



Entergy Nuclear Northeast  
Entergy Nuclear Operations, Inc.  
James A. FitzPatrick NPP  
P.O. Box 110  
Lycoming, NY 13093  
Tel 315 349 6024 Fax 315 349 6480

April 20, 2001  
JAFP-01-0096

**T. A. Sullivan**  
Vice President, Operations-JAF

United States Nuclear Regulatory Commission  
Attn: Document Control Desk  
Mail Stop O-P1-17  
Washington, D.C. 20555

Subject: **Docket No. 50-333**  
**LICENSEE EVENT REPORT: LER-01-001 (DER-01-0787)**

**Conflicting Design Requirements For Reactor Building Equipment  
Hatchway Configuration Resulted In The Plant Being In An Unanalyzed  
Condition**

Dear Sir:

This report is submitted in accordance with 10 CFR 50.73(a)(2)(ii)(B), "Any event or condition that resulted in the nuclear power plant being in an unanalyzed condition that significantly degraded plant safety."

There are no commitments contained in this report.

Questions concerning this report may be addressed to Mr. Gordon Brownell at (315) 349-6360.

Very truly yours,

A handwritten signature in black ink, appearing to read "T. A. Sullivan".

T. A. Sullivan

TAS:GB:las  
Enclosure

cc: USNRC, Region 1  
USNRC, Project Directorate  
USNRC Resident Inspector  
INPO Records Center

IE22

<b>NRC FORM 366</b> (6-1998)				<b>U.S. NUCLEAR REGULATORY COMMISSION</b>				<b>APPROVED BY OMB NO. 3150-0104</b> <b>EXPIRES 06/30/2001</b>  Estimated burden per response to comply with this mandatory information collection request: 50 hrs. Reported lessons learned are incorporated into the licensing process and fed back to industry. Forward comments regarding burden estimate to the Records Management Branch (T-6 F33), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, and to the Paperwork Reduction Project (3150-0104), Office of Management and Budget, Washington, DC 20503. If an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.																												
<b>LICENSEE EVENT REPORT (LER)</b>  (See reverse for required number of digits/characters for each block)																																				
<b>FACILITY NAME (1)</b> James A. FitzPatrick Nuclear Power Plant						<b>DOCKET NUMBER (2)</b> 05000333		<b>PAGE (3)</b> 1 OF 4																												
<b>TITLE (4)</b> Conflicting Design Requirements for Reactor Building Equipment Hatchway Configuration Resulted in the Plant Being in an Unanalyzed Condition																																				
<b>EVENT DATE (5)</b> <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:33%;">MONTH</td> <td style="width:33%;">DAY</td> <td style="width:33%;">YEAR</td> </tr> <tr> <td>02</td> <td>21</td> <td>01</td> </tr> </table>			MONTH	DAY	YEAR	02	21	01	<b>LER NUMBER (6)</b> <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:33%;">YEAR</td> <td style="width:33%;">SEQUENTIAL NUMBER</td> <td style="width:33%;">REVISION NUMBER</td> </tr> <tr> <td>01</td> <td>001</td> <td>00</td> </tr> </table>			YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	01	001	00	<b>REPORT DATE (7)</b> <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:33%;">MONTH</td> <td style="width:33%;">DAY</td> <td style="width:33%;">YEAR</td> </tr> <tr> <td>04</td> <td>20</td> <td>01</td> </tr> </table>			MONTH	DAY	YEAR	04	20	01	<b>OTHER FACILITIES INVOLVED (8)</b> <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:60%;">FACILITY NAME</td> <td style="width:40%;">DOCKET NUMBER</td> </tr> <tr> <td>N/A</td> <td>05000</td> </tr> <tr> <td>FACILITY NAME</td> <td>DOCKET NUMBER</td> </tr> <tr> <td>N/A</td> <td>05000</td> </tr> </table>		FACILITY NAME	DOCKET NUMBER	N/A	05000	FACILITY NAME	DOCKET NUMBER	N/A	05000
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<b>POWER LEVEL (10)</b> 100		20.2201(b)		20.2203(a)(2)(v)		50.73(a)(2)(i)		50.73(a)(2)(viii)																												
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<b>LICENSEE CONTACT FOR THIS LER (12)</b>																																				
<b>NAME</b> Mr. Gordon Brownell, Licensing Engineer						<b>TELEPHONE NUMBER (Include Area Code)</b> (315) 349-6360																														
<b>COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)</b>																																				
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<b>SUPPLEMENTAL REPORT EXPECTED (14)</b>						<b>EXPECTED SUBMISSION</b>		MONTH	DAY	YEAR																										
YES (If yes, complete EXPECTED SUBMISSION DATE).				X    NO																																
<b>ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)</b>																																				
<p>On February 21, 2001, with the reactor at approximately 100 percent power, it was discovered that conflicting design analyses existed for the configuration of an equipment hatchway, located in the Reactor Building Secondary Containment, at the 326 foot elevation. Specifically, the hatchway is credited as being open for the high energy line break (HELB) analysis, which models a flow path to upper elevations in the event of a break, and establishes Environmental Qualification (EQ) profiles for surrounding equipment. The Fire Protection Program (10 CFR 50 Appendix R) analysis assumes that a cover is installed on the hatchway. The as-found configuration identified the hatchway cover to be installed. With this flow path closed, the existing temperature and pressure EQ profile models indicate that the EQ limits for 600 volt emergency switchgear 71L15 and 71L16, located on the 300 foot elevation, could have been exceeded in the event of a HELB.</p> <p>The most probable cause for the conflicting design analyses was inadequate work practices.</p> <p>Corrective actions include the removal of the hatchway cover, completing an evaluation to resolve the conflicting design analyses, and performing a review of the plant modification package which originally installed the hatchway cover to assure that no other missed program or analyses considerations exist.</p>																																				

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

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**EVENT DESCRIPTION**

On February 21, 2001, with the reactor at approximately 100 percent power, it was discovered that conflicting design analyses existed for the configuration of an equipment hatchway, located in the northwest corner of the Reactor Building Secondary Containment [NH] between the ceiling of the 300 foot (ft.) elevation and the floor of the 326 ft. elevation. Specifically, the hatchway is credited as being open for the high energy line break (HELB) analysis. This analysis models a flow path from the 300 ft. elevation, through the open hatchway, and into the 326 ft. elevation. The Environmental Qualification (EQ) profiles for EQ equipment were established based on this analysis. The Fire Protection Program analysis assumes that a hatch cover is installed on the floor penetration (3 hour designated 10 CFR 50 Appendix R barrier). The as-found configuration identified the hatch cover to be installed.

A review of EQ profiles and temperature margins of potentially effected area equipment was performed in support of equipment operability. This evaluation identified that, with the restricted flow path, during a postulated HELB, the 600 volt emergency switchgear [SWGR] located on the 300 ft. elevation in close proximity to the HELB break, could be susceptible to environmental conditions in excess of its existing EQs.

On February 21, 2001 at 1515 hours Operations entered Technical Specifications (T.S.) Limiting Conditions for Operation (LCO) 3.9.A.2.b. and 3.0.C. requiring the plant to be in Cold Shutdown within 24 hours unless the 600 volt emergency switchgear was restored to an operable condition.

On February 21, 2001 at 1856 hours, operators entered a Fire Protection Program required LCO for removal of the Reactor Building elevation 326 ft. hatchway cover. At 2138 hours, following the removal of the hatchway cover, 600 volt emergency switchgear was returned to an operable condition.

The northwest equipment hatchway located between the ceiling of the Reactor Building 300 ft. elevation and the 326 ft. floor elevation was originally designed to have no cover. The only HELB postulated to occur for the 300 ft. elevation is in Reactor Water Cleanup (RWCU) System [CE] lines and therefore, this open hatchway was a significant consideration in developing EQ profiles for equipment in the adjacent 300 ft. elevation area as well as a less significant consideration for other Reactor Building breaks.

In 1984, Plant Modification F1-83-036 was completed which added a cover to the northwest equipment hatchway 326 ft. elevation in support of the Fire Protection Program upgrade.

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**CAUSE OF EVENT**

Given the age of this event, and based on the available information, it was concluded that the most probable cause for this event was inadequate work practices. [Cause Code B]

The conclusions made following a review of the documentation associated with Plant Modification F1-83-036 were that the person(s) responsible for its development did not perform the level of detailed review necessary for implementation of the modification. Considerations were not given for the effects the proposed new hatchway cover would have on existing area HELB flow models. Consequently, the EQ profiles for both 71L15 and 71L16 were not revised.

**ANALYSIS OF EVENT**

This report is being submitted in accordance with 10 CFR 50.73(a)(2)(ii)(B), "Any event or condition that resulted in the nuclear power plant being in an unanalyzed condition that significantly degraded plant safety."

The safety function of the 600 volt emergency switchgear is to distribute safeguard loads from emergency onsite AC power sources, adequate for the safe shutdown of the reactor following abnormal operational transients and postulated accidents.

Switchgear 71L15 and 71L16 are electrical equipment providing power sources for the engineered safeguards and Emergency Core Cooling Systems in opposite redundant trains. If the equipment hatchway is assumed to be closed, it is conservatively assumed that a HELB would render both switchgear unavailable due to environmental effects.

An evaluation was conducted to determine the risk impact of leaving the equipment hatchway closed coincident with a postulated RWCU line rupture. The Conditional Core Damage Probability (CCDP) was quantified on the failure of both 600 volt switchgear 71L15 and 71L16 given an assumed intermediate break LOCA for the Reactor Water Cleanup system line rupture. Given the line break frequency, the Conditional Core Damage Frequency (CCDF) for this scenario was  $7.47 \times 10^{-10}$ . This resultant frequency does not significantly contribute to core damage risk for keeping the hatchway closed.

An Engineering evaluation is being prepared to evaluate the potential fire-related consequences of plant operation with the cover for the northwest Reactor Building equipment hatchway 326 ft. elevation removed.

**EXTENT OF CONDITION**

This condition was identified during an extent of condition evaluation recommended through corrective actions from a previously identified deficiency report. These reviews have been completed and no further similar conditions were identified.

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**CORRECTIVE ACTIONS**

1. An Engineering evaluation is being completed to determine whether the removal of the subject hatchway cover will/will not adversely affect the ability of the plant to achieve and maintain safe shutdown in the event of a fire. The evaluation will include an assessment of reasonably postulated fires which could challenge the barrier as well as the impact of the postulated fires on credited safe shutdown equipment.  
(Scheduled Completion Date: June 15, 2001)
2. If the Engineering evaluation listed in Corrective Action No. 1 determines that the cover on the hatchway, located in northwest corner of the Reactor Building 326 ft. elevation, can be permanently removed, a Design Change Package will be developed to document the removal.  
(Scheduled Completion Date: September 28, 2001)
3. Since the date of completion of the design package for Plant Modification F1-83-036, significant work control improvements have been made to the modification control process. Both Administrative and Design Control procedures now contain specific and detailed methodologies to aid engineers in the review, evaluation, and resolution of design change considerations.
4. A review of Plant Modification F1-83-036 will be completed to provide assurance that that there are no additional program/analysis interface issues which may not have been addressed.  
(Scheduled Completion Date: July 31, 2001)

**ADDITIONAL INFORMATION**

- A. Previous Similar Events: LER-94-006 reported an EQ concern affecting safety related switchgear caused by personnel error. However, the corrective actions taken would not have precluded this event from happening.
- B. Failed Components: None
- C. Applicability to NEI 99-02, Rev. 0, "Regulatory Assessment Performance Indicator Guideline".  
  
This event is reportable as a Safety System Functional Failure in accordance with NEI guidance.