



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

Salem Generating Station

February 25, 1983

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

Dear Mr. Haynes:

LICENSE NO. DPR-70  
DOCKET NO. 50-272  
REPORTABLE OCCURRENCE 83-006/03L

Pursuant to the requirements of Salem Generating Station Unit No. 1, Technical Specifications, Section 6.9.1.9.b, we are submitting Licensee Event Report for Reportable Occurrence 83-006/03L. This report is required within thirty (30) days of the occurrence.

Sincerely yours,

H. J. Midura  
General Manager -  
Salem Operations

RF:ks *847*

CC: Distribution

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PDR ADOCK 05000272  
S PDR

The Energy People

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Report Number: 83-006/03L  
Report Date: 02-23-83  
Occurrence Date: 01-26-83  
Facility: Salem Generating Station Unit 1  
Public Service Electric & Gas Company  
Hancock's Bridge, New Jersey 08038

IDENTIFICATION OF OCCURRENCE:

A.C. Electrical Power Sources - Emergency Diesel Generators - Inoperable.

This report was initiated by Incident Reports 83-026 and 83-028.

CONDITIONS PRIOR TO OCCURRENCE:

Mode 5 - RX Power 0 % - Unit Load 0 MWe.

DESCRIPTION OF OCCURRENCE:

At 1640 hours, January 26, 1983, during a routine refueling shutdown, the Senior Shift Supervisor was informed that non-seismically qualified components had been installed in the Class 1E control power DC feeds to the emergency diesel generators. The feeds had been modified during the current refueling to provide an alternate source of control power to the generators. Design Change Request (DCR) 1EC-1355 installed fusible disconnects in separate DC power selector boxes, to allow shifting from normal to alternate control power sources. The alternate source was provided in accordance with 10 CFR 50 Appendix R Alternate Shutdown criteria.

During the normal DCR follow-up, it was discovered the disconnects were non-seismically qualified. Nos. 1A, 1B and 1C Emergency Diesel Generators were declared inoperable, and Technical Specification Action Statements 3.8.1.2 and 3.8.2.2 were entered. Core alterations and positive reactivity changes were immediately suspended, and containment integrity was maintained.

Work was immediately commenced to restore the control power feeds to seismic specifications. Following completion of the changes, Nos. 1A and 1B Emergency Diesel Generators were satisfactorily tested. The generators were declared operable, and Action Statements 3.8.1.2 and 3.8.2.2 were terminated at 1900 hours, January 27, 1983.

At 1400 hours, January 28, 1983, the Senior Shift Supervisor was notified that the diesel generator control power selector boxes were still not seismically qualified. Further review of the installation had revealed that the boxes were inadequately supported. The diesel generators were declared inoperable a second time, and since the plant

DESCRIPTION OF OCCURRENCE: (cont'd)

had entered Mode 4, Action Statement 3.8.1.1d was entered. The operability of the two offsite A.C. circuits was immediately demonstrated. Seismically qualified supports were installed, the generators were declared operable, and at 2207 hours, January 28, 1983, Action Statement 3.8.1.1d was terminated.

No significant seismic events were observed during the time period involved in the occurrence; in the absence of such events the generators were capable of meeting AC power requirements for refueling, shutdown, and normal operation.

APPARENT CAUSE OF OCCURRENCE:

Installation of the pull-type fusible disconnects and new power boxes was completed on No. 1C Diesel Generator October 30, 1982; on No. 1B Diesel Generator November 6, 1982; and on No. 1A Diesel Generator November 22, 1982.

Investigation of the problem revealed that the occurrence involved an oversight of seismic requirements in the design of the alternate control power modification. As noted, the design changes had been made in accordance with 10 CFR 50 Appendix R; the appendix does not require alternate shutdown components to meet seismic design criteria.

The control power selector box and components involved both the normal and alternate power feeds, however. In specifying the fusible disconnects to facilitate switchover from normal to standby control power, and in designing the power selector box supports, application of the seismic design requirements was overlooked. A review of the engineering program procedures and administration revealed no inadequacies, and the problem was assumed to be isolated in nature.

ANALYSIS OF OCCURRENCE:

The operability of the A.C. and D.C. power sources and associated distribution systems during operation ensures that sufficient power will be available to supply the safety related equipment for safe shutdown of the facility and mitigation of accidents. The requirements are consistent with the initial condition assumptions of the accident analyses, and are based on maintaining a single supply with an assumed loss of offsite power and single failure of the other A.C. source.

Operability of the power sources and associated distribution systems during shutdown and refueling ensures that the facility can be maintained in those conditions for extended time periods and that sufficient instrumentation and control capability is available for monitoring and maintaining the facility status.

ANALYSIS OF OCCURRENCE: (cont'd)

Installation of the non-seismically qualified components resulted in the remote possibility that, during a seismic event, the diesel generators would not start automatically and could not be started remotely from the control room. Starting of the generators would have required re-establishment of the control power at the local control panel. Due to the refueling outage and resultant low core decay heat conditions, had a seismic event caused the loss of both the diesel control power circuits and the offsite A.C. sources, a significant amount of time was available to restore control power to the diesels.

Since no significant seismic event occurred, the emergency diesels were, in fact, capable of meeting the power requirements for shutdown, refueling, and normal operation. Due to the timeliness in which the problem was discovered and corrected, and the availability of time for restoration of diesel control, the event involved no risk to the health and safety of the public. The occurrence constituted operation in a degraded mode permitted by a limiting condition for operation, and is reportable in accordance with Technical Specification 6.9.1.9b.

Action Statement 3.8.1.1d requires:

With two or more of the above required diesel generators inoperable, demonstrate the operability of two offsite A.C. circuits by performing surveillance requirement 4.8.1.1.1.a within one hour and at least once per 8 hours thereafter; restore at least two of the inoperable diesel generators to operable status within 2 hours or be in at least hot standby within the next 6 hours and in cold shutdown within the following 30 hours. Restore three diesel generators to operable status within 72 hours from the time of initial loss or be in at least hot standby within the next 6 hours and in cold shutdown within the following 30 hours.

Action Statement 3.8.1.2 requires:

With less than the minimum required A.C. electrical power sources operable, suspend all operations involving core alterations or positive reactivity changes until the minimum required sources are restored to operable status.

Action Statement 3.8.2.2 requires:

With less than two A.C. electrical bus trains operable, energized, and aligned to an operable diesel generator, establish containment integrity within 8 hours.

CORRECTIVE ACTION:

As noted, in the first instance, core alterations and positive reactivity changes were suspended, and containment integrity was



CORRECTIVE ACTION: (cont'd)

maintained, in compliance with Action Statement 3.8.1.2. The pull-out links were replaced with seismically qualified terminal blocks and jumpers. As stated, the generators were declared operable, and at 1900 hours, January 27, 1983, Action Statements 3.8.1.2 and 3.8.2.2 were terminated.

On the second occasion, as noted, operability of the redundant sources was demonstrated and the plant was already in Mode 4, in compliance with Action Statement 3.8.1.1d. Additional support braces and gussets for the power selector boxes were designed to seismic standards. The supports were installed, the generators were declared operable, and at 2207 hours, January 28, 1983, Action Statement 3.8.1.1d was terminated.

Personnel involved in the design of the modifications reviewed the FSAR design bases and appropriate seismic standards. Due to the apparently isolated nature of the occurrence, no further action was deemed necessary.

FAILURE DATA:

Not Applicable

Prepared By R. Frahm

H.J. Widura (R)

General Manager -  
Salem Operations

SORC Meeting No. 83-022