

September 14, 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: TECHNICAL SPECIFICATIONS ON DC ELECTRICAL
SYSTEM REQUIREMENTS (TAC NO. MC7204)

Dear Mr. Kansler:

The Commission has issued the enclosed Amendment No. 286 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 dated April 27, 2005, as supplemented by letters dated November 22, 2005, and August 1, 2006. The amendment revises the TSs to allow a battery charger to be out of service for up to 7 days.

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. 286 to DPR-59
2. Safety Evaluation

cc w/encls: See next page

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Accession Number: ML062420074

*See Safety Evaluation dated 8/17/06

OFFICE	LPL1-1\PM	LPL1-1\LA	EEEB\BC	OGC	LPL1-1\BC
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DATE	8/30/06	8/31/06	8/17/06	9/12/06	9/13/06

Official Record Copy

DATED: September 14, 2006

AMENDMENT NO. 286 TO FACILITY OPERATING LICENSE NO. DPR-59 FITZPATRICK

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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. 286
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 April 27, 2005, as supplemented on November 22, 2005, and August 1, 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 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 Appendix A, as revised through Amendment No. 286, 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 and
Technical Specifications

Date of Issuance: September 14, 2006

ATTACHMENT TO LICENSE AMENDMENT NO. 286

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
3

Insert 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
3.8.4.1
3.8.4.2
3.8.4.3

Insert Pages
3.8.4.1
3.8.4.2
3.8.4.3
3.8.4.4

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 286 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 April 27, 2005, Agencywide Document Access and Management System (ADAMS) Accession No. ML051510286, as supplemented by letters dated November 22, 2005, ADAMS Accession No. ML053390087, and August 1, 2006, ADAMS Accession No. ML062200313, Entergy Nuclear Operations, Inc. (the licensee) submitted a request for changes to the James A. FitzPatrick Nuclear Power Plant (JAFNPP) Technical Specifications (TSs). The supplements dated November 22, 2005, and August 1, 2006, provided additional information that clarified the application, did not expand the scope of the application as originally noticed, and did not change the Nuclear Regulatory Commission (NRC) staff's original proposed no significant hazards consideration determination. The August 1, 2006, submittal reduced the scope of the changes to only revise TS Limiting Condition for Operation (LCO) 3.8.4, "DC Sources-Operating," to allow a battery charger to be inoperable for up to 7 days, while specifying criteria to be met by the in-service battery charger.

2.0 REGULATORY EVALUATION

The following NRC requirements and guidance documents are applicable to the NRC staff's review of the license amendment request:

Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, Appendix A, General Design Criterion (GDC)-17, "Electric power systems," requires, in part, that nuclear power plants have onsite and offsite electric power systems to permit the functioning of structures, systems, and components that are important to safety. The onsite system is required to have sufficient independence, redundancy, and testability to perform its safety function, assuming a single failure. The offsite power system is required to be supplied by two physically independent circuits that are designed and located so as to minimize, to the extent practical, the likelihood of their simultaneous failure under operating and postulated accident and environmental conditions. In addition, this criterion requires provisions to minimize the probability of losing electric power from the remaining electric power supplies as a result of loss of power from the unit, the offsite transmission network, or the onsite power supplies.

GDC-18, "Inspection and testing of electric power systems," requires that electric power systems that are important to safety must be designed to permit appropriate periodic inspection and testing.

10 CFR 50.63, "Loss of all alternating current power," requires that each light-water cooled nuclear power plant licensed to operate must be able to withstand for a specified duration and recover from a station blackout (SBO).

10 CFR 50.36, "Technical specifications," requires a licensee's TSs to establish LCOs, which include Completion Times (CTs) for equipment that is required for safe operation of the facility.

10 CFR 50.65, "Requirements for monitoring the effectiveness of maintenance at nuclear power plants," requires that preventive maintenance activities must not reduce the overall availability of the systems, structures, and components.

Regulatory Guide (RG) 1.32, "Criteria For Safety-Related Electric Power Systems For Nuclear Power Plants," provides guidance for complying with GDC-17 and GDC-18 with respect to design, operation, and testing of safety-related electric power systems of all types of nuclear power plants.

3.0 TECHNICAL EVALUATION

3.1 Design of the JAF Direct Current Electrical Power System

At JAF, the direct current (dc) electrical power system consists of two 125 volt (V) dc electrical power subsystems, and two 419 V dc low-pressure coolant injection (LPCI) motor operated valve (MOV) independent power supply subsystems. Each subsystem consists of one battery, one battery charger, and the corresponding control equipment and interconnecting cabling supplying power to the associated bus.

The 125 V dc power sources provide both motive and control power to selected safety-related equipment, as well as circuit breaker control power for the nonsafety-related 4160 V alternating current (ac) and selected 600 V ac distribution systems. Each 125 V dc subsystem is energized by one 125 V dc battery and one 125 V dc battery charger. Each battery is exclusively associated with a single 125 V dc bus. Each battery charger is exclusively associated with a 125 V dc subsystem and cannot be interconnected with any other 125 V dc subsystem. The chargers are supplied from the same AC load groups for which the associated 125 V dc subsystem supplies the control power. The loads between the redundant 125 V dc subsystem are not transferable except for the automatic depressurization system (ADS). The ADS valve solenoids are normally fed from the Division 1 125 V dc subsystem with the Division 2 125 V dc subsystem providing a backup source. In addition, the Division 1 125 V dc subsystem provides a backup source to the Division 2 ADS logic circuits.

The 419 V dc LPCI MOV independent power supply subsystems provide the 600 V ac LPCI Independent Power Supply System with a reliable source of power to operate the MOVs associated with the LPCI subsystems and provide power to one reactor core isolation cooling (RCIC) pump enclosure exhaust fan via the 600 V ac LPCI independent power supply inverters and associated distribution system. The 419 V dc LPCI MOV independent power supply system consists of two subsystems.

Each 419 V dc LPCI MOV independent power supply subsystem is energized by the associated 419 V dc battery or the associated 419 V dc rectifier/charger. Each battery and rectifier/charger is exclusively associated with a 419 V dc LPCI MOV independent power supply subsystem and cannot be interconnected with the other 419 V dc LPCI MOV independent power supply subsystem.

During normal operation, the dc loads are powered from the battery chargers with the batteries floating on the system. In cases where momentary loads are greater than the charger capability, or battery charger output voltage is low, or on loss of normal power to the battery charger, the dc loads are automatically powered from the batteries. Also, on an LPCI automatic actuation signal, the 419 V dc rectifier/charger ac input breakers will open and the 600 V ac LPCI independent power supply inverters will be powered from the 419 V dc LPCI MOV independent power supply batteries.

3.2 Evaluation of Proposed Changes

In its letter dated April 27, 2005, as supplemented by letters dated November 22, 2005, and August 1, 2006, the licensee proposed a license amendment to the TSs for JAF. The August 1, 2006, submittal reduced the scope of the changes to only revise LCO 3.8.4, "DC Sources-Operating."

The NRC staff reviewed and evaluated each of the proposed changes to the JAF TSs as follows:

3.2.1 LCO 3.8.4 Change (1):

The licensee proposed the following:

- The existing Condition A, associated Required Actions and CTs will be renamed and replaced with the following:
 - New Condition A addresses the condition where a required battery charger on one 125 V dc power subsystem becomes inoperable.
 - New Required Action A.1 would require restoring battery terminal voltage to greater than or equal to the minimum established float voltage (127.8 V) within 2 hours.
 - New Required Action A.2 would require verification that battery float current is less than or equal to 2 amps once per 12 hours.
 - New Required Action A.3 would require restoring the battery charger to OPERABLE status within 7 days.

Evaluation of LCO 3.8.4 Change (1)

The proposed change to LCO 3.8.4 addresses the condition where one battery charger on one subsystem is inoperable. The licensee proposed increasing the battery charger CT from 8 hours to 7 days provided that they are able to restore battery terminal voltage to greater than or equal to the minimum established float voltage within 2 hours, and are able to verify that battery float current is less than or equal to 2 amps once per 12 hours.

The battery charger, in addition to maintaining battery operability, provides dc control power to ac circuit breakers and thus supports the recovery of ac power following events such as loss of offsite power or SBO. New Required Action A.1 would provide assurance that a battery discharge is terminated by requiring that the battery terminal voltage be restored to greater than or equal to the minimum established float voltage (127.8 V) in 2 hours. This time period provides an allowance for returning an inoperable charger to operable status or for reestablishing an alternate means of restoring battery terminal voltage to greater than or equal to the minimum established float voltage. This provides assurance that the battery will be restored to its fully charged condition from any discharge that might have occurred due to the battery charger being inoperable. At the end of the 2 hours, a terminal voltage of at least the minimum established float voltage provides indication that the battery is on the exponential charging current portion of its recharging cycle. In its November 22, 2005, response to an NRC staff request for additional information, the licensee stated that the alternate means that is being credited for the proposed extended CT is an appropriately sized spare battery charger that is capable of being powered by Class 1E power. The licensee provided a regulatory commitment to update its Updated Final Safety Analysis Report to include a description of the spare battery charger.

New Required Action A.2 would require that once per 12 hours, battery float current be verified to be less than or equal to 2 amps. This provides an indication that, if the battery has been discharged as the result of an inoperable battery charger, it has now been fully charged. If at the expiration of the 12-hour period, the battery float current is not less than or equal to 2 amps, there may be additional problems and Required Action C must be followed, which requires entry into Mode 3, hot shutdown, within 12 hours. This verification provides assurance that the battery has sufficient capacity to perform its safety function.

Given that the dc bus remains energized, the battery discharge is terminated based on restoration of the battery terminal voltage (New Required Action A.1), and the battery is fully recharged based upon battery float current (New Required Action A.2), there is reasonable basis for extending the restoration time for an inoperable battery charger beyond the existing 8-hour limit to 7 days (New Required Action A.3). The NRC staff's approval of the extended CT for the battery charger is also based on the availability of a spare battery charger that is appropriately sized and capable of being powered by Class 1E power.

Based on the above, the NRC staff concludes that the proposed change to LCO Action 3.8.4 meets the conditions of the GDCs and other pertinent regulatory criteria listed in Section 2 above and is therefore acceptable.

3.2.2 LCO 3.8.4 Change (2):

The licensee proposed that an alternative criteria would be added to Surveillance Requirement (SR) 3.8.4.2 that would allow the charger operability to be verified by recharging its associated battery to the fully charged state within 24 hours while supplying the largest combined demands of the various continuous steady state loads, after a battery discharge to the bounding design basis event discharge state.

Evaluation of Proposed LCO 3.8.4 Change (2)

This is an alternate method for verifying the design capacity of each battery charger. As described in the revised TS Bases for SR 3.8.4.2, this test of the battery charger would occur following a battery service test. The level of loading required to run this test may not normally be available following the battery service test and may need to be supplemented with additional loads. The duration of this test may be longer than the charger sizing criteria since the battery recharge is affected by float voltage, temperature, and the exponential decay in charging current. Each JAF battery charger is capable of recharging its respective battery within 24 hours while supplying the largest combined demands of the various continuous steady state loads, after a battery discharge to the bounding design basis event discharge state. Therefore, the proposed alternate testing criteria would satisfy the purpose of SR 3.8.4.2. Based on this information, the NRC staff finds the proposed change to SR 3.8.4.2 meets the conditions of the GDCs and other pertinent regulatory criteria listed in Section 2 above and is therefore 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 (70 FR 41444). 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: Matthew McConnell

Date: September 14, 2006