

# LICENSEE EVENT REPORT

CONTROL BLOCK: (PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

0 1 N Y R E G 1 2 0 0 - 0 0 0 0 0 - 0 0 3 4 1 1 1 1 4 5  
8 9 LICENSE CODE 14 15 LICENSE NUMBER 25 26 LICENSE TYPE 30 37 CAT 58

CON'T  
0 1 REPORT SOURCE L 6 0 5 0 0 0 2 4 4 7 1 1 1 6 8 3 8 1 2 1 6 8 3 9  
80 81 DOCKET NUMBER 88 89 EVENT DATE 74 75 REPORT DATE 80

## EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (17)

0 2 During normal operations, while auditing heat balance calorimetrics performed the  
0 3 previous two days, it was noted that unreliable feedwater temperature data was used  
0 4 to compute each calorimetric. The resultant effect was that the Nuclear Power  
0 5 Ranges were not calibrated in accordance with T.S. 4.1.1. There were no significant  
0 6 occurrences as a result of the event. (See attached for continuation).  
0 7  
0 8  
7 8 9

0 9 SYSTEM CODE I A 11 CAUSE CODE A 12 CAUSE SUBCODE A 13 COMPONENT CODE I N S T R U 14 COMP. SUBCODE X 15 VALVE SUBCODE Z 16  
7 8 9 10 11 12 13 14 15 16  
17 LER/RO REPORT NUMBER 3 3 23 SHUTDOWN METHOD Z 21 HOURS 0 0 0 0 22 ATTACHMENT SUBMITTED Y 23 NPRO-4 FORM SUB. N 24 PRIME COMP. SUPPLIER A 25 COMPONENT MANUFACTURER W 1 2 0 26  
21 22 23 24 25 26 27 28 29 30 31 32  
ACTION TAKEN H 18 G 19 EFFECT ON PLANT Z 20  
33 34 35 36 37 38 39 40 41 42 43 44 45 46 47

## CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)

1 0 The cause for using unreliable feedwater temperature data and subsequent improper  
1 1 calibration of the power ranges was due to not having the computer RTD data points  
1 2 placed on scan. The events leading to this stemmed from an administrative  
1 3 procedure change on 11/14/83 to record a more reliable and accurate F. W. Temp.  
1 4 with newly installed RTD's. (See attached for continuation).  
7 8 9

1 5 FACILITY STATUS E 28 % POWER 1 0 0 29 OTHER STATUS NA 30 METHOD OF DISCOVERY A 31 DISCOVERY DESCRIPTION Audit of Calorimetrics 32  
7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30  
1 6 ACTIVITY CONTENT RELEASED OF RELEASE Z 33 Z 34 AMOUNT OF ACTIVITY NA 35 LOCATION OF RELEASE NA 36  
7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30  
1 7 PERSONNEL EXPOSURES NUMBER 0 0 0 37 TYPE Z 38 DESCRIPTION NA 39  
7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30  
1 8 PERSONNEL INJURIES NUMBER 0 0 0 40 DESCRIPTION NA 41  
7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30  
1 9 LOSS OF OR DAMAGE TO FACILITY TYPE Z 42 DESCRIPTION NA 43  
7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30  
2 0 PUBLICITY ISSUED Z 44 DESCRIPTION NA 45  
7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

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PDR ADDCK 05000244  
S PDR

JE22

NRC USE ONLY

NAME OF OPERATOR

Joseph A. Widay

PHONE 315-524-4446 ext. 316

## Event Description and Probable Consequences (Cont'd):

As background information, the following is presented:

During the previous refueling outage, new feedwater R.T.D.'s were installed on the specific feedwater line to each S/G. Prior to that time, the only feedwater data available existed from installed thermocouples at the outlet of each High Pressure Feedwater Heater train. This location is before the water exits to a common feedwater header. This common header then directs the water to each individual S/G via the feedwater control valves.

Past calorimetric heat balances were based on the output of the thermocouple data. To provide a more accurate and reliable indication of feedwater temperature to each S/G, it was decided to use the R.T.D. output for calculation of the heat balance. Since up to this time, only local indication existed for the R.T.D.'s, it was requested of the computer technicians to wire these points into the computer. This was performed properly, however, it was not noted at the time that the points were not placed on computer scan and therefore, not updating. Following wiring of the R.T.D. points, a procedure change was generated on 11/14/83 to use the R.T.D. data for performance of the calorimetric. This led to the events described herein.

The probable consequence of improper calibration of the power ranges was that there existed a potential for adjusting the detectors in a non-conservative direction which could lead to a reduction in the degree of redundancy. This reduction of redundancy has a direct bearing on the protection afforded by the power ranges. This protection involves limiting core thermal power to acceptable limits.

The following analysis is presented in regards to determining the actual core thermal power from the period of 11/14/83 @ 0932 to 11/16/83 @ 0910. During this time period, unreliable feedwater temperature data was used and subsequently, the power ranges were improperly calibrated. This analysis is being performed to assure that at no time was averaged licensed core thermal power exceeded. (Full 100% steady-state power level is that as defined in the NRC letter from E. L. Jordan, Assistant Director for Technical Programs, as stated: "The average power level over any eight hour shift should not exceed the "full steady-state licensed power level" and also, "In no case should 102% power be exceeded").

To determine the actual feedwater temperatures during the above stated time frame, the following was performed:

- 1) Using the digital trend function, addressable points:

U7000Q - 5A F.W.H. outlet average thermocouple reading.  
U7001Q - 5B F.W.H. outlet average thermocouple reading.  
\*Y8400 - A S/G inlet RTD reading.  
\*Y8401 - B S/G inlet RTD reading.

were placed on five minute trending. A data base of 145 points was acquired from the time frame of 11/16/83 @ 1540 to 11/17/83 @ 0423.

\*Following placing the RTD's on computer scan.

- 2) The acquired data was then analyzed to determine the relationship between outlet H.P.F.W.H. temperatures to the S/G inlet RTD readings. From this data, the averaged temperature deviation was determined.
- 3) The averaged deviation was then added to the average thermocouple feedwater outlet temperature for each of the specific calorimetrics performed between 11/14/83 and 11/16/83. This corrected feedwater temperature was then used in computing the true core thermal power.

NOTE: The average thermocouple feedwater outlet temperature data was still available for each specific calorimetric performed during the above time frame via the Plant Process Computer calorimetric printout.

The following table summarizes the results:

Date	Time	Corrected Power	Calculated Power
11/14/83	0932	99.34	99.27
11/14/83	1303	99.54	99.52
11/14/83	1710	99.994	99.998
11/15/83	0014	99.56	99.43
11/15/83	0900	100.11	100.18
11/15/83	1030	99.95	99.95
11/15/83	1723	100.24	100.16
11/15/83	2030	99.93	99.88
11/16/83	0019	99.77	99.70
11/16/83	0910	99.74	99.69

NOTE: Above corrected power based on adding 1.28°F to the thermocouple average outlet temperature.

Calculations:

$$\left( \frac{Y8400 + Y8401}{2} \right) - \left( \frac{U7000 + U7001}{2} \right) = \Delta T$$

$$\sum_{i=1}^{145} \Delta T \div 145 = \text{Averaged temperature deviation} \\ = 1.28^{\circ}\text{F}$$

As summarized in the table above, at no time was the averaged core thermal power as defined in E. L. Jordan's letter, exceeded. Furthermore, compliance with never exceeding or even approaching the 102% power criteria was always maintained.



Cause Description and Corrective Actions (Cont'd):

These addressable points were wired into the computer, however, they were never placed on scan mode. Immediate corrective action involved procedurally reverting back to the previous feedwater thermocouple data points in performance of heat balance calorimetrics. Also to preclude further recurrence, personnel involved with performance of calorimetrics via computer access points have been cautioned to denote status of computer data before using. Subsequent to this, the newly installed R.T.D.'s were placed on computer scan. The RTD data will again be used to calculate the heat balance pending incorporation into our calorimetric procedure.



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December 16, 1983

Dr. Thomas E. Murley, Regional Administrator  
U.S. Nuclear Regulatory Commission  
Region I  
631 Park Avenue  
King of Prussia, PA 19406

Subject: LER 83-029/03L, Calibration of Nuclear Power Range  
Detectors R. E. Ginna Nuclear Power Plant, Unit No. 1  
Docket No. 50-244

Dear Dr. Murley:

In accordance with Technical Specifications, article 6.9.2.b.(3), "Observed inadequacies in the implementation of administrative or procedural controls which threaten to cause reduction of degree of redundancy provided in reactor protection systems or engineered safety feature systems", the attached Licensee Event Report LER 83-029/03L-0 is hereby submitted.

Very truly yours,

*John E. Maier*  
John E. Maier

Attachment

xc: Document Control Desk (1)

1/1  
IE22