



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

Salem Generating Station

October 6, 1982

Mr. R. C. Haynes  
Regional Administrator  
USNRC  
Region 1  
631 Park Avenue  
King of Prussia, Pennsylvania 19406

Dear Mr. Haynes:

LICENSE NO. DPR-75  
DOCKET NO. 50-311  
REPORTABLE OCCURRENCE 82-106/03L

Pursuant to the requirements of Salem Generating Station Unit No. 2, Technical Specifications, Section 6.9.1.9.b, we are submitting Licensee Event Report for Reportable Occurrence 82-106/03L. This report is required within thirty (30) days of the occurrence.

Sincerely yours,

H. J. Midura  
General Manager -  
Salem Operations

RF:ks *ks*

CC: Distribution

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PDR ADOCK 05000311  
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The Energy People

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Report Number: 82-106/03L

Report Date: 10-06-82

Occurrence Date: 09-13-82

Facility: Salem Generating Station, Unit 2  
Public Service Electric & Gas Company  
Hancocks Bridge, New Jersey 08038

IDENTIFICATION OF OCCURRENCE:

Axial Flux Distribution - Out of Specification.

This report was initiated by Incident Report 82-275.

CONDITIONS PRIOR TO OCCURRENCE:

Mode 1 - Rx Power 78% - Unit Load 850 MWe.

DESCRIPTION OF OCCURRENCE:

At approximately 1115 hours, September 13, 1982, during routine inspection of No. 21A Circulator Travelling Screen, six broken links on the carrier chain were discovered. The circulator and screen were de-energized. No. 21B and 23B Water Boxes were already out of service due to condenser leaks, and with a third circulator removed from service, condenser vacuum started to decrease. A load reduction was commenced to maintain vacuum, and automatic control rod insertion occurred in response to the change in Tave-Tref. At 1120 hours, as a result of rod insertion, axial flux distribution (AFD) went out of the +6, -9% target band, and Technical Specification Action Statement 3.2.1.a.2 was entered. Reactor power was stabilized at 55%. Boration was commenced to allow control rod withdrawal and return of AFD to the target band. At 1127 hours, AFD was within specification with a total penalty deviation of 7 minutes accumulated. AFD remained within the limits of Technical Specification Figure 3.2-1 throughout the transient.

DESIGNATION OF APPARENT CAUSE OF OCCURRENCE:

Broken chain links on the travelling screen carrier chains have been found on a recurrent basis, and apparently involve stress induced cracking of the carbon steel links.

ANALYSIS OF OCCURRENCE:

Limits on AFD insure core thermal limits are not exceeded during normal operation, including periods of xenon redistribution. The AFD band also insures that the initial core thermal conditions assumed for events analyzed in the FSAR are met. During rapid plant thermal power reduction, however, control rod motion will cause the AFD to deviate from the target band. This deviation will not affect xenon distribution sufficiently to change the peaking factor envelope upon return to power, provided thermal power, total deviation and duration are controlled.

ANALYSIS OF OCCURRENCE: (continued)

## Action Statement 3.2.1.a.2 requires:

Between 50% and 90% of rated thermal power, power operation may continue, provided the indicated AFD has not been outside of the +6, -9% target band for more than 1 hour penalty deviation cumulative during the previous 24 hours, and the indicated AFD is within the limits of Figure 3.2-1 of the Technical Specification; otherwise, reduce thermal power to less than 50% of rated power within 30 minutes and reduce the Power Range Neutron Flux-High trip setpoints to less than or equal to 55% of rated thermal power within the next 4 hours.

As noted, the plant was maintained within the limits specified in the action statement, and consequently no risk to the health or safety of the public was involved. The event constituted operation in a degraded mode permitted by a limiting condition for operation, and is reportable in accordance with Technical Specification 6.9.1.9.b.

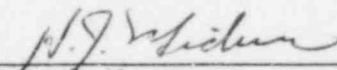
CORRECTIVE ACTION:

As noted, the AFD was returned to within specification at 1127 hours, September 13, 1982, and Action Statement 3.2.1.a.2 was terminated. The failed chain links were replaced, No. 21A Circulator was returned to service, and load escalation was commenced. A Design Change Request has been submitted for replacement of the existing chain links with ones of stainless steel; the change is presently under review.

FAILURE DATA:

Rex Chainbelt  
Carrier Chain Link

Prepared By R. Frahm

  
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General Manager -  
Salem Operations

SORC Meeting No. 82-88