

April 25, 2002

EA-02-066

Mr. Theodore Sullivan  
Vice President - Operations  
Entergy Nuclear Northeast  
James A. FitzPatrick Nuclear Power Plant  
Post Office Box 110  
Lycoming, NY 13093

SUBJECT: FITZPATRICK - NRC INSPECTION REPORT 50-333/02-03

Dear Mr. Sullivan:

On March 30, 2002, the NRC completed an inspection at the James A. FitzPatrick Nuclear Power Plant. The enclosed report documents the inspection findings which were discussed on April 18, 2002, with you and members of your staff.

The inspection examined 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. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

Based on the results of this inspection, the inspectors identified two issues of very low safety significance (Green). These issues were determined to involve violations of NRC requirements. However, because of their very low safety significance and because they have been entered into your corrective action program, the NRC is treating these issues as Non-Cited violations, in accordance with Section VI.A.1 of the NRC's Enforcement Policy. If you deny the noncited violations, you should provide a written response with the basis for the denial, within 30 days of the date of this inspection report, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, D.C. 20555-0001; with copies to the Regional Administrator, Region I; the Director, Office of Enforcement, and the NRC Resident Inspector at the FitzPatrick facility.

Immediately following the terrorist attacks on the World Trade Center and the Pentagon, the NRC issued an advisory recommending that nuclear power plant licensees go to the highest level of security, and all promptly did so. With continued uncertainty about the possibility of additional terrorist activities, the Nation's nuclear power plants remain at the highest level of security and the NRC continues to monitor the situation. This advisory was followed by additional advisories, and although the specific actions are not releasable to the public, they generally include increased patrols, augmented security forces and capabilities, additional security posts, heightened coordination with law enforcement and military authorities, and more limited access of personnel and vehicles to the sites. The NRC has conducted various audits of your response to these advisories and your ability to respond to terrorist attacks with the capabilities of the current design basis threat (DBT). On February 25, 2002, the NRC issued an

Mr. T. Sullivan

2

Order to all nuclear power plant licensees, requiring them to take certain additional interim compensatory measures to address the generalized high-level threat environment. With the issuance of the Order, we will evaluate Entergy Nuclear Northeast's compliance with these interim requirements.

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/reading-rm.html> (the Public Electronic Reading Room).

Sincerely,

***/RA by Richard Barkley for/***

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

Docket No. 50-333  
License No.: DPR-59

Enclosure: Inspection Report 50-333/02-03  
Attachment: Supplemental Information

cc w/encl: J. Yelverton, CEO, Entergy Operations  
B. O'Grady, General Manager, Entergy Nuclear Operations  
J. Knubel, VP Operations Support  
H. Salmon, Director of Oversight  
A. Halliday, Licensing Manager  
M. Kansler, Chief Operating Officer, Entergy  
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J. Fulton, Assistant General Counsel  
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J. Tierney, Oswego County Administrator  
C. Donaldson, Esquire, Assistant Attorney General, New York Dept. of Law  
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U.S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket No.: 50-333

License No.: DPR-59

Report No.: 50-333/02-03

Licensee: Entergy Nuclear Northeast

Facility: James A. FitzPatrick Nuclear Power Plant

Location: 268 Lake Road  
Scriba, New York 13093

Dates: February 10 - March 30, 2002

Inspectors: R. A. Rasmussen, Senior Resident Inspector  
D. A. Dempsey, Resident Inspector

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

## SUMMARY OF FINDINGS

IR 05000333-02-03, on 02/10 - 03/30/02; Entergy Nuclear Northeast, James A. FitzPatrick Nuclear Power Plant, maintenance rule implementation, surveillance testing.

The report covers a seven-week inspection by resident inspectors. Two findings of very low safety significance were identified. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described at its Reactor Oversight Process website at <http://www.nrc.gov/reactors/operating/oversight.html>.

### A. Inspector Identified Findings

- Green. The inspectors identified that preventive maintenance performed on a startup feedwater control valve was inadequate and that two functional failures of the valve had not been properly categorized in accordance with 10 CFR 50.65.

This issue was considered more than minor, because failure of the valve to control feedwater flow to the reactor vessel could result in a loss of feedwater transient and plant trip. However, this issue was determined to be of very low safety significance using phase one of the SDP because it did not contribute to the likelihood of a LOCA initiator or of both a reactor trip and unavailability of mitigating equipment, and did not increase the likelihood of a fire or internal/external flood.

- Green. The inspectors identified a long-standing uncorrected condition adverse to quality involving inability to perform inservice tests of four control room/relay room temperature control valves.

The issue was considered more than minor, because long-standing uncorrected problems involving accident mitigating equipment could become a more significant safety concern. However, this issue was determined to be of very low safety significance using phase one of the SDP because the failed open valves were in the accident mitigating position and represented a design deficiency that was confirmed not to result in a loss of safety function per Generic Letter 91-18, Revision 1.

### B. Licensee Identified Findings

- None

## REPORT DETAILS

### **SUMMARY OF PLANT STATUS**

The reactor operated at full power for the majority of the inspection period. Two unplanned reductions of reactor power greater than twenty percent occurred during this period. On March 13, 2002, reactor power was reduced due to a failure of an electrical connection in the C circulating water pump motor junction box. The failure caused the circulating water pump motor to trip. On March 21, 2002, the B reactor water recirculation motor generator tripped during a maintenance activity to replace worn brushes.

#### **1. REACTOR SAFETY Initiating Events, Mitigating Systems, Barrier Integrity [REACTOR - R]**

##### 1R04 Equipment Alignments

###### a. Inspection Scope

The inspectors performed the following partial equipment alignment walkdowns:

- B core spray loop walkdown during performance of ST-3PA, Core Spray Loop A Quarterly Operability Test (IST)
- B and D emergency diesel generators (EDG) and reserve 115KV power supplies following failure of the A EDG during surveillance test ST-9BA, EDG A and C Full Load Test and ESW Operability Test

During these walkdowns the inspectors verified that select valves and circuit breakers were in the appropriate position by comparing actual component position and the position described in the applicable operating procedures. The inspectors also performed visual inspections of the material condition of the major system components.

###### b. Findings

No findings of significance were identified.

##### 1R05 Fire Protection

###### a. Inspection Scope

The inspectors toured several plant areas and observed conditions related to fire protection. The inspectors looked for transient combustible materials, observed the condition of suppression systems, penetration seals, and ventilation system fire dampers, and verified that fire doors were functional. Areas observed were:

- Fire zone RB-1A, reactor building elevations 272, 300, 326, and 344 feet
- Fire zone RB-1B, reactor building west elevation 272 feet
- Fire zones RR-1 and CT-4, relay room elevation 286 feet and north cable run room, respectively
- Fire zones BR-1 through 5, battery room complex

###### b. Findings

No findings of significance were identified.

1R06 Flood Protection

a. Inspection Scope

The inspector reviewed the JAF Individual Plant Examination (IPE) and the Updated Final Safety Analysis Report (UFSAR) concerning internal flooding events. The inspection included walkdowns of the areas in which flooding could have the greatest impact on risk, including the relay room, the battery rooms, and the reactor building crescent rooms. Additionally, the inspector reviewed flooding-related procedures and Entergy's evaluation of an internal flooding event documented in NRC Information Notice 98-31, Fire Protection System Design Deficiencies and Common-Mode Flooding of Emergency Core Cooling System Rooms at Washington Nuclear Project Unit 2.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification

a. Inspection Scope

On March 18, 2002, the inspector observed licensed operator simulator training to assess operator performance for scenarios involving: feedwater level control malfunctions, a steam jet air ejector fire, and thermal hydraulic core flow instabilities. The scenarios included event classifications in accordance with IAP-2, "Classification of Emergency Events," and simulated NRC notifications. Following the exercises the inspector observed the training instructor debriefs with the operating crew.

b. Findings

No findings of significance were identified.

1R12 Maintenance Rule Implementation

1. Startup Feedwater Flow Control Valve Failures

a. Inspection Scope

The inspector reviewed Entergy's implementation of the maintenance rule for startup feedwater flow control valve 34FCV-137. The inspector reviewed the following deviation/event reports (DERs) to verify that the issues were classified correctly concerning functional failures and maintenance preventable functional failures in accordance with Entergy Engineering Standard ES-14, Maintenance Rule Instructions for Functional Failure Determination (JAF):

00-03927	00-03935	01-00060	01-01615	01-03900
01-04308	02-00154			

The DERs documented occasions in which the valve either operated sluggishly, exceeded administrative stroke time limits, or failed to stroke at all.

b. Findings

The inspector identified one Green finding due to ineffective preventive maintenance performed on startup feedwater control valve 34FCV-137. Also, Entergy failed to properly categorize two functional failures of the valve in 2001. Entergy's incorrect categorizations of the component failures resulted in not properly classifying the valve as an (a)1 component.

The preventive maintenance program for the valve calls for overhauling the air-operator once every ten years and calibrating the positioner every two years. However, the preventive maintenance has not been adequate as evidenced by erratic operation, failures of the valve to stroke within the established time limits, and repetitive corrective maintenance.

DER 01-00060 documented that valve 34FCV-137 had failed to stroke during a surveillance test on January 6, 2002. Entergy attributed the failure to an actuator air leak caused by reassembly without a locking device to prevent the loosening of a stem nut (which subsequently occurred). Entergy did not identify this test failure as a functional failure. The inspector concluded that this test failure represented a maintenance preventable functional failure, based on the valve's complete failure during the test and the direct contribution of the prior maintenance. Administrative procedure AP-05.03 specifies that a risk significant component (such as valve 34FCV-137) be classified as (a)1 if a maintenance preventable functional failure occurs.

The inspector also noted that Entergy had missed another opportunity to properly categorize the valve as an (a)1 component. DER 01-04308 documented that on November 3, 2001, the valve would not open beyond 50% of full travel. Entergy did not identify this degraded condition as a functional failure. The inspector determined that this condition represented a functional failure. The maintenance rule performance criterion for valve 34FCV-137 is less than or equal to two functional failures in 24 months. The correct functional failure determination would have necessitated further evaluation and could have resulted in the (a)1 classification.

Entergy personnel agreed that in hindsight the two conditions should have been categorized as failures, which would have resulted in the valve being classified as an (a)1 component. Such a classification would have involved developing and implementing an appropriate action plan and goals, and monitoring the valve's performance against the established goals. None of this occurred due to the incorrect failure determinations.

The inspector determined that this issue had a credible impact on safety in that failure of the valve to control feedwater flow to the reactor vessel would result in a loss of feedwater transient and plant trip, affecting the initiating events cornerstone. The inspector evaluated the issue using the Phase 1 Significance Determination Process (SDP) for initiating events, and determined it to be of very low safety significance (Green) in that the finding did not contribute to the likelihood of a LOCA initiator or of

both a reactor trip and unavailability of mitigating equipment, and did not increase the likelihood of a fire or internal/external flood.

10 CFR 50.65(a)1 requires holders of an operating license to monitor the performance of structures, systems, or components (SSCs) within the rule as specified by 10 CFR 50.65(b) against licensee-established goals, in a manner sufficient to provide reasonable assurance that such SSCs are capable of fulfilling their intended functions. 10 CFR 50.65(a)2 states that monitoring, as specified in 10 CFR 50.65(a)1, is not required where it has been demonstrated that the performance or condition of an SSC is being effectively controlled through the performance of preventive maintenance such that the SSC is performing its intended function. Contrary to the above, Entergy did not demonstrate that the performance of valve 34FCV-137 had been controlled effectively through the performance of appropriate preventive maintenance and did not monitor against licensee-established goals. Specifically, Entergy did not identify and properly classify functional failures, and did not implement an effective preventive maintenance program for startup feedwater flow control valve 34FCV-137. This violation is being treated as a Non-Cited Violation, consistent with Section VI.A of the NRC Enforcement Policy, issued on May 1, 2000 (65FR25368). The issues associated with this violation are in the Entergy corrective action system as DER 02-00615. (NCV 50-333/02-03-01)

## 2. Other Maintenance Rule Reviews

### a. Inspection Scope

The inspector reviewed the implementation of the maintenance rule (10 CFR 50.65) as it pertained to the following:

- 120VAC uninterruptible power supply (71UPS-1)
- Control room and relay room ventilation systems
- Spent fuel pool cooling system pumps

The inspectors reviewed the classification of functional failures associated with these systems. The inspectors also reviewed the deviation/event reports that were initiated for these components and verified that functional failures were properly evaluated.

### b. Findings

No findings of significance were identified.

### 1R13 Maintenance Risk Assessment and Emergent Work

#### a. Inspection Scope

The inspector reviewed Entergy's assessment of plant risk due to the following planned and emergent maintenance activities:

- Unplanned maintenance on the 120VAC uninterruptible power supply (71UPS-1) on February 27-28
- Unplanned corrective maintenance on the A emergency diesel generator droop selector switch on March 4
- Planned troubleshooting of the main generator automatic voltage regulator on March 26

The inspectors reviewed the maintenance risk assessments and the evaluations of the potential core damage impact of the activities. Entergy concluded that these activities were not risk significant, based on the slight increase in conditional core damage probability for the period that the systems were out of service. The inspectors also reviewed the technical specifications and the UFSAR for compensatory measures associated with these activities.

The inspection also included a review of contingency plans and verification that the effects on plant risk and protected equipment were discussed during briefings and shift turnovers. During the maintenance the inspectors toured the work areas to assure that the scope of the work was consistent with the maintenance plans and that no additional systems were adversely impacted.

#### b. Findings

No findings of significance were identified.

### 1R14 Personnel Performance During Nonroutine Plant Evolutions and Events

#### a. Inspection Scope

The inspectors reviewed operators' performance during the following nonroutine events:

- March 13, 2002, fire in C circulating water pump junction box
- March 21, 2002, B recirculation pump motor-generator set trip

#### b. Findings

No findings of significance were identified.

## 1R15 Operability Evaluations

### a. Inspection Scope

The inspectors reviewed the below listed operability determinations performed to address issues identified with safety significant systems. The inspectors reviewed associated sections of the FSAR and technical specifications for the discrepant conditions.

- DER-02-00764, Uncontrolled use of 120VAC fire protection system electrical outlets
- DER-02-00961, Safety relief valves C and F leakage rate above action level
- DER-02-01164, Technical specification minimum spent fuel pool level inconsistent with NRC Safety Guide 25 assumptions
- DER-02-01925, Control room ventilation system temperature control valves not in-service tested.
- DER-02-00729, Reactor building siding came off
- DER-02-00876, Snow entering the emergency diesel generator engine air intake

### b. Findings

No findings of significance were identified.

## 1R19 Post Maintenance Testing

### a. Inspection Scope

The inspectors observed and reviewed the post maintenance testing associated with the following activities:

- Troubleshooting and restoration of 120VAC uninterruptible power supply voltage regulators and motor-generator set speed controls on March 1
- Replacement of the A emergency diesel generator droop selector switch on March 6

### b. Findings

No findings of significance were identified.

## 1R22 Surveillance Testing

### 1. Inservice Testing of Control Room/Relay Room Temperature Control Valves

#### a. Inspection Scope

The inspector reviewed the results of surveillance tests that were performed in the last two years on temperature control valves in the control room and relay room ventilation system. Once per calendar quarter, the three-way throttle valves are verified to fail to the maximum cooling water flow position by removing motive power from the valve actuators using surveillance procedure ST-41F, HVAC Control Valve Fail Position Test (IST). The inspector verified that the test satisfied the requirements of Entergy's inservice test program (including relief request VRR-06, Revision 1), and Part 10 (OM-10) of ASME/ANSI Oma-1988, Inservice Testing of Valves in Light-Water Reactor Power Plants. The review also included special condition tagging records 00-00119 and 01-00741, and the following deficiency/event reports (DER):

98-01038	98-02253	99-00441	01-01114	01-02337
01-03582	01-03596	01-04847	02-01022	

#### b. Findings

The inspector identified a finding that for several years Entergy has been unable to perform a valid quarterly inservice test of four control room/relay room temperature control valves because the valves have been immobilized in their fail-safe positions using special condition tags. This issue was determined to be of very low safety significance (Green) using phase one of the SDP, because the fail-safe position of the valves ensures maximum cooling water flow rates through the ventilation system's air handling units. This finding was dispositioned as a non-cited violation.

Quarterly inservice testing of the temperature control valves is required by 10 CFR 50.55a(f) and the JAF technical specifications. Section 4.2.1.6 of OM-10 and NRC-approved IST program relief request VRR-06, Revision 1, require valves with fail-safe actuators to be tested by the operation of the actuator upon loss of valve actuating power. However, because of long-standing problems involving the design of the actuators and the ventilation system's control loop, the valves have been immobilized in their fully open position for several years. As a result, Entergy has been unable to operate the valves as necessary to verify the fail-safe function in accordance with ST-41F.

The inspector considered Entergy's failure to promptly identify and correct the condition adverse to quality involving the design and operation of the temperature control valves to be more than minor in that long-standing uncorrected problems involving accident mitigating equipment could become a more significant safety concern. However, this issue was determined to be of very low safety significance (Green) using phase one of the SDP because the failed open valves represented a design deficiency that was confirmed not to result in a loss of safety function per Generic Letter 91-18, Revision 1. Entergy's failure to promptly identify and correct the condition adverse to quality involving the temperature control valves was a violation of 10 CFR 50, Appendix B,

Criterion XVI, Corrective Action. This violation is being treated as a non-cited violation, consistent with Section VI.A of the NRC Enforcement Policy, issued on May 1, 2000 (65FR25368). The issues associated with this violation are in the corrective action system as DER 02-01124. (NCV 50-333/02-03-02)

2. Other Surveillance Tests

a. Inspection Scope

The inspectors observed portions of testing and/or reviewed procedures and test results involving the following surveillance tests:

- ST-3PA, Core Spray Loop A Quarterly Operability Test (IST)
- RAP-7.4.1, Control Rod Scram Time Evaluation (IST)
- ST-2Y, RHR Heat Exchanger Performance Test

The inspector reviewed technical specifications, the UFSAR, and Part 6 (OM-6) of ASME/ANSI OMA-1988, Inservice Testing of Pumps in Light Water Reactor Plants, and verified that the testing met appropriate test objectives.

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications

a. Inspection Scope

The inspectors reviewed temporary modification (TMOD) 02-011, Reconfigure 3B drain tank level control valve 31LCV-121B actuator air supply. The inspectors verified that the modification was controlled in accordance with applicable procedures, and reviewed the modification for impact on control room operations and 10 CFR 50.59 applicability.

b. Findings

No findings of significance were identified.

**4. OTHER ACTIVITIES**

4OA6 Meetings

Exit Meeting Summary

On April 18, 2002, the resident inspectors presented their inspection results to Mr. T. Sullivan and members of the Entergy staff. The inspectors asked whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

**ATTACHMENT 1  
SUPPLEMENTAL INFORMATION**

a. Key Points of Contact

A. Halliday	Manager, Licensing
D. Johnson	Manager, Scheduling and Outages
A. Khanifar	Manager of Engineering
W. Maguire	General Maintenance Manager
B. O'Grady	General Manager of Plant Operations
P. Russell	Operations Manager
T. Sullivan	Site Executive Officer
A. Zaremba	Director, Safety Assurance

b. List of Items Opened, Closed and Discussed

Opened and Closed

NCV 50-333/02-03-01:	Inadequate preventive maintenance of the startup feedwater control valve
NCV 50-333/02-03-02:	Inadequate corrective action for safety-related temperature control valves

c. List of Acronyms

CFR	Code of Federal Regulations
DBT	Design Basis Threat
DER	Deviation/Event Report
EDG	Emergency Diesel Generator
ESW	Emergency Service Water
IPE	Individual Plant Evaluation
IST	Inservice Test
LOCA	Loss of Coolant Accident
NCV	Non-Cited Violation
NRC	Nuclear Regulatory Commission
SDP	Significance Determination Process
SSC	Systems, Structures, and Components
TMOD	Temporary Modification
UFSAR	Updated Final Safety Analysis Report