



Public Service Electric and Gas Company P.O. Box 236 Hancocks Bridge, New Jersey 08038  
Salem Generating Station

January 24, 1990

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

Dear Sir:

SALEM GENERATING STATION  
LICENSE NO. DPR-75  
DOCKET NO. 50-311  
UNIT NO. 2  
LICENSEE EVENT REPORT 89-026-00

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

Sincerely yours,

L. K. Miller  
General Manager -  
Salem Operations

MJP:pc

Distribution

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The Energy People

LICENSEE EVENT REPORT (LER)

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

TITLE (4) ESF - Containment Vent. Isol. due to Design/Equipment Problem

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 NAME(S)		DOCKET NUMBER(S)														
1	2	2	8	8	9	8	9	-	0	2	6	-	0	0	0	1	2	4	9	0	0	5	0	0	0

OPERATING MODES (9) 1

POWER LEVEL (10) 11010

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5: (Check one or more of the following) (11)

<input type="checkbox"/> 20.402(b)	<input checked="" type="checkbox"/> 20.402(e)	<input type="checkbox"/> 60.73(a)(2)(iv)	<input type="checkbox"/> 75.71(b)
<input type="checkbox"/> 20.402(a)(1)(ii)	<input type="checkbox"/> 60.20(a)(1)	<input type="checkbox"/> 60.73(a)(2)(v)	<input type="checkbox"/> 75.71(a)
<input type="checkbox"/> 20.402(a)(1)(iii)	<input type="checkbox"/> 60.20(a)(2)	<input type="checkbox"/> 60.73(a)(2)(vi)	OTHER (Specify in Abstract below and in Text, NRC Form 309A)
<input type="checkbox"/> 20.402(a)(1)(iv)	<input type="checkbox"/> 60.73(a)(2)(i)	<input type="checkbox"/> 60.73(a)(2)(vii)(A)	
<input type="checkbox"/> 20.402(a)(1)(v)	<input type="checkbox"/> 60.73(a)(2)(ii)	<input type="checkbox"/> 60.73(a)(2)(vii)(B)	
<input type="checkbox"/> 20.402(a)(1)(vi)	<input type="checkbox"/> 60.73(a)(2)(iii)	<input type="checkbox"/> 60.73(a)(2)(viii)	

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 NRRDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRRDS
B	I	L	D	E	T	V	1	5	Y

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 12/28/89 at 1750 hours, the Radiation Monitoring System (RMS) Plant Vent Noble Gas Monitor, 2R41A, channel spiked resulting in a Containment Purge/Pressure-Vacuum Relief System (CP/P-VRS) isolation signal. The isolation signal had occurred at approximately the same time the 2R41 pump was being restarted after the completion of investigations of a low flow alarm. The root cause of this event can be attributed to a design/equipment problem. The Victoreen RMS equipment has been shown to be susceptible to electrical spikes. As stated previously, the 2R41 pump was being restarted at the time the isolation signal occurred. The 2R41 pump controls are in the same Nuclear Instrumentation Module (NIM) bin as is the 2R41A channel. Therefore, it is surmised that the pump start signal may have caused the electrical spike. There is no specific troubleshooting procedure for the pump; therefore, no specific requirement to "block" the 2R41A channel response exists. Upon receipt of the ESF signal, the 2R41A channel was reset. This event will be reviewed with applicable Maintenance Department personnel. An "Operating Guide" will be posted to identify that the 2R41A channel alarm response blocking requirements. As indicated in several previous LERs, associated with CP/P-VRS signal actuation, Engineering has investigated the RMS system concerns. Several system design modifications are planned which will eliminate the spurious CP/P-VRS actuation signals. These modifications include installation of a regulated or uninterruptable power supply and eventual upgrade or replacement of the current Victoreen model detector system(s).



LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

Salem Generating Station	DOCKET NUMBER	LER NUMBER	PAGE
Unit 2	5000311	89-026-00	2 of 3

PLANT AND SYSTEM IDENTIFICATION:

Westinghouse - Pressurized Water Reactor

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

IDENTIFICATION OF OCCURRENCE:

Engineered Safety Feature (ESF) Actuation Signal, Containment Purge/Pressure-Vacuum Relief isolation, due to a design/equipment problem

Event Date: 12/28/89

Report Date: 1/24/90

This report was initiated by Incident Report No. 89-805.

CONDITIONS PRIOR TO OCCURRENCE:

Mode 1 Reactor Power 100% - Unit Load 1160 MWe

DESCRIPTION OF OCCURRENCE:

On December 28, 1989 at 1750 hours, the Radiation Monitoring System (RMS) {IL} Plant Vent Noble Gas Monitor, 2R41A, channel spiked resulting in a Containment Purge/Pressure-Vacuum Relief System (CP/P-VRS) {BF} isolation signal. The isolation signal had occurred at approximately the same time the 2R41 pump was being restarted after the completion of investigations of a low flow alarm.

APPARENT CAUSE OF OCCURRENCE:

The root cause of this event can be attributed to a design/equipment problem as discussed in several prior LERs, (e.g., 311/89-002-00). The Victoreen RMS equipment has been shown to be susceptible to electrical spikes.

As stated above, the 2R41 pump was being restarted at the time the isolation signal occurred. The 2R41 pump controls are in the same Nuclear Instrumentation Module (NIM) bin as is the 2R41A channel. Therefore, it is surmised that the pump start signal may have caused the electrical spike. There is no specific troubleshooting procedure for the pump; therefore, no specific requirement to "block" the 2R41A channel response exists. The procedure used for conducting investigations of inoperable I&C equipment is IIC-14.1.001, "General Troubleshooting Procedure For Installed Plant Equipment".

ANALYSIS OF OCCURRENCE:

Isolation of the CP/P-VRS is part of the design Engineered Safety Features (ESFs). It mitigates the release of excessive quantities of radioactive material to the environment after a design base accident.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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ANALYSIS OF OCCURRENCE: (cont'd)

The 2R41A channel monitor's the plant vent effluent releases for radioactive particulates via representative sampling. The ESF actuation feature of CP/P-VRS isolation, associated with this channel, is of conservative design. It is not taken credit for in the UFSAR nor is it addressed by the Technical Specifications. The channel which is taken credit for CP/P-VRS isolation is the 2R12A channel which monitor's Containment noble gas activity. During this event, the 2R12A monitor remained operable.

As indicated in the Apparent Cause of Occurrence section, the isolation signal was the result of a design/equipment problem. It was not the result of high plant vent activity. Therefore, this event did not affect the health or safety of the public. However, due to the actuation of an ESF system, this event is reportable in accordance with Code of Federal Regulations 10CFR50.73(a)(2)(iv).

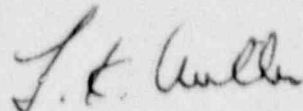
CORRECTIVE ACTION:

Upon receipt of the ESF signal, the 2R41A channel was reset.

This event will be reviewed with applicable Maintenance Department personnel to explain the relationship between 2R41 pump starts and inadvertent CP/P-VRS actuations.

An "Operating Guide" will be posted to identify that the 2R41A RMS channel alarm response blocking requirements (reference station administrative procedure AP-3, "Document Control Program") when working on the 2R41 pump.

As indicated in prior LERs, associated with CP/P-VRS signal actuation, Engineering has investigated the RMS system concerns. Several system design modifications are planned which will eliminate spurious CP/P-VRS actuation signals. These design modifications include installation of a regulated or uninterruptable power supply and eventual upgrade or replacement of the current Victoreen model detector system(s). The plans for completion of these modifications are included in the current PSE&G Living Engineering Plan for the RMS System.



General Manager -  
Salem Operations

MJP:pc

SORC Mtg. 90-007