



**PSEG**

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

Salem Generating Station

October 15, 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 82-113/01T

Pursuant to the requirements of Salem Generating Station  
Unit No. 2, Technical Specifications, Section 6.9.1.8.c,  
we are submitting Licensee Event Report for Reportable  
Occurrence 82-113/01T. This report is required within  
fourteen (14) days of the occurrence.

Sincerely yours,

H. J. Midura  
General Manager -  
Salem Operations

RF:ks

CC: Distribution

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PDR ADOCK 05000311  
S PDR

The Energy People

Report Number: 82-113/01T  
Report Date: 10-15-82  
Occurrence Date: 10-05-82  
Facility: Salem Generating Station, Unit 2  
Public Service Electric & Gas Company  
Hancocks Bridge, New Jersey 08038

IDENTIFICATION OF OCCURRENCE:

Containment Service Water Leak - No. 22 Containment Fan Coil Unit.

This report was initiated by Incident Report 82-318.

CONDITIONS PRIOR TO OCCURRENCE:

Mode 1 - Rx Power 82% - Unit Load 900 MWe.

DESCRIPTION OF OCCURRENCE:

At 1150 hours, October 5, 1982, while performing a containment surveillance, an operator discovered a small service water leak of approximately 0.5 GPM on the cooling coils of No. 22 Containment Fan Coil Unit (CFCU). No. 22 CFCU was declared inoperable and the leak was isolated. Prompt notification was made to the NRC by telephone at 1205 hours, in accordance with NRC IE Bulletin 80-24, with written confirmation transmitted on October 6, 1982. Technical Specification Action Statement 3.6.2.3a was already in force as of 1653 hours, October 4, 1982, because No. 21 CFCU was inoperable. With a second group inoperable, Action Statement 3.6.2.3b was entered, retroactive to the discovery of the leak. Both containment spray systems were operable throughout the occurrence.

DESIGNATION OF APPARENT CAUSE OF OCCURRENCE:

Investigation of the problem revealed that the leakage was due to erosion of the cooling coils. The coils are fabricated of copper nickel alloy, which is susceptible to erosion by silt laden service water. Similar failures of other CFCU's have been noted, with most leaks occurring at bends where erosion is more significant.

ANALYSIS OF OCCURRENCE:

Primary containment is a design feature which ensures that the release of radioactive materials in the event of accident conditions will be restricted such that site boundary radiation doses will be within the limits of 10CFR100. NRC IE Bulletin 80-24 requires that any service water leak inside the containment be considered as a degradation of the containment boundary. If containment pressure increased to the design pressure of 47 psig during the accident, there is a possibility of the release of radioactivity through the service water discharge. The occurrence, therefore, constituted an abnormal degradation of the primary containment and is reportable in accordance with Technical Specification 6.9.1.8.c.

The CFCU's operate in conjunction with the containment spray systems to remove heat and radioactive contamination from the containment atmosphere in the event of a design basis accident. Operability of either all fan coil groups or of both containment spray systems is necessary to ensure offsite radiation dose is maintained within the limits of 10CFR100.

Because the leakage was immediately isolated, containment integrity was maintained. The fuel cladding was intact and thus redundant fission product barriers existed. Finally, containment cooling capability was provided by the containment spray systems. The occurrence, therefore, involved no risk to the health or safety of the public. Due to the loss of redundancy in design and engineered safety features, the event constituted operation in a degraded mode permitted by the limiting conditions for operation.

Action Statement 3.6.2.3.b requires:

With two groups of containment cooling fans inoperable, restore at least one group of cooling fans to operable status within 72 hours, or be in at least hot standby within the next 6 hours and in cold shutdown within the following 30 hours.

CORRECTIVE ACTION:

As noted, the leakage was immediately isolated, and prompt notification performed in accordance with Technical Specification 6.9.1.8. The leaky cooler was repaired utilizing Belzona metal filler and leakage was stopped. The CFCU was returned to operation and satisfactorily tested. At 0338 hours, October 6, the unit was declared operable, and Action Statement 3.6.2.3.b was terminated. Action Statement 3.6.2.3.a remained in effect due to the inoperability of No. 21 CFCU; it was subsequently terminated at 1505 hours, October 7, 1982 with completion of repairs on the unit.

CORRECTIVE ACTION: (continued)

Design Change Request 2EC-0505 has been issued to replace the CFCU cooling coils with coils manufactured of AL-6X steel, for improved erosion and corrosion resistance in the service water environment. This change is scheduled for implementation during the next refueling outage. A commitment to submit a Supplemental Report upon completion was made in LER 82-070/01T.

FAILURE DATA:

A number of containment service water leaks due to similar failures of CFCU cooling coils have occurred since January 1, 1982.

Westinghouse Electric Corporation  
Containment Fan Coil Unit  
U-Tube Cooling Coil

Prepared By R. Frahm

H. J. McInerney  
General Manager -  
Salem Operations

SORC Meeting No. 82-92