March 15, 2006

Mr. Britt T. McKinney
Senior Vice President & Chief Nuclear Officer
PPL Susquehanna, LLC
769 Salem Blvd. - NUCSB3
Berwick, PA 18603-0467

SUBJECT: SUSQUEHANNA STEAM ELECTRIC STATION, UNITS 1 AND 2
PROBLEM IDENTIFICATION AND RESOLUTION
INSPECTION REPORT NOS. 05000387/2006006, 05000388/2006006

Dear Mr. McKinney:

On February 10, 2006, the US Nuclear Regulatory Commission (NRC) completed a team inspection at the Susquehanna Steam Electric Station, the enclosed inspection report documents the inspection findings, which were discussed on February 10, 2006, with you and members of your staff during an exit meeting.

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

On the basis of the sample selected for review, the team concluded that in general, problems were properly identified, evaluated, and corrected. There was one green finding identified during this inspection associated with problem identification. The finding was the failure to identify that a scaffold had been inappropriately constructed contacting a safety-related instrument sensing line. The finding was determined to be a violation of NRC requirements. However, because of the very low safety significance and because it has been entered into your corrective action program, the NRC is treating this finding as Non-Cited Violation, in accordance with Section VI.A.1 of the NRC's Enforcement Policy. If you deny this Non-Cited Violation, you should provide a response with the basis for your denial, within 30 days of the date of this inspection report, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington DC, 20555-0001, with copies to the Regional Administrator, Region I; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC, 20555-0001; and the NRC Resident Inspector at the Susquehanna facility.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document

Room or from the Publically 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/

James M. Trapp, Chief
Projects Branch 4
Division of Reactor Projects

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

Enclosure: Inspection Report Nos. 05000387/2006006, 05000388/2006006
w/Attachment: Supplemental Information

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REGION I

Docket Nos:	50-387, 50-388
License Nos:	NPF-14, NPF-22
Report Nos:	05000387/2006006, 05000388/2006006
Licensee:	PPL Susquehanna, LLC
Facility:	Susquehanna Steam Electric Station, Units 1 and 2
Location:	769 Salem Blvd. - NUCSA4 Berwick, PA 18603-0467
Dates:	January 23 - February 10, 2006
Team Leader:	B. S. Norris, Senior Project Engineer, Division of Reactor Projects (DRP)
Inspectors:	A. J. Blamey, Senior Resident Inspector, Susquehanna, DRP A. A. Rosebrook, Project Engineer, DRP T. C. Setzer, Project Engineer, DRP
Approved by:	James M. Trapp, Chief Projects Branch 4 Division of Reactor Projects

Enclosure

SUMMARY OF FINDINGS

IR 05000387/2006-006 and 05000388/2006-006; 01/23/2006 - 02/10/2006; Susquehanna Steam Electric Station, Units 1 and 2; Biennial Baseline Inspection of the Identification and Resolution of Problems. One violation was identified in the area of identification of deficiencies.

This inspection was conducted by three regional inspectors and one resident inspector. One finding of very low safety significance (Green) was identified during this inspection and was classified as a Non-Cited Violation (NCV). The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process" (SDP). Findings for which the SDP does not apply may be Green or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 3, dated July 2000.

Identification and Resolution of Problems

The team concluded that the implementation of the corrective action program (CAP) at Susquehanna was generally good. The team determined that Susquehanna was effective at identifying problems and entering them in the CAP. However, while the identification of equipment deficiencies was acceptable, the team identified one finding and several minor issues where there appeared to be an attitude of acceptance of deficiencies and abnormal conditions. Once entered into the system, the items were screened and prioritized in a timely manner using established criteria. Items entered into the CAP were properly evaluated commensurate with their safety significance. The causal evaluations reasonably identified the causes of the problems and developed appropriate corrective actions. The team noted a trend over the last two years of a lack of rigor with regard to operability evaluations. Corrective actions were typically implemented in a timely manner and appropriately addressed the root causes. However, the team identified one example where the corrective actions to prevent repetition for a NRC identified NCV were implemented in an ineffective manner constituting a minor violation. Licensee audits and self-assessments were generally adequate. The team also noted that the licensee's efforts to reduce human performance error rates were continuing. On the basis of interviews conducted during the inspection, the team concluded that workers at the site felt free to input safety concerns into the CAP.

A. NRC Identified and Self-Revealing Findings

Cornerstone: Mitigating Systems

- Green: The inspectors identified a NCV of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," for failure to identify, for greater than a year, that a scaffold was constructed contacting a safety-related instrument sensing line which provided an input to the automatic depressurization system (ADS). The affected system was declared inoperable until the scaffold was removed. The licensee took prompt corrective action to remove the subject scaffold and entered the issue into the corrective action program. The licensee conducted an extensive plant walk-down that identified other scaffolds which were not properly constructed. The licensee subsequently determined that ADS was operable but degraded.

  This finding was greater than minor because it is associated with the equipment performance attribute of the Mitigating Systems Cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of the ADS system that responds to initiating events to prevent undesirable consequences. The inspectors noted the issue was also greater than minor, based on a review of NRC Inspection Manual Chapter (IMC) 0612, Appendix E, "Examples of Minor Issues and Cross-Cutting Aspects," Example 4.a - the issue is not minor if later evaluation determined that safety-related equipment was adversely affected. The finding was determined to be of very low safety significance (Green) because the performance deficiency did not represent a design deficiency and did not result in the loss of a safety function. The finding had a cross-cutting aspect related to the area of Problem Identification and Resolution; specifically, station personnel did not identify that the incorrect construction of the scaffolding was a condition adverse to quality. (Section 4OA2.1.b.(1))

B. Licensee-Identified Violations

None.

REPORT DETAILS

4. OTHER ACTIVITIES (OA)

4OA2 Problem Identification and Resolution (PI&R) (Biennial - IP 71152B)

.1 Effectiveness of Problem Identification

a. Inspection Scope

The inspection team reviewed the procedures describing the corrective action program (CAP) at the Susquehanna Steam Electric Station (SSES). SSES staff identified problems by initiating Action Requests (ARs). For conditions adverse to quality, human performance problems, equipment nonconformances, industrial or radiological safety concerns, and other significant issues, the ARs are classified as Condition Reports (CRs). The CRs are screened for operability, categorized by priority and significance (L1 through L3), and assigned for evaluation and resolution.

The team reviewed CRs selected across the seven cornerstones of safety in the NRC's Reactor Oversight Program (ROP) to determine if problems were being properly identified, characterized, and entered into the CAP for evaluation and resolution. The team selected items from the maintenance, operations, engineering, emergency planning, security, radiological control, training, and oversight programs to ensure that SSES was appropriately considering problems identified in each functional area. The team used this information to select a risk-informed sample of CRs that had been issued since the last NRC PI&R inspection, which was conducted in February 2004.

The team also selected items from other processes at Susquehanna and from the AR system which had not been classified as CRs, to verify that they appropriately considered these items for entry into the corrective action program. Specifically, the team reviewed a sample of work orders, engineering requests, operator log entries, control room deficiency and work-around lists, operability determinations, engineering system health reports, completed surveillance tests, current temporary configuration change packages, and training requests. The documents were reviewed to ensure that underlying problems associated with each issue were appropriately considered for resolution via the corrective action process. In addition, the team interviewed plant staff and management to determine their understanding of and involvement with the CAP. The CRs and other documents reviewed, and a list of key personnel contacted, are listed in the Attachment to this report.

The team reviewed a sample of Quality Assurance audits, including the most recent audit of the CAP, the CAP trend reports, and the departmental self-assessments. This review was performed to determine if problems identified through these evaluations were entered into the AR system, and whether the corrective actions were properly completed to resolve the deficiencies. The effectiveness of the audits and self-assessments was evaluated by comparing audit and self-assessment results against self-revealing and NRC-identified findings, and current observations during the inspection.

The team considered risk insights from the NRC's and SSES's risk analyses to focus the sample selection and plant tours on risk-significant components. The team determined that the five highest risk-significant systems were the 125 volt direct-current (DC) system including the station black-out diesel, the emergency diesel generators, the residual heat removal system, the emergency service water system, and the reactor core isolation cooling system. For the selected risk-significant systems, the team reviewed the applicable system health reports, a sample of work requests and engineering documents, plant log entries, and results from surveillance tests and maintenance tasks.

b. Assessment and Findings

In general, the team determined that the identification of equipment deficiencies to be acceptable at SSES. However, the team identified several minor issues where there appeared to be an attitude of acceptance of deficiencies and abnormal conditions. For example, the inspectors identified scaffolds built without the necessary clearance to adjacent safety-related equipment, breakers not fully racked-in on safety-related direct current load centers, material stored next to or touching safety-related equipment, and ground water intrusion around safety-related pipe penetrations. With the exception discussed below regarding scaffolding, all of the issues that were failures to comply with NRC requirements, constituted violations of minor significance that are not subject to enforcement action in accordance with the NRC's Enforcement Policy.

The housekeeping and cleanliness in some areas of the plant required improvement, in that it had the potential to directly affect equipment or mask worsening conditions. Examples included the failure to clean up oil leaks, failure to return ladders to the designated areas after use, failure to remove transient combustibles, and failure to clean water stains on the walls. At the end of the first week of inspection, SSES management instituted an aggressive review of all plant areas, and identified numerous other problems with scaffolding and general housekeeping. During the second week of on-site inspection, the inspection team identified additional discrepancies in areas that SSES had already walked-down.

The team also reviewed a sampling of Quality Assurance audits and departmental self-assessments and considered them to be adequate.

(1) Failure to Identify That Scaffolding Was Adversely Affecting Safety-Related Equipment

Introduction: The inspectors identified a NCV of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action." The licensee did not recognize that a scaffold was constructed in contact with a safety-related instrument sensing line which provided an input to the automatic depressurization system (ADS); this resulted in the system being declared inoperable until the scaffold was removed.

Description: On January 25, 2006, the inspectors identified a scaffold constructed between the Unit 2 "D" residual heat removal (RHR) pump and RHR heat exchanger. The attached scaffold inspection tag indicated that the scaffold was built in January 2005 and was last inspected on March 19, 2005. The inspector noted that the scaffold mid-rail was resting on top of the instrument tubing for two RHR pump discharge pressure switches ("PS-E11-2N020D" and "PS-E11-2N016D"). The pressure switches provide inputs to the ADS permissive logic, indicating that the RHR pump is running and has sufficient discharge pressure.

Station procedure MT-AD-504, "Scaffold Erection, Review and Inspection," referred to drawing C-1804, "Physical Clearance Criteria," which required a minimum clearance of 7/8-inch between scaffold components and instrument tubing. Step 6.1.8 of MT-AD-504 required an engineering evaluation/resolution if scaffolding could not be erected within the seismic requirements of the procedure. The step also stated that if an engineering resolution could not be obtained, the affected component needed to be declared inoperable or taken out-of-service. No evaluation existed for the observed deviation.

The inspectors discussed this with the scaffold System Engineer, who took the issue to the Control Room for an operability determination. The Shift Manager determined that the affected portion of ADS was inoperable and entered Technical Specification Limiting Condition for Operation 3.3.5.1.5.f, for the low pressure injection permissive for ADS initiation. The issue was immediately entered into the CAP as CR 745248. An extent-of-condition conducted by SSES included a site-wide inspection of scaffolding, that revealed many additional scaffolds which were not built in accordance with the procedure with respect to clearance and attachment requirements. Examples included a threaded rod for supporting a drywell nitrogen make-up line that was bent out around scaffolding and scaffolding that was impairing a pre-action sprinkler system which required a continuous fire watch. SSES's investigation also revealed that the associated work package for the Unit 2 RHR scaffolding incorrectly indicated that the scaffold was removed on March 19, 2005.

Analysis: The inspectors determined that the performance deficiency was the failure of SSES personnel to identify a condition adverse to quality that existed for over a year. Specifically, a scaffold was constructed with less than the minimum required clearance from safety-related equipment. Subsequent evaluation by SSES determined that the scaffolding could have disabled the signal input from the "D" RHR pump to that channel of ADS, but the other low pressure inputs (the "B" RHR pump and the core spray pumps) would have permitted that channel of ADS to function. The inspectors determined the issue was greater than minor, based on a review of NRC Inspection Manual Chapter (IMC) 0612, Appendix E, "Examples of Minor Issues and Cross-Cutting Aspects," Example 4.a - the issue is not minor if later evaluation determined that safety-related equipment was adversely affected.

The finding is associated with the equipment performance attribute of the Mitigating Systems Cornerstone; in that it contributed to the decreased capability of the safety-related ADS system to respond to an initiating event to prevent undesirable consequences. The inspectors performed a Phase 1 screening using IMC 0609,

Appendix A, “Determining the Significance of Reactor Inspection Findings for At-Power Situations.” The finding was determined to be of very low safety significance (Green) because the performance deficiency did not represent a design deficiency; did not result in the loss of a safety function; did not involve the loss or degradation of equipment or function specifically designed to mitigate a seismic, flooding, or severe weather initiating event (e.g. seismic snubbers) and did not involve the total loss of any safety function identified by the licensee through a probabilistic risk or similar analysis.

The finding had a cross-cutting aspect related to the area of Problem Identification and Resolution; specifically, station personnel did not identify that the incorrect construction of the scaffolding was a condition adverse to quality.

Enforcement: Appendix B, Criterion XVI, “Corrective Action,” of 10 CFR 50, requires that conditions adverse to quality be promptly identified and corrected. Contrary to this, SSES personnel failed to identify that scaffolding around the Unit 2 “D” RHR pump and heat exchanger was not constructed in accordance with the controlling procedure (MT-AD-504) and was resting on safety-related tubing which provided an input to the permissive logic for the ADS system. This condition had existed for approximately twelve months. After the issue was identified by the NRC, an SSES engineering evaluation determined that the affected train of ADS was degraded but operable due to the scaffolding. Because this violation is of very low safety significance (Green) and was entered into the licensee’s corrective action program (CR 745248), this violation is being treated as an NCV, consistent with Section VI.A.1 of the NRC Enforcement Policy: **NCV 05000388/2006006-01, Failure to Identify Scaffolding that Affected the Safety-Related RHR Discharge Pressure Instrument Tubing Input to ADS**.

.2 Prioritization and Evaluation of Issues

a. Inspection Scope

The inspection team reviewed the CRs listed in the attachment to the inspection report to assess whether SSES adequately evaluated and prioritized the identified problems. The team selected the CRs to cover the seven cornerstones of safety identified in the NRC’s ROP. The team also considered risk insights from the SSES Probabilistic Risk Analysis to focus the CR sample. The review was expanded to five years for SSES’s evaluation of problems associated with their energy control process and equipment tagging, including incorporation of industry operating experience information for applicability to their facility.

The CRs reviewed encompassed the full range of SSES evaluations, including root cause analysis, apparent cause evaluation, and a basic evaluation. The review included the appropriateness of the assigned significance, the scope and depth of the causal analysis, and the timeliness of the resolutions. For significant conditions adverse to quality, the team reviewed SSES’s corrective actions to preclude recurrence. The team observed several of the CR screening committee meetings, in which SSES personnel reviewed incoming CRs for prioritization, and evaluated preliminary corrective action assignments, analyses, and plans. The team also reviewed equipment operability

determinations, reportability assessments, and extent-of-condition reviews for selected problems. The team assessed the backlog of corrective actions, including the backlog in the maintenance and engineering departments, to determine, individually and collectively, if there was an increased risk due to delays in implementation. The team further reviewed equipment performance results and assessments documented in completed surveillance procedures, operator log entries, and trend data to determine whether the equipment performance evaluations were technically adequate to identify degrading or non-conforming equipment.

b. Assessment

No findings of significance were identified.

The team determined that SSES screened the CRs appropriately and properly classified them for significance. There were no items in the engineering and maintenance backlogs that were risk significant, individually or collectively. The team considered the effort of the CR Screening Committee added value to the CAP process, the discussions about specific topics was detailed and there were no classifications or operability determinations that the NRC disagreed with. The team noted that significant conditions adverse to quality were normally classified as Priority “L1" and received a formal root cause analysis and an extent-of-condition review. Less significant conditions, Priority “L2" and “L3," typically received an apparent cause evaluation or a basic causal review, respectively. The majority (>99%) of the CRs written were for less significant issues.

The quality of the causal analyses reviewed was generally adequate, although the team noted that the documentation for several of those reviewed was limited and did not support the final conclusion. For example: the Apparent Cause Evaluation (ACE) for the failure of the 2X270 transformer in July 2004 (CR 596092) did not clearly capture the fact that the maintenance procedure was not followed with respect to performing an evaluation of the Doble test data. This was the subject of NRC Finding 2004004-03. In addition, the ACE did not capture the basis for the decision to not re-perform the Doble test prior to returning the transformer to service.

The team noted that there was a trend over the last two years of a lack of rigor with regard to operability determinations. Of the nine operability determinations chosen for detailed review, four had inadequate bases and documentation (although the conclusion was correct), two had the wrong conclusion (called the equipment operable when it was inoperable), two did not properly address the appropriate condition, and one had the correct conclusion but did not make the equipment inoperable. The equipment issues have been reviewed and documented, as appropriate, in previous NRC inspection reports. The team noted that the two most recent operability determinations had the correct conclusion with respect to operability, but the documentation was limited and did not always support the conclusion. Discussions with the SSES staff provided the additional information to support the conclusion, and the operability determinations were revised to become stand-alone documents.

The inspectors performed an expanded evaluation of problems related to the energy control process (the terminology used by SSES for the control and tagging of equipment out-of-service). The team reviewed a large sample over the past five years of condition reports, self-assessments, inspection findings, and internal and external operating experience. The review indicated that the number of CRs increased in 2003 after SSES noted that CRs were not being effectively utilized to document energy control issues. Over the last three years, the number of events has remained steady at approximately forty per year. SSES has incorporated industry and site operating experience into station procedures for the energy control process in an effort to reduce the number of events. This has resulted in improved procedures, in that, the procedures have redundant verification for equipment tagging; however, these improvements have not significantly reduced the number of events. Many of the events are related to human performance with respect to the implementation of the process, and not to weaknesses in the energy control process.

In 2004, SSES began training on the use of human performance tools to reduce the number of human performance errors. Although there was a decrease in the error rate in 2004, there was no appreciable reduction in 2005. In late 2005, SSES concluded that additional effort was required to understand the root cause of the "active" human performance errors (why human performance tools were not effective or used) and therefore continue to reduce the error rate. While SSES is more consistently using human performance tools at the station, areas for improvement in the analysis of active human performance errors remain.

.3 Effectiveness of Corrective Actions

a. Inspection Scope

The team reviewed the corrective actions associated with selected CRs to determine whether the actions addressed the identified causes of the problems. The team reviewed CRs for repetitive problems to determine whether previous corrective actions were effective. The team also reviewed SSES's timeliness in implementing corrective actions and their effectiveness in precluding recurrence for significant conditions adverse to quality. The team reviewed the CRs associated with selected non-cited violations and findings to determine whether SSES properly evaluated and resolved these issues.

b. Assessment and Findings

No findings of significance were identified.

The team concluded that corrective actions were generally appropriate, effective, and completed in a timely manner. The team noted the incorporation of industry operating experience information in the determination of the corrective actions, as appropriate. For significant conditions adverse to quality, corrective actions were identified to prevent recurrence.

The team noted one example where the corrective actions to prevent recurrence for a NRC-identified NCV were implemented in an ineffective manner. In May 2005 a ventilation damper for the "D" ESW pump failed closed due to a failure of the pneumatic operator for the damper. Maintenance secured the damper by wiring it in the open position, using a preventive maintenance work order as the controlling document. Both operations and maintenance personnel failed to recognize that the wiring of the damper constituted a temporary modification. In June 2005, the resident inspectors questioned the seismic qualification of the damper and SSES determined that the damper did not meet the required seismic qualification. This issue was entered into the licensee's CAP (CR 681948) and was documented as a NCV in NRC Inspection Report 05000387 & 388/2005003-002.

A Root Cause Analysis (RCA) team was formed to determine the cause of this finding and to develop corrective actions to prevent recurrence. These corrective actions to prevent recurrence included training most station personnel on the definition and purpose of temporary modifications and each department was to evaluate their respective CAP responsibilities and implement appropriate changes to ensure that the process for controlling temporary modifications was properly implemented. The findings and recommendations of the RCA team were reviewed and approved by plant management.

The inspectors identified that the CAP database indicated that all the corrective actions were closed; however, appropriate actions were not implemented to address the issues of temporary modification training and process reviews. Specifically, only the engineering and operations department conducted temporary modification training. The assignments for maintenance, chemistry, work management, and quality assurance departments were closed without training being performed based on a determination by departmental management that training was not required. In addition, the departmental review of the processes for controlling temporary modifications resulted in all departments concluding that the existing procedures were adequate.

While the ineffective implementation of corrective actions did not result in a recurrence of the original issue, an opportunity was missed to address and correct a programmatic weakness in the control of temporary modifications which was the underlying cause of the original issue. This issue is considered to be a violation of minor significance. As such, this issue is not subject to enforcement action in accordance with the NRC's Enforcement Policy.

.4 Assessment of Safety Conscious Work Environment

a. Inspection Scope

During the interviews with station personnel, the team assessed the safety conscious work environment (SCWE) at the SSES. Specifically, the team interviewed station personnel to assess whether they were hesitant to raise safety concerns to their management and/or the NRC, due to a fear of retaliation. The team also reviewed SSES's Employee Concerns Program (ECP) to determine if employees were aware of

the program and had used it to raise concerns. The team reviewed a sample of the ECP files to ensure that issues were entered into the corrective action program.

b. Assessment and Findings

No findings of significance were identified.

The team determined that the plant staff were aware of the importance of having a strong SCWE and expressed a willingness to raise safety issues. No one interviewed had experienced retaliation for safety issues raised, or knew of anyone who had failed to raise issues. All persons interviewed had an adequate knowledge of the CAP and ECP. Based on these limited interviews, the team concluded that there was no evidence of an unacceptable SCWE.

4OA6 Meetings, including Exit

On February 10, 2006, the team presented the inspection results to Mr. Britt M^{c}Kinney, Susquehanna Senior Vice President, and other members of the Susquehanna staff, who acknowledged the findings. The inspectors confirmed that no proprietary information reviewed during inspection was retained.

ATTACHMENT: Supplemental Information

In addition to the documentation that the inspectors reviewed (listed in the attachment), copies of information requests given to the licensee are in ADAMS, under accession number ML060690367.

ATTACHMENT - SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel:

P. Brady – Supervising Engineer, Allentown
D. Brophy - Regulatory Affairs Engineer
L. Brosious - Discipline Planning Supervisor
S. Clements - Human Performance Leader
D. Coffin - Supervisor, Emergency Planning
S. Cook - Manager, Quality Assurance
V. D'Angelo - Assistant Maintenance Manager
D. D'Angelo - Manager, Station Engineering
A. Fitch - Assistant Operations Manager
J. Grisewood - Manager, Corrective Action & Assessment
R. Hoffert - Employee Concerns Program Representative
A. Iorfida -Project Manager, Maintenance
J. Jeanguenat - Senior Engineer
J. Kapuschinsky - Mechanical Foreman, FIN Team
K. Kennedy - Assistant Site Manager, M^{c}Carl's Inc. (Contractor)
R. Kessler - Senior Health Physicist
A. Kissinger - Operations Engineer
H. Koehler – Senior Engineer, System Engineering
D. Kostelnik – Senior Engineer, Allentown Engineering
B. M^{c}Kinney - Senior Vice President & Chief Nuclear Officer
D. Mitchell - Senior Engineer
J. Moyer - Maintenance Production Foreman
R. Pagodin - General Manager, Nuclear Engineering
R. Paley - Manager, Work Management
M. Rochester - Employee Concerns Program Representative
D. Roland - Non-Outage Scheduling Manager
M. Roper - Foreman, Effluents Management Services
R. Saccone - Vice President, Nuclear Operations
S. Sienkiewicz - Supervisor, NDE
H. Snavely – Foreman, Mechanical Maintenance, Scaffolding
R. Vazquies – Senior Engineer, Allentown Engineering
T. Walters – Senior Engineer, System Engineering
S. Wary - Human Performance Leader
E. Wolf - Radiological Operations Supervisor

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened and Closed

NCV 05000388/2006006-01 Failure to Identify Scaffolding that Affected the Safety-Related RHR Discharge Pressure Instrument Tubing Input to ADS (Section 4OA2.1.b.(1))

LIST OF DOCUMENTS REVIEWED

Procedures:

CL-054-0012, Common ESW System Mechanical Checkoff List, Revision 35
CL-116-0012, Unit 1 RHRSW System A Mechanical Checkoff List, Revision 10
CL-116-0014, Unit 1 RHRSW System B Mechanical Checkoff List, Revision 10
CL-216-0012, Unit 2 RHRSW System A Mechanical Checkoff List, Revision 12
CL-216-0014, Unit 2 RHRSW System B Mechanical Checkoff List, Revision 7
MT-AD-504, Scaffold Erection, Review, and Inspection, Revision 5
MT-GM-015, Torquing Guidelines, Revision 17
MT-IT-001, AC Insulation Dielectric Loss and Power Factor Checking, Revision 9 & 10
NDAP-00-0109, Employee Concerns Program, Revision 9
NDAP-00-0111, Investigation and Resolution of Alleged Discrimination for Having Engaged in Protected Activities, Revision 6
NDAP-00-0333, Operational Decision-Making Process, Revision 1
NDAP-00-0708, Corrective Action Review Board, Revision 3
NDAP-00-0752, Root Cause Analysis, Revision 1
NDAP-QA-0312, Control of LCO's, TRO's, and Safety Function Determination Program, Revision 9
NDAP-QA-0440, Control of Transient Combustible/Hazardous Material, Revision 5
NDAP-QA-0702, Action Request and Condition Report Process, Revision 17
NDAP-QA-0703, Operability Assessments and Requests for Enforcement Discretion, Revisions 8 & 9
NDAP-QA-0725, Operating Experience Review Program, Revision 8
NDE-UT-014, Ultrasonic Testing, Revision 2
ODCM-QA-009, Systems with NRC I&E Bulletin 80-10 Applicability, Revision 2
OP-000-001, Breakers, Revision 16
OP-102-001, 125V DC System, Revision 14
OP-AD-092, Check-Off List Program, Revision 7
OPS-1, Operational Quality Assurance Program, Revision 13
OPS-2, Terms and Definitions, Revision 10
OPS-5, Deficiency Control System, Revision 12
PSP-31, Minor Deficiency Monitoring Program, Revision 0
SO-054-001, Monthly ESW System Valve Alignment, Revision 16
SO-116-001, Monthly RHR Service Water System Alignment Check, Revision 11
SO-216-001, Monthly RHR Service Water System Alignment Check, Revision 12

Quality Assurance Audits/Surveillances:

Chemistry, 2004
Emergency Preparedness, 2005
Engineering, 2005
Fitness for Duty/Access Authorization, 2005
Maintenance, 2004
Nuclear Industry Evaluation Program Audit of SSES Quality Assurance, 2004
Operations, 2005
Personnel Dosimetry TLD Program, 2004
Procurement and Material Conditions, 2005
Radiation Protection, 2005
Security, 2004 & 2005
Solid Radwaste, 2005

Self Assessments:

CAA-04-02, Site Wide Self-Assessment
CAA-05-01, Operating Experience
CAA-05-09, Review of All Level 3 Outage CR's
CHM-05-02, Chemistry Diesel Fuel Oil Program
CHM-05-08, Closed Cooling Water Chemistry Control Program
EFF-05-01, U212 Refueling Outage Critique - Effluents
HPS-05-01, Respiratory Protection Program
HPS-05-03, Health Physics Instrumentation and Source Control Programs
MNT-05-01, Human Performance Training Effectiveness
MNT-05-05, U212 Refueling Outage Critique - Electrical Maintenance, including VOTES and MOV Testing
MNT-05-06, U212 Refueling Outage Critique - I&C, including MOV Testing
MNT-05-07, U212 Refueling Outage Critique - Mechanical Maintenance, including LLRT Tests
MNT-05-08, U212 Refueling Outage Critique - Permanent Plant Modifications
MNT-05-09, U212 Refueling Outage Critique - Fix-It-Now Team
MNT-05-10, U212 Refueling Outage Critique - Refuel Floor
MNT-05-15, On-Going Self Assessment on a Fire Protection Modification
OPS-04-02, Operations Standards
OPS-05-01, Unit 2 12RIO10 Outage Critique and Self Assessment
OPS-05-03, Operations Human Performance Program
SEC-05-02, Security
SEC-05-07, Nuclear Security
Independent Technical Review Report 02-05, Energy Control Process Annual Assessment, December 30, 2002

Condition Reports (* denotes an CR generated as a result of this inspection):

311623	412223	520632	540553	542164	543586	545457
319767	449281	521482	540632	542361	544336	545459
339039	471679	527452	541976	542808	544951	546352
383060	509273	534140	542043	543172	544985	546574
395595	519179	538251	542046	543290	545310	548418

549077	577606	606067	647332	676994	729208	745033*
549980	579920	606139	648827	677620	733324	745103*
551793	581708	606386	648838	678228	733338	745120*
552566	581951	606431	650499	678727	733343	745221*
553337	582120	607474	651207	678821	733346	745248*
553443	582588	607477	652033	679247	733357	745462*
553821	584400	608468	653050	680555	733364	745506*
554646	585186	609948	653634*	681673	733367	745520*
555283	585365	610090	653654	681948	733375	745552*
555285	585913	610219	653738*	684798	733510	745559*
555582	589653	610452	653791	687214	734793	746105
555676	589653	610892	656648	687771	734810	746203*
555687	590040	610912	658293	689415	734812	746368*
556923	590722	611406	659286	690166	736585	746440
559696	590834	612528	659791*	691421	738098	746468*
560186	592958	612784	663890	691557	738575	746481*
561319	594329	613306	664649	691695	738753	746484*
561450	596092	613944	665179	691909	739109	746654*
561459	597331	616068	665185	693286	739114	746658*
561474	597529	616488	666253	694309	739262	746857*
562891	597648	618272	666835	694426	739996*	747368*
565133	598269	618412	666836	699219	742271	747792*
567886	598297	621819	667594	701398	742591	747941*
567919	598334	621965	667984	704629	743367	747957*
568173	598823	622728	668189	706377	743651	748603*
568629	598972	622760	668556	708588	743658	748729*
571933	599435	623696	668628	711703	744445*	748738*
572258	599817	623700	670326	711747	744822*	748841*
573680	599943	632430	670343	713750	744866	748880*
573728	600250	632746	671064	713758	744866*	749107*
574688	600517	637800	674352	716536	744867*	749139*
574823	600532	639636	674816*	716796	744871*	749294*
575087	600907	641451	674820*	719012	744892*	749544*
575191	602542	644715	674824*	722650	744893*	749832*
576545	602649	647202	675151	725338	744895*	749900*
576861	603047	647202*	676652	725951	744896*	749930*
577583	605216	647203	676926	727426	744900*	750221*
577592						

Operating Experience:

CR 646681, Information Notice 2005-004, Single Failure and Fire Vulnerability of Redundant Electrical Safety Buses

CR 705029,Information Notice 2005-25, Inadvertent Reactor Trio and Partial Safety Injection Action Due to Tin Whiskers

CR 725951, Information Notice 2005-30, Safe Shutdown Potentially Challenged by Unanalyzed Internal Flooding Events and Inadequate Design

Maintenance Work Requests:

PCWO 344941	PCWO 575210	PCWO 597978	PCWO 677151
PCWO 575194	PCWO 596694	PCWO 676964	PCWO 723456

Engineering Requests:

EWR 345123 EWR 709897 EWR 745196

Non-Cited Violations and Findings Reviewed:

NCV 2004002-01, "A" EDG unplanned start due to procedure implementation error (CR 555671)
NCV 2004002-02, Unavailability of RHR on loss of condensate transfer (CR 561459)
NCV 2004004-02, Reactor building floor and equipment drains not fully scoped into the Maintenance Rule (CR 599817)
NCV 2004005-01, Reactor recirculation and residual heat removal system instrument lines outside of secondary containment (CR 621353)
NCV 2004005-03, Failure to post horizontal spent fuel storage module B-5 as a high radiation area (CR 509273)
NCV 2004005-04, Failure to correctly package waste resin for shipment (CR 613944)
NCV 2004006-01, Susquehanna did not promptly correct a condition adverse to quality associated with foaming of lubricating oil on the 'D' core spray pump motors for both Units 1 and 2 (CR 546574)
NCV 2004007-01, Failure to identify loose governor hold-down bolts (CR 553821)
NCV 2004007-02, Maintenance work instructions not implemented to tighten a 'D' emergency diesel generator governor bolt (CR 498084)
NCV 2005002-01, Inadequate equipment status for a degraded control room radiological barrier door (CR 654152)
NCV 2005003-01, Inadequate maintenance performance contributed to a failure of 125 volt dc battery charger 2D633 (CR 665179)
NCV 2005003-02, Inadequate evaluation for a degraded emergency service water ventilation damper (CR 681948)
FIN 2004003-01, Loss of one offsite power source to Unit 2 - operating unit (CR 561358)
FIN 2004003-02, Loss of one offsite power source to Unit 1 - shutdown unit (CR 561358)
FIN 2004004-03, PPL did not retest and evaluate transformer 2X270 (CR 596092)
FIN 2004004-04, Diesel driven fire pump lack of engine cooling (CR 618412)
FIN 2005003-03, Additional collective radiation exposure due to inadequate preparation for RHR (CR 687771)
FIN 2005003-04, Inadequate corrective actions to address loss of main transformer cooling (CR 670326)
Licensee Identified NCV IR 2004003, Failure to log in on the RWP for a posted high radiation area (CR 553890)
Licensee Identified NCV IR 2004003, Failure to have an RWP for a high radiation area (CR 561450)
Licensee Identified NCV IR 2004004, Fuel moves were not terminated when both trains of CREOAS were inoperable (CR 556923)
Licensee Identified NCV IR 2004005, Spent fuel storage casks were moved without the necessary radiation monitors operable (CR 600250)

Licensee Identified NCV IR 2005003, Design basis for CST low level did not adequately address the possibility of vortexing (CR 667984)

System Health Reports:

System 002, Station Portable Blackout Diesel Generator - Second Quarter 2005
System 024 Diesel Generators (Unit Common) - Second and Third Quarters 2005
System 054 Emergency Service Water (Unit Common) - Second and Third Quarters 2005
System 102, Unit 1 125 Volt DC - Second Quarter 2005
System 118 Unit 1 Instrument Air - Second and Third Quarters 2005
System 202, Unit 2 125 Volt DC - Second Quarter 2005
System 218 Unit 2 Instrument Air - Second and Third Quarters 2005

Calculations:

EC-SHLD-1001, Seismic Qualification of Shadow Shielding for Use Inside Containment During Conditions 4 to 5, Revision 0
EC-STRU-0512, Installation of Permanent Attachment Lugs and Qualification of Unit 1&2 Common RHR SDC Line Permanent Shielding Suspended from El. 670 Grating in the RHR Pump Room, Revision 2
SC-STRU-0675, Permanent Attachment Lugs (PALs) for Support of Temporary Radiation Shielding, Revision 2

Miscellaneous:

CAP Data and Trends for 2004 to 2005
Coaching Card Detail Report for Radiation Control Observations, October 2005 - January 2006
Coaching Cards for Various Functional Areas
Control Room Operator Narrative Logs, May 2005
Human Performance Corrective Actions
Maintenance Rule Expert Panel Submittal for C EDG, June 15, 2005
Maintenance Rule Expert Panel Submittal for D EDG, February 6, 2006
Monthly Trend Code Reports for Contamination Control and High Radiation areas, January 2003 - February 2006
OE 16955 - Un-Posted High Radiation Area at Independent Spent Fuel Storage Installation, September 25, 2003
Radiation Detection Principles Lesson Plan, January 25, 2006
RWP 2004-0071, Layout, Unload, Place, and Erect New HSM's for Dry Fuel Storage and Associated Support Including Thermocouples, Revision 0
RWP 2006-1003, Reactor Cavity Decontamination Work Plan, Revision 0
Site Human Performance Excellence Plan for 2006
Situational Awareness-Hazard Recognition
Susquehanna Final Safety Analysis Report
Susquehanna Technical Specifications, Units 1 and 2
Work Standards - Peer Checking

LIST OF ACRONYMS

ACE	Apparent Cause Evaluation
ADS	Automatic Depressurization System
AR	Action Request
CAP	Corrective Action Program
CR	Condition Report
CREOAS	Control Room Emergency Outside Air System
DC	Direct Current
ECP	Employee Concerns Program
ESW	Emergency Service Water
FIN	Finding
FSAR	Final Safety Analysis Report
GL	NRC Generic Letter
I&C	Instrumentation and Controls
I&E	Inspection and Enforcement
IMC	NRC Inspection Manual Chapter
IN	NRC Information Notice
IR	Inspection Report
LCO	Limiting Condition for Operation
LLRT	Local Leak Rate Test
MOV	Motor-Operated Valve
NCV	Non-Cited Violation
NDE	Non-Destructive Examination
NRC	Nuclear Regulatory Commission
OE	Operating Experience
PI&R	Problem Identification & Resolution
QA	Quality Assurance
RCA	Root Cause Analysis
RHR	Residual Heat Removal
RHRSW	Residual Heat Removal Service Water
ROP	Reactor Oversight Process
RWP	Radiation Work Permit
SCWE	Safety Conscious Work Environment
SDP	Significance Determination Process
SSES	Susquehanna Steam Electric Station
TRM	Technical Requirements Manual
TS	Technical Specifications
VOTES	Valve Operator Testing Evaluation System