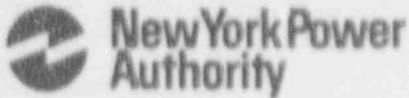


James A. FitzPatrick  
Nuclear Power Plant  
P.O. Box 41  
Lycoming, New York 13093  
315 342-3840



Radford J. Converse  
Resident Manager

January 27, 1992  
JAFF-92-0094

United States Nuclear Regulatory Commission  
Document Control Desk  
Mail Station P1-137  
Washington, D.C. 20555

SUBJECT: DOCKET NO. 50-333  
LICENSEE EVENT REPORT: 91-032-00 - Intake Heaters  
Potentially Inoperable Due to  
Control Room Fire

Dear Sir:

This report is submitted in accordance with 10 CFR 50.73(a)(2)(ii)  
and (a)(2)(v).

Questions concerning this report may be addressed to  
Mr. Michael Licitra at (914) 681-6425.

Very truly yours,

A handwritten signature in cursive script, appearing to read 'R. Converse'.

RADFORD J. CONVERSE

RJC:WVC:ML:lar

Enclosure

cc: USNRC, Region I  
USNRC Resident Inspector  
INPO Records Center

*Cent No 106A1705443*

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S PDR

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) **JAMES A. FITZPATRICK NUCLEAR POWER PLANT** DOCKET NUMBER (2) **0 5 0 0 0 3 3 3 1** PAGE (3) **1** OF **0 4**

TITLE (4) **Intake Deicing Heaters Potentially Inoperable Due to Hypothetical Fire Scenario Not Previously Considered**

| 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 NAME |   | DOCKET NUMBER (9) |   |   |   |   |   |   |   |   |   |   |   |
| 1              | 2   | 6    | 9              | 1                 | 9               | 1     | 0   | 3                             | 2             | 0 | 0                 | 0 | 1 | 2 | 7 | 9 | 2 | 0 | 5 | 0 | 0 | 0 |

OPERATING MODE (10) **R**

POWER LEVEL (11) **0 0 0**

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR § (Check one or more of the following) (12)

|  |   |  |   |
|--|---|--|---|
| <input type="checkbox"/> 20.402(b)       | <input type="checkbox"/> 20.403(a)                  | <input type="checkbox"/> 20.726(c)(1)(i)             | <input type="checkbox"/> 20.716(b)  |
| <input type="checkbox"/> 20.402(b)(1)(B) | <input type="checkbox"/> 20.301(a)(1)               | <input checked="" type="checkbox"/> 20.726(c)(1)(ii) | <input type="checkbox"/> 20.716(b)  |
| <input type="checkbox"/> 20.402(b)(1)(C) | <input type="checkbox"/> 20.301(a)(2)               | <input type="checkbox"/> 20.726(c)(1)(iii)           | <input type="checkbox"/> OTHER (Specify in Abstract below and in Text, NRC Form 898A) |
| <input type="checkbox"/> 20.402(b)(1)(D) | <input type="checkbox"/> 20.726(c)(1)(iv)           | <input type="checkbox"/> 20.726(c)(1)(v)             |   |
| <input type="checkbox"/> 20.402(b)(1)(E) | <input checked="" type="checkbox"/> 20.726(c)(1)(v) | <input type="checkbox"/> 20.726(c)(1)(vi)            |   |
| <input type="checkbox"/> 20.402(b)(1)(F) | <input type="checkbox"/> 20.726(c)(1)(vi)           | <input type="checkbox"/> 20.726(c)(1)(vii)           |   |
| <input type="checkbox"/> 20.402(b)(1)(G) | <input type="checkbox"/> 20.726(c)(1)(vii)          | <input type="checkbox"/> 20.726(c)(1)(viii)          |   |
| <input type="checkbox"/> 20.402(b)(1)(H) | <input type="checkbox"/> 20.726(c)(1)(viii)         | <input type="checkbox"/> 20.726(c)(1)(ix)            |   |

LICENSEE CONTACT FOR THIS LER (13)

NAME **Michael Licitra** TELEPHONE NUMBER **9 1 4 6 8 1 - 6 4 2 5**

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (14)

| CAUSE | SYSTEM | COMPONENT | MANUFACTURER | REPORTABLE TO NRC | CAUSE | SYSTEM | COMPONENT | MANUFACTURER | REPORTABLE TO NRC |
|-------|--------|-----------|--------------|-------------------|-------|--------|-----------|--------------|-------------------|
|       |        |           |              |                   |       |        |           |              |                   |
|       |        |           |              |                   |       |        |           |              |                   |

SUPPLEMENTAL REPORT EXPECTED (15)

YES (If yes, complete EXPECTED SUBMISSION DATE)  NO

EXPECTED SUBMISSION DATE (16) **0 5 1 8 9 2**

ABSTRACT (Limit to 1000 spaces, i.e., approximately fifteen single-space typewritten lines) (17)

INTERIM REPORT

EIIS Codes are in [ ]

On 12/26/91 with the plant in a cold condition and undergoing routine maintenance, a Plant Operations Review Committee meeting was held and determined that during a postulated control room fire, the existing design of the circulating water system intake structure [NN] deicing heaters is outside the design bases of the plant. Engineering evaluations found that the loss of these deicing heaters due to a control room fire is possible and this type of event has not been analyzed as part of the Appendix R fire analysis. The design bases of the deicing heaters is currently being reviewed and a determination of the safety significance of these heaters is underway. Therefore, the conclusions implied in this description and analyses are preliminary and an updated report will be submitted within 60 days of the completion of the necessary investigation and analyses.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

|  |  |                |                   |                 |          |        |
|--|--|----------------|-------------------|-----------------|----------|--------|
| FACILITY NAME (1)<br><br>JAMES A. FITZPATRICK<br>NUCLEAR POWER PLANT | DOCKET NUMBER (2)<br><br>0 5 0 0 0 3 3 3 | LER NUMBER (6) |                   |                 | PAGE (3) |        |
|  |  | YEAR           | SEQUENTIAL NUMBER | REVISION NUMBER |          |        |
|  |  | 9 1            | 0 3 2             | 0 0             | 0 2      | OF 0 4 |

TEXT (if more space is required, use additional NRC Form 308A's (1))

INTERIM REPORT

EIIS Codes are in [ ]

Description

On December 26, 1991 with the plant in a cold condition and undergoing routine maintenance, a Plant Operations Review Committee meeting was held and determined that the existing design of the circulating water system [NN] deicing heaters is outside the design bases of the plant and may prevent the fulfillment of the safety function of systems and structures that are needed to maintain safe shutdown, remove residual heat, control release of radioactive material, and mitigate the consequence of an accident. These conditions require submittal of an LER under 10 CFR 50.73(a)(2)(ii) and (v). This determination resulted in a notification to the NRC via the Emergency Notification System on December 26, 1991.

The design bases of the deicing heaters are currently being reviewed and a determination of the safety significance of the heaters is underway. Therefore, the conclusions implied in the description and analyses are preliminary. An update report will be submitted within 60 days of the completion of the necessary investigation and analyses.

During the recent Diagnostic Evaluation at FitzPatrick on or about October 21, 1991, a concern was raised by an NRC evaluator concerning the operability of the intake structure deicing heaters in the event of a control room fire. Subsequent engineering evaluations found that the loss of these deicing heaters due to a control room fire is possible and this type of event has not been analyzed as part of the Appendix R fire analysis. Therefore, the lack of such analyses is outside the design bases of the plant.

Cause

The preliminary (apparent) cause of the operation of the plant outside of the design bases due to the omission of the deicing heaters in the previous fire analyses was due to a lack of adequate documentation of the design bases of the deicing heaters.

The deicing heaters are described in the plant Technical Specifications as an "additional safety-related capability". However, the Final Safety Analysis Report (FSAR) does not describe these heaters in detail nor does the FSAR describe the design bases of these heaters. The only design description of the deicing heaters is found in response to an NRC question addressed during the licensing phase of the plant and is found in Supplement 4 of the original FSAR. The design described in the response to this question was not incorporated into the subsequent updated versions of the FSAR.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

|  |  |                |                   |                 |          |        |
|--|--|----------------|-------------------|-----------------|----------|--------|
| FACILITY NAME (1)<br><br>JAMES A. FITZPATRICK<br>NUCLEAR POWER PLANT | DOCKET NUMBER (2)<br><br>0 5 0 0 0 3 3 3 | LER NUMBER (3) |                   |                 | PAGE (3) |        |
|  |  | YEAR           | SEQUENTIAL NUMBER | REVISION NUMBER |          |        |
|  |  | 9 1            | - 0 3 2           | - 0 0           | 0 3      | OF 0 4 |

TEXT (if more space is required, use additional NRC Form 3884's) (17)

The lack of a documented design bases for the deicing heaters was compounded by the plant Master Equipment List (MEL) program results which had reviewed and classified these heaters as non-safety-related in 1984. Depending upon the outcome of the analyses to be conducted to determine the need for these heaters and to resolve the concerns of this LER, this classification may, or may not be, correct. The analyses to be conducted may verify the results of the MEL classification.

Analysis

The deicing heaters form part of the intake structure at the plant. This intake structure is located approximately 900 feet offshore in Lake Ontario, submerged on the lake bottom in approximately 25 feet of water. This location was chosen to eliminate the potential for surface ice blockage during winter months.

The intake is a roofed structure which draws water in through side openings with steel bars to block large debris from entering the intake system.

A type of ice known as frazil ice can form on steel bars of intake structures in northern climates. This type of ice is formed when the water in contact with the bars is slightly below freezing temperature. At these low temperatures, frazil ice can adhere to the bars and potentially block the intake structure. This blockage can result in a safety concern if plant systems required for maintaining safe shutdown or for accident mitigation become deprived of necessary cooling water.

Experience has shown that frazil ice will not form on, or adhere to, bars which are slightly above the freezing point. To ensure that frazil ice does not block the intake openings, heating elements are installed in each bar. These heating elements maintain the bars above the freezing temperature of the lake water.

These heating elements are arranged in two redundant sets of 44 elements each and are powered from redundant Class 1E emergency power supplies [ED]. A minimum number of heating elements are required to be operational by plant Technical Specification 3.11.E whenever the lake water temperature at the intake structure is less than or equal to 37 degrees fahrenheit. This minimum number is related to the minimum flow required during a design basis event where only a fraction of the normal water flow is required to achieve and maintain the plant in a safe shutdown condition.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

|  |  |                |                   |                 |          |        |
|--|--|----------------|-------------------|-----------------|----------|--------|
| FACILITY NAME (1)<br><br>JAMES A. FITZPATRICK<br>NUCLEAR POWER PLANT | DOCKET NUMBER (2)<br><br>0 5 0 0 3 3 3 | LER NUMBER (3) |                   |                 | PAGE (3) |        |
|  |  | YEAR           | SEQUENTIAL NUMBER | REVISION NUMBER |          |        |
|  |  | 9 1            | 0 3 2             | 0 0             | 0 4      | OF 0 4 |

TEXT (if more space is required, use additional NRC Form 3864's) (17)

The control switches for these heaters are located next to one another in the main control room and are susceptible to coincident damage in the event of a fire in the control room. No means of restarting these heaters is readily available if the control circuits are damaged by a control room fire.

Corrective Action

1. The plant was in a safe cold shutdown condition upon determination that the design was not in accordance with the design bases. Therefore, no operational changes to the plant were necessary.
2. Analyses are being conducted to determine the complete design bases of the deicing heaters. These analyses will be completed prior to start-up of the plant from the current refueling outage currently scheduled for March 24, 1992.
3. An updated LER will be submitted within 60 days after completion of all analyses necessary to resolve the issues of this LER. Currently scheduled for May 18, 1992.
4. The FSAR will be updated to reflect completion of the analyses/evaluations which establish the design bases of the intake heaters. Due date July 1993.
5. Additional corrective action (if any) will be determined when the analyses are complete.

Additional Information

Failed Components: None

Previous Similar Events: LER-91-023 described an event in which safe shutdown capability could be effected by certain postulated fire scenarios. LER-91-010 described events in which the 10 CFR 50, Appendix R, analyses were incomplete or inadequate.