



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

July 21, 2010

Vice President, Operations
Entergy Nuclear Operations, Inc.
James A. FitzPatrick Nuclear Power Plant
P.O. Box 110
Lycoming, NY 13093

SUBJECT: JAMES A. FITZPATRICK NUCLEAR POWER PLANT - ISSUANCE OF
AMENDMENT REGARDING TESTING OF SAFETY/RELIEF VALVES (TAC NO.
ME2810)

Dear Sir or Madam:

The Commission has issued the enclosed Amendment No. 297 to Renewed Facility Operating License No. DPR-59 for the James A. FitzPatrick Nuclear Power Plant. The amendment consists of changes to the Technical Specifications (TSs) in response to your application dated November 23, 2009, and superseded by application dated March 18, 2010, as supplemented by letters dated May 11 and June 3, 2010.

The amendment revises TS Surveillance Requirements (SRs) 3.4.3.2 and 3.5.1.13 by deleting the current requirement to manually actuate each main steam safety/relief valve (SRV) during plant startup. SRs 3.4.3.2 and 3.5.1.13 have been modified to require that the SRVs be tested in accordance with the inservice test program that meets the requirements of American Society of Mechanical Engineers *Code for Operation and Maintenance of Nuclear Power Plants*.

A copy of the related Safety Evaluation is enclosed. A Notice of Issuance will be included in the Commission's next regular biweekly *Federal Register* notice.

Sincerely,

A handwritten signature in black ink that reads "B.K. Vaidya".

Bhalchandra K. Vaidya, Project Manager
Plant Licensing Branch I-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-333

Enclosures:

1. Amendment No. 297 to DPR-59
2. Safety Evaluation

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

ENERGY NUCLEAR FITZPATRICK, LLC
AND ENERGY NUCLEAR OPERATIONS, INC.

DOCKET NO. 50-333

JAMES A. FITZPATRICK NUCLEAR POWER PLANT
AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 297
Renewed Facility Operating License No. DPR-59

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Entergy Nuclear Operations, Inc. (the licensee) dated November 23, 2009, as superseded on March 18, 2010, and as supplemented on May 11 and June 3, 2010, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Renewed Facility Operating License No. DPR-59 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 297, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of its issuance and shall be implemented within 60 days.

FOR THE NUCLEAR REGULATORY COMMISSION



Nancy L. Salgado, Chief
Plant Licensing Branch I-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Renewed Facility Operating
License and Technical Specifications

Date of Issuance: July 21, 2010

ATTACHMENT TO LICENSE AMENDMENT

AMENDMENT NO. 297 TO RENEWED FACILITY OPERATING LICENSE NO. DPR-59

DOCKET NO. 50-333

Replace the following page of the License with the attached revised page. The revised page is identified by amendment number and contains marginal lines indicating the areas of change.

Remove Page

Insert Page

Page 3

Page 3

Replace the following pages of the Appendix A Technical Specifications with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Remove Pages

Insert Pages

3.4.3-2

3.4.3-2

3.5.1.7

3.5.1.7

- (4) ENO pursuant to the Act and 10 CFR Parts 30, 40, and 70 to receive, possess, and use, at any time, any byproduct, source and special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration; or associated with radioactive apparatus, components or tools..
- (5) Pursuant to the Act and 10 CFR Parts 30 and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility.

C. This renewed operating license shall be deemed to contain and is subject to the conditions specified in the following Commission regulations in 10 CFR Chapter I: Part 20, Section 30.34 of Part 30, Section 40.41 of Part 40, Sections 50.54 and 50.59 of Part 50, and Section 70.32 of Part 70; and is subject to all applicable provisions of the Act and to the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:

(1) Maximum Power Level

ENO is authorized to operate the facility at steady state reactor core power levels not in excess of 2536 megawatts (thermal).

(2) Technical Specifications

The Technical Specifications contained in Appendix A , as revised through Amendment No. 297 are hereby incorporated in the renewed operating license. The licensee shall operate the facility in accordance with the Technical Specifications.

(3) Fire Protection

ENO shall implement and maintain in effect all provisions of the approved fire protections program as described in the Final Safety Analysis Report for the facility and as approved in the SER dated November 20, 1972; the SER Supplement No. 1 dated February 1, 1973; the SER Supplement No. 2 dated October 4, 1974; the SER dated August 1, 1979; the SER Supplement dated October 3, 1980; the SER Supplement dated February 13, 1981; the NRC Letter dated February 24, 1981; Technical Specification Amendments 34 (dated January 31, 1978), 80 (dated May 22, 1984), 134 (dated July 19, 1989), 135 (dated September 5, 1989), 142 (dated October 23, 1989), 164 (dated August 10, 1990), 176 (dated January 16, 1992), 177 (dated February 10, 1992), 186 (dated February 19, 1993), 190 (dated June 29, 1993), 191 (dated July 7, 1993), 206 (dated February 28, 1994) and 214 (dated June 27, 1994); and NRC Exemptions and associated safety evaluations dated April 26, 1983, July 1, 1983, January 11, 1985, April 30, 1986, September 15, 1986 and September 10, 1992 subject to the following provision:

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.3.1	Verify the safety function lift setpoint of the required S/RVs is 1145 ± 34.3 psig. Following testing, lift settings shall be within $\pm 1\%$.	In accordance with the Inservice Testing Program
SR 3.4.3.2	Verify each required S/RV is capable of being opened.	In accordance with the Inservice Testing Program.

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.5.1.13	Verify each required ADS valve is capable of being opened.	In accordance with the Inservice Testing Program



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 297 TO

RENEWED FACILITY OPERATING LICENSE NO. DPR-59

ENTERGY NUCLEAR OPERATIONS, INC.

JAMES A. FITZPATRICK NUCLEAR POWER PLANT

DOCKET NO. 50-333

1.0 INTRODUCTION

By letter dated November 23, 2009, (Agencywide Documents Access and Management System (ADAMS) Accession No. ML093310431) Entergy Nuclear Operations, Inc., the licensee, requested Nuclear Regulatory Commission (NRC) approval of a proposed amendment to the technical specifications (TSs) for the James A. FitzPatrick Nuclear Power Plant (JAF). The license amendment would modify the TS requirements for testing of the Safety/Relief Valves (SRVs) by deleting the current requirement to manually actuate each SRV during plant startup. By letter dated March 18, 2010 (ADAMS Accession No. ML100840528), the licensee superseded the original application. Supplemental information was provided by the licensee in their letters dated May 11 (ADAMS Accession No. ML101310214) and June 3, 2010 (ADAMS Accession No. ML101580384). The supplements dated May 11 and June 3, 2010, provided additional information that clarified the application, did not expand the scope of the application as originally noticed, and did not change the NRC staff's original proposed no significant hazards consideration determination.

The JAF main steam SRVs are Target Rock Two-Stage, Model 7567F design. The licensee plans to replace some or all of the two-stage models with Target Rock Three-Stage, Model 0867F. The SRVs are dual-function valves capable of being independently opened in either the safety or the relief mode of operation. In the safety mode of operation, each SRV opens when system pressure exceeds the valve's set pressure. In the relief mode of operation, each SRV is opened by the auxiliary actuating device. This mode of operation is used to operate the Automatic Depressurization System.

Each SRV consists of a number of significant components such as the auxiliary actuating device (includes an air actuator for the three-stage models), two solenoid-operated valves (SOVs), a pneumatic attachment manifold, and the main disk assembly. Current TSs requires that each SRV be tested as a unit in-situ on reactor steam every 24 months. The licensee is proposing to test each SRV using a series of overlapping tests that do not require in-situ testing on reactor steam at the frequencies specified in the American Society of Mechanical Engineers (ASME) *Code for Operation and Maintenance of Nuclear Power Plants* (OM Code).

2.0 REGULATORY EVALUATION

Title 10 of the *Code of Federal Regulations*, Part 50, Section 50.36(c)(2)(ii)(C) (10 CFR 50.36(c)(2)(ii)(C)), "Criterion 3," requires, in part, that a TS limiting condition for operation (LCO) be established for a component that is part of the primary success path and which functions or actuates to mitigate a design-basis accident or transient that either assumes the failure of, or presents a challenge to, the integrity of a fission product barrier.

10 CFR 50.36(c)(3), "Surveillance requirements," requires, in part, that surveillance requirements (SRs) be established to ensure that the necessary quality of components is maintained, and that facility operation will be within safety limits.

10 CFR 50.55a(f), "Inservice testing requirements," requires, in part, that ASME Class 1, 2, and 3 components must meet the requirements of the ASME OM Code, except where alternatives have been authorized pursuant to paragraphs (a)(3)(i) and (a)(3)(ii) of 10 CFR 50.55a. Current JAF TS SRs 3.4.3.2 and 3.5.1.13 state that each main steam SRV must be manually actuated every 24 months during a startup once reactor steam pressure and flow are adequate to perform the test. In its amendment application, the licensee proposes to revise the SRV test method in SRs 3.4.3.2 and 3.5.1.13. The proposed SRs 3.4.3.2 and 3.5.1.13 replace the existing requirement to periodically manually actuate the SRVs on reactor steam with a new requirement that the main steam SRVs be tested in accordance with the methodology and frequency specified in the JAF inservice test (IST) program.

3.0 TECHNICAL EVALUATION

3.1 Specific Changes Requested

The licensee has proposed the following changes to the JAF TSs:

The proposed revision to SRs 3.4.3.2 and 3.5.1.13 would eliminate the current test requirement that each SRV opens when manually actuated at a frequency of every 24 months on a staggered test for each solenoid. The proposed revision to SRs 3.4.3.2 and 3.5.1.13 would state that each required SRV is capable of being opened in accordance with the IST program.

The licensee states that the proposed amendment would modify the TS requirements for testing of the JAF SRVs by replacing the current requirement to manually actuate each SRV as a unit during plant startup with a requirement to verify that each valve is capable of being opened. The verification of the capability to open would be satisfied by a series of overlapping tests that demonstrate the required function of the SRV components. Elimination of the current TS requirement to actuate the SRVs during a startup once reactor steam and flow are adequate is desirable to decrease the potential for SRV leakage. The current 24-month frequency for the SRVs would be revised to be "in accordance with the IST program." This frequency would allow crediting IST program tests that are performed at frequencies other than 24 months as follows:

- An SOV functional test will be performed in-situ for each SRV once per operating cycle. In the SOV function test for two-stage SRVs, a test rig with a calibrated pressure gauge will be connected downstream of the SOV pneumatic manifold in place of the SRV actuator. Each SOV will be energized, and pneumatic pressure at the downstream connection will be recorded and compared with pneumatic header pressure. In the SOV test for three-stage

SRVs, the SOVs will be connected to the first stage assembly and the test will include a dry lift of the air actuator stem. This test demonstrates that pneumatic pressure is applied to the first stage when the solenoid is energized.

- An SRV auxiliary actuator functional test will be performed at an offsite test facility for each SRV. Test intervals will be determined in accordance with the IST program. In the auxiliary actuator functional test program, an SOV will be energized, and the actuator pilot rod lift (two-stage SRVs) or the air actuator stem movement (three-stage SRVs) will be measured. These measurements will verify that the actuator pilot rod (two-stage SRVs) or the air actuator stem (three-stage SRVs) move the minimum required distance to ensure proper operation of each SRV auxiliary actuating device in the relief mode of operation.
- Set pressure testing is performed using steam at the offsite test facility at intervals determined in accordance with the IST program. This is the current test required by SR 3.4.3.1. In addition to demonstrating that the auxiliary actuator SRV pilot stage will actuate on high steam pressure in the safety mode, this test overlaps with the actuator functional test to demonstrate that the pilot stage (two stage SRVs) or second stage (three stage SRVs) will actuate in the relief mode.
- Main disk assembly testing will be performed using steam at a test facility. Currently, the IST program requires that one-third of the SRV main disk assemblies be replaced each outage. Operation of the main disk assemblies is verified at least every 6 years per approved JAF Relief Request VRR-06 (ADAMS Accession No. ML092730032). Due to test facility limitations, the main disk assembly is tested with a flow restricting device in the discharge path to limit steam flow; this test does not restrict movement of the main disk. Main disk assembly testing demonstrates that the main disk will open and port steam when actuated by the installed auxiliary actuator.

3.2 Basis for Changes

The NRC staff has received requests for TS changes related to the testing requirements for boiling-water reactor dual-function main steam SRVs. Licensees have determined that in-situ testing of the SRVs on reactor steam can contribute to undesirable seat leakage of the valves during subsequent plant operation and have received NRC approval to perform testing at a test facility coupled with in-situ tests and other verifications of component performance.

3.3 Evaluation

10 CFR 50.55a(f) requires that the licensee's IST program meet the requirements of the ASME OM Code. The JAF fourth 10-year interval IST program complies with the 2001 Edition with the 2002 and 2003 Addenda of the ASME OM Code. Specifically, the following OM Code test requirements apply to the JAF IST program for testing the main steam SRVs:

- Mandatory Appendix I, Section I-1320(a), "Test Frequencies, Class 1 Pressure Relief Valves," requires that Class 1 pressure relief valves be set pressure tested at least once every 5 years. ASME Code Case OMN-17, "Alternative Rules for Testing ASME Class 1 Pressure Relief/Safety Valves," allows extension of the test interval for SRVs from 5 years to 6 years plus a 6-month grace period. The code case imposes a special maintenance requirement to disassemble and inspect each SRV to verify that parts are free from defects

resulting from time-related degradation or maintenance-induced wear prior to the start of the extended test interval. The licensee has been authorized by the NRC in JAF Relief Request VRR-06 to use Code Case OMN-17.

- Section I-1320(a) requires that 20 percent of the SRVs be tested in any 24-month period.
- Section I-1320(c) requires SRVs be tested more frequently than every 5 years if test failures occur.
- Section I-3310(d) requires that the electrical characteristics be determined for each SOV at the frequency specified in I-1320(a).
- Section I-3310(e) requires that the pressure integrity and stroke capability of each SRV air actuator be demonstrated at the frequency specified in I-1320(a).
- Section I-3410(d) of the 2001 Edition through 2003 Addenda of the OM Code requires that SRVs with auxiliary actuating devices that have been maintained or refurbished in place, removed for maintenance and testing, or both, and reinstalled be remotely actuated at reduced or normal system pressure to verify open and close capability of the valve before resumption of electric power generation. Section I-3410(d) was revised in the 2004 Edition of the OM Code to not require that SRVs be opened and closed at reduced or normal system pressure following maintenance. Section I-3410(d) in the 2004 Edition of the OM Code requires that each SRV that has been removed for maintenance or testing and reinstalled shall have the electrical and pneumatic connections verified either through mechanical/electrical inspection or test. The NRC approved use of Section I-3410(d) of the 2004 Edition of the OM Code in JAF Relief Request VRR-06.

The NRC staff has reviewed the licensee's proposed TS changes and agrees that the current TS requirement to perform in-situ manual actuation of the SRVs on reactor steam can cause undesirable SRV leakage. The OM Code does not require that an SRV be tested as a unit. For example, the auxiliary actuating device can be tested independently of the main disk assembly.

A major difference between the current TS-required SRV manual actuation requirements and the OM Code requirements is that the OM Code allows a series of overlapping tests to individually test SRV components. Furthermore, the OM Code (2004 Edition and later editions and addenda) no longer requires in situ SRV testing following maintenance. Another difference between the current TSs and the OM Code is that there could be less frequent testing of the SRV components. Instead of testing each SRV as a unit every 24 months during startup following a refueling outage, the test frequency for SRV significant components could be extended for up to 6 years plus a 6-month grace period. However, the OM Code is performance based in that it requires SRVs be tested more frequently if test failures occur. For example, the OM Code requires that two additional valves be tested when a valve in the initial test group exceeds the set pressure acceptance criteria. All remaining valves in the group are required to be tested if one of the additional valves tested exceeds its set pressure acceptance criteria. Therefore, the SRV test frequency would be equivalent to the current TS test frequency if test failures occur. The staff finds that the testing required by the OM Code provides adequate periodic verification of all of the individual SRV components and valve operation.

Another difference between the current TS-required manual actuation requirement and the licensee's proposal is that when performing the testing in-situ as required by the current TSs, the testing verifies that the SRV discharge lines are not blocked. However, the licensee stated that its foreign material exclusion program provides assurance that the valves and discharge piping remain free of obstructions. The staff finds that the licensee has acceptably addressed this concern.

Based on the above evaluation, the NRC staff concludes that the licensee has demonstrated the adequacy of the proposed changes to the JAF TSs. The proposed changes demonstrate proper SOV operation without the need for in-situ testing with reactor steam. Therefore, the proposed changes to SRs 3.4.3.2 and 3.5.1.13 are acceptable.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the New York State official was notified of the proposed issuance of the amendment. The State official had no comments.

5.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes surveillance requirements. The NRC staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration, and there has been no public comment on such finding (75 FR 20631). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

6.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above that (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: Steve Tingen, NRR

Date: July 21, 2010

July 21, 2010

Vice President, Operations
Entergy Nuclear Operations, Inc.
James A. FitzPatrick Nuclear Power Plant
P.O. Box 110
Lycoming, NY 13093

SUBJECT: JAMES A. FITZPATRICK NUCLEAR POWER PLANT - ISSUANCE OF
AMENDMENT REGARDING TESTING OF SAFETY/RELIEF VALVES (TAC NO.
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Sincerely,

/RA/

Bhalchandra K. Vaidya, Project Manager
Plant Licensing Branch I-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-333

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1. Amendment No. 297 to DPR-59
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