

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Salem Generating Station - Unit - 1	DOCKET NUMBER (2) 0 5 0 0 0 2 7 2	PAGE (3) 1 OF 0 3
--	--------------------------------------	----------------------

TITLE (4)
Potential Loss of D/G Areas Ventilation Due To Seismic Concern - Inad. Design Review

EVENT DATE (6)			LER NUMBER (8)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)		
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAMES		DOCKET NUMBER(S)
0 5	1 9	8 8	8 8	0 1 0	0 0	0 5	3 1	8 8	Salem Unit 2		0 5 0 0 0 3 1 1
THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)											

OPERATING MODE (9) 1	POWER LEVEL (10) 1 0 0	20.402(b)	20.406(a)(1)(ii)	20.406(a)(1)(iii)	20.406(a)(1)(iv)	20.406(a)(1)(v)	20.406(c)	50.73(a)(2)(i)	50.73(a)(2)(ii)	50.73(a)(2)(iii)	50.73(a)(2)(iv)	50.73(a)(2)(v)	50.73(a)(2)(vi)	50.73(a)(2)(vii)	50.73(a)(2)(viii)(A)	50.73(a)(2)(viii)(B)	50.73(a)(2)(ix)	73.71(b)	73.71(c)	OTHER (Specify in Abstract below and in Text, NRC Form 365A)
												X								

LICENSEE CONTACT FOR THIS LER (12)

NAME M. J. Pollack - LER Coordinator	TELEPHONE NUMBER 6 0 9 3 3 9 - 4 0 2 2
---	---

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE) NO

EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR

ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

On May 19, 1988 it was identified that the Salem Unit 1 and Unit 2 Diesel Generator (D/G) area Cardox Fire Suppression System {KQ} PE relay may not be Class 1E seismically qualified. The failure of the PE relay could result in the loss of the D/G Area Ventilation System {VJ}. This was discovered during the preparation of a design change package associated with the D/G area cardox system controls. The root cause of this event has been attributed to inadequate design. The D/G area cardox system has existed for the life of the plant with minimal change. The seismic qualification of the cardox system PE relay was not considered when it was originally designed. Procedural modifications have been made to provide Operations personnel with instructions to reset the relay after a seismic event. They will be trained on the exact physical location of the relay and how to reset it. Until the operators are trained, Site Protection Department personnel are available to reset the relay. Site Protection has an existing procedure which addresses this relay. A design change will be developed to eliminate the seismic concern associated with the PE relay.

8806090040 880531
PDR ADOCK 05000311
S PDR

IE22 11

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

Salem Generating Station	DOCKET NUMBER	LER NUMBER	PAGE
Unit 1	5000272	88-010-00	2 of 3

PLANT AND SYSTEM IDENTIFICATION:

Westinghouse - Pressurized Water Reactor

Energy Industry Identification System (EIIS) codes are identified in the text as {xx}

IDENTIFICATION OF OCCURRENCE:

Potential Loss of Diesel Generator Areas Ventilation Due to Seismic Concern - Inadequate Design Review

Event Date: 5/19/88

Report Date: 5/31/88

This report was initiated by Incident Report No. 88-181.

CONDITIONS PRIOR TO OCCURRENCE:

Unit 1: Mode 1 Reactor Power 100% - Unit Load 1160 MWe
Unit 2: Mode 1 Reactor Power 100% - Unit Load 1150 MWe

DESCRIPTION OF OCCURRENCE:

On May 19, 1988 it was identified that the Salem Unit 1 and Unit 2 Diesel Generator (D/G) area Cardox Fire Suppression System {KQ} PE relay may not be Class 1E seismically qualified. The failure of the PE relay could result in the loss of the D/G Area Ventilation System {VJ}. This was discovered during the preparation of a design change package associated with the D/G area cardox system controls.

The Nuclear Regulatory Commission (NRC) was notified of this event on May 19, 1988 at 1710 hours in accordance with the requirements of the Code of Federal Regulations 10CFR 50.72(b)(2)(iii)(A).

APPARENT CAUSE OF OCCURRENCE:

The root cause of this event has been attributed to inadequate design. The D/G area cardox system has existed for the life of the plant with minimal change. The seismic qualification of the cardox system PE relay was not considered when it was originally designed.

ANALYSIS OF OCCURRENCE:

The cardox system PE relay is designed to lock out the respective D/G Area Ventilation System upon automatic cardox system actuation. This ensures minimal dilution or evacuation of the cardox gas during a fire in the respective D/G area. Each of the three D/G areas have independent cardox systems and ventilation systems.

The PE relay is a mercury tube switch type Cardox Relay. The mercury tube is mounted in a tube contact bed that when tilted rolls the mercury away from the tube contact leads, that interpose the D/G area

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

Salem Generating Station	DOCKET NUMBER	LER NUMBER	PAGE
Unit 1	5000272	88-010-00	3 of 3

ANALYSIS OF OCCURRENCE:

exhaust fan circuit, causing an open circuit which de-energizes the respective D/G area exhaust fan. The contact bed latches in place once tilted. During a seismic event, vibration of the contact bed could cause it to inadvertently tilt latching it in place or cause relay chattering (cycling between the on and off positions), due to sloshing mercury in the relay tube.

With no ventilation, a D/G could run approximately fifteen minutes before ambient temperature could exceed the limitations of some of the electrical components associated with the D/G (e.g., generator exciter and the voltage regulator). The D/Gs are required to supply emergency on-site power during blackout conditions.

Based upon a detailed field inspection of the relay, it is concluded that structural integrity of the relay after a seismic event would be maintained. However, as stated above, the relay contact and function cannot be assured after a seismic event. The relay could be manually reset, restoring the functioning of the D/G ventilation system within the required twenty minutes of the loss of ventilation if a Blackout occurred coincident with the seismic event.

A seismic event in the vicinity of Salem Generating Station large enough to cause relay chattering is unlikely. Also, the ability to reset the relay is highly probable even if a significant seismic event occurred. Therefore, the health and safety of the public was not effected. However, this event is reportable in accordance with NRC Code of Federal Regulations 10CFR 50.73(a)(2)(v)(A).

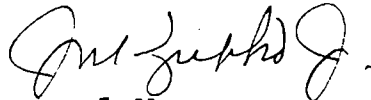
CORRECTIVE ACTION:

Procedural modifications have been made to provide Operations personnel with instructions to reset the relay after a seismic event.

Equipment Operators will be trained on the exact physical location of the relay and how to reset it. Until the operators are trained, Site Protection Department personnel are available to reset the relay. Site Protection has an existing procedure which addresses this relay.

The other D/G cardox system circuitry components were checked for seismic criteria compliance. No other seismic concerns were identified.

A design change will be developed to eliminate the seismic concern associated with the PE relay.


General Manager -
Salem Operations



PSEG

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

Salem Generating Station

May 31, 1988

**U. S. Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555**

Dear Sir:

**SALEM GENERATING STATION
LICENSE NO. DPR-70
DOCKET NO. 50-272
UNIT NO. 1
LICENSEE EVENT REPORT 88-010-00**

This Licensee Event Report is being submitted pursuant to the requirements of the Code of Federal Regulations 10CFR 50.73(a)(2)(v)(A). This report is required within thirty (30) days of discovery.

Sincerely yours,

**J. M. Zupko, Jr.
General Manager-
Salem Operations**

MJP:pc

Distribution

The Energy People

IE22
11