October 23, 2002

Mr. Bryce L. Shriver
Senior Vice President and
Chief Nuclear Officer
Susquehanna Steam Electric Station
PPL Susquehanna, LLC
769 Salem Blvd., NUCSB3
Berwick, PA 18603-0035

SUBJECT: SUSQUEHANNA STEAM ELECTRIC STATION - NRC EMERGENCY PREPAREDNESS SUPPLEMENTAL INSPECTION REPORT 50-387/02-010, 50-388/02-010

Dear Mr. Shriver:

On September 23-25, 2002, the U.S. Nuclear Regulatory Commission (NRC) conducted an emergency preparedness (EP) supplemental inspection at your Susquehanna Steam Electric Station (SSES), Units 1 & 2. The inspection was conducted to assess the corrective actions associated with not maintaining on-shift staffing in accordance with your Emergency Plan (E-Plan) which resulted in a violation with White significance. (Inspection Report No. 50-387/01-006, 50-388/01-006) Last January 2002, a previous supplemental inspection was conducted for this issue, however, it was discontinued because the NRC determined the Root Cause Analysis and corrective actions were inadequate to support closure of the White finding. The results of that inspection were documented in Inspection Report No. 50-387/02-009, 50-388/02-009. Subsequently, you conducted a second root cause analysis which the NRC reviewed and evaluated during this inspection. The enclosed report documents the supplemental inspection findings which were discussed on September 25, 2002, with you and other members of your staff.

The supplemental inspection was conducted to determine if the root causes and contributing causes of the White finding were understood, to assess the extent of the condition review, and to determine if the corrective actions for risk significant performance issues were sufficient to address causes, and to prevent recurrence. To accomplish these objectives, the inspector reviewed your root cause analysis and evaluation of extent of condition and conducted an independent inspection to assess your conclusions. Based on the second root cause analysis, the NRC concluded that a sufficiently broad evaluation of the on-shift staffing issue was conducted and planned/taken corrective actions are adequate to address the underlying causes of the violation.

Given your acceptable performance in addressing the on-shift staffing issue, the white finding associated with this issue will only be considered in assessing plant performance for a total of four quarters in accordance with the guidance in IMC 0305, “Operating Reactor Assessment Program.”

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room for 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/

Wayne D. Lanning, Director
Division of Reactor Safety

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

Enclosures: Inspection Report 50-387/02-010, 50-388/02-010

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REGION I

Docket Nos:	50-387, 50-388
License Nos:	NPF-14, NPF-22
Report Nos:	50-387/02-010, 50-388/02-010
Licensee:	PPL Susquehanna, LLC
Facilities:	Susquehanna Steam Electric Station, Units 1&2
Location:	Berwick, PA 18603
Dates:	September 19, 2002 (In-office) September 24-26, 2002 (Onsite)
Inspector:	N. McNamara, Emergency Preparedness Inspector, DRS, RI
Approved by:	Richard J. Conte, Chief Operational Safety Branch Division of Reactor Safety

SUMMARY OF FINDINGS

IR 05000387/02-010, IR 05000388/02-010; PPL Susquehanna, LLC; on 09/24-26/2002; Susquehanna Steam Electric Station; Units 1&2. Supplemental Inspection Report - Violation - White significance.

The emergency preparedness (EP) supplemental inspection was performed onsite by a region-based inspector. No findings were identified. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 3, dated July 2000.

Cornerstone: Emergency Preparedness

The NRC performed this supplemental inspection to assess the licensee's evaluation regarding on several occasions during 1999-2002 on-shift staffing went below the minimum requirements of the emergency plan. This performance issue was previously characterized as having low to moderate risk significance ("white") in NRC Inspection Report No. 50-387/01-006, 50-388/01-006. Last January 2002, a previous supplemental inspection was conducted for this issue; however, it was discontinued because the NRC determined the Root Cause Analysis and corrective actions were inadequate to support closure of the White finding. The results of that inspection were documented in Inspection Report No. 50-387/02-009, 50-388/02-09. Subsequently, the licensee conducted a second root cause analysis which was reviewed during this supplemental inspection in accordance with Inspection Procedure 95001. The inspector determined that the licensee performed a comprehensive evaluation of the on-shift staffing issue. The licensee's evaluation identified the following root causes of the staffing issue: (1) less than adequate management understanding of EP requirements; (2) inadequate EP reference in Procedure No. NDAP-QA-0300; (3) Operations did not fully investigate and pursue short term staffing alternatives; (4) insufficient Operations ownership and support of EP; (5) EP revision process less than adequate; and (6) failure to implement existing commitment tracking control. The staffing issue was not limited to the EP area, and the licensee has taken corrective actions to ensure that on-shift staffing meets the requirements of the E-Plan. As a result of the root cause analysis, the licensee broadened their extent of condition review to ensure that all NRC regulations and industry commitments were being met in all program areas and their associated procedures.

Given the licensee's acceptable performance in addressing the on-shift staffing issue, the white finding associated with this issue will only be considered in assessing plant performance for a total of four quarters in accordance with the guidance in IMC 0305, "Operating Reactor Assessment Program." Implementation of the licensee's remaining corrective actions may be reviewed during future inspections.

Report Details

01. INSPECTION SCOPE

The NRC performed this supplemental inspection to assess the licensee's evaluation associated with the on-shift staffing going below the minimum requirements of the E-Plan. This performance issue was previously characterized as "white" in NRC Inspection Report No. 50-387/02-009 and 50-388/02-009 and is related to the emergency preparedness cornerstone in the reactor oversight performance area. The inspection scope included a review of the associated Root Cause Analysis Report (CR 380489 - Part A and Part B), condition reports (CRs), program procedures and the adequacy of the completed corrective actions. In addition, interviews were conducted with the Operations Manager, control room staff, selected Root Cause Analysis Team members and senior management involved in the generation of the Root Cause Report and its associated corrective actions. A list of documents reviewed is attached.

02. EVALUATION OF INSPECTION REQUIREMENTS

02.01 Problem Identification

a. Determination of who (i.e., licensee, self-revealing, or NRC) identified the issue and under what conditions.

On February 27, 2001, the NRC Resident Inspector informed Operations that the continuous on-shift staffing issues were not meeting the requirements of the licensee's E-Plan.

b. Determination of how long the issue existed, and prior opportunities for identification.

The licensee believes this issue existed since 1997 because at that time they reduced the Operations staff to historical low numbers. There have been 18 occasions that were documented between 1999 and 2001 where minimum staffing requirements weren't met.

There were several prior opportunities to identify this issue.

(1) In 1984, procedure NDAP-0300, "Conduct of Operations," stated there were E-Plan minimum staffing requirements but did not specify the numbers. At some point that reference was removed;
(2) In 1986, an administrative procedure, used as a guideline for developing station procedures, stated that appropriate regulatory requirements were to be referenced to ensure adherence. However, the root cause team found this was not routinely followed especially with respect to the emergency response requirements;
(3) CRs were not adequately reviewed and corrective actions were narrowly focused;
(4) Less than adequate management response to expressed concerns by the operation's staff regarding staffing issues and in EP drill critiques;
(5) Yearly Nuclear Assurance Assessments of the EP Program; and
(6) continuous NRC feedback in which concerns were raised about the adequacy of the control room staffing.

c. Determination of the plant-specific risk consequences (as applicable) and compliance concerns associated with the issue.

Due to the nature of this issue, this is not measurable in risk assessment terms. The failure to maintain on-shift staffing is of low to moderate safety significance because without adequate staffing the licensee may not be able to properly respond to a radiological emergency by taking initial actions to protect the public health and safety. Not having an adequate number of staff to respond to an event has resulted in the licensee not meeting planning standard 10 CFR 10.47(b)(2) which states, in part, "that on-shift facility licensee responsibilities for emergency response are unambiguously defined, and adequate staffing to provide initial facility accident response in key functional areas is maintained at all times, and timely augmentation of response capabilities is available."

02.02 Root Cause and Extent of Condition Evaluation

a. Evaluation of methods used to identify the root causes and contributing causes.

The Root Cause Analysis Team (RCAT) followed the SSES Investigator's Guide and station procedure Nos. NDAP-QA-0702 and OESI-AD-001. The methods of evaluation used included: (1) detailed timeline from interviews and reference documents; (2) Barrier determination for determining what barriers existed to break the sequence of events that led to the problem; (3) use of independent evaluators with diverse industry experience; (4) "Why Charting" analysis method which included a causal factor review; and (5) evaluation of corrective actions for each root cause and causal factor. The inspector found the evaluation methods used by the licensee to be acceptable.

b. Level of detail of the root cause evaluation.

The licensee's root cause evaluation was thorough and identified several primary root causes. Some of which included: (1) less than adequate management understanding of EP requirements; (2) inadequate EP reference in Procedure No. NDAP-QA-0300; (3) Operations did not fully investigate and pursue short term staffing alternatives; (4) insufficient Operations ownership and support of EP; (5) EP revision process less than adequate; and (6) a failure to implement existing commitment tracking control. The staffing issue was not limited to the EP area, and the licensee has taken corrective actions to ensure that on-shift staffing meets the requirements of the E-Plan. As a result of the root cause analysis, the licensee broadened their extent of condition review to ensure that all NRC regulations and industry commitments were being met in all program areas and their associated procedures.

c. Consideration of prior occurrences of the problem and knowledge of prior operating experience.

The licensee identified prior occurrences of the problem as discussed in Section 02.01.b of this report. The recurrences reflected a corrective action problem and weak management oversight. During NRC interviews with the Operations' staff conducted in June 2001, the inspector determined that staff did not have prior knowledge of the E-Plan requirements for meeting minimum on-shift staffing.

d. Consideration of potential common causes and extent of condition of the problem.

The licensee considered the potential common causes of the problem from three perspectives: common cause relationship, extent of condition, and generic implications. The licensee identified the common causes as: (1) Emergency Planning was not a high priority and (2) self assessment and corrective action processes were not systematically used to identify and address Emergency Planning performance issues. With respect to the extent of the condition, the licensee found other E-Plan requirements or commitments that were not being met and some document discrepancies in procedures and logkeeping that could have allowed other positions to go below E-Plan requirements. These discrepancies have been corrected. The extent of condition review extended to station staffing commitments in all program areas and documents, which included, the Fire Plan, Security Plan and Technical Specifications. These documents are currently being reviewed to ensure compliance is being met. The licensee identified several generic implications which included: (1) SSES had not made EP a high priority which is evidenced by multiple changes to EP management and limited EP resources; (2) systematic approach to training was not rigorously applied to the EP function which has resulted in a degradation in E-Plan knowledge and performance; and (3) self assessment and corrective action processes were not used systematically to identify and address EP performance issues; and (4) trends were not always identified and corrective actions were not effective to prevent recurrence.

02.03 Corrective Actions

a. Appropriateness of corrective actions.

The licensee issued 34 condition reports that were directly linked to a root cause, causal factor and/or generic implication. In addition, corrective actions were identified for preventing recurrence and 21 of 34 corrective actions have been completed. SSES management has committed to hiring and training additional licensed operators to significantly increase the availability of the control room staff. However, management has recognized this process may take up to three years to complete. The licensee has initiated several short-term corrective actions which included: (1) revised on-shift staffing procedures to ensure consistency with station E-Plan commitments; (2) developed a short term on-shift staffing plan; (3) developed an Operations resource utilization plan; (4) verified that the process for tracking the basis for requirements was effectively documenting new regulatory commitments in site procedures and documents; (5) provided procedural guidance for the Shift Supervisors on how to maintain required staffing; and (6) performed a training needs analysis for PORC members, pertaining to E-Plan changes and other changes to technical program requirements to ensure minimum staffing requirements would be always met. The inspector reviewed several condition reports and found that corrective actions appeared to have appropriately addressed the identified problems. An E-Plan revision was recently submitted to the NRC for approval which commits to a dedicated Fire Brigade Team Leader, Control Room Communicator and Operations Support Center Coordinator which will alleviate control room staff responsible for filling those Nuclear Emergency Response Organization (NERO) positions and relying on control room staff to perform multiple

tasks during emergency conditions. The inspector found the corrective actions to be appropriate.

b. Prioritization of corrective actions.

Once the licensee completed the second root cause analysis, the corrective actions were appropriately prioritized. As stated earlier, 21 of 34 corrective actions have been completed and the remainder actions were related to preventing recurrence which will be closed once the licensee has seen evidence that the corrective actions were successful.

c. Establishment of a schedule for implementing and completing the corrective actions.

The inspector determined that the licensee's schedule for implementing and completing the corrective actions was adequate.

d. Establishment of quantitative or qualitative measures of success for determining the effectiveness of the corrective actions to prevent recurrence.

The licensee initiated a callout process for replacing on-shift position vacancies due to if someone already on-shift suddenly becomes incapacitated, unavailable or must leave due to an immediate emergency. Since February 2002, the licensee has not gone below the minimum on-shift staffing requirements of the E-Plan. Interviews with management and Operations staff indicated a commitment to emergency planning and managers have been added to the NERO to demonstrate to SSES staff of their commitment. The Emergency Planning staff was relocated onsite and the EP Manager participates in the daily plant briefing to senior management. E-Plan revision processes were changed to ensure that procedure changes are properly reviewed. In addition, the licensee developed a communication plan that raises EP awareness with station personnel and a plan that reviews overall timeliness, accuracy and responsiveness to employee concerns and identify actions to improve responsiveness to employee concerns. The licensee has established guidelines for PORC reviews and quality assurance audits to ensure these processes capture discrepancies in procedures for meeting E-Plan commitments and regulations and the adequacy of corrective actions.

03. MANAGEMENT MEETINGS

Exit Meeting Summary

The inspector presented the inspection results to Mr. Shriver and other licensee personnel, at the conclusion of the inspection on September 26, 2002 and the licensee acknowledged the results of the inspection.

Attachment 1 - Supplemental Information

Attachment 1

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Susquehanna Electric Steam Station

T. Harpster, General Manager, Plant Support
G. Ruppert, Manager Nuclear Operations
J. Grisewood, Supervisor, Nuclear Emergency Planning
T. Kirwin, Manager Nuclear Maintenance (RCA Team Lead)
J. Perry, Senior Engineer, (Root Cause Team Member)
R. Tripolli, Nuclear Regulatory Affairs
D. Roland, Shift Manager

NRC

S. Hansell Senior Resident Inspector, Susquehanna
J. Richmond Resident Inspector, Susquehanna

LIST OF DOCUMENTS REVIEWED*

Evaluation and Root Cause of Minimum On-Shift Staffing Requirements (CR 380489 - Part A)
White Finding on Staffing Levels was Inadequate (CR 380489 - Part B)
Root Cause Analysis Root Cause Team
NAS Emergency Planning Audit Review Approach & Summary of Results
Collective Significance Analysis Technical/Operator Training Program Conclusions Applicable to Emergency Preparedness, dated 8/30/01
Nuclear Emergency Response Organization Emergency Preparedness Improvement Plan PLA-5391
Letter from Conger & Elsea, Inc., dated February 21, 2002
Independent Review of Emergency Planning White Finding, dated April 25, 2002
Regulatory Program Review (CRA 413844)
Emergency Plan for Susquehanna Steam Electric Station, Units 1&2
NDAP-QA-0300, Conduct of Operations, Rev. 12
OI-AD-008, Operation's Shift Manning
NDAP-QA-0002, Nuclear Department Procedure Writing, Rev. 15
Emergency Plan, Rev 40, Changes for NRC Approval (AR 380489)
Procedure Changes to Procedure No. NDAP-QA-0300
CA-3, Operations Short Term Staffing Plan
CA11 Commitment Verification, Historical NRC Commitments

* - Does not include all procedures reviewed in preparation for the EP baseline and supplemental inspection.

LIST OF ACRONYMS

CFR	Code of Federal Regulations
CRs	Condition Report
EP	Emergency Preparedness
E-Plan	Emergency Plan
NERO	Nuclear Emergency Response Organization
NRC	Nuclear Regulatory Commission
RCAT	Root Cause Analysis Team
SDP	Significance Determination Process
SSES	Susquehanna Steam Electric Station