



Public Service Electric and Gas Company P. O. Box #168 Hancocks Bridge, New Jersey 08038

January 27, 1982

Mr. R. C. Haynes  
Director of USNRC  
Office of Inspection and Enforcement  
Region 1  
631 Park Avenue  
King of Prussia, Pennsylvania 19406

Dear Mr. Haynes:

LICENSE NO. DPR-70  
DOCKET NO. 50-272  
REPORTABLE OCCURRENCE 81-107/03X-1

Pursuant to the requirements of Salem Generating Station Unit No. 1, Technical Specifications, Section 6.9.2, we are submitting Licensee Event Report for Reportable Occurrence 81-107/03X-1. This report is required within thirty (30) days of the occurrence.

Sincerely yours,

A handwritten signature in cursive script, appearing to read "H. J. Midura".

H. J. Midura  
General Manager -  
Salem Operations

FD:al

CC: Distribution

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PDR ADOCK 05000272  
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The Energy People

Report Number: 81-107/03X-1

Report Date: 01-27-82

Occurrence Date: 10-29-81

Facility: Salem Generating Station, Unit 1  
Public Service Electric & Gas Company  
Hancocks Bridge, New Jersey 08038

IDENTIFICATION OF OCCURRENCE:

Inadvertent Safety Injection.

This report was initiated by Incident Reports 81-432, 81-433 and 81-434.

CONDITIONS PRIOR TO OCCURRENCE:

Mode 1 - Rx Power 99% - Unit Load 1040 MWe.

DESCRIPTION OF OCCURRENCE:

On October 29, 1981, during normal operations, an inadvertent safety injection occurred after a reactor trip due to loss of the vital bus 1A inverter. The 1A inverter was declared inoperable and Action Statement 3.8.2.1 was entered at 1343 hours. During subsequent recovery actions the boron injection tank (BIT) and the No. 11 and No. 12 boric acid storage tanks (BAST) were diluted below Technical Specifications. The BIT and BASTs were declared inoperable and Action Statements 3.5.4.1.b and 3.1.2.8.a(2), respectively, were entered at 1358 hours, due to the BIT and BAST dilutions.

DESIGNATION OF APPARENT CAUSE OF OCCURRENCE:

The safety injection was caused by high steam flow indications due to loss of vital bus 1A and low-low Tavg on two loops. The loss of the 1A inverter was associated with replacing the cabinet fan unit fuses. A voltage transient was induced into the inverter control wiring causing the inverter to trip off line.

The cause of the Boric Acid System dilution was due to the Control Operator failing to follow proper procedures. Instead of draining the BIT, after the injection, and refilling it from the BAST, the operator recirculated the unborated water in the BIT into the BAST, diluting the boron concentration in the entire system to below specification.

ANALYSIS OF OCCURRENCE:

The unit was designed for 50 safety injection transients. This safety injection transient was No. 14. It was of less severity than the design basis transient, and, therefore, had no detrimental effect on the unit, so operation may safely continue.

Technical Specification 3.8.2.1 requires:

With less than the above complement of A.C. busses operable, restore the inoperable bus to operable status within 8 hours or be in at least hot standby within the next 6 hours and in cold shutdown within the following 30 hours.

Technical Specification 3.5.4.1.b requires:

With the boron injection tank inoperable, restore the tank to operable status within 1 hour or be in hot standby and borated to a shutdown margin equivalent to 1% delta K/K at 200 degrees Fahrenheit within the next 6 hours; restore the tank to operable status within the next 7 days or be in hot shutdown within the next 12 hours.

Technical Specification 3.1.2.8.a(2) requires:

With the Boric Acid Storage System inoperable, restore the storage system to operable status within 72 hours or be in at least hot standby within the next 6 hours and borated to a shutdown margin equivalent to at least 1% delta K/K at 200 degrees Fahrenheit; restore the Boric Acid Storage System to operable status within the next 7 days or be in cold shutdown within the next 30 hours.

CORRECTIVE ACTION:

The 1A vital instrument bus was removed from the inverter and connected to the alternate Solatron power source at 1353 hours. It was initially logged that Action Statement 3.8.2.1 was terminated at that time. However, it was actually not terminated until after the inverter fuses had been replaced and the inverter was back in service. Boric acid was added to the BIT and the concentration tested satisfactorily. The BIT was declared operable and at 0215 hours, October 30, 1981 Action Statement 3.5.4.1.b was terminated. Boric acid was added to the two BASTs and the concentration tested satisfactorily. BASTs No. 11 and No. 12 were declared operable and Action Statement 3.1.2.8.a(2) was terminated at 0430 hours, October 30, 1981.

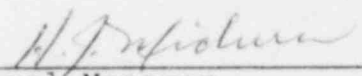
The inverter cabinet fan power cable was re-routed within the cabinet to preclude any interaction. This corrective action is being tested during the current refueling outage to determine it's effectiveness. A supplemental report will be issued upon completion.

The Control Operator was counseled on proper BIT refilling procedures and a memo was written to all Senior Shift Supervisors detailing the sequence of events and consequences of a loss of vital bus for dissemination to all shift operating personnel.

FAILURE DATA:

Garret Corporation  
Inverter  
Model 524038-1

Prepared By F. Dickey

  
General Manager -  
Salem Operations

SORC Meeting No. 81-121