

## LICENSEE EVENT REPORT (LER)

|  |        |  |                |                   |                 |                  |                 |           |                |   |  |  |  |                      |     |      |
|--|--------|--|----------------|-------------------|-----------------|------------------|-----------------|-----------|----------------|---|--|--|--|----------------------|-----|------|
| FACILITY NAME (1)<br>Millstone Point Unit 2                                |        |  |                |                   |                 |                  |                 |           |                | DOCKET NUMBER (2)<br>0 5 0 0 0 3 3 6                |  |  |  | PAGE (3)<br>1 OF 0 2 |     |      |
| TITLE (4)<br>Neutron Detector Wiring Problem                               |        |  |                |                   |                 |                  |                 |           |                |   |  |  |  |                      |     |      |
| 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)   |  |                      |     |      |
|  |        |  |                |                   |                 |                  |                 |           | NA             |   |  | 0 5 0 0 0  |  |                      |     |      |
| 0 1 1 7  | 8 4    | 8 4  |                | 0 0 4             |                 | 0 1 0 5          | 1 5 8 4         |           | NA             |   |  | 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) |                |                   |                 |                  |                 |           |                |   |  |  |  |                      |     |      |
| 1  |        | 20.402(b)  |                |                   |                 | 20.405(c)        |                 |           |                | <input checked="" type="checkbox"/> 50.73(a)(2)(iv) |  | 73.71(b)   |  |                      |     |      |
| POWER LEVEL (10)   |        | 20.405(a)(1)(i)  |                |                   |                 | 50.36(c)(1)      |                 |           |                | <input checked="" type="checkbox"/> 50.73(a)(2)(v)  |  | 73.71(c)   |  |                      |     |      |
| 0 1 5 10   |        | 20.405(a)(1)(ii)   |                |                   |                 | 50.36(c)(2)      |                 |           |                | <input checked="" type="checkbox"/> 50.73(a)(2)(vi) |  | OTHER (Specify in Abstract below and in Text, NRC Form 355A) |  |                      |     |      |
|  |        | 20.405(a)(1)(iii)  |                |                   |                 | 50.73(a)(2)(i)   |                 |           |                |   |  |  |  |                      |     |      |
|  |        | 20.405(a)(1)(iv)   |                |                   |                 | 50.73(a)(2)(ii)  |                 |           |                |   |  |  |  |                      |     |      |
|  |        | 20.405(a)(1)(v)  |                |                   |                 | 50.73(a)(2)(iii) |                 |           |                |   |  |  |  |                      |     |      |
|  |        | 20.405(a)(1)(vi)   |                |                   |                 | 50.73(a)(2)(iv)  |                 |           |                |   |  |  |  |                      |     |      |
| LICENSEE CONTACT FOR THIS LER (12)   |        |  |                |                   |                 |                  |                 |           |                |   |  |  |  |                      |     |      |
| NAME   |        |  |                |                   |                 |                  |                 |           |                | TELEPHONE NUMBER                                    |  |  |  |                      |     |      |
| Thomas Filburn, Plant Engineer   |        |  |                |                   |                 |                  |                 |           |                | 2 0 3 4 4 7 - 1 7 9 1 1                             |  |  |  |                      |     |      |
| 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                                   |  |  |  |                      |     |      |
| D I G D E I T  |        | W I L D  | W I L D        | Y                 |                 |                  |                 |           |                |   |  |  |  |                      |     |      |
|  |        |  |                |                   |                 |                  |                 |           |                |   |  |  |  |                      |     |      |
| SUPPLEMENTAL REPORT EXPECTED (14)  |        |  |                |                   |                 |                  |                 |           |                |   |  | EXPECTED SUBMISSION DATE (15)                                |  | MONTH                | DAY | YEAR |
| <input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE)   |        |  |                |                   |                 |                  |                 |           |                |   |  | <input checked="" type="checkbox"/> NO                       |  |                      |     |      |

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

During a routine start-up while at 50% power, irregularities were discovered in the response of the A & B Channels of the excore detectors. The unit was performing the Shape Annealing Factor Test as part of the power ascension testing program following the units fifth refueling outage. This testing pointed to Channels A and B of the excore detectors being improperly connected. The unit commenced a normal plant shutdown while the I&C department investigated the problem.

Upon investigation it was found that the field inputs to Channel A and B of the linear range (excore) detector drawers of the Reactor Protection System (RPS) were reversed. With 1½ hours Channel A was restored to a proper detector configuration, calibrated and aligned. With 3 channels now operable the shutdown was terminated at 47% power and the unit entered the Tech. Spec. action statement 3.3.1.1.2.b for one inoperable channel. Within 2 hours of the shutdown initiation Channel B cables were reversed, the channel calibrated, aligned and returned to operable status. The unit returned to 50% power and upon reaching equilibrium Reactor Engineering confirmed that all the linear range power range detectors and associated signals responded as desired.

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## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

APPROVED OMB NO. 3150-0104

EXPIRES: 8/31/85

| FACILITY NAME (1)      | DOCKET NUMBER (2) | LER NUMBER (6) |                   |                 | PAGE (3) |       |
|------------------------|-------------------|----------------|-------------------|-----------------|----------|-------|
|                        |                   | YEAR           | SEQUENTIAL NUMBER | REVISION NUMBER |          |       |
| Millstone Point Unit 2 | 0500033684        | -              | 004               | -               | 0002     | OF 02 |

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

While performing the Shape Annealing Factor Test as part of the Power Ascension Testing program, irregularities were discovered in the response of Channels A and B of the excore detectors. The unit was at 50% power, performing routine start-up functions at the time.

The unit commenced a normal plant shutdown in accordance with TSAS 3.03 while the I&C department investigated the problem. The investigation revealed that the field inputs to Channels A & B of the linear range (excore) detector drawers of the Reactor Protection System (RPS) were reversed.

Within 1½ hours Channel A was restored to a proper detector configuration, calibrated and aligned. With 3 channels operable the shutdown was terminated at 47% power and the unit entered TSAS 3.3.1.1.2.b. for one inoperable channel. Within 2 hours of the shutdown initiation, Channel B cables were reversed, the channel calibrated, aligned and returned to operable status.

The unit returned to 50% power and upon reaching equilibrium Reactor Engineering confirmed that all the linear range power range detectors and associated signals responded as desired.

As a verification of proper cable connection I&C used a Time Domain Reflectometer (TDR) to show that the shorter cable was connected to the lower signal amplifier while the longer detector cable was connected to the upper signal amplifier.

An investigation into the cause of detector switch has been completed. The Channel A and B cables were restored improperly following surveillance testing due to a faulty procedure. The procedure has since been revised to correct the connection details in the I&C procedure. Additionally, other I&C procedures have been reviewed to identify necessary improvements. Additional corrective actions are as follows:

1. The I&C Department generated a department procedure for using the TDR to verify cable length. This procedure has been included in the operations pre-critical check list to be performed whenever work is performed on the excore detectors.
2. This event and its impact on reactor safety was discussed with departmental personnel. Particular attention was placed on the use and application of maintenance aids and work practices.
3. Northeast Utilities Nuclear Safety Department has been informed of this event and has evaluated it for applicability to other units within the Northeast Utilities System.
4. A step will be inserted in the power ascension testing program that will verify axial shape index response to CEA insertion. The upper and lower excore response will also be verified. (This item has been identified to the Reactor Engineering Department which will track it until its inclusion in the power ascension test procedure.)

Similar LER's: 80-036/03L-0

# NORTHEAST UTILITIES



THE CONNECTICUT LIGHT AND POWER COMPANY  
WESTERN MASSACHUSETTS ELECTRIC COMPANY  
HOLYOKE WATER POWER COMPANY  
NORTHEAST UTILITIES SERVICE COMPANY  
NORTHEAST NUCLEAR ENERGY COMPANY

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May 15, 1984  
MP-6019

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

Reference: Facility Operating License No. DPR-65  
Docket No. 50-336  
Reportable Occurrence RO-50-336/84-004-1

Gentlemen:

This letter forwards the update Licensee Event Report 84-004-1 concerning neutron detector wiring problems.

Very truly,

NORTHEAST NUCLEAR ENERGY COMPANY

A handwritten signature in cursive script, appearing to read 'E. J. Mroczka'.

E. J. Mroczka  
Station Superintendent  
Millstone Nuclear Power Station

EJM/TF:ejl

Attachment: LER RO 50-336/84-004-1

cc: Dr. T. E. Murley, Region I

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