

JUN 09 2004

LR-N04-0263

Mr. David Vito
United States Nuclear Regulatory Commission
Region I
P.O. Box 80377
Valley Forge, PA 19484

**SALEM AND HOPE CREEK GENERATING STATIONS
DOCKET NOS. 50-272, 50-311, AND 50-354**

RE: RI-2004-A-0036

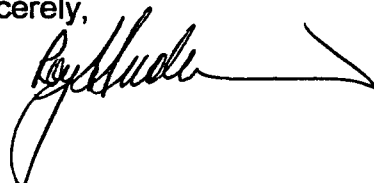
This responds to the April 26, 2004 letter from A. Randolph Blough (RI-2004-A-0036), to Roy A. Anderson, President and Chief Nuclear Officer, PSEG Nuclear LLC, requesting that inspections or investigations as necessary be conducted to reasonably prove or disapprove concerns received by the NRC regarding activities at the Salem and Hope Creek Generating Stations. In a telephone call with Mr. Jeffrie Keenan, PSEG Assistant General Solicitor, on May 26, 2004, you agreed to extend the due date for this response to June 9, 2004.

In response to this concern, we assigned Mr. Donald Ferraro of the law firm Morgan Lewis, and Mr. Tom Lake, PSEG Employee Concerns Program Manager, to conduct an independent investigation of these concerns. The investigation included a review of documentation related to the Salem steam generator blowdown process radiation monitors, the stations' tagging process, and the stations' processes for issuing new or revised procedures. Copies of the materials reviewed are available for on site review through Mr. Lake.

As discussed in Attachment 1, PSEG has not substantiated the concerns. Consequently, no additional corrective actions are necessary.

Should you have any questions or require additional information, please contact Mr. Keenan at 856.339.5429.

Sincerely,



C-116

**Response to Nuclear Regulatory Commission Letter Dated April 26, 2004, Concerning
Activities at the Salem and Hope Creek Generating Stations**

(Tracking Number RI-2004-A-0036)

RESPONSE TO NRC-REFERRED CONCERN

I. Introduction

By letter dated April 26, 2004, the NRC requested that Mr. Roy A. Anderson, President and Chief Nuclear Officer, PSEG Nuclear LLC (PSEG or the "Company"), conduct inspections or investigations to reasonably prove or disprove two concerns primarily regarding the Salem steam generator blowdown process radiation monitors, the Salem tagging process, and the Salem and Hope Creek stations' processes for issuing new or revised procedures. The letter also informed Mr. Anderson that the NRC's review of PSEG's response would consider whether:

1. the individual conducting the investigation was independent of the organization affected by the concern;
2. the evaluator was proficient in the specific functional area;
3. the evaluation was of sufficient depth and scope;
4. appropriate root causes and generic implications were considered if the concern was substantiated; and
5. the corrective actions, if necessary, were sufficient.

Mr. Donald Ferraro of the law firm Morgan Lewis, and Mr. Tom Lake, PSEG Employee Concerns Program (ECP) Coordinator, were assigned the task of investigating these concerns.

II. Investigation Process

Independence of the Investigators

Mr. Ferraro, as a contractor working for the PSEG legal department, is independent from the issues and processes discussed in this response. Mr. Lake, in his position as ECP Manager, is also independent from the Salem and Hope Creek tagging process, maintenance procedure writers, and other PSEG personnel and processes discussed in this response.

Proficiency of the Investigators

Mr. Ferraro is a licensed attorney practicing in the area of nuclear regulatory law. Mr. Ferraro is also a degreed nuclear engineer with extensive nuclear power plant operating experience.

Mr. Lake is skilled in, and has significant experience conducting, fact-finding investigations. Mr. Lake has over 19 years of commercial nuclear power plant experience, including nine years in the PSEG Employee Concerns Program.

Depth and Scope of the Investigation

The investigations performed to address these issues included a review of station procedures and other documentation related to the Salem steam generator blowdown process radiation monitors, the Salem tagging process, and the Salem and Hope Creek processes for issuing new or revised procedures.

In addition, the investigators interviewed personnel from the various departments.

III. Investigation Findings and Conclusions

A. Issue No. 1

It was asserted that PSEG has had history of overpressurizing and damaging the Salem steam generator blowdown process radiation monitors (R19s). Tagging process inadequacies are believed to have been at the root cause of the problem, but management's attention has been inappropriately focused on just changing the underlying system procedure. The extent of condition review for the tagging process inadequacies has been inadequate because PSEG does not have adequate personnel or contract resources to resolve issues.

Response: This concern was not substantiated.

This concern appears to stem from events at Salem in late 2003. Specifically, on November 13, 2003, following the performance of scheduled maintenance on the Salem steam generator blowdown process radiation monitors, 2R19 A, B, C, and D, plant personnel removed the tag-out for those radiation monitors so that they could be returned to service. The radiation monitors could not be properly set up at that time, however, because the plant was in Mode 4 (i.e., steam generator pressure was too low).

On or about November 21, 2003, after the plant had entered Mode 3, plant personnel discovered that each of the four 2R19 radiation monitor pressure regulators was leaking. In response to this condition, Notification 20167745 was issued. A subsequent

while in service

investigation determined that the radiation monitors were valved-in without their corresponding coolers being aligned to the closed cooling water (CCW) system. This exposed the components to abnormally high temperatures and resulted in damage to the pressure regulators. A separate Notification (70034733) was issued to address this configuration control issue.

On December 5, 2003, the safety tags were rehung to permit repair of the 2R19 radiation monitors. The tags were released the following day, December 6. During restoration, I&C technicians found that each of the radiation monitors pressure regulators again leaked and their pressure regulator gauges over-ranged and damaged. Notification 20169597 was issued and the investigation performed pursuant to that Notification determined that the tag-out was released even though the radiation monitors were not in the lineup required by procedure S2.IC-ZZ.RM-0055, "2R19 A/B/C/D Steam Generator Blowdown Process Radiation Monitor Mechanical Isolation/Restoration." PSEG determined that the lineup was incorrect because although this procedure instructed technicians to perform the restoration after the tags are released, valves could be (and likely were) manipulated after release of the tags but prior to restoration. The investigation also found that personnel had not properly removed the radiation monitors from service in accordance with this procedure.

Consequently, and in contrast to the claim in Issue No. 1 that "tagging process inadequacies" were the cause of the deficiency, the evaluation for Notification 20169597 determined that the apparent cause was "[f]ailure to remove the 2R19s from service [in accordance with] the applicable procedure (S2.IC-ZZ.RM-0055)." The evaluation also determined that the contributing cause for this event was a "[f]ailure to maintain configuration control of the 2R19s from the time they were discovered leaking and isolated [until] ... they were tagged for repair."

The corrective actions (CA) for this event were:

- Review this condition and causes with all Salem licensed operators and ensure that they understand the importance of removing the R19s from service in accordance with the I&C procedure. This CA has been completed.
- Evaluate revising S2.IC-ZZ.RM-0055 so that the 2R19 lineup is verified prior to releasing the safety tags. The procedure was revised and re-issued on March 12, 2004.

Another Notification, 20183170, was issued on March 26, 2004 to address the concern that tag-out instructions for the 2R19 radiation monitors (particularly with regard to isolation valves 2SS178) were lost during the conversion from the Tagging Request Inquiry System (TRIS) to SAP in November 1999. Evaluation 70037990 was performed to address this issue. The PSEG employee most familiar with TRIS, SAP, and the switch from the former to the latter, performed the evaluation. The evaluator reviewed a

when are they required? what mode? were they in service? s/b blowdown occurring in mode??

1st mistake already restored!

2nd mistake during restoration!

now defunct TRIS database and TRIS/SAP changes since 1996 and found that no tagging instructions were ever in either database for the 2SS178 (sampling system grab sample gate) valves.¹ The evaluator determined that this is the only known claim of data potentially lost during the TRIS-to-SAP conversion. The evaluator also noted that tagging instructions for valves 2SS178 would not have prevented the damage to the 2R19 radiation monitors because the system lineup was not properly verified (as required by procedure S2.IC-ZZ.RM-0055) prior to release of the tag-out and restoration of the equipment.

Consequently, with regard to Issue No. 1, PSEG has determined that the proper CAs have been identified and timely performed. Not only were "tagging process inadequacies" not the cause of the deficiency, but also there is no indication to support the notion that "PSEG does not have adequate personnel or contract resources to resolve issues."

B. Issue No. 2

It was asserted that, in February 2004, control room operators incorrectly entered an ODCM action statement for an inoperable plant vent process radiation monitor, 1R41. The action statement for an inoperable vent stack flow rate monitor should have been entered. As a result, all of the I&C radiation monitor work procedures were revised to include specific technical specification and ODCM action statement references. Because PSEG does not have the resources to implement the corrective actions or procedure revisions in a timely manner, this action took an excessive amount of time.

In another case, because of inadequate resources a procedure writer was asked to perform a station qualified review for a particular procedure/equipment issue (HC.MD-PM.BF-00100) that he/she was not qualified to perform. Because of valid objections, this review was not performed.

Response: This concern was not substantiated.

As correctly stated in Issue No. 2, an as yet undetermined number of I&C radiation monitor work procedures will be revised to include specific Technical Specification and Off-site Dose Calculation Manual (ODCM) action statement references. These

¹ In the course of his investigation, the evaluator did find that the SAP tagging database for valve 2GB155, "Steam Generator Sample Radiation Monitor Discharge Valve," contains the following statement: "Prior to closing GB155, notify I&C to isolate transmitter to prevent damage to R19."

procedure revisions (as are most other PSEG procedure revisions) will be prioritized and implemented in accordance with current PSEG procedure revision processes. PSEG prioritizes procedure changes into one of seven categories by determining their potential impact on such factors as personnel safety, equipment damage, plant operation, and Technical Specification compliance. Revisions that only require editorial changes or correction of typographical errors are normally given lower priority.

The highest priority procedure revisions, "Category 1," are those that must be addressed within 48 hours or placed on administrative "hold" because their performance could result in personnel injury, equipment damage, unintentional reactor trip, Technical Specification violation, or operation of the plant outside its design basis. Lesser priority revisions are processed in accordance with their significance and are tracked as backlog items.

PSEG is steadily completing these procedure revisions. For example, at the end of May 2004, the Salem mechanical procedure revision backlog was approximately 275 with a linearly decreasing backlog goal of approximately 220. For Hope Creek, the mechanical procedure backlog is approximately 190 with a linearly decreasing backlog goal of approximately 150.

PSEG's investigation into this concern has not found any evidence to support the assertion that "PSEG does not have the resources to implement the corrective actions or procedure revisions in a timely manner...." Rather, procedure revisions are prioritized and implemented in accordance with their relative significance.

The final concern raised in Issue No. 2 is that "because of inadequate resources a procedure writer was asked to perform a station qualified review for a particular procedure/equipment issue ... that he/she was not qualified to perform." PSEG found no evidence to support this claim.

Station qualified reviews (SQRs) are performed in accordance with procedures NC.DM-AP.ZZ-0001(Q), "Procedure Administrative Processes," and NC.DM-AP.ZZ-0004(Q), "Procedure Independent Reviews (Station Qualified Reviewer Process)." Although the number of SQR-qualified individuals at Hope Creek and Salem has decreased over the last several years, the present number of qualified reviewers is still sufficient. Personnel are not expected to perform SQRs where the revision is outside the reviewer's particular area of expertise. For example, procedure writers are typically asked to review the administrative or "mechanical" aspects of a procedure change. Where the technical content of a procedure change is outside the procedure writer's area of expertise, Step 3.4 of NC.DM-AP.ZZ-0004(Q) requires that the reviewer request and coordinate a cross-discipline review. Step 5.2.2 indicates that the cross-discipline reviewer is not required to be SQR-qualified, but should be the "Subject Matter Expert (SME) or best qualified individual...." Such a review is a routine part of the SQR process and does not indicate that there are insufficient resources to properly perform the review.

IV. Root Cause Analysis and Corrective Actions

The concerns raised in the NRC's April 26, 2004 letter were not substantiated. Consequently, no new root cause analyses were required and no additional corrective actions are necessary.