

May 1, 2003

Mr. Michael Kansler, President
Entergy Nuclear Operations, Inc.
440 Hamilton Avenue
White Plains, NY 10601

SUBJECT: JAMES A. FITZPATRICK NUCLEAR POWER PLANT - AMENDMENT
RE: REGARDING LOCAL POWER RANGE MONITOR CALIBRATION
FREQUENCY (TAC NO. MB6945)

Dear Mr. Kansler:

The Commission has issued the enclosed Amendment No. 277 to 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 transmitted by letter dated December 6, 2002. The amendment increases the surveillance interval of the local power range monitor calibrations from 1000 megawatt-days/ton to 2000 megawatt-days/ton.

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,

/RA/

Guy S. Vissing, Sr. Project Manager, Section 1
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-333

Enclosures: 1. Amendment No. 277 to DPR-59
2. Safety Evaluation

cc w/encls: See next page

FitzPatrick Nuclear Power Plant

cc:

Mr. Jerry Yelverton
Chief Executive Officer
Entergy Operations
1340 Echelon Parkway
Jackson, MS 39213

Mr. John Herron
Senior Vice President and
Chief Operating Officer
Entergy Nuclear Operations, Inc.
440 Hamilton Avenue
White Plains, NY 10601

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

Mr. Dan Pace
Vice President, Engineering
Entergy Nuclear Operations, Inc.
440 Hamilton Avenue
White Plains, NY 10601

Mr. John Kelly
Director - Licensing
Entergy Nuclear Operations, Inc.
440 Hamilton Avenue
White Plains, NY 10601

Mr. George Tasick
Licensing Manager
Entergy Nuclear Operations, Inc.
James A. FitzPatrick Nuclear Power Plant
P.O. Box 110
Lycoming, NY 13093

Resident Inspector's Office
U. S. Nuclear Regulatory Commission
P.O. Box 136
Lycoming, NY 13093

Mr. Harry P. Salmon, Jr.
Director of Oversight
Entergy Nuclear Operations, Inc.
440 Hamilton Avenue
White Plains, NY 10601

Ms. Charlene D. Faison
Licensing
Entergy Nuclear Operations, Inc.
440 Hamilton Avenue
White Plains, NY 10601

Supervisor
Town of Scriba
Route 8, Box 382
Oswego, NY 13126

Charles Donaldson, Esquire
Assistant Attorney General
New York Department of Law
120 Broadway
New York, NY 10271

Regional Administrator, Region I
U.S. Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, PA 19406

Oswego County Administrator
Jack Tierney
46 East Bridge Street
Oswego, New York 13126

Mr. William M. Flynn, President
New York State Energy, Research,
and Development Authority
17 Columbia Circle
Albany, NY 12203-6399

Mr. Arthur Zaremba, Licensing Manager
Director, Safety Assurance
Entergy Nuclear Operations, Inc.
James A. FitzPatrick Nuclear Power Plant
P.O. Box 110
Lycoming, NY 13093

FitzPatrick Nuclear Power Plant

cc:

Mr. Paul Eddy
Electric Division
New York State Dept. of Public Service
3 Empire State Plaza, 10th Floor
Albany, NY 12223

Michael J. Colomb
General Manager
Entergy Nuclear Operations, Inc.
James A. FitzPatrick Nuclear Power Plant
P.O. Box 110
Lycoming, NY 13093

Mr. James Knubel
Vice President, Operations Support
Entergy Nuclear Operations, Inc.
440 Hamilton Avenue
White Plains, NY 10601

Mr. John M. Fulton
Assistant General Counsel
Entergy Nuclear Generation Co.
Pilgrim Station
600 Rocky Hill Road
Plymouth, MA 02360

Mr. J. Spath, Program Director
New York State Energy, Research, and
Development Authority
17 Columbia Circle
Albany, NY 12203-6399

Mr. Ronald Schwartz
SRC Consultant
64 Walnut Drive
Spring Lake Heights, NJ 07762

Mr. Ronald J. Toole
SRC Consultant
Toole Insight
605 West Horner Street
Ebensburg, PA 15931

Mr. Charles W. Hehl
SRC Consultant
Charles Hehl, Inc.
1486 Matthew Lane
Pottstown, PA 19465

Mr. Tim Judson
Organizer
Citizens Awareness Network
140 Bassett St.
Syracuse, NY 13210

Deborah Katz
Executive Director
Citizens Awareness Network
P.O. Box 83
Shelburne Falls, MA 01370

Shawn McConnell
NYPIRG Project Coordinator
13 Hewitt Union
SUNY Oswego
Oswego, NY 13126

Tom Dellwo
Oswego NYPIRG Environmental
Project Leader
13 Hewitt Union
SUNY Oswego
Oswego, NY 13126

May 1, 2003

Mr. Michael Kansler, President
Entergy Nuclear Operations, Inc.
440 Hamilton Avenue
White Plains, NY 10601

SUBJECT: JAMES A. FITZPATRICK NUCLEAR POWER PLANT - AMENDMENT
RE: REGARDING LOCAL POWER RANGE MONITOR CALIBRATION
FREQUENCY (TAC NO. MB6945)

Dear Mr. Kansler:

The Commission has issued the enclosed Amendment No. 277 to 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 transmitted by letter dated December 6, 2002. The amendment increases the surveillance interval of the local power range monitor calibrations from 1000 megawatt-days/ton to 2000 megawatt-days/ton.

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,

/RA/

Guy S. Vissing, Sr. Project Manager, Section 1
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-333

Enclosures: 1. Amendment No. 277 to DPR-59
2. Safety Evaluation

cc w/encls: See next page

ADAMS Accession Number: ML030860088, TS(s): ML, Package: ML

*SE provided - no significant changes made

Office	PDI-1\PM	PDI-1\LA	EEIB	SRXB*	RORP\SC	OGC	PDI-1\SC
Name	GVissing	SLittle	EMarinos	RCaruso	RDenning	RHoefling	RLaufer
Date	4/3/03	4/3/03	4/14/03	3/19/2003	4/16/03	4/22/03	4/30/03

OFFICIAL RECORD COPY

DATED: May 1, 2003

AMENDMENT NO. 277 TO FACILITY OPERATING LICENSE NO. DPR-59 FITZPATRICK

PUBLIC
PDI-1 R/F
RLaifer
OGC
EKendrick
GHill (2)
WBeckner
ACRS
BPlatchek, RI
GVissing
SLittle

cc: Plant Service list

ENTERGY NUCLEAR OPERATIONS, INC.

DOCKET NO. 50-333

JAMES A. FITZPATRICK NUCLEAR POWER PLANT

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 277
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 December 6, 2002, 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 Facility Operating License No. DPR-59 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 277, 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 30 days.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Richard J. Laufer, Chief, Section 1
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: May 1, 2003

ATTACHMENT TO LICENSE AMENDMENT NO. 277

FACILITY OPERATING LICENSE NO. DPR-59

DOCKET NO. 50-333

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

Remove Page

3.3.1.1-4

Insert Page

3.3.1.1-4

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 277 TO 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 December 6, 2002 (Reference 1), Entergy Nuclear Operations, Inc. (ENO or the licensee) submitted an application to amend the James A. FitzPatrick Nuclear Power Plant (JAFNPP) Technical Specifications (TSs). The proposed amendment would change the surveillance requirement (SR) TS 3.3.1.1.7 to allow JAFNPP to increase the interval between whole core traversing in-core probes (TIP) to local power range monitors (LPRM) calibrations from 1000 megawatt days per ton (MWD/T) to 2000 MWD/T. Increasing the frequency interval between required LPRM calibrations is justified by improvements in the fuel analytical bases, the core monitoring process, and the nuclear instrumentation. The Nuclear Regulatory Commission (NRC) staff has previously reviewed and approved similar amendments for the Vermont Yankee and River Bend Stations.

The JAFNPP LPRM system consists of 31 LPRM string assemblies, each containing 4 miniature fission chamber type neutron detectors. The 124 detectors are positioned at various locations on 4 horizontal planes in the reactor core. Each LPRM assembly also contains a calibration tube for a TIP. The TIP system is used to calibrate the LPRMs to maintain design accuracy during operation. The TIP system provides a signal proportional to the gamma flux, which correlates to the neutron flux at LPRM locations, and this high precision signal is used to adjust LPRM amplifier gains during the LPRM calibration. The Plant Computer System is used for data collection and storage and to calibrate each LPRM signal by comparing TIP scanned signals to current LPRM readings and calculating gain adjustment factors (GAFs).

The calibrated LPRMs provide neutron flux signals to the average power range monitor (APRM) system, the rod block monitor (RBM) system, and the Emergency Plant Information Computer (EPIC) process computer. The LPRMs are grouped by axial and radial location to provide a representative indication of neutron flux to the six APRM channels. The APRMs provide indication of the core average thermal power and input to the reactor protection system (RPS). The RBM system receives flux inputs from LPRMs around a selected control rod and prevents withdrawal of that rod when local power is above a preset limit. LPRM inputs to the EPIC computer are used to calculate core thermal limits and ensure operations are with established limits.

2.0 REGULATORY EVALUATION

The JAFNPP Updated Final Safety Analysis Report (UFSAR) provides details of the LPRM, APRM, RBM, and TIP systems, in Sections 7.5.6, 7.5.7, 7.5.8, and 7.5.9, respectively. The APRM and RBM systems are the only nuclear instrumentation (NI) systems which use the calibrated LPRM readings.

The justification to increase the surveillance interval between LPRM calibrations is based upon maintaining the uncertainty in core power distribution within the limits contained in the NRC approved Licensing Topical Report General Electric Boiling-Water Reactor Thermal Analysis Basis (GETAB) (Reference 2). The NRC staff has previously reviewed and approved similar amendments for River Bend, dated June 11, 1999, (ADAMS Accession Number ML02162090), and for Vermont Yankee, dated July 18, 2000, (ADAMS Accession Number ML003733066).

3.0 TECHNICAL EVALUATION

The licensee requested a change to the JAFNPP TSs to revise TS 3.3.1.1, "RPS Instrumentation," SR 3.3.1.1.7, and the associated Bases to increase the interval between whole core LPRM calibrations from 1000 MWD/T to 2000 MWD/T.

The revised TS would allow the licensee to increase the interval between LPRM calibrations from 1000 MWD/T to 2000 MWD/T on the basis that the uncertainty in the power distribution will remain within the previous limits contained in NEDO-10958-P-A, "General Electric BWR Thermal Analysis Basis (GETAB) Data, Correlation and Design Application," dated January 1977 (Reference 2). The current requirement was based on using the older P-1 core monitoring process and older design LPRM chambers, which experienced drift between calibrations. The basis for the requirement was that the added uncertainty in the nodal power distribution due to LPRM based operation between the whole core TIP and LPRM calibration should not increase the uncertainty allowed by the original GETAB standard deviation limit of 8.7%.

The licensee cited detailed statistical evaluations of the uncertainty in LPRM-based monitoring cases run at exposure intervals in excess of 2000 equivalent full power hours, as reviewed and accepted in Reference 3, which have shown that the GETAB equivalent safety limit of 8.7% would not be exceeded. This is due to improved LPRM chambers (the NA200 and NA300 series) that exhibit consistent LPRM sensitivity throughout their useful nuclear life (up to 40,000 MWD/T), and to the improved core monitoring systems (GE MONICORE) that utilizes nodal diffusion theory coupled with plant data including the improved nuclear instrumentation. These evaluations have shown that the equivalent total nodal uncertainty for the increased calibration interval of 2000 MWD/T would be 7.6% for fission chamber TIPs and less for the gamma TIPs installed at JAFNPP. For the analyzed cases (up to 2688 MWD/T) the total nodal uncertainty remains less than the original GETAB requirement of 8.7%. In addition, GE Nuclear Services confirmed the LPRM calibration acceptance criteria in a JAFNPP specific evaluation (Reference 4) and stated that the proposed changes conform to the generic and plant specific licensing topical reports.

Therefore, it is acceptable for JAFNPP to operate for 2000 MWD/T between whole core LPRM calibrations since it is using NA200 and NA300 series LPRM chambers in conjunction with the GE MONICORE core monitoring system.

4.0 CONCLUSIONS OF THE TECHNICAL EVALUATION

Based on our review, the NRC staff concludes that the proposed change to the TS to change the frequency of SR 3.3.1.1.7, "Calibrate the Local Power Range Monitors," from 1000 MWD/T average core exposure to 2000 MWD/T average core exposure and the revision to the associated BASES discussion is acceptable for incorporation because the use of improved LPRM chambers (NA200/NA300 series) and the improved GE MONICORE core monitoring system is still within the original GETAB requirement (Reference 2), as validated by the staff review and approval of the GE licensing topical reports in Reference 3.

5.0 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.

6.0 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 (68 FR 5674). 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.

7.0 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.

8.0 REFERENCES

1. Letter from T. A. Sullivan (EOI/JAF) to USNRC, "Proposed Change to Technical Specifications Regarding Local Power Range Monitor Calibration Frequency (JPTS-02-002)," dated December 6, 2002.
2. NEDO-10958-P-A, "General Electric BWR Thermal Analysis Basis (GETAB) Data, Correlation and Design Application," dated January 1977.
3. Letter from F. Akstulewicz (NRR) to G. A. Watford (GE), "Acceptance for Referencing of Licensing Topical Reports NEDC-32601P, 'Methodology and Uncertainties for Safety Limit MCPR Evaluations;' NEDC-32694P, 'Power Distribution Uncertainties for Safety

Limit MCPR Evaluation;' and 'Amendment 25 to NEDE-24011-P-A on Cycle-Specific Safety Limit MCPR' (TAC Nos M97490, M99069 and M97491)," dated March 11, 1999.

4. "LPRM Calibration Interval Increase for James A. FitzPatrick Nuclear Power Plant," GE-NE-0000-0006-7210-01, dated October 2002.

Principal Contributor: E. Kendrick

Date: May 1, 2003