

LICENSEE EVENT REPORT

CONTROL BLOCK: 1

(PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

1 2 3 4 5 6 7 8 9 0 1 2 3 4 5

- I. LER NUMBER: 83-005/01T-0
- II. LASALLE COUNTY STATION: Unit 1
- III. DOCKET NUMBER: 050/373/374
- IV. EVENT DESCRIPTION:

During the analysis of the data obtained in LOD-15, Containment Isolation System temperature monitoring, it was observed that several of the Leak Detection temperature indicators, manufactured by Panalarm Division of the Riley Company, had varying readouts between divisions.

In a meeting between CECO and Sargent and Lundy personnel, held on February 4, 1983, it was requested that an investigation into the discrepancy be performed.

At 1500 hours, while in Cold Shutdown, on February 7, 1983, it was determined that several of the temperature switches should be placed into the degraded equipment log with respect to Technical Specification 3/4.3.2.

Further investigation showed that a total of 19 modules are suspect; twelve are for ambient temperatures and seven are for differential temperatures.

See the attached sheet labeled "Table 1" for the list of the temperature switches.

V. PROBABLE CONSEQUENCES OF THE OCCURRENCE:

An investigation of the isolation circuitry for the four systems involved, RWCU, RHR, RCIC and Main Steam, shows that, for each of the strings, at least one good temperature switch would have caused an isolation signal at the desired trip point. All of the switches would have caused an isolation but at a temperature greater than the allowable value.

Safe operation of the plant was maintained at all times.

VI. CAUSE:

The initial portion of the investigation verified that all of the locally mounted thermocouples tested were giving accurate temperature data when compared to an independent thermocouple placed in the same location.

Data was then taken from the indicator and also from the thermocouple contacts on the back of the Riley alarm modules and compared against the data obtained locally. The results showed that some of the meter indications had a large difference, in excess of $\pm 8^{\circ}\text{F}$, when compared to the actual temperature. This showed that the output of the Riley modules were not calibrated with respect to the common indicator meter. The data comparison also showed that the temperatures as seen on the landed thermocouple contacts, at the back of the Riley module, and the area temperature, as seen by lifting the thermocouple leads from the Riley, had a temperature discrepancy.

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At the suggestion of General Electric, several modules were tested for impedance. Results showed that modules considered accurate as well as modules considered inaccurate had acceptable input impedances.

After consultation with Riley, and based on additional data, the vendor suggested that the problem might be in the temperature compensators.

VII. CORRECTIVE ACTION:

To determine which of the modules should be considered questionable and therefore should be considered for replacement, it was taken as a basis, the fact that a tolerance of $\pm 3^{\circ}\text{F}$ was used in calculations for the alarm trip points.

On this basis, 19 temperature switches were identified as out of tolerance.

Temperature switches from Unit 2 were tested for satisfactory operation and used to replace the 19 temperature switches that have been identified as potentially faulty.

As of February 13, 1983, all of the U-1 Riley temperature switches were calibrated per the procedure and also with respect to the output of the Riley and the indicator meter.

The temperature switches from Unit 1 as well as those found in Unit 2 as being outside of the tolerance limit, will be sent to Riley for an analysis as to cause. A potential 10CFR50.55e report was made to NRC Region III at 1345 on February 15, 1983 by Project Engineering.

ATTACHMENTS:

Table 1 is a list of the temperature switches and their associated serial numbers which were replaced. The second column contains the serial numbers of the modules used from Unit 2 as replacements.

Table 2 is a list of all Unit 1 and Unit 2 module serial numbers considered questionable.

Prepared by: Kermit C. Wittenburg

TABLE 1

Unit 1 Temperature Switch Number of Module To Be Replaced		Unit 1 Temperature Switch Module Serial Number	Serial Number of Module From Unit 2 Which Can Be Used To Replace Temperature Switch As Shown In Column One
-T-	(1E31 - N601B	86 - PEGF - 710	86 - PEGF - 654
	(1E31 - N601C	86 - PEGF - 725	86 - PEGF - 656
	(1E31 - N601D	86 - PEGF - 705	86 - PEGF - 668
	(1E31 - N601G	86 - PEGF - 726	86 - PEGF - 666
	(1E31 - N601H	86 - PEGF - 703	86 - PEGF - 660
	(1E31 - N601K	86 - PEGF - 708	86 - PEGF - 670
	(1E31 - N602A	86 - PEGF - 720	86 - PEGF - 671
	(1E31 - N602B	86 - PEGF - 713	86 - PEGF - 672
	(1E31 - N604A	86 - PEGF - 724	86 - PEGF - 676
	(1E31 - N604B	86 - PEGF - 718	86 - PEGF - 658
	(1E31 - N604D	86 - PEGF - 715	86 - PEGF - 657
	(1E31 - N608B	86 - PEGF - 712	86 - PEGF - 673
dT	(1E31 - N600B	86 - VEFF - 736	86 - VEFF - 697
	(1E31 - N600C	86 - VEFF - 741	86 - VEFF - 680
	(1E31 - N600D	86 - VEFF - 730	86 - VEFF - 683
	(1E31 - N600F	86 - VEFF - 737	86 - VEFF - 677
	(1E31 - N600G	86 - VEFF - 745	86 - VEFF - 687
	(1E31 - N603B	86 - VEFF - 743	86 - VEFF - 688
	(1E31 - N614D	86 - VEFF - 740	86 - VEFF - 699

TABLE 2

TEMPERATURE SWITCH SERIAL NUMBER OF QUESTIONABLE MODULES

86 VEFF - 0727	86 VEFF - 0732	86 VEFF - 0686
86 VEFF - 0738	86 PEGF - 0704	86 PEGF - 0667
86 VEFF - 0744	86 VEFF - 0749	86 PEGF - 0659
86 PEGF - 0709	86 PEGF - 0707	86 PEGF - 0663
86 PEGF - 0716	86 VEFF - 0748	86 PEGF - 0664
86 PEGF - 0717	86 PEGF - 0706	86 VEFF - 0694
86 VEFF - 0746	86 PEGF - 0713	86 PEGF - 0653
86 PEGF - 0722	86 VEFF - 0750	86 VEFF - 0695
86 VEFF - 0733	86 VEFF - 0739	86 VEFF - 0696
86 VEFF - 0742	86 VEFF - 0735	86 VEFF - 0698
86 PEGF - 0721	86 PEGF - 0711	86 PEGF - 0661
86 VEFF - 0734	86 VEFF - 0679	86 PEGF - 0675
86 VEFF - 0747	86 VEFF - 0678	86 VEFF - 0691
86 VEFF - 0728	86 VEFF - 0684	86 PEGF - 0669
86 VEFF - 0729	86 VEFF - 0681	86 PEGF - 0655
86 VEFF - 0723	86 VEFF - 0682	86 VEFF - 0700
86 VEFF - 0714	86 VEFF - 0693	86 PEGF - 0662
86 VEFF - 0719	86 VEFF - 0689	
86 VEFF - 0731	86 VEFF - 0690	