Updated Report-Previous Report Dated 5/31/85

POW 28-06-01-01

NRC Form 366 (9-83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/85

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Surry Power Station, Unit 2	0 5 0 0 0 2 8 1	1 OF 0 3

TITLE (4)

Discrepancies with EQ Components

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(S)
										0 5 0 0 0
0 5	0 1	8 5	8 5	0 0 4	0 1	0 8	1 5	8 5		0 5 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)			
N		20.402(b)	20.405(c)	50.73(a)(2)(iv)	73.71(b)
POWER LEVEL (10)		20.405(a)(1)(i)	50.36(c)(1)	50.73(a)(2)(v)	73.71(c)
		20.405(a)(1)(ii)	50.36(c)(2)	X 50.73(a)(2)(vii)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)
		20.405(a)(1)(iii)	50.73(a)(2)(i)	50.73(a)(2)(viii)(A)	
		20.405(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(viii)(B)	
		20.405(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
	AREA CODE
R. F. Saunders, Station Manager	8 0 4 3 5 7 - 3 1 8 4

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

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

ABSTRACT

With Unit No. 2 in a Refueling Shutdown Condition, discrepancies with Rosemount Model 1153 transmitters and CONAX environmental seal assemblies were noted. The identified discrepancies were: (1) degraded terminal screws used to terminate the field wiring inside the Rosemount transmitters, and (2) CONAX seal assemblies that did not provide a positive environmental seal.

The failure of the terminal screws was due to overtorquing the hollow (bored) screws. The hollow screws had been installed in the transmitters by the vendor. The CONAX connectors had been improperly installed due to inadequate installation procedures.

Solid terminal screws were installed in the EQ transmitters located in both containments. CONAX connector discrepancies were corrected and the installation procedures were modified.

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NRC Form 366 (9-83)

NRC Form 366A (9-83)

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION
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Surry Power Station, Unit 2	0 5 0 0 0 2 8 1	8 5	— 0 0 4	— 0 1	0 2 OF 0 3

TEXT (If more space is required, use additional NRC Form 366A's) (17)

DISCREPANCIES WITH EQ COMPONENTS

1. Description of the Event

With Unit No. 2 in a Refueling Shutdown Condition, discrepancies with Rosemount Model 1153 transmitters and CONAX environmental seal assemblies were noted. The identified discrepancies were: (1) degraded terminal screws used to terminate the field wiring inside the Rosemount transmitters, and (2) CONAX seal assemblies that did not provide a positive environmental seal.

Terminal Screws

Destructive testing conducted on site, indicated that the screws heads would shear with *low torque applied. The terminal screws are of a hollow (bored) design. In addition to the field wiring terminals, each transmitter has test terminals to allow the measurement of loop current during transmitter calibration. The test terminal screws are bored to accept a miniature banana plug.

CONAX Connectors

Several CONAX connectors were found improperly installed which allowed moisture to accumulate inside transmitters. Specific problems noted were: (1) the sealing ferrule was improperly located on the feed thru sub-assembly, (2) sealing ferrule installed backwards, and (3) the seal body sub-assembly hand tight.

Approximately 134 CONAX connectors (unit 1 and 2) were inspected and 9 connectors would not have provided a positive seal. Evidence of inleakage (moisture or snubber oil) was found in 6 transmitters. Approximately 30 connectors may not have provided a positive seal.

2. Safety Consequences and implications

The effect of the degraded terminal screws and CONAX connectors would have been erratic transmitter output or loss of circuit continuity. Depending upon the specific component (transmitter or valve) involved, the degradation could have resulted in spurious alarms or containment isolation valve closure, partial ESF signals, or detected during routine channel checks and calibrations.

3. Cause

Terminal Screws

The hollow style terminal screws, when torqued to an excessive value, have sufficient tensile loading to cause them to fail.

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*Testing performed by Rosemount determined that the average shear strength was 21 in-lbs. and base metal cracking at 15 in-lbs. of applied torque.

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TEXT (If more space is required, use additional NRC Form 366A's) (17)

DISCREPANCIES WITH EQ COMPONENTS

CONAX Connectors

The CONAX Connectors were improperly installed due to inadequate installation procedures. CONAX connectors had been installed under the Design Change program.

4. Corrective Actions

Terminal Screws

Replacement terminal screws (solid style) were obtained from Rosemount and were installed in the Environmentally Qualified transmitters located in Unit 1 and 2 containments. Solid screws will be installed in the remaining Rosemount transmitters.

CONAX Connectors

A detailed inspection program was developed and conducted for both units 1 and 2 and identified discrepancies were corrected.

5. Actions Taken to Prevent Recurrence

The CONAX connector installation procedure for open Design Change Packages has been modified to insure the correct placement of the sealing ferrule. Other replacement and repair procedures for CONAX connectors will be modified.

6. Generic Implications

Rosemount provides the transmitters to licensees with the hollow style screws for both the field wiring and test terminals.

VIRGINIA POWER

Surry Power Station
P. O. Box 315
Surry, Virginia

August 15, 1985

U.S. Nuclear Regulatory Commission
Document Control Desk
016 Phillips Building
Washington, D. C. 20555

Serial No: 85-013A
Docket No: 50-281
License No: DPR-37

Gentlemen:

Pursuant to Surry Power Station Technical Specifications, Virginia Power hereby submits the following Licensee Event Report Update for Surry Unit 2.

REPORT NUMBER

85-004-01

This report has been reviewed by the Station Nuclear Safety and Operating Committee and will be reviewed by Safety Evaluation and Control.

Very truly yours,

RF Saunders

R. F. Saunders
Station Manager

Enclosure

cc: Dr. J. Nelson Grace
Regional Administrator
Suite 2900
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