

Public Service  
Electric and Gas  
Company

**Stanley LaBruna**

Public Service Electric and Gas Company

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Vice President - Nuclear Engineering

**OCT 13 1994**

NLR-N94179

United States Nuclear Regulatory Commission  
Document Control Desk  
Washington, DC 20555

Gentlemen:

**REPLY TO A NOTICE OF VIOLATION  
INSPECTION REPORT NOS. 50-272/94-18, 50-311/94-18, 50-354/94-18  
SALEM AND HOPE CREEK GENERATING STATIONS  
DOCKET NOS. 50-272, 50-311, AND 50-354**

Pursuant to the provisions of 10CFR2.201, this letter submits the response of Public Service Electric and Gas Company (PSE&G) to the notice of violation issued to Salem and Hope Creek Generating Stations. The Notice of Violation was received by PSE&G on September 13, 1994. By telephone call of October 2, 1994 between Messrs. Frank Thomson of PSE&G and John White of NRC Region I, the response date was agreed upon as being October 13, 1994, representing a 30 day interval from time of receipt by PSE&G.

As required by the notice of violation and 10CFR2.201, this response includes a written statement or explanation for the violation and, where applicable, the corrective steps which have been or will be taken to avoid further violations, and the date when full compliance will be achieved. Additionally, this response contains a discussion of why a procedure acceptance criteria problem, identified at Hope Creek Station, was not addressed in a timely manner at Salem Station. This information is provided in Attachment 1 to this letter.

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Should you have any questions or comments on this transmittal, we will be pleased to discuss them with you.

Sincerely,



Attachment

C Mr. T. T. Martin, Administrator - Region I  
U. S. Nuclear Regulatory Commission  
475 Allendale Road  
King of Prussia, PA 19406

Mr. D. Moran, Licensing Project Manager - Hope Creek  
U. S. Nuclear Regulatory Commission  
One White Flint North  
11555 Rockville Pike  
Rockville, MD 20852

Mr. L. N. Olshan, Licensing Project Manager - Salem  
U. S. Nuclear Regulatory Commission  
One White Flint North  
11555 Rockville Pike  
Rockville, MD 20852

Mr. R. Summers (S05)  
USNRC Senior Resident Inspector - Hope Creek

Mr. C. Marschall (S05)  
USNRC Senior Resident Inspector - Salem

Mr. K. Tosch, Manager, IV  
NJ Department of Environmental Protection  
Bureau of Nuclear Engineering  
CN415  
Trenton, NJ 08625



STATE OF NEW JERSEY )  
 ) SS.  
COUNTY OF SALEM )

Stanley LaBruna, being duly sworn according to law deposes and says:

I am Vice President - Nuclear Engineering of Public Service Electric and Gas Company, and as such, I find the matters set forth in the above referenced letter, concerning the Salem and Hope Creek Generating Stations, are true to the best of my knowledge, information and belief.

  
\_\_\_\_\_

Subscribed and Sworn to before me  
this 13 day of October, 1994.

  
\_\_\_\_\_  
Notary Public of New Jersey

My Commission Expires 4-25-95

ELIZABETH J. KIDD  
Notary Public of New Jersey  
My Commission Expires April 25, 1995

ATTACHMENT 1

Ref: NLR-N94179

Public Service Electric & Gas Company  
Docket Nos. 50-272; 50-311; 50-354  
Salem Generating Station Units 1 & 2  
Hope Creek Generating Station  
License Nos. DPR-70; DPR-75; NPF-57

In accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions", 10 CFR Part 2, Appendix C, NRC has identified the below described violation:

Part 50 of Title 10 of the Code of Federal Regulations, Appendix B, Criterion XI, "Test Control," requires that a test program shall be established to assure that all testing required to demonstrate that structures, systems, and components will perform satisfactorily in service is identified and performed in accordance with written test procedures which incorporate the requirements and acceptance limits contained in applicable design documents. Contrary to the above, 125V vital battery service test procedures for both Salem Units and Hope Creek Station did not incorporate the acceptance limits contained in the applicable design documents. For the Salem Units, on or before August 15, 1994, Procedure SC.MD-ST.125-0004(Q), "125 Volt Station Batteries 18 Month Service Test and Associated Surveillance Testing using BCT-2000," Revision 3, indicated an acceptance limit of 105V, while Calculation ES-4.003Q, "125 VDC System Study," indicated an acceptable value of 113.4V for the "A" batteries and 112.8V for the "B" and "C" batteries. For the Hope Creek Station, on or before March 3, 1994, Procedure HC.IC-ST.PK-0002(Q), "18 Month Surveillance & Service Test of the 125 Volt Batteries Using BCT-2000," indicated an acceptance limit of 105V while Calculation E-4.2(Q), "Hope Creek Generating Station 125V & 250V CL 1E DC System: Short Circuit & Voltage Drop Studies," indicated an acceptable limit of 108V.

Pursuant to the provisions of 10 CFR 2.201, Public Service Electric and Gas Company provides the following response:

**I. REASON FOR THE VIOLATION**

PSE&G does not dispute the violation as stated for Salem Station.

PSE&G does dispute the violation as written for Hope Creek Station. The requirement to revise the procedure acceptance criteria was both identified and controlled by PSE&G. Specifically, the cognizant System Engineer was responsible both for obtaining the revised acceptance criteria from Engineering, as well as for preparing a new procedure which incorporated the revised acceptance criteria.

A new procedure was required because new test equipment had been purchased to perform this surveillance and because implementing department responsibility for this surveillance was transferred from Maintenance to the Instrument & Controls group. Having identified that a new procedure was needed, the cognizant System Engineer ensured that the new procedure, including the revised acceptance criteria, would be in place prior to the next scheduled performance of this surveillance. This precluded use of the referenced procedure until its acceptance criteria were revised. As a result, a violation of 10CFR50 Appendix B, Criterion XI requirements did not exist.

**BACKGROUND INFORMATION****HOPE CREEK STATION**

During the Hope Creek EDSFI conducted in January/February of 1992, the NRC noted a potential concern with battery surveillance test limits minimum voltage (REF: 354/92-80-04). The concern identified that voltage drops between the battery and its loads were potentially not considered nor reflected in the acceptance criteria. The design calculations in effect at that time showed that, while carrying its design basis loads, battery terminal voltage would remain higher than the Technical Specification surveillance test limit over the entire battery load cycle. However, these calculations did not specify an acceptable battery terminal voltage limit which included losses. Subsequent to the inspection finding, a Voltage Drop Study, completed in April, 1993, identified needed changes to the FSAR (Section 8.3.2), the Technical Specifications (4.8.2.1), and the procedural acceptance limits (HC.IC-ST.PK-0002(Q)).

PSE&G verified that test data (obtained during Hope Creek's 4th Refueling Outage - Fall 1992) met or exceeded the revised requirements. Battery terminal voltages were well above the new acceptance limits identified in the Voltage Drop Study. PSE&G concludes that the battery remains operable to perform its intended safety function.

The identified change to the acceptance limits of procedure HC.IC-ST.PK-0002(Q), "18 Month Surveillance & Service Test of the 125 Volt Batteries Using BCT-2000," revised acceptance criteria did not become necessary until the conduct of the next Service Test on the 125 volt batteries scheduled for the Spring, 1994 refueling outage. Since the necessary procedure acceptance criteria changes were known and were made prior to the next occasion of the procedure's use, a violation of 10CFR50 Appendix B Criterion XI did not exist.

#### **SALEM STATION**

In March, 1992, while preparing to perform a self-assessment EDSFI at Salem Station, specific lessons learned from the Hope Creek EDSFI as well as other industry findings were discussed in a meeting between Salem and Engineering personnel. The relevance of the potential Hope Creek finding (that battery voltage requirements may not have been properly calculated) and its applicability to Salem were not recognized and did not get appropriate follow-up. (NOTE: Salem Technical Specifications differ from Hope Creek's in that the Salem Technical Specification does not require verification of minimum battery terminal voltage during the 18 Month Battery Service Test surveillance. This may have contributed to the lack of appropriate follow-up.)

PSE&G attributes this violation to inadequate communication within the organization. We also attribute this to failure to implement a formal requirement to identify procedures impacted by calculations. Consequently, the need to compare the procedural acceptance limit against the minimum terminal voltage provided in the engineering calculation was not properly addressed.

PSE&G verified that battery service test data met or exceeded the value expressed in the current engineering calculation and that the Salem Station batteries remained operable to perform their intended safety function.

**II. CORRECTIVE ACTIONS TAKEN AND RESULTS ACHIEVED****HOPE CREEK STATION**

PSE&G verified that test data (obtained during Hope Creek's 4th Refueling Outage - Fall 1992) met or exceeded the revised requirements. Battery terminal voltages were well above the new acceptance limits identified in the Voltage Drop Study. PSE&G concludes that the battery remains operable to perform its intended safety function.

The corrective actions taken at Hope Creek Station to address the inadequate Battery Service Testing Criteria (Unresolved Item 50-354/92-80-04), which also apply to this Notice of Violation, were found acceptable and this item was subsequently closed in Inspection Report 50-354/94-18. LCR 93-12 to revise Hope Creek's Technical Specifications will be submitted by November 30, 1994.

**SALEM STATION**

PSE&G verified that battery service test data met or exceeded the value expressed in the current engineering calculation and that the Salem Station batteries remained operable to perform their intended safety function.

A request to revise procedure SC.MD-ST.125-0004(Q) "125 Volt Station Batteries 18 Month Service Test and Associated Surveillance Testing using BCT-2000" and SC.MD-ST.125-0002(Q) "125 Volt Station Batteries 18 Month Service Test and Associated Surveillance Testing" has been prepared. The procedures will be corrected prior to the next occasion of use (presently scheduled for Unit 2 RFO-8, Fall 1994).

PSE&G has conducted a self-assessment of Engineering/Station interface, and roles and responsibilities. The self-assessment identified that intra-organization communications needed improvement. A plan to correct these deficiencies has been implemented during the past year.

**III. CORRECTIVE ACTIONS TO PREVENT RECURRENCE**

1. Salem Station Procedure, SC.MD-ST.125-0004(Q) "125 Volt Station Batteries 18 Month Service Test and Associated Surveillance Testing using BCT-2000" and SC.MD-ST.125-0002(Q) "125 Volt Station Batteries 18 Month Service Test and Associated Surveillance Testing" service test acceptance criteria will be revised to address the most recent identified voltage requirements from Calculation ES-4.003Q "125VDC System Study" prior to the next 125 Volt Battery Service Test **(Completion Date - prior to Refueling Outage 2R8)**.
2. Revise Design Engineering Procedure NC.DE-AP.ZZ-0002(Q) "Engineering Calculations and Analyses" to create administrative controls for plant design calculations which 1) ensure that procedural impacts are clearly identified, and 2) require follow-up between Engineering and Station personnel to ensure timely and appropriate implementation. **(Completion Date - December 15, 1994)**.
3. Verify that findings from Hope Creek EDSFI 1) have been adequately evaluated for applicability to Salem Station, and 2) verify that all items applicable to Salem Station have been properly addressed. **(Completion Date - October 25, 1994)**.
4. Complete a departmental rolldown which reinforces responsibilities of System and Design engineering personnel regarding communications and follow-up. **(Completion Date - November 15, 1994)**.

**STATUS OF COMPLIANCE**

Public Service Electric and Gas Company is in full compliance.