

On March 19, 2010, inspectors presented inspection results to Mr. T. Rausch and other members of his staff. PPL acknowledged the findings. A proprietary document had been reviewed and was returned to PPL.

On April 20, 2010, the resident inspectors presented their findings to Mr. J. Helsel, and other members of his staff, who acknowledged the findings. No proprietary information is contained in this report. The inspectors confirmed that proprietary information was not provided or examined during the inspection.

4OA7 Licensee-Identified Violations

In June 2007, PPL Susquehanna management informed NRC resident inspectors that they had identified an issue where an individual had falsified entries in a weld rod oven temperature log. The NRC Office of Investigations (OI) Investigation (Report 1-2008-031) initiated on March 7, 2008, at PPL's Susquehanna Steam Electric Station (SSES). The purpose of the investigation was to determine if a SSES Operations Support Clerk (OSC) deliberately falsified weld rod oven temperature verification logs between June 8, 2007, and February 1, 2008. Based on evidence developed during the OI investigation, the NRC concluded that the SSES OSC deliberately falsified the Weld Rod Oven Temperature Logs for four dates, specifically, January 29, 2008, through February 1, 2008. The creation of a false record material to the NRC constituted a violation of 10 CFR 50.9.

Because the licensee is responsible for the actions of its employees, and because the violation was willful, the violation of 10 CFR 50.9 was evaluated under the NRC traditional enforcement process as set forth in Section IV.A.4 of the NRC Enforcement Policy. The NRC considered that the violation, absent willfulness, would be of minor safety significance because subsequent evaluation by PPL of the oven temperature recorders (separate from the logs) determined that the temperatures for this time frame were all satisfactory for the issuance of weld rods. However, the NRC increased the significance of the violation to Severity Level IV because the violation involved a deliberate act.

The NRC considered issuance of a Notice of Violation for this issue. However, after considering the factors set forth in Section VI.A.1 of the Enforcement Policy, the NRC determined that although the violation was willful, a non-cited violation (NCV) was appropriate in this case because: (1) PPL identified the violation; (2) the violation involved the acts of a non-supervisory individual who was not a licensee official in the

context of the NRC Enforcement Policy; (3) the violation resulted from the isolated actions of a single individual without management involvement; and, (4) PPL took significant remedial action.

The NRC also recognized that PPL did identify this issue on January 28, 2008, during a QA audit of the SSES Tool Room. As such, this violation was characterized as a licensee-identified, SLIV NCV of 10 CFR 50.9. Because it is a licensee-identified issue, it will not be entered into the Plant Issues Matrix; and in accordance with NRC Inspection Manual Chapter 0305, "Plant Assessment" was not directly considered in the plant assessment process. (EA-09-006)

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

N. Coddington, Senior Engineer, Regulatory Affairs
C. Dodge, Simulator Engineering
A. Fitch, Training Director
R. Fry, Operations Training Manager
C. Hess, Simulator Superviser
S. Lines, Manager Nuclear Support
M. Rochester, Special Projects Coordinator, Nuclear Regulatory Affairs
V. Schuman, Radiation Protection Manager
R. Smith, General Manager, Site Preparedness and Services
R. Collier, System Engineer
J. Folta, System Engineer
S. Muntzenberger, System Engineer
B. O'Rourke, Senior Engineer, Nuclear Regulatory Affairs
H. Riley, Chemistry Support

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

None.

Opened/Closed

None.

Closed

TI 2515/173	TI	Review of the Implementation of the Industry Ground Water Protection Voluntary Initiative (4OA5.1)

BASELINE INSPECTION PROCEDURE PERFORMED

LIST OF DOCUMENTS REVIEWED
(Not Referenced in the Report)

Section 1R01: Adverse Weather Protection

Condition Report:

1200467

Work Order:

1220431

Section 1R04: Equipment Alignment

Condition Reports:

1238476, 1238478, 1238529, 1238538, 1238545, 1238673, 1237869, 1237890, 1239235

Procedures:

OP-252-001, HPCI System, Revision 42
OP-011-001, SDHR System, Revision 17
OP-024-001, Diesel Generators, Revision 55
SO-024-013, Offsite Power Source and Onsite Class 1E Operability Test, Revision 17
TP-105-009, Load Center 1B240 Outage Coordination Procedure, Revision 2

Drawings:

M-2155, Unit 2 HPCI, Revision 40
M-2156, Unit 2 HPCI Turbine-Pump, Sheet 1, Revision 26
M-2156, Unit 2 HPCI Lubricating and Control Oil, Sheet 2, Revision 9
E-296142, SDHR, Revision 0

Section 1R05: Fire Protection

Condition Reports:

1241744, 1239621, 1239617, and 1242388

Procedures:

FP-0130166, North and Center Cable Chases Fire Zones 0-27G, 0-27H, 0-26T, 0-26V, 0-28Q, 0-28R, Elevations 754', 741' 771', Revision 5
FP-113-100, Drywell Fire Zone 1-4F Elevation 704' Thru 807', Revision 3
FP-113-113, Containment Access Area Elevation 719', Revision 6
FP-213-236, Core Spray Pump Room Fire Zone 2-1A, Elevation 645', Revision 6
FP-213-237, Core Spray Pump Room 'A' Fire Zone 2-1B, Elevation 645', Revision 5
FP-213-238, HPCI Pump Room Fire Zone 2-1C, Elevation 645', Revision 5

FP-213-239, RCIC Pump Room Fire Zone 2-1D, Elevation 645', Revision 7
FP-213-240, RHR Pump Room 'B' Fire Zone 2-1E, Elevation 645', Revision 5
FP-213-241, RHR Pump Room 'A' Fire Zone 2-1F, Elevation 645', Revision 6
FP-213-242, Sump Pump Room Fire Zone 2-1G, Elevation 645', Revision 6
FP-113-125, Access Area, Adjoining Rooms Fire Zones 1-6A, 1-61, 0-6G, Elevation 779', Revision 5
FP-213-260, Access Area, Sample Room, Adjacent Areas Fire Zone 2-6A, Elevation 779', Revision 5

Other:

Fire Protection Review Report, Revision 10

Section 1R06: Flood Protection Measures

Condition Reports (* NRC identified):

1237509*, 1237510*

Procedures:

T.S. 3.8.8
GO-100-006, "Cold Shutdown Defueled and Refueling," Revision 41
SO-100-005, "Weekly Electrical Distribution Verification," Revision 4

Other:

DCP 92-9063, "Units 1 and 2 Control Structure Floor Drain Closures," Revision 0
EC-RISK-0539, Internal Flooding Analysis for PRA, Revision 1
Susquehanna Steam Electric Station IPE, Volume 1, NPE-91-001, December 1991

Section 1R07: Heat Sink Performance

Procedures:

SO-116-A03, Quarterly RHRSW System Flow Verification Division I, Revision 5
OP-116-001, RHRSW, Revision 29
NDAP-QA-0524, Equipment Reliability and Station Health Process
SO-216-B04, RHRSW System Comprehensive Flow Verification Division II, Revision 3

Work Orders:

1181149, 646441,590967

Other:

Calculation EC-016-1002, Ultimate Heat Sink – Minimum Heat Transfer Design Bases Analysis, Revision 14
M1181-52, Clean and Inspect RHRSW HX, 2E205B RTPM 490967

Section 1R08: Inservice Inspection Activities

Condition Reports:

1240628, 1244107, 1243254, 1242231, 1242703, 1241471, 1241529, 1241088, 1239451, 1241472, 1244586

Action Requests:

1219844, 1243274, 1242707, 1241702, 1242704, 1243570

NDT Examination Reports:

UT 10002, Ultrasonic Manual Examination of weld HBB 1012-4A-B, RCIC
MT-10-004, MT of four welds, GBB 1151-HW-5A, B, C and D in the RHR system
PT-10-001, Liquid PT of weld DCB 1021-HW-2, PL ug/H1 in the RHR system

NDT Examination Procedures:

NDE-MT-001 R4, Wet and Dry MT Examination
NDE-LP-001 R3, Color Contrast Liquid Penetrant Examination
NDE-UT-002 R5, Manual Ultrasonic Examination of Ferritic Welds

Work Orders:

1089016, 617614, 995883, 1057477

Miscellaneous:

16RFO Shroud Inspection, Unit 1 16RFO Core Shroud Weld Inspection and growth comparison 2004/2010
Dwg C 198606, ISI Isometric, weld identification, ISI-HBB-101-2, RCIC
WPS N-A-IA-MA-88 R4, WPS for gas tungsten arc (GTAW) and shielded shielded metal arc welding (SMAW) of stainless steel, ASME IX and ASME III
WPS N A-IA-MA-88 R4B, WPS for GTAW and SMAW welding of stainless steel
WPS N-A-IA-MA-11 R8B, WPS for welding of carbon steel
CNF, CNF identifying cracks in steam dryer skirt at 45 degree vertical weld

Other:

GEH Engineering Report, Steam Dryer Inspections 45 degree Tee Crack Indication Evaluation, 0000-0115-4403-R0, March 2010, Proprietary

Section 1R12: Maintenance Effectiveness

Condition Reports:

1201335, 1201376, 667984, 668320, 1139920, 1222613, 1246429, 1236279, 1177506, 1246136

Work Orders:

1199954, 1152093

Other:

Maintenance Rule Database
Second Period 2009 System 205 Health Report – 480V Load Centers
Second Period 2009 System 252 Health Report – HPCI

Section 1R13: Maintenance Risk Assessments and Emergent Work Control

Condition Report:

1194403, 1199435, 1241265, 1241562

Procedures:

NDAP-QA-0340, Protected Equipment Program, Revision 6

Section 1R15: Operability Evaluations

Condition Reports (* NRC-identified):

1200724, 1222234, 1222019, 1226795*, 1222475*, 1222604*, 315019, 313946, 1156991, 1225053, 1225054, 1234181, 1233237, 973958, 1233643, 1234270, 1234260, 1241977*, 1240758, 1194388, 1156877, 1246136, 1246429, 1236279, 1177506

Action Requests:

960059, 1156877

Calculations:

EC-050-0554, RCIC Surveillance Test Acceptance Criteria for High Pressure Test, Revision 3

Procedures:

IC-150-001, RCIC Turbine Control System Calibration, Revision 4
SE-200-007, ESW/RHRSW Functional Test at 2C201B, Revision 8
SO-250-002, Quarterly RCIC Flow Verification, Revision 38
SR-278-012, LPRM Calibration and Validation, Revision 6
SO-030-B06, ESCW Comprehensive Flow Verification LOOP "B", February 20, 2010, Revision 4 and Revision 3
MT-GE-053, Battery Capacity Test System Lineup and Operation for Testing Station Batteries and Battery Charger, Revision 2
SM-102-C04, 48 Month Channel "C" 1D630-125 VDC Battery Discharge Modified Performance Test and Battery Charger Capability Test, Revision 15
SO-216-A03, Quarterly RHRSW System Flow Verification Division I, Revision 5
OP-216-001, RHRSW, Revision 24

Drawings:

M-186, Sheet 2, Control Structure Chilled Water System "B", Revision 12
93-14057, 20"-150 Flanged Ends Carbon Steel Testable Swing Check Valve, Revision 2
M-112, Unit 1 RHRSW, Revision 47
M-2112, Unit 2 RHRSW, Revision 29

Work Order:

1200839, 1223850, 1037299, 1001084, 1051618

Other:

RTPM 361810, RTPM 330466, ERPM 913099, RTPM 280415,
NUREG -1482, Guidelines for Inservice Testing at Nuclear Power Plants, Revision 1
SUS-ISTPLN-100.0, Third Ten Year Inservice Testing Program Plan, Revision 0
Instrument Calibration Sheet Electronic Controller, FC-E41-2R600, Activity 869566
ECB 0 125V DC Battery Discharge Test and Battery Charger Capability Test

Engineering Work Request:

1201624, 1221928, 647112

Section 1R18: Permanent Plant Modifications

Condition Reports (* NRC identified):

1233689*

Action Requests (* NRC identified):

1201306, 1219361, 1233689*

Procedures:

SO-100-011, Reactor Vessel Temperature and Pressure Recording, Revision 16
T.S. 3.4.1.0
FSAR 5.2.3.3.1.3
10 CFR 50 Appendix G

Work Order:

1219753

Other:

TEC – 1221769, Install Temporary Thermocouple Reader in IC007, Revision 0
Calculation EC-062-0573, Study to Support the Bases Section of TS 3.4.10, "RCS Pressure and Temperature Units," Revision 1

Section 1R19: Post-Maintenance Testing

Condition Reports (*NRC-identified):

1234376, 1234592*, 1235872*, 1177506

Procedures:

MT-RC-055, RPS MG Set OV/UF Relay Calibration Procedure, Revision 6
SO-152-004, Quarterly HPCI Valve Exercising, Revision 28
SO-216-A03, Quarterly RHRSW Flow Verification Division I, Revision 5

Work Orders:

1221442, 1221423, 1236291, 1177525, 1246189

Section 1R20: Refueling and Other Outage Activities

Condition Reports:

1239296, 1247740, 1248832, 1247068, 1248862

Procedures:

GO-100-005, Plant Shutdown to Hot/Cold Shutdown, Revision 44
GO-100-004, Plant Shutdown to Minimum Power, Revision 49
OP-149-002, RHR Shutdown Cooling, Revision 45
OP-181-001, Refueling Platform Operation, Revision 32
SO-100-011, Reactor Vessel Temperature and Pressure Recording, Revision 16, dated March 2, 2010
NDAP-QA-0025, Working Hour Limits for Station Staff, Revision 7
NDAP-00-2002, Fitness for Duty/Behavior Observation Program, Revision 8

Work Orders:

1063656, MSIV Stroke Timing

Section 1R22: Surveillance Testing

Condition Reports (* NRC identified):

1234583*, 1229215, 1228880, 1196405, 1227320, 1227815, 1228141, 1227894, 1236112, 1241378, 1240345

Action Requests:

1240880, 1240975

Procedures:

SE-024-B01, Diesel Generator B Integrated Surveillance Test, Revision 3
SE-200-007, ESW/RHRSW Functional Test at 2C201B, Revision 8
SO-250-002, Quarterly RCIC Flow Verification, Revision 38
SO-253-004, Quarterly SBLC Flow Verification, Revision 35
SO-151-B02, Quarterly Core Spray Flow Verification Division II, Revision 15
SI-159-303A, 24 Month Calibration of Suppression Pool Water Temperature Channel TX-15751 (PAM, Remote Shutdown and High Temperature Alarms), Revision 2
SE-159-024, LLRT of Main Steam Line Isolation Valves Penetration Number X-7D, Revision 14
SO-149-014, RHR Cold Shutdown Valve Exercising, Revision 17
SE-159-026, LLRT of Feedwater Line A Penetration Number X-9A and Check Valve Operability Test SCBL, Revision 17
NDAP-QA-0412, Leakage Rate Test Program, Revision 11
NDAP-QA-0720, Station Report Matrix and Reportability Evaluation Guidance, Revision 15

Work Orders:

1039863

Calculations

EC-053-0507, Calculation of Maximum ATWS Injection Pressure, Revision 2

Section 1EP6: Drill Evaluation

Condition Reports:

1228344

Section 2RS1: Radiological Hazard Assessment and Exposure Controls

Condition Reports:

1199041; 1199548; 1200312; 1201766; 1217324; 1222786; 1225611; 1231268; and 1239406

Work Orders:

20101002; 20101320; and 20101353

Section 2RS2: Occupational ALARA Planning and Controls

Condition Reports:

1199336; 1217673; 1217768; 1218114; 1219051; 1227816; 1228303; 1237389; and 1239341

Other:

ALARA pre-job reviews: ISI, CRB and LPRM Exchanges; scaffolding work in the drywell; CRD exchange, undervessel work

Section 4OA1: Performance Indicator Verification

Other:
Unit 1 and Unit 2 Operating Logs

Section 4OA2: Identification and Resolution of Problems

Condition Reports (* NRC identified):

1222475*, 1226795*, 1234592*, 1234589*, 1234078*, 1237045*, 1237052*, 1238854*, 1240678, 1242549*, 1249212

Section 4OA5: Other Activities

Procedures:

NDAP-QA-1180, Rev 5, Radiological Effluent Monitoring and Control
NDAP-QA-0720, Rev 15, Station Report Matrix and Reportability Evaluation Guidance
NDAP-QA-0627, Rev 21, Radioactive Contamination Control
NDAP-QA-0483, Rev 0, Buried Piping Program

Other:

Groundwater Analysis Reports, Teledyne Brown Engineering, October, 2007 – December, 2009
Critical Systems Environmental Risk Assessment Report: Susquehanna Steam Electric Station Tritium in Groundwater Assessment, September 25, 2006 (Shaw Environmental. Inc.)
Updated Hydrogeologic Investigation Report: Susquehanna Steam Electric Station, April, 2009 (Conestoga-Rovers & Associates)
Hydrogeologic Investigation Report: Susquehanna Steam Electric Station, February, 2008 (Conestoga-Rovers & Associates)
NEI 07-07 Ground Water Self Assessment, October 13, 2008
NEI Peer Assessment of SSES Implementation of NEI Groundwater Initiative, December 2, 2009
Self-Assessment/Benchmark – NEI 07-07, Groundwater Protection Initiative, August, 2008

LIST OF ACRONYMS

ALARA	As Low As Is Reasonably Achievable
ASME	American Society of Mechanical Engineers
CAP	Corrective Action Program
CFR	Code of Federal Regulations
CNF	Customer Notification Forms
CR	Condition Report
CRD	Control Rod Drive
EDG	Emergency Diesel Generator
EPU	Extended Power Uprate
FSAR	[SSES] Final Safety Analysis Report
HPCI	High Pressure Coolant Injection
IR	NRC Inspection Report
ISI	Inservice Inspection
IVVI	In-Vessel Visual Inspection
JP	Jet Pump
NEI	Nuclear Energy Institute
NRC	Nuclear Regulatory Commission
OOS	Out-of-Service
PDI	Performance Demonstration Initiative
PI	[NRC] Performance Indicator
PMT	Post-Maintenance Test
PPL	PPL Susquehanna, LLC
RCIC	Reactor Core Isolation Cooling
RCS	Reactor Coolant System
RFO	Refuel Outage
RHR	Residual Heat Removal
RHRSW	Residual Heat Removal Service Water
RP	Radiation Protection
RWP	Radiation Work Permit
SDHR	Supplemental Decay Heat Removal
SSC	Structures, Systems and Components
SSES	Susquehanna Steam Electric Station
TRM	Technical Requirements Manual
TS	Technical Specifications
UT	Ultrasonic Test
VT	Visual Examination
WO	Work Order