July 26, 2006

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

SUBJECT: JAMES A. FITZPATRICK NUCLEAR POWER PLANT - ISSUANCE OF AMENDMENT RE: CHANGES TO THE REACTOR VESSEL MATERIAL SURVEILLANCE PROGRAM (TAC NO. MC9682)

Dear Mr. Kansler:

The Commission has issued the enclosed Amendment No. 285 to Facility Operating License No. DPR-59 for the James A. FitzPatrick Nuclear Power Plant (JAFNPP). The amendment consists of changes to the Updated Final Safety Analysis Report in response to your application dated January 26, 2006, as supplemented on April 12, 2006.

The amendment approves the implementation of the Boiling Water Reactor Vessel and Internals Project reactor pressure vessel integrated surveillance program as the basis for demonstrating the compliance of JAFNPP with the requirements of Appendix H to Title 10 of the *Code of Federal Regulations* Part 50 (10 CFR Part 50).

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/

John P. Boska, Senior 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. 285 to DPR-59
2. Safety Evaluation

cc w/encls: See next page

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Accession Number: ML061710335 *see safety evaluation dated April 19, 2006

OFFICE	LPL1-1\PM	LPL1-1\LA	CVIB\BC	OGC	LPL1-1\BC
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DATE	6/28/06	7/10/06	4/19/06	7/19/06	7/21/06

Official Record Copy

DATED: July 26, 2006

AMENDMENT NO. 285 TO FACILITY OPERATING LICENSE NO. DPR-59 FITZPATRICK

PUBLIC
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RidsAcrsAcnwMailCenter
RidsNrrPMJBoska
RidsNrrLASLittle
ECobey, RI
GOttenberg

cc: Plant Mailing list

FitzPatrick Nuclear Power Plant

cc:

Mr. Gary J. Taylor
Chief Executive Officer
Entergy Operations, Inc.
1340 Echelon Parkway
Jackson, MS 39213

Mr. John T. Herron
Sr. VP and Chief Operating Officer
Entergy Nuclear Operations, Inc.
440 Hamilton Avenue
White Plains, NY 10601

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

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

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

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

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

Resident Inspector's Office
James A. FitzPatrick Nuclear Power Plant
U. S. Nuclear Regulatory Commission
P.O. Box 136
Lycoming, NY 13093

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

Mr. Michael J. Colomb
Director of Oversight
Entergy Nuclear Operations, Inc.
440 Hamilton Avenue
White Plains, NY 10601

Mr. David Wallace
Director, Nuclear Safety Assurance
Entergy Nuclear Operations, Inc.
James A. FitzPatrick Nuclear Power Plant
P.O. Box 110
Lycoming, NY 13093

Mr. James Costedio
Manager, Regulatory Compliance
Entergy Nuclear Operations, Inc.
James A. FitzPatrick Nuclear Power Plant
P.O. Box 110
Lycoming, NY 13093

Assistant General Counsel
Entergy Nuclear Operations, Inc.
440 Hamilton Avenue
White Plains, NY 10601

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

FitzPatrick Nuclear Power Plant

cc:

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

Oswego County Administrator
Mr. Steven Lyman
46 East Bridge Street
Oswego, NY 13126

Mr. Peter R. Smith, President
New York State Energy, Research,
and Development Authority
17 Columbia Circle
Albany, NY 12203-6399

Mr. Paul Eddy
New York State Dept. of Public Service
3 Empire State Plaza
Albany, NY 12223-1350

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

Mr. James H. Sniezek
BWR SRC Consultant
5486 Nithsdale Drive
Salisbury, MD 21801-2490

Mr. Michael D. Lyster
BWR SRC Consultant
5931 Barclay Lane
Naples, FL 34110-7306

Mr. Garrett D. Edwards
814 Waverly Road
Kennett Square, PA 19348

ENTERGY NUCLEAR FITZPATRICK, LLC

AND ENTERGY NUCLEAR OPERATIONS, INC.

DOCKET NO. 50-333

JAMES A. FITZPATRICK NUCLEAR POWER PLANT

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 285
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 January 26, 2006, as supplemented on April 12, 2006, , 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 Updated Final Safety Analysis Report, 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 Appendix A, as revised through Amendment No. 285, 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

/RA/

Richard J. Laufer, Chief
Plant Licensing Branch I-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes to the License

Date of Issuance: July 26, 2006

ATTACHMENT TO LICENSE AMENDMENT NO. 285

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
3	3

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 285 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 January 26, 2006 (Agencywide Documents Access and Management System [ADAMS] accession number ML060390304), as supplemented by letter dated April 12, 2006 (ADAMS accession number ML061150393) (References 1, 2), Entergy Nuclear Operations, Inc. (Entergy or the licensee) submitted a request for changes to the James A. FitzPatrick Nuclear Power Plant (JAFNPP) Updated Final Safety Analysis Report (UFSAR) to modify the basis for their compliance with the requirements of Appendix H to Title 10 of the *Code of Federal Regulations* Part 50 (Appendix H to 10 CFR Part 50), "Reactor Vessel Material Surveillance Program Requirements." In their license amendment submittal, the licensee requested that they be approved to implement the Boiling Water Reactor Vessel and Internals Project (BWRVIP) reactor pressure vessel (RPV) integrated surveillance program (ISP) as the basis for demonstrating the compliance of JAFNPP with the requirements of Appendix H to 10 CFR Part 50.

The BWRVIP RPV ISP was submitted for Nuclear Regulatory Commission (NRC) staff review and approval in topical reports BWRVIP-78, "BWR Vessel and Internals Project, BWR Integrated Surveillance Program Plan," and BWRVIP-86, "BWRVIP, BWR Integrated Surveillance Program Implementation Plan" (References 3, 4). Additional information necessary to establish the technical basis for, and proposed implementation of, the BWRVIP ISP was provided in letters from the BWRVIP to the NRC dated December 15, 2000, and May 30, 2001 (References 5, 6). The NRC staff approved the proposed BWRVIP ISP in a safety evaluation (SE) which was provided to the BWRVIP by letter dated February 1, 2002 (Reference 7). However, the NRC staff's SE required that plant-specific information be provided by BWR licensees who wish to implement the BWRVIP ISP for their facilities. Entergy's January 26, 2006, and April 12, 2006, submittals addressed the plant-specific information required in the NRC staff's February 1, 2002, BWRVIP ISP SE. The supplement dated April 12, 2006, 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.

2.0 REGULATORY EVALUATION

The NRC staff finds that Entergy, in its January 26, 2006, submittal, identified the applicable regulatory requirements. The regulatory requirements for which the NRC staff based its acceptance are described below:

Nuclear power plant licensees are required by 10 CFR 50.60, "Acceptance criteria for fracture prevention measures for lightwater nuclear power reactors for normal operation," to meet the material surveillance program requirements for the reactor coolant pressure boundary set forth in Appendix H to 10 CFR Part 50. Appendix H requires licensees to implement RPV surveillance programs to "monitor changes in the fracture toughness properties of ferritic materials in the reactor vessel beltline region...which result from exposure of these materials to neutron irradiation and the thermal environment." Two specific alternatives are provided with regard to the design of a facility's RPV surveillance program which may be used to address the requirements of Appendix H to 10 CFR Part 50.

The first alternative is the implementation of a plant-specific RPV surveillance program consistent with the requirements of American Society for Testing and Materials (ASTM) Standard Practice E 185, "Standard Practice for Conducting Surveillance Tests for Light-Water Cooled Nuclear Power Reactor Vessels." In the design of a plant-specific RPV surveillance program, a licensee may use the edition of ASTM Standard Practice E 185 which was current on the issue date of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code to which the reactor vessel was purchased, or later editions through the 1982 edition.

The second alternative provided in Appendix H to 10 CFR Part 50 is the implementation of an ISP. An ISP is defined in Appendix H to 10 CFR Part 50 as occurring when, "the representative materials chosen for surveillance for a reactor are irradiated in one or more other reactors that have similar design and operating features." Five specific criteria are stated in Section III.C.1 of Appendix H to 10 CFR Part 50 which must be met to support approval of an ISP:

a. The reactor in which the materials will be irradiated and the reactor for which the materials are being irradiated must have sufficiently similar design and operating features to permit accurate comparisons of the predicted amount of radiation damage.

b. Each reactor must have an adequate dosimetry program.

c. There must be adequate arrangement for data sharing between plants.

d. There must be a contingency plan to assure that the surveillance program for each reactor will not be jeopardized by operation at reduced power level or by an extended outage of another reactor from which data are expected.

e. There must be substantial advantages to be gained, such as reduced power outages or reduced personnel exposure to radiation, as a direct result of not requiring surveillance capsules in all reactors in the set.

As noted in Section 1.0 of this SE, the NRC staff approved the proposed BWRVIP ISP in an SE which was issued to the BWRVIP by letter dated February 1, 2002 (Reference 7). All of the

criteria cited above for approval of the ISP were addressed either completely or partially in Reference 7. For those criteria which could not be fully addressed in Reference 7, plant-specific information would be required from licensees who wished to implement the BWRVIP for their facilities. As stated in Reference 7:

> [L]icensees who wish to participate in the BWR ISP must provide, for NRC staff review and approval, information which defines how they will determine RPV and/or surveillance capsule fluences based on the dosimetry data which will be available for their facilities. This information must be submitted concurrently with each licensee's submittal to replace their existing plant-specific surveillance program with the BWR ISP as part of their facility's licensing basis. The information submitted must be sufficient for the staff to determine that:
>
> 1. RPV and surveillance capsule fluences will be established as based on the use of an NRC-approved fluence methodology that will provide acceptable results based on the available dosimetry data,
>
> 2. if one methodology is used to determine the neutron fluence values for a licensee's RPV and one or more different methodologies are used to establish the neutron fluence values for the ISP surveillance capsules which "represent" that RPV in the ISP, the results of these differing methodologies are compatible (i.e., within acceptable levels of uncertainty for each calculation).

Regulatory Guide (RG) 1.190, "Calculational and Dosimetry Methods for Determining Pressure Vessel Neutron Fluence," describes methods and assumptions acceptable to the NRC staff for determining the pressure vessel neutron fluence. The guide is intended to ensure the accuracy and reliability of the fluence determination required by General Design Criteria 14, 30, and 31 of Appendix A, "General Design Criteria for Nuclear Power Plants," to 10 CFR Part 50.

This plant-specific information was required by the NRC staff to ensure that criterion III.C.1.b of Appendix H to 10 CFR Part 50 for an ISP could be met by each facility, and to confirm that data which would be shared as part of the BWRVIP ISP could be effectively utilized by each licensee for the monitoring of RPV embrittlement for their facility.

3.0 TECHNICAL EVALUATION

In their letter dated January 26, 2006, as supplemented by letter dated April 12, 2006, Entergy submitted information for JAFNPP which addressed the information requested in the NRC staff's February 1, 2002, BWRVIP ISP SE (Reference 7). Entergy submitted a revised Section 4.2.7 of the JAFNPP UFSAR by References 1 and 2, which stated, in part:

> The NRC approved the BWRVIP program in an SER, dated February 1, 2002, and determined the approved ISP adequately addresses the requirements of 10 CFR 50, Appendix H. A condition of the NRC SER requires that individual plant vessel fluence calculations be performed using methods in accordance with the recommendations of Regulatory Guide 1.190. JAF[NPP] will perform future fluence calculations and P-T curve revisions based upon the NRC approved methodology, following the guidance in Regulatory Guide 1.190.

The NRC staff has concluded that the inclusion of this statement in the JAFNPP UFSAR is sufficient to address both items (1) and (2) from Reference 7. Regarding item (1), the licensee's use of a methodology for determining the JAFNPP RPV neutron fluence values, which is consistent with the attributes of RG 1.190, will provide acceptable results based upon the available dosimetry data. Regarding item (2), RPV surveillance capsules tested under the BWRVIP ISP will have their fluences determined by the use of a methodology which is consistent with the attributes of RG 1.190. The NRC staff has concluded that any two (or more) different fluence methodologies will provide "compatible" (as defined in Reference 7) results provided that the best estimate fluence values are within each other's uncertainty bounds.

Entergy provided a revised Section 4.2.7 of the JAFNPP UFSAR by References 1 and 2 which documented the licensee's incorporation of the BWRVIP ISP into the JAFNPP licensing basis:

> An Integrated Surveillance Program (ISP) has been established by the BWRVIP to replace individual plant vessel surveillance programs as documented in BWRVIP-86-A, "BWR Vessels and Internals Project, Updated BWR Integrated Surveillance Program (ISP) Implementation Plan," Final Report, October 2002. The ISP matches the vessel chemistry of an individual plant to a representative plant and the capsule results, (i.e., changes in fracture toughness with neutron exposure, from the representative plant will be applied at the individual plant).
>
> The NRC approved the BWRVIP program in an SER, dated February 1, 2002, and determined the approved ISP adequately addresses the requirements of 10 CFR 50, Appendix H. A condition of the NRC SER requires that individual plant vessel fluence calculations be performed using methods in accordance with the recommendations of Regulatory Guide 1.190. JAF[NPP] will perform future fluence calculations and P-T curve revisions based upon the NRC approved methodology, following the guidance in Regulatory Guide 1.190. The capsule withdrawal schedule at the representative plant is controlled by the BWRVIP. JAF[NPP] is a member of the BWRVIP and will replace its individual plant surveillance program with the ISP. The balance of the JAF[NPP] specimen capsules will remain in place to serve as backup for the BWRVIP program, or as otherwise needed.

The NRC staff has concluded that the information provided in the revised JAFNPP UFSAR is adequate to document the licensee's intent to appropriately implement the BWRVIP ISP as the method for demonstrating the compliance of JAFNPP with the requirements of Appendix H to 10 CFR Part 50.

The NRC staff noted that by Reference 1, the Technical Specifications (TS) Bases, page B 3.4.9-2, was modified to include the BWRVIP ISP as a method used to remove and evaluate the irradiated reactor vessel material specimens. Section 4.2.7 of the JAFNPP UFSAR was also included as a reference for TS Bases 3.4.9. The changes made are consistent with the requirements of BWRVIP-86-A, therefore, the NRC staff has no objection to the licensee's changes to the TS Bases concerning the inclusion of the BWRVIP ISP.

The NRC staff has concluded that the information provided by Entergy is sufficient to conclude that the BWRVIP ISP, as approved in Reference 7, can be implemented for JAFNPP as the basis for demonstrating the facility's continued compliance with the requirements of Appendix H to 10 CFR Part 50. As part of the implementation and documentation of the licensee's intent to

utilize the BWRVIP ISP for this purpose, the licensee shall modify the JAFNPP UFSAR as noted in this SE and as stated in their January 26, 2006, license amendment request, as supplemented by letter dated April 12, 2006.

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. 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 (71 FR 13174). 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.

7.0 REFERENCES

1. T. A. Sullivan (Entergy) to U.S. NRC Document Control Desk, “Proposed License Amendment: Changes to the Reactor Vessel Material Surveillance Program,” January 26, 2006.

2. T. A. Sullivan (Entergy) to U.S. NRC Document Control Desk, “Response to Request for Additional Information Regarding Proposed License Amendment: Changes to the Reactor Vessel Material Surveillance Program (TAC No. MC9682),” April 12, 2006.

3. C. Terry (BWRVIP) to U.S. NRC Document Control Desk, “Project No. 704 - BWR Vessel and Internals Project, BWR Integrated Surveillance Program Plan (BWRVIP-78),” December 22, 1999.

4. C. Terry (BWRVIP) to U.S. NRC Document Control Desk, “Project No. 704 - BWRVIP-86: BWR Vessel and Internals Project, BWR Integrated Surveillance Program Implementation Plan,” Electric Power Research Institute Technical Report 1000888, December 22, 2000.

5. C. Terry (BWRVIP) to U.S. NRC Document Control Desk, “PROJECT NO. 704 - BWRVIP Response to NRC Request for Additional Information Regarding BWRVIP-78,” December 15, 2000.

6. C. Terry (BWRVIP) to U.S. NRC Document Control Desk, “PROJECT NO. 704 - BWRVIP Response to Second NRC Request for Additional Information on the BWR Integrated Surveillance Program,” May 30, 2001.

7. W. H. Bateman (USNRC) to C. Terry, “Safety Evaluation Regarding EPRI Proprietary Reports “BWR Vessel and Internals Project, BWR Integrated Surveillance Program Plan (BWRVIP-78)” and “BWRVIP-86: BWR Vessel and Internals Project, BWR Integrated Surveillance Program Implementation Plan,” February 1, 2002.

Principal Contributor: G. Ottenberg

Date: July 26, 2006