



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

Salem Generating Station

July 09, 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 90-026-00

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. R. Miller
General Manager -
Salem Operations

MJP:pc

Distribution

9007120030 900709
PDR ADOCK 05000311
S FDC

The Energy People

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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 Actuation: Containment Ventilation Isolation, Equipment/Design Concerns (2R12B)

| EVENT DATE (5) | | | LER NUMBER (6) | | | REPORT DATE (7) | | | OTHER FACILITIES INVOLVED (8) | | |
|----------------|-----|------|----------------|-------------------|-----------------|-----------------|-----|------|-------------------------------|---|-------------------|
| MONTH | DAY | YEAR | YEAR | SEQUENTIAL NUMBER | REVISION NUMBER | MONTH | DAY | YEAR | FACILITY NAMES | | DOCKET NUMBER (8) |
| 0 | 6 | 0 | 9 | 9 | 0 | 0 | 2 | 6 | 0 | 0 | 0 |
| 0 | 6 | 0 | 9 | 9 | 0 | 0 | 7 | 0 | 0 | 0 | 0 |

| OPERATING MODE (9) | THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR § (Check one or more of the following) (11) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--------------------|--|-----------|--------------------|--|-----------------|----------|-----------------|-------------|--|-----------------|----------|------------------|-------------|--|-----------------|--|-------------------|----------------|--|--------------------|--|------------------|-----------------|--|--------------------|--|-----------------|------------------|--|--------------------|--|
| 4 | <table border="1"><tr><td>20.402(b)</td><td>20.406(c)</td><td>X</td><td>60.73(a)(2)(iv)</td><td>73.71(b)</td></tr><tr><td>20.406(a)(1)(i)</td><td>60.39(a)(1)</td><td></td><td>60.73(a)(2)(iv)</td><td>73.71(c)</td></tr><tr><td>20.406(a)(1)(ii)</td><td>60.39(a)(2)</td><td></td><td>60.73(a)(2)(iv)</td><td>OTHER (Specify in Abstract below and in Text, NRC Form 366A)</td></tr><tr><td>20.406(a)(1)(iii)</td><td>60.73(a)(2)(i)</td><td></td><td>60.73(a)(2)(iv)(A)</td><td></td></tr><tr><td>20.406(a)(1)(iv)</td><td>60.73(a)(2)(ii)</td><td></td><td>60.73(a)(2)(iv)(B)</td><td></td></tr><tr><td>20.406(a)(1)(v)</td><td>60.73(a)(2)(iii)</td><td></td><td>60.73(a)(2)(iv)(C)</td><td></td></tr></table> | 20.402(b) | 20.406(c) | X | 60.73(a)(2)(iv) | 73.71(b) | 20.406(a)(1)(i) | 60.39(a)(1) | | 60.73(a)(2)(iv) | 73.71(c) | 20.406(a)(1)(ii) | 60.39(a)(2) | | 60.73(a)(2)(iv) | OTHER (Specify in Abstract below and in Text, NRC Form 366A) | 20.406(a)(1)(iii) | 60.73(a)(2)(i) | | 60.73(a)(2)(iv)(A) | | 20.406(a)(1)(iv) | 60.73(a)(2)(ii) | | 60.73(a)(2)(iv)(B) | | 20.406(a)(1)(v) | 60.73(a)(2)(iii) | | 60.73(a)(2)(iv)(C) | |
| 20.402(b) | 20.406(c) | X | 60.73(a)(2)(iv) | 73.71(b) | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 20.406(a)(1)(i) | 60.39(a)(1) | | 60.73(a)(2)(iv) | 73.71(c) | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 20.406(a)(1)(ii) | 60.39(a)(2) | | 60.73(a)(2)(iv) | OTHER (Specify in Abstract below and in Text, NRC Form 366A) | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 20.406(a)(1)(iii) | 60.73(a)(2)(i) | | 60.73(a)(2)(iv)(A) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 20.406(a)(1)(iv) | 60.73(a)(2)(ii) | | 60.73(a)(2)(iv)(B) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 20.406(a)(1)(v) | 60.73(a)(2)(iii) | | 60.73(a)(2)(iv)(C) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

LICENSEE CONTACT FOR THIS LER (12)
NAME
M. J. Pollack - LER Coordinator

TELEPHONE NUMBER

AREA CODE

6 0 9 3 3 9 - 2 0 2 2

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

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

SUPPLEMENTAL REPORT EXPECTED (14)

| YES (If yes, complete EXPECTED SUBMISSION DATE) | NO | EXPECTED SUBMISSION DATE (15) | MONTH | DAY | YEAR |
|---|----|-------------------------------|-------|-----|------|
| X | | | | | |

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

On June 9, 1990 at 2330 hours, the 2R12B (Containment Radioactive Iodine Monitor) Radiation Monitoring System (RMS) (IL) channel failed low. This resulted in an Engineered Safety Feature (ESF) actuation signal for Containment Purge/Pressure-Vacuum Relief (CP/P-VR) System isolation. The channel was declared inoperable. The root cause of this event has been attributed to design/equipment concerns. The type detector system used for the Salem Unit 2 RMS channels is manufactured by Victoreen. Periodic problems with this system have been experienced as indicated in prior LERs (e.g., 311/90-010-00). Troubleshooting by Maintenance personnel identified a failed scalar, failed discriminator potentiometer, and a failed high voltage potentiometer. The failed components were replaced. Subsequently, the 2R12B channel was successfully functionally tested and the channel was declared operable on July 6, 1990. As indicated in prior LERs, Engineering has investigated the concerns with the Unit 2 RMS channels. It is anticipated that several system design modifications will eliminate the spurious ESF actuation signals. The plans for completion of these modifications are included in the current PSE&G Living Engineering Plan for the RMS system.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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|------------------------------------|--------------------------|-------------------------|----------------|
| Salem Generating Station Unit 2 | DOCKET NUMBER 5000311 | LER NUMBER 90-026-00 | PAGE 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:

Actuation of an Engineered Safety Feature, Containment Purge Pressure-Vacuum Relief isolation, due to design/equipment concerns

Event Date: 6/09/90

Report Date: 7/09/90

This report was initiated by Incident Report No. 90-383.

CONDITIONS PRIOR TO OCCURRENCE:

Mode 4 (Hot Shutdown)

DESCRIPTION OF OCCURRENCE:

On June 9, 1990 at 2330 hours, the 2R12B (Containment Radioactive Iodine Monitor) Radiation Monitoring System (RMS) [IL] channel failed low. This resulted in an Engineered Safety Feature (ESF) actuation signal for Containment Purge/Pressure-Vacuum Relief (CP/P-VR) System [BF] isolation. The channel was declared inoperable.

On June 10, 1990 at 0022 hours, the Nuclear Regulatory Commission was notified of the actuation of the CP/P-VRS isolation signal in accordance with Code of Federal Regulations 10CFR 50.72(b)(2)(ii).

APPARENT CAUSE OF OCCURRENCE:

The root cause of this event has been attributed to design/equipment concerns. The type detector system used for the Salem Unit 2 RMS channels is manufactured by Victoreen. Periodic problems with this system have been experienced as indicated in prior LERs (e.g., 311/90-010-00).

Troubleshooting by Maintenance personnel identified a failed scalar, failed discriminator potentiometer, and a failed high voltage potentiometer.

ANALYSIS OF OCCURRENCE:

The 2R12B RMS channel monitor's the radioactive iodine gas content of the Containment atmosphere. By design, either a "high" alarm signal or a low channel failure will cause the automatic isolation of the CP/P-VR System.

Air samples are pulled from the Containment atmosphere through a

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

| | | | |
|--------------------------|---------------|------------|--------|
| Salem Generating Station | DOCKET NUMBER | LER NUMBER | PAGE |
| Unit 2 | 5000311 | 90-026-00 | 3 of 3 |

ANALYSIS OF OCCURRENCE: (cont'd)

filter paper which continuously moves past the 2R11A (Containment Radioactive Particulate Monitor) detector. The air sample then passes through a charcoal cartridge (monitored by the 2R12B monitor) and is then mixed into a fixed shielded volume where it is viewed by the 2R12A (Containment Radioactive Noble Gas Monitor) monitor. The air sample is then returned to the Containment.

Several area radiation monitors, in addition to the 2R11A and 2R12A monitors, are used to corroborate the 2R12B channel's indications. The corroborating area radiation monitors do not have isolation capabilities; they only have alarm capability. None of these channels indicated any abnormal activity during this event.

The 2R12A Containment Radioactive Noble Gas monitor is the channel taken credit for by the accident analysis for monitoring Containment airborne activity in order to mitigate the consequences of an accident. The 2R12A monitor has the capability of automatic isolation of the CP/P-VR System. It remained operable during the course of this event and did not indicate any abnormal Containment airborne activity.

During this event, RCS leakage within Containment did not increase nor was there any indication of increasing Containment activity as indicated by the 2R12B corroborating RMS channels. Therefore, this event did not affect the health or safety of the public. However, due to the automatic actuation of an ESF system, this event is reportable in accordance with Code of Federal Regulations 10CFR 50.73(a)(2)(iv).

CORRECTIVE ACTION:

The failed components were replaced. Additionally, the pins (which connect to the backplane) were replaced with longer pins. Prior to declaring the channel operable, six point channel calibration check and functional testing will be completed.

As indicated in LER 311/90-022-00, Engineering has investigated the concerns with the Unit 2 RMS channels. It is anticipated that several system design modifications will eliminate the spurious ESF actuation signals. The plans for completion of these modifications are included in the current PSE&G Living Engineering Plan for the RMS system.

L.K. Gulle

General Manager -
Salem Operations

MJP:pc

SORC Mtg. 90-085