Entergy

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December 30, 2004
JAFP-04-0195

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

**SUBJECT: JAMES A. FITZPATRICK NUCLEAR POWER PLANT**
**NRC DOCKET NO. 50-333**
**APPLICATION FOR TECHNICAL SPECIFICATION IMPROVEMENT TO REVISE CONTROL ROD SCRAM TIME TESTING FREQUENCY**

Gentlemen:

Pursuant to 10 CFR 50.90, Entergy Nuclear Operations, Inc. (ENO) is submitting a request for amendment to the Technical Specifications (TS) for the James A. FitzPatrick Nuclear Power Plant (JAFNPP).

The proposed amendment would revise TS testing frequency for the surveillance requirement (SR) in TS 3.1.4, "Control Rod Scram Times." These changes are based on TS Task Force (TSTF) change traveler TSTF-460 (Revision 0) that has been approved generically for the boiling water reactor (BWR) Standard TS, NUREG-1433 (BWR/4) and NUREG-1434 (BWR/6) by revising the frequency of SR 3.1.4.2, control rod scram time testing, from "120 days cumulative operation in MODE 1" to "200 days cumulative operation in MODE 1." A notice announcing the availability of this proposed TS change using the consolidated line item improvement process was published in the Federal Register on August 23, 2004 (69 FR 51864).

Commitments made by the Licensee in this letter are listed in Attachment 4.

Attachment 1 provides a description of the proposed change and confirmation of applicability.
Attachment 2 provides the existing TS page marked-up to show the proposed change.
Attachment 3 provides the re-typed TS page with the proposed change incorporated.
Attachment 4 provides a summary of regulatory commitments made by this submittal.
Attachment 5 provides a draft copy of the associated TS Bases changes.

ENO requests approval of the proposed license amendment by June 15, 2005, with the amendment being implemented within 30 days. The requested approval date and implementation period will allow sufficient time for effective planning and scheduling of affected activities associated with scram time testing. Although the associated TS Bases change does not require NRC approval, a copy has been included with this transmittal for your convenience.

In accordance with 10 CFR 50.91, a copy of this application, with attachments, is being provided to the designated New York State Official.

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Should you have any questions concerning this letter, please contact Mr. Andrew Halliday at (315) 349-6055.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on this the 30TH day of December, 2004.

Sincerely,

T. A. Sullivan
Site Vice President

Attachments:

1. Description and Assessment
2. Proposed Technical Specification Change (Mark-Up)
3. Proposed Technical Specification Page (Retyped)
4. Summary of Regulatory Commitments
5. Proposed Technical Specification Bases Changes (Mark-Up)

cc: Regional Administrator, Region I
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Attachment 1 to JAFP-04-0195
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**Description and Assessment**

## 1.0 INTRODUCTION

The proposed license amendment revises the required testing frequency for the surveillance requirement (SR) in Technical Specification (TS) 3.1.4, "Control Rod Scram Times." A notice announcing the availability of this proposed TS change using the consolidated line item improvement process (CLIIP) was published in the Federal Register on August 23, 2004 (69 FR 51864).

## 2.0 PROPOSED CHANGE

These changes are based on TS Task Force (TSTF) change traveler TSTF-460 (Revision 0) that has been approved generically for the boiling water reactor (BWR) Standard TS, NUREG-1433 (BWR/4) and NUREG-1434 (BWR/6). The required frequency of SR 3.1.4.2, control rod scram time testing, is changed from "120 days cumulative operation in MODE 1" to "200 days cumulative operation in MODE 1."

## 3.0 BACKGROUND

The background for this application is adequately addressed by the CLIIP Notice of Availability published on August 23, 2004 (69 FR 51864) and TSTF-460.

## 4.0 REGULATORY REQUIREMENTS AND GUIDANCE

The applicable regulatory requirements and guidance associated with this application are adequately addressed by the CLIIP Notice of Availability published on August 23, 2004 (69 FR 51864) and TSTF-460.

## 5.0 TECHNICAL ANALYSIS

Entergy Nuclear Operations, Inc. (ENO) has reviewed the safety evaluation (SE) published on August 23, 2004 (69 FR 51864) as part of the CLIIP Notice of Availability. This verification included a review of the NRC staff's SE and the supporting information provided to support TSTF-460. ENO has concluded that the justifications presented in the TSTF proposal and the SE prepared by the NRC staff are applicable to JAFNPP and justify this amendment for the incorporation of the changes to the JAFNPP TS.

As described in the CLIIP model SE, part of the justification for the change in surveillance frequency is the high reliability of the JAFNPP control rod drive system. As requested in the notice of availability published on August 23, 2004 (69 FR 51864), the historical performance of the control rod drive system at JAFNPP is as follows:

**Description and Assessment**

The control rod insertion time test results at the JAFNPP have shown the control rod scram rates to be highly reliable. During the most recent 6 years of operation, out of 942 scram time tests, no 'Slow Rods' were identified. Improved Technical Specifications (ITS) were implemented at JAF near the end of Cycle 15 and Scram Time Testing (STT) for all Control Rod Drives (CRDs) up to the present (Cycle 17) met ITS acceptance criteria with no 'Slow Rods' identified. Prior to ITS, custom Technical Specifications (CTS) had different criteria using maximum and average scram times for detecting slow CRDs. During Cycle 14 up to ITS implementation there were no CRDs that failed the STT CTS criteria.

The recent Cycle 17 STT conducted in October 2004, during JAFNPP's recent refuel outage, was performed with a newly installed Scram Solenoid Pilot Valve (SSPV). Specifically, the ASCO SSPV was replaced with an AVCO SSPV on all 137 Hydraulic Control Unit (HCU) assemblies in accordance with JAFNPP's design change process. The AVCO valve was selected because of its enhanced design, which eliminates the elastomer diaphragms used in the removed ASCO valves thereby eliminating the potential for diaphragm elastomer degradation. This component replacement had no adverse affect on the Control Rod Drive system as shown by STT results from post modification testing at the end of our recent refueling outage. Based on results gained from installing this hardware upgrade at other plants, most notably Vermont Yankee where STT (using the AVCO SSPV) resulted in no 'Slow Rods' over multiple cycles, JAFNPP is confident that future STT results will be bounded by historical STT results.

## 6.0 COMMITMENTS

As discussed in the CLIIP model SE published in the Federal Register on August 23, 2004 (69 FR 51864) for this TS improvement, ENO is making the following regulatory commitment with the understanding that the NRC will include it as a condition for the issuance of the requested amendment:

> ENO will incorporate the revised acceptance criterion value of 7.5 percent into the TS Bases for JAFNPP in accordance with the Bases Control Program described in TS 5.5.11.

## 7.0 NO SIGNIFICANT HAZARDS CONSIDERATION

ENO has reviewed the proposed no significant hazards consideration determination published on August 23, 2004 (69 FR 51864) as part of the CLIIP. ENO has concluded that the proposed determination presented in the notice is applicable to JAFNPP and the determination is hereby incorporated by reference to satisfy the requirements of 10 CFR 50.91(a).

## 8.0 ENVIRONMENTAL EVALUATION

ENO has reviewed the environmental evaluation included in the model SE published on August 23, 2004 (69 FR 51864) as part of the CLIIP. ENO has concluded that the staff's findings presented in that evaluation are applicable to JAFNPP and the evaluation is hereby incorporated by reference for this application.

**Description and Assessment**

## 9.0 PRECEDENT

This application is being made in accordance with the CLIIP. JAFNPP is not proposing variations or deviations from the TS changes described in TSTF-460 or the NRC staff's model SE published on August 23, 2004 (69 FR 51864).

## 10.0 REFERENCES

Federal Register Notice: Notice of Availability of Model Application Concerning Technical Specifications Improvement Regarding Revision to the Control Rod Scram Time Testing Frequency in STS 3.1.4, "Control Rod Scram Times" for General Electric Boiling Water Reactors Using the Consolidated Line Item Improvement Process, published August 23, 2004 (69 FR 51864).

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**PROPOSED TECHNICAL SPECIFICATION CHANGE (MARK-UP)**

SURVEILLANCE REQUIREMENTS (continued)

| | SURVEILLANCE | FREQUENCY |
|---|---|---|
| SR 3.1.4.2 | Verify, for a representative sample, each tested control rod scram time is within the limits of Table 3.1.4-1 with reactor steam dome pressure ≥ 800 psig. | ~~120~~ 200 days cumulative operation in MODE 1 |
| SR 3.1.4.3 | Verify each affected control rod scram time is within the limits of Table 3.1.4-1 with any reactor steam dome pressure. | Prior to declaring control rod OPERABLE after work on control rod or CRD System that could affect scram time |
| SR 3.1.4.4 | Verify each affected control rod scram time is within the limits of Table 3.1.4-1 with reactor steam dome pressure ≥ 800 psig. | Prior to exceeding 40% RTP after fuel movement within the affected core cell<br><br>AND<br><br>Prior to exceeding 40% RTP after work on control rod or CRD System that could affect scram time |

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**PROPOSED TECHNICAL SPECIFICATION PAGE (RETYPED)**

SURVEILLANCE REQUIREMENTS (continued)

| SURVEILLANCE | | FREQUENCY |
|---|---|---|
| SR 3.1.4.2 | Verify, for a representative sample, each tested control rod scram time is within the limits of Table 3.1.4-1 with reactor steam dome pressure $\geq$ 800 psig. | 200 days cumulative operation in MODE 1 |
| SR 3.1.4.3 | Verify each affected control rod scram time is within the limits of Table 3.1.4-1 with any reactor steam dome pressure. | Prior to declaring control rod OPERABLE after work on control rod or CRD System that could affect scram time |
| SR 3.1.4.4 | Verify each affected control rod scram time is within the limits of Table 3.1.4-1 with reactor steam dome pressure $\geq$ 800 psig. | Prior to exceeding 40% RTP after fuel movement within the affected core cell<br><br>AND<br><br>Prior to exceeding 40% RTP after work on control rod or CRD System that could affect scram time |

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**SUMMARY OF REGULATORY COMMITMENTS**

The following table identifies those actions committed to by Entergy in this document. Any other statements in this submittal are provided for information purposes and are not considered to be regulatory commitments.

| **List of Regulatory Commitments** | | | |
|---|---|---|---|
| | **TYPE (Check one)** | | **SCHEDULED COMPLETION DATE (If Required)** |
| COMMITMENT | **ONE-TIME ACTION** | **CONTINUING COMPLIANCE** | |
| This letter contains **One (1)** new commitment.<br><br>ENO will incorporate the revised acceptance criterion value of 7.5 percent into the TS Bases for JAFNPP in accordance with the Bases Control Program described in TS 5.5.11. | **X** | | **30 days after TS amendment approval** |

Attachment 5 to JAFP-04-0195
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**PROPOSED TECHNICAL SPECIFICATION BASES CHANGES (MARK-UP)**

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.1.4.1

The scram reactivity used in DBA and transient analyses is based on an assumed control rod scram time. Measurement of the scram times with reactor steam dome pressure ≥ 800 psig demonstrates acceptable scram times for the transients analyzed in References 3 and 4.

Maximum scram insertion times occur at a reactor steam dome pressure of approximately 800 psig because of the competing effects of reactor steam dome pressure and stored accumulator energy. Therefore, demonstration of adequate scram times at reactor steam dome pressure ≥ 800 psig ensures that the measured scram times will be within the specified limits at higher pressures. Limits are specified as a function of reactor pressure to account for the sensitivity of the scram insertion times with pressure and to allow a range of pressures over which scram time testing can be performed. To ensure that scram time testing is performed within a reasonable time following a shutdown duration of ≥ 120 days, control rods are required to be tested before exceeding 40% RTP following the shutdown. This Frequency is acceptable considering the additional surveillances performed for control rod OPERABILITY, the frequent verification of adequate accumulator pressure, and the required testing of control rods affected by fuel movement within the associated core cell and by work on control rods or the CRD System.

SR 3.1.4.2

Additional testing of a sample of control rods is required to verify the continued performance of the scram function during the cycle. A representative sample contains at least 10% of the control rods. The sample remains representative if no more than ~~20%~~ of the control rods in the sample tested are determined to be "slow." With more than ~~20%~~ of the sample declared to be "slow" per the criteria in Table 3.1.4-1, additional control rods are tested until this ~~20%~~ criterion (i.e., ~~20%~~ of the entire sample size) is satisfied, or until the total number of "slow" control rods (throughout the core, from all surveillances) exceeds the LCO limit. For planned testing, the control rods selected for the sample should be different for each test. Data from inadvertent scrams should be used whenever possible to avoid unnecessary testing at power, even if the control rods with

7.5%

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.1.4.2 (continued)

data may have been previously tested in a sample. The ~~120~~ 200 day Frequency is based on operating experience that has shown control rod scram times do not significantly change over an operating cycle. This Frequency is also reasonable based on the additional Surveillances done on the CRDs at more frequent intervals in accordance with LCO 3.1.3 and LCO 3.1.5, "Control Rod Scram Accumulators."

SR 3.1.4.3

When work that could affect the scram insertion time is performed on a control rod or the CRD System, testing must be done to demonstrate that each affected control rod retains adequate scram performance over the range of applicable reactor pressures from zero to the maximum permissible pressure. The scram testing must be performed once before declaring the control rod OPERABLE. The required scram time testing must demonstrate the affected control rod is still within acceptable limits. The limits for reactor pressures < 800 psig are found in the Technical Requirements Manual (Ref. 7) and are established based on a high probability of meeting the acceptance criteria at reactor pressures ≥ 800 psig. Limits for ≥ 800 psig are found in Table 3.1.4-1. If testing demonstrates the affected control rod does not meet these limits, but is within the 7-second limit of Table 3.1.4-1, Note 2, the control rod can be declared OPERABLE and "slow."

Specific examples of work that could affect the scram times are (but are not limited to) the following: removal of any CRD for maintenance or modification; replacement of a control rod; and maintenance or modification of a scram pilot valve, scram valve, accumulator, isolation valve or check valve in the piping required for scram.

The Frequency of once prior to declaring the affected control rod OPERABLE is acceptable because of the capability to test the control rod over a range of operating conditions and the more frequent surveillances on other aspects of control rod OPERABILITY.

(continued)