

January 26, 2001

Mr. Theodore Sullivan  
Vice President - Operations  
Entergy Nuclear Northeast  
James A. FitzPatrick Nuclear Power Plant  
Post Office Box 41  
Lycoming, NY 13093

SUBJECT: NRC'S FITZPATRICK REPORT 05000333/2000-012

Dear Mr. Sullivan:

On December 30, 2000, the NRC completed an inspection at the James A. FitzPatrick Nuclear Power Plant. The results of this inspection were discussed on January 19, 2001, with you and members of your staff. The enclosed report presents the results of that inspection.

This inspection was an examination of activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. Within these areas, the inspection consisted of a selected examination of procedures and representative records, observations of activities, and interviews with personnel.

No findings of significance were identified.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/NRC/ADAMS/index.html> (the Public Electronic Reading Room). Should you have any questions regarding this report, please contact me at 610-337-5211.

Sincerely,

**/RA/**

Glenn W. Meyer, Chief  
Projects Branch 3  
Division of Reactor Projects

Docket No. 05000333  
License No.: DPR-59

Enclosure: Inspection Report 05000333/2000-012

Mr. Theodore Sullivan

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U.S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket No.: 05000333

License No.: DPR-59

Report No.: 2000-012

Licensee: Entergy Nuclear Northeast  
Post Office Box 41  
Lycoming, NY 13093

Facility: James A. FitzPatrick Nuclear Power Plant

Location: Post Office Box 41  
Scriba, New York 13093

Dates: November 18, 2000 to December 30, 2000

Inspectors: R. A. Rasmussen, Senior Resident Inspector  
R. A. Skokowski, Resident Inspector

Approved by: G. W. Meyer, Chief  
Projects Branch 3  
Division of Reactor Projects

## SUMMARY OF FINDINGS

IR 05000333/2000-012, on 11/18-12/30/2000; Entergy Nuclear Northeast, James A. FitzPatrick Nuclear Power Plant. Maintenance Rule Implementation.

The report covers a six-week inspection by resident inspectors, which identified one unresolved issue which requires further NRC evaluation including the significance. The significance of issues is indicated by their color (green, white, yellow, red) and was determined by the Significance Determination Process (SDP) in Inspection Manual Chapter 0609 (see Attachment 1).

### **Barrier Integrity**

TBD: It appears that the licensee did not implement adequate corrective actions to prevent repetitive leakage test failures on the main steam isolation valves (MSIVs). Technical specifications for containment require MSIVs to meet individual leakage rate criteria and the primary containment to meet a total pathway criteria. These criteria were not met during as found testing for three consecutive operating cycles. The final disposition of this issue will remain unresolved pending further evaluations including determination of significance.

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## Report Details

### **SUMMARY OF PLANT STATUS**

The plant operated at full power for the duration of the inspection period with the exception of two brief planned down powers on December 18 and 28, 2000, to back flush the main condenser waterboxes.

#### **1. REACTOR SAFETY**

##### **Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity**

#### 1R04 Equipment Alignments

##### a. Inspection Scope

The inspectors performed a partial system walkdown of the residual heat removal (RHR) system while the B RHR service water system was out of service for planned maintenance.

##### b. Findings

No findings of significance were identified.

#### 1R05 Fire Protection

##### a. Inspection Scope

The inspectors focused on fire protection equipment during inspections of the cable spreading room, the relay room, and the battery rooms.

##### b. Findings

No findings of significance were identified.

#### 1R12 Maintenance Rule Implementation

##### a. Inspection Scope

The inspectors reviewed actions taken to correct inadequate performance of main steam isolation valve 29AOV-80B, the B line inboard isolation, 29AOV-80D, the D line inboard isolation, and 29AOV-86D, the D line outboard isolation. This review included the Maintenance Rule, 10CFR50.65, Section a)1, action plan, licensee event reports (LERs) 50-333/96-012, 50-333/98-13, and 50-333/00-15, and NRC Inspection Report 50-333/99-03.

##### b. Observations and Findings

It appears that the licensee did not implement adequate corrective actions to prevent repetitive leakage test failures of main steam isolation valves (MSIVs). Technical specifications for containment limit MSIV individual leakage and the primary containment

total pathway leakage. These criteria were not met during as found testing for three consecutive operating cycles. The final disposition of this issue will remain unresolved pending further NRC evaluations including determination of safety significance which has the potential to be more than Green.

For three consecutive refueling outages, the licensee reported via LERs that containment leakage rates exceeded authorized limits. In each case, the primary contributor to the containment leakage was the MSIVs. Five out of eight MSIVs have failed the individual leakage requirements in each of the past three outages, with three main steam line valves failing in all three outages. The failure of both MSIVs in one steam line constitutes a failed containment penetration. The failure history of the MSIVs for the past three cycles is shown in the table below.

Main Steam Line Isolation Valve Failure History {Note: Each steam line has an 80 valve (inboard) and an 86 valve (outboard).}								
LER	80 A	86 A	80 B	86 B	80 C	86 C	80 D	86 D
96-12	F	F	F	P	P	P	F	F
98-13	P	F	F	F	P	P	F	F
00-15	P	P	F	F	P	F	F	F

P= Pass      F=Fail

In each of the LERs, the licensee attributed the failure mechanism to normal wear and damage caused by valve cycling. Following the 1998 failures the licensee performed an evaluation and developed a modification package (JD-99-089) to improve valve performance. Key attributes of this modification included improved valve body and actuator guiding to reduce damage to the valve seat during cycling.

NRC previously reviewed the 1996 and 1998 failures, issued a non-cited violation in NRC Inspection Report 50-333/99-03 for the failure to meet technical specification requirements, and evaluated the proposed corrective actions. However, once the needed modifications were developed, the licensee elected to not implement the modification until the next refueling outage. This decision appeared to not adequately consider the performance trend and the need to continually comply with technical specifications.

The inspectors reviewed the performance history and evaluated the adequacy of the actions taken following the failures in 1998. The January 2000 modification package described the past history and why the modifications were necessary. In a section titled "Reason for Change," the modification package stated, "Maintenance personnel have typically been repairing the seating surfaces until the valve passes the leak test. This type of approach does not correct the root cause of the seat leakage." Based on the information in the modification package, the inspectors concluded that the repairs performed following the 1998 outage were similar to the repairs performed following the 1996 outage, which were ineffective in improving performance. Therefore, the



inspectors concluded that the failures identified in the 2000 outage were expected and preventable. The inspectors concluded that the actions taken following the 1998 refueling outage were inadequate to prevent the failures in 2000.

10CFR50, Appendix B, Criterion XVI, Corrective Actions, requires that equipment failures are corrected. Technical Specifications, Section 3.7.2 requires that primary containment integrity shall be maintained at all times when the reactor is critical. To verify containment integrity technical specification Section 4.7.A.2.b, requires that leakage through each MSIV is less than or equal to 5.4 standard liters per minute (SLM) when tested at greater than or equal to 25 psig. Additionally, technical specification section 6.20, specifies a maximum total pathway leakage of less than 320 SLM. Contrary to the above, following two consecutive failures of MSIV's 29AOV-80B, 29AOV-80D, and 29AOV 89D, the corrective actions were inadequate to prevent a subsequent failure. Each of these valves exceeded 5.4 SLM when tested individually, and the total pathway exceeded 320 SLM. This issue requires evaluation using Appendix H of the Significance Determination Process, which is still in draft form. Therefore, final disposition of this issue will remain unresolved pending further evaluation by NRC senior risk analysts. Currently, the safety significance has the potential to be greater than Green. **(URI 05000333/2000-12-001)**

#### 1R13 Maintenance Risk Assessment and Emergent Work

##### a. Inspection Scope

The inspectors reviewed the maintenance risk assessments and maintenance activities associated with the following emergent work activities:

- Forced down powers for main condenser cleaning.
- Malfunction of one of the safety relief valve electric lift circuits.

##### b. Findings

No findings of significance were identified.

#### 1R15 Operability Evaluations

##### a. Inspection Scope

The inspectors reviewed operability determinations associated with the following plant equipment challenges:

- Failure of the RHR service water strainer basket to shift.
- Control rods with slow drive speeds.
- Anomalous data used by the 3D monicore system for performing thermal limit calculations.

##### b. Findings

No findings of significance were identified.

#### 1R19 Post Maintenance Testing

##### a. Inspection Scope

The inspectors reviewed post maintenance testing of the RHR service water strainer following repairs.

##### b. Findings

No findings of significance were identified.

#### 1R22 Surveillance Testing

##### a. Inspection Scope

The inspectors reviewed procedures and observed portions of testing related to the following surveillance tests:

- ST-2XA, RHR Service Water System Testing.
- ST-3AA, Core Spray Monthly Operability Test.

##### b. Findings

No findings of significance were identified.

### 4. **OTHER ACTIVITIES**

#### 4OA1 Performance Indicator Verification

##### a. Inspection Scope

The inspectors reviewed Entergy's programs for gathering and submitting data for the reactor coolant system activity, and reactor coolant system leakage performance indicators.

##### b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems

The inspection finding in section 1R13 describes inadequate resolution of MSIV performance issues. Other items associated with Entergy's corrective action program were reviewed without findings.

4OA5 Other

(Closed) LER 50-333/00-015: Containment Leakage Rate Exceeds Authorized Limits. This LER was described in section 1R12 of this report and is closed.

4OA6 Meetings

Exit Meeting Summary

On January 19, 2001, the inspectors presented the inspection results to Mr. Sullivan and members of his staff, who acknowledged the finding presented. Additionally, the inspectors confirmed that none of the information reviewed by the inspectors was considered proprietary.

**PARTIAL LIST OF PERSONS CONTACTED**

M. Colomb	General Manager
W. O'Malley	General Manager Operations
T. Sullivan	VP Operations
G. Tasick	Licensing Manager
G. Thomas	Director Design Engineering
A. Zaremba	Director of Safety Assurance

**ITEMS OPENED, CLOSED, AND DISCUSSED**

Opened

05000333/2000-12-001	URI	MSIV leakage failures during three consecutive outages. (Section 1R12)
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Opened and Closed

none

Closed

LER 50-333/00-015: Containment Leakage Rate Exceeds Authorized Limits.

**LIST OF ACRONYMS USED**

AOV	Air-operated Valve
CFR	Code of Federal Regulations
DER	Deficiency and Event Report
FSAR	Final Safety Analysis Report
IR	Inspection Report
LER	Licensee Event Report
LLRT	Local Leak-rate Test
MR	Maintenance Rule
MSIV	Main Steam Isolation Valve
NRC	Nuclear Regulatory Commission
NYPA	New York Power Authority
PI	Performance Indicator
PIM	Plant Issues Matrix
RHR	Residual Heat Removal
SDP	Significance Determination Process
SLM	Standard Liters per Minute
TBD	To Be Determined

## APPENDIX 1

# NRC's REVISED REACTOR OVERSIGHT PROCESS

The federal Nuclear Regulatory Commission (NRC) recently revamped its inspection, assessment, and enforcement programs for commercial nuclear power plants. The new process takes into account improvements in the performance of the nuclear industry over the past 25 years and improved approaches of inspecting and assessing safety performance at NRC licensed plants.

The new process monitors licensee performance in three broad areas (called strategic performance areas): reactor safety (avoiding accidents and reducing the consequences of accidents if they occur), radiation safety (protecting plant employees and the public during routine operations), and safeguards (protecting the plant against sabotage or other security threats). The process focuses on licensee performance within each of seven cornerstones of safety in the three areas:

### **Reactor Safety**

- Initiating Events
- Mitigating Systems
- Barrier Integrity
- Emergency Preparedness

### **Radiation Safety**

- Occupational
- Public

### **Safeguards**

- Physical Protection

To monitor these seven cornerstones of safety, the NRC uses two processes that generate information about the safety significance of plant operations: inspections and performance indicators. Inspection findings will be evaluated according to their potential significance for safety, using the Significance Determination Process, and assigned colors of GREEN, WHITE, YELLOW or RED. GREEN findings are indicative of issues that, while they may not be desirable, represent very low safety significance. WHITE findings indicate issues that are of low to moderate safety significance. YELLOW findings are issues that are of substantial safety significance. RED findings represent issues that are of high safety significance with a significant reduction in safety margins.

Performance indicator data will be compared to established criteria for measuring licensee performance in terms of potential safety. Based on prescribed thresholds, the indicators will be classified by color representing varying levels of performance and incremental degradation in safety: GREEN, WHITE, YELLOW, and RED. GREEN indicators represent performance at a level requiring no additional NRC oversight beyond the baseline inspections. WHITE corresponds to performance that may result in increased NRC oversight. YELLOW represents performance that minimally reduces safety margins and requires even more NRC oversight. And RED indicates performance that represents a significant reduction in safety margins but still provides adequate protection to public health and safety.

The assessment process integrates performance indicators and inspection so the agency can reach objective conclusions regarding overall plant performance. The agency will use an Action Matrix to determine in a systematic, predictable manner which regulatory actions should be taken based on a licensee's performance. The NRC's actions in response to the significance (as represented by the color) of issues will be the same for performance indicators as for inspection findings. As a licensee's safety performance degrades, the NRC will take more and increasingly significant action, which can include shutting down a plant, as described in the Action Matrix.

More information can be found at: <http://www.nrc.gov/NRR/OVERSIGHT/index.html>.