



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**

REGION I  
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KING OF PRUSSIA, PA 19408-1415

May 2, 2000

Mr. Harold W. Keiser  
President and Chief Nuclear Officer  
PSEG Nuclear LLC  
Post Office Box 236  
Hancocks Bridge, NJ 08038

SUBJECT: NRC SALEM INSPECTION REPORT NOS. 05000272/2000-003 AND  
05000311/2000-003

Dear Mr. Keiser:

On March 31, 2000, the NRC completed a team inspection of your Salem Nuclear Generating Station Units 1 & 2. The enclosed report presents the results of that inspection. The results were discussed on April 18, 2000 with Messrs. M. Bezilla, D. Garchaw and T. O'Connor, and other members of your staff.

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 with the conditions of your operating license. Within this area, the inspection involved selected examination of procedures and representative records, observations of activities, and interviews with personnel.

Based upon the sample reviewed during this inspection, the team concluded that issues were being properly entered into in your corrective action program. The resulting evaluations or root cause analyses were of good quality and appropriate corrective actions were prescribed. Although the team observed a few instances where required evaluations were untimely, and corrective actions were overdue, none of the issues was determined to be significant. Nevertheless, the instances were consistent with observations from previous NRC inspections and your staff's self-assessments of activities involving the corrective action program. While your staff was taking actions to address the issues regarding your new computer program system, which is used to implement the corrective action program, our team noted that implementation continues to be a challenge to your staff.

Mr. Howard W. Keiser

2

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosures will be placed in the NRC Public Document Room.

Sincerely,

/RA/

Wayne D. Lanning, Director  
Division of Reactor Safety

Docket Nos. 05000272; 05000311

License Nos. DPR-70; DPR-75

Enclosure: Inspection Report 05000272/2000-003, 05000311/2000-003;

cc w/encl:

E. Simpson, Senior Vice President and Chief Administrative Officer

M. Bezilla, Vice President - Nuclear Operations

D. Garchow, Vice President - Technical Support

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U.S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket Nos: 05000272, 05000311

License Nos: DPR-70, DPR-75

Report Nos: 05000272/2000-003, 05000311/2000-003

Licensee: Public Service Enterprise Group Nuclear LLC

Facility: Salem Nuclear Generating Station, Units 1 & 2

Location: P.O. Box 236  
Hancocks Bridge, NJ 08038

Dates: March 27 - 31, 2000

Inspectors: J. Yerokun, Division of Reactor Safety (DRS), Team leader  
J. Laughlin, Division of Reactor Projects (DRP)  
J. McFadden, DRS  
L. James, DRS  
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Approved by: David C. Lew, Chief  
Performance Evaluation Branch  
Division of Reactor Safety

## SUMMARY OF FINDINGS

Salem Generating Station, Units 1 & 2  
NRC Inspection Report 05000272/2000-003, 05000311/2000-003

The report covers a one-week region-based team inspection conducted using the guidance contained in NRC Inspection Manual Chapter 2515. The inspection, which was an annual inspection of the effectiveness of the licensee's Problem Identification and Resolution program, covered all seven cornerstones of safety and was accomplished in accordance with NRC inspection procedure 71152, "Identification and Resolution of Problems."

### **Corrective Action Program**

The licensee was effective at identifying problems. In general, problems were properly captured and characterized in the corrective action program. Nevertheless, the team found two instances, involving low significance, where issues were not entered into the corrective action process in a timely manner. The instances did not represent a programmatic trend or concern.

The licensee's resolution of problems was adequate. Based on the sample reviewed, items entered into the corrective action program were properly classified and prioritized for resolution. Evaluations and root cause analysis were of good depth and quality. The prescribed corrective actions appeared appropriate to correct the problems and the corrective actions were generally completed in a timely manner. However, there were a few instances where the required evaluations for notifications were untimely or when the prescribed corrective actions were overdue. Although none of the examples resulted in a significant adverse condition, they were similar to previous NRC observations and the licensee's self-assessments of activities involving the corrective action program. While the licensee was taking actions to address the issues associated with the new computer program system, which is used to implement the corrective action program, the implementation continued to present significant challenges to the users.

In the Safety Conscious Work Environment area, plant personnel were familiar with and did not feel reluctant to use the processes that existed for raising safety issues.

TABLE OF CONTENTS

	<u>PAGE NO.</u>
SUMMARY OF FINDINGS .....	ii
4. OTHER ACTIVITIES (OA) .....	1
4OA1 Problem Identification and Resolution (IP 71152) .....	1
4OA1.1 Problem Identification .....	1
4OA1.2 Problem Resolution and Corrective Actions .....	2
4OA1.3 Assessments and Review Committees .....	4
4OA1.4 Safety Conscious Work Environment .....	4
4OA5 Management Meetings .....	5
4OA5.1 Exit Meeting Summary .....	5
 Attachment 1 NRC's REVISED REACTOR OVERSIGHT PROCESS	

## Report Details

### **4. OTHER ACTIVITIES (OA)**

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity, Emergency Preparedness, Occupational Radiation Safety, Public Radiation Safety, and Physical Protection.

#### 4OA1 Problem Identification and Resolution (IP 71152)

##### 4OA1.1 Problem Identification

###### a. Inspection Scope

The team reviewed items selected across the seven cornerstones of safety to determine if problems were being properly characterized and entered into the corrective action program for evaluation and resolution. In preparation for the inspection, the team obtained and reviewed the following licensee documents to understand the process for implementing the corrective action program at Salem Station: NC-WM-AP.ZZ-0000(Q), Notification Process, revision 1, dated 2/24/2000; NC-WM-AP-0002(Q), Performance Improvement Process, revision 1, dated 2/24/2000; NC-NA-AP-0054(Q), Operating Experience (OE) Program, revision 5, dated 8/17/98; and NC-NA-AP.ZZ-0077(Z), Self-assessment Process, revision 2, dated 11/1/99. The team conducted plant walkdowns and interviewed plant personnel to identify and review other processes that may exist where problems or issues could be identified.

The team's review included the following: control room logs; control room deficiencies; operability determinations; temporary modifications; system health reports; Quality Assurance and departmental self-assessment results; corrective action review board meeting records; station operation review committee meeting minutes; and outage critiques. The team also reviewed the operating experience (OE) program's disposition of thirty industry operating events and notifications and the resolution of ten of those thirty.

###### b. Observations and Findings

There were no findings identified during this inspection.

Issues identified through various processes were promptly entered into the corrective action program through the "notification" process which was established for identifying and resolving adverse conditions and non-conformances. The team did not identify any discrepancy with the characterization of the issues reviewed. However, the team observed two instances where notifications were not timely generated. In one instance, a problem encountered with a breaker during a charging pump test was not entered into the corrective action program until the licensee was questioned by the team. The licensee subsequently generated notifications 20024554 and

20024914 to address the issue. In another instance, issues identified in a quality assessment report (Report 99-0179, Security Access Control - Human Performance Issues) were not tracked by any notification. The licensee subsequently generated notification 20010495 to address this issue.

c. Conclusion

The licensee was effective at identifying problems. In general, problems were properly captured and characterized in the corrective action program. Nevertheless, the team found two instances, involving low significance, where notifications were not generated in a timely manner. The instances did not represent a programmatic trend or concern.

4OA1.2 Problem Resolution and Corrective Actions

a. Inspection Scope

The team reviewed items selected from the licensee's corrective action program that were generated within the last one year period to determine the appropriateness of the resolution, including the detail and broadness of the root cause analysis (or apparent cause evaluation), and the specified corrective actions. The team also reviewed the backlog of corrective actions to determine if there were any items that individually or collectively represented an adverse effect on plant risk significance (CDF) or an adverse trend in the implementation of the corrective action program.

Using factors such as the plant risk insights derived from Salem's individual plant evaluation and systems' maintenance rule significance as the selection criteria, the following samples of items were reviewed:

- Sixty-three N2 (requires trending only) notifications.
- Fourteen N1, significance level 3 (requires condition corrected only) notifications.
- Forty-eight N1, significance level 2 (requires apparent cause evaluation) notifications.
- Twenty-two N1, significance level 1 (requires root cause analysis and actions to prevent recurrence) notifications.
- Previous NRC violations (eleven non-cited violations, one cited violation and one escalated action - EA 99-055).
- Twenty licensee event reports (LERs).

b. Observations and Findings

There were no findings identified during this inspection.

The evaluations and root cause analysis reviewed were of good quality and reflected proper consideration for common cause and extent of condition. However, the team observed some instances where: (1) the required evaluations for notifications (2005907, 20006427 and 20017977) were performed late; (2) there was inappropriate closure of significance level 2 notifications (20007585 and 20007041); and (3) the significance level designation for notification 20002670 was not appropriate. The licensee generated notifications 20024573, 20024682, 20024917 and 20025010 to address these issues. Further review by the licensee revealed other instances similar to the ones identified by the team, and the licensee generated notifications 20024788 and 20024789 to address those issues.

The prescribed corrective actions for the notifications reviewed, appeared appropriate. The backlog of corrective actions was being managed well and the team did not identify any item in it that represented an adverse effect on plant risk. However, the team observed some examples (notification 20014491 and CR990504273) where corrective actions were overdue or not being identified and tracked within the corrective action program's system. The licensee generated notification 20025066 to address this issue.

None of the issues identified resulted in any significant adverse condition. Nevertheless, the issues were consistent with observations from previous NRC inspections and the licensee's assessments involving the corrective action program. In NRC inspection report 50-272;311/99-06, an instance where corrective actions for an Auxiliary Feedwater System issue were untimely was identified as a green finding, non cited violation (NCV) 99-06-02. In NRC inspection report 50-272;311/99-09, weaknesses associated with delays in initial cause determination were documented. The licensee attributed some of the issues to the implementation of the new computer program system which was started in July 1999. The implementation continued to present significant challenges to the users. The licensee had generated notifications 20001318, 20017395 and 20020511 to address the problem. As a result of additional questions raised by the team, the licensee generated notifications 20024455 and 20024737.

c. Conclusion

The team concluded that the licensee's resolution of problems was adequate. Based on the sample reviewed, items entered into the corrective action program were properly classified and prioritized for resolution. The evaluations and root cause analysis reviewed were of good depth and quality. The prescribed corrective actions appeared appropriate to correct the problems and the corrective actions were generally completed in a timely manner. However, there were a few instances where the required evaluations for notifications were untimely or when the prescribed corrective actions were overdue. Although the



team did not find any of the examples to result in a significant adverse condition, they were similar to previous NRC observations and the licensee's self-assessments of activities involving the corrective action program. While the licensee was taking actions to address the issues regarding the new computer program system, which encompasses the corrective action program, the implementation continued to present significant challenges to the users.

#### 4OA1.3 Effectiveness of Self-assessments

##### a. Inspection Scope

The team reviewed twelve Quality Assurance (QA) and seventeen departmental self-assessments to determine the following: (1) if the licensee's assessment of performance in the Problem Identification and Resolution area reflected that they understood the problems that exist with the program and (2) if the licensee's assessment of performance in the corrective action program area was comparable to the NRC's assessment results.

The inspectors observed the conduct of a Safety Oversight Review Committee (SORC) meeting on March 28, 2000, reviewed SORC meeting notes for the calendar year 2000, and reviewed Corrective Action Review Board (CARB) action items for the calendar year 2000 to track the resolution of issues identified by the respective review committee.

##### b. Observations and Findings

There were no findings identified during this inspection. The assessments reviewed reflected that the licensee was aware of the existing issues with the corrective action program such as the delays associated with evaluations and was taking actions to correct the issues. On a minor note, the inspection revealed that the charter for the CARB was outdated. The licensee generated notification 20024574 to address this.

#### 4OA1.4 Safety Conscious Work Environment

##### a. Inspection Scope

The inspector reviewed the licensee's Safety Conscious Work Environment program implementation (Employee Concern Program) and conducted interviews with plant personnel to determine if conditions existed that would challenge the establishment of a safety conscious work environment at Salem. Sixteen individuals were interviewed.

b. Observations and Findings

There were no findings identified during this inspection. Plant personnel were familiar with and did not feel reluctant to use the processes that existed for raising safety issues.

4OA5 Management Meetings

4OA5.1 Exit Meeting Summary

The team presented the inspection results to Messrs. M. Bezilla, D. Garchaw, T. O'Connor and other members of the PSEG staff during an exit meeting on April 18, 2000. The licensee acknowledged the finding presented. No information examined or reviewed during the inspection was considered to be proprietary.

## PARTIAL LIST OF PERSONS CONTACTED

M. Bezilla, Vice President, Operations  
 J. Carey, Employee Concerns Program Manager  
 J. Defebo, Self-Assessment Supervisor  
 T. Ferraro, System engineer  
 C. Fricker, QA Manager  
 S. Gerstein, Maintenance Section Leader  
 M. Hassler, Radian Protection Superintendent  
 R. Henricksen, Corrective Action Program Supervisor  
 B. Knieriem, Licensing Engineer  
 S. Miller, Licensing Engineer  
 P. Tow, acting Operations Manger - Staff  
  
 A. Kapsalopoulou, New Jersey Department of Environmental Protection

## INSPECTION PROCEDURE USED

71152 Identification and resolution of problems

## LIST OF ACRONYMS USED

AFW	Auxiliary Feedwater
ALARA	As Low As Reasonably Achievable
CAP	Corrective Action Program
EDG	Emergency Diesel Generator
EP	Emergency Preparedness
GL	Generic Letter
LER	Licensee Event Report
Mrule	Maintenance Rule (10 CFR 50.65)
N	Notification
NCV	Non cited violation
NRC	Nuclear Regulatory Commission
OE	Operability Evaluation
PI	Performance Indicator
PSEG	Public Service Enterprise Group Nuclear LLC
SDP	Significance Determination Process
TS	Technical Specifications
UFSAR	Updated Final Safety Analysis Report

## ATTACHMENT 1

### NRC's REVISED REACTOR OVERSIGHT PROCESS

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

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

#### Reactor Safety

- Initiating Events
- Mitigating Systems
- Barrier Integrity
- Emergency Preparedness

#### Radiation Safety

- Occupational
- Public

#### Safeguards

- Physical Protection

To monitor these seven cornerstones of safety, the NRC uses two processes that generate information about the safety significance of plant operations: inspections and performance indicators. Inspection findings will be evaluated according to their potential significance for safety, using the Significance Determination Process, and assigned colors of GREEN, WHITE, YELLOW or RED. GREEN findings are indicative of issues that, while they may not be desirable, represent very low safety significance. WHITE findings indicate issues with low to moderate safety significance, which may require additional NRC inspections. YELLOW findings are more serious issues with substantial safety significance and would require the NRC to take additional actions. RED findings represent issues of high safety significance with an unacceptable loss of safety margin and would result in the NRC taking significant actions that could include ordering the plant shut down.

Performance indicator data will be compared to established criteria for measuring licensee performance in terms of potential safety. Based on prescribed thresholds, the indicators will be classified by color representing incremental degradation in safety: GREEN, WHITE, YELLOW, and RED. The color for an indicator corresponds to levels of performance that may result in increased NRC oversight (WHITE), performance that results in definitive, required action by the NRC (YELLOW), and performance that is unacceptable but still provides adequate protection to public health and safety (RED). GREEN indicators represent performance at a level requiring no additional NRC oversight beyond the baseline inspections.

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