September 15, 2001

Mr. T. A. Sullivan Vice President, Operations Entergy Nuclear Operations, Inc. P.O. Box 110 Lycoming, NY 13093

SUBJECT: JAMES A. FITZPATRICK NUCLEAR POWER PLANT - ISSUANCE OF

AMENDMENT RE: PROPOSED ONE-TIME-ONLY EMERGENCY CHANGE TO THE TECHNICAL SPECIFICATIONS REGARDING RESERVE AC POWER

ALLOWABLE OUT-OF-SERVICE TIME (TAC NO. MB2889)

Dear Mr. Kansler:

The Commission has issued the enclosed Amendment No. 272 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 September 14, 2001, and supplemented by a letter also dated September 14, 2001.

The amendment authorizes a one-time-only change to TS 3.9.B.1 and associated Bases. Specifically, this change extends the Limiting Condition for Operation (LCO) allowable out-of-service time for one incoming Reserve AC Power line (115KV line #3) and/or one reserve station transformer inoperable from 7 days to 14 days during the period commencing September 9, 2001 and extending through September 23, 2001.

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/

Robert Clark, 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. 272 to DPR-59

2. Safety Evaluation

cc w/encls: See next page

September 15, 2001

Mr. T. A. Sullivan Vice President, Operations Entergy Nuclear Operations, Inc. P.O. Box 110 Lycoming, NY 13093

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cc w/encls: See next page ACCESSION NO. ML012600033

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DATE	9/15/01	9/14/01	9/14/01	9/15/01	9/14/01	9/15/01	9/15/01

Official Record Copy

^{*}Memo of 9/14/01 **By e-mail ***Review done by MO'Brien

DATED: September 15, 2001

AMENDMENT NO. 272 TO FACILITY OPERATING LICENSE NO. DPR-59, FITZPATRICK

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ENTERGY NUCLEAR OPERATIONS, INC.

DOCKET NO. 50-333

JAMES A. FITZPATRICK NUCLEAR POWER PLANT

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 272 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 September 14, 2001, and supplemented by a letter also dated September 14, 2001, 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. 272 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.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Peter S. Tam, Acting 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: September 15, 2001

ATTACHMENT TO LICENSE AMENDMENT NO. 272 ENTERGY NUCLEAR OPERATIONS, INC.

JAMES A. FITZPATRICK NUCLEAR POWER PLANT

FACILITY OPERATING LICENSE NO. DPR-59

DOCKET NO. 50-333

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.

<u>Insert Pages</u>		
216		
223		

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION RELATED TO AMENDMENT NO. 272 TO FACILITY OPERATING LICENSE NO. DPR-59 ENTERGY NUCLEAR OPERATIONS, INC.

JAMES A. FITZPATRICK NUCLEAR POWER PLANT (JAFNPP)

DOCKET NO. 50-333

1.0 INTRODUCTION

By letter dated September 14, 2001, Entergy Nuclear Operations, Inc. (the licensee) submitted an application for an amendment. The application proposed a one-time-only change to Technical Specifications (TS) Section 3.9.B.1 and associated Bases. Specifically, this change would extend the Limiting Condition for Operation (LCO) allowable out-of-service time for one incoming Reserve AC Power line (115KV line #3) and/or one reserve station transformer inoperable from 7 days to 14 days during the period commencing September 9, 2001 and extending through September 23, 2001. The licensee supplemented the application by a letter, also dated September 14, 2001.

The licensee requested that the amendment be issued under emergency circumstances. The NRC reviewed the application. The staff's review findings are delineated below.

2.0 BACKGROUND

The JAFNPP offsite power is supplied to the 115-kV and 345-kV switchyards from the transmission network by four transmission lines. The 115-kV switchyard is supplied by two independent 115-kV transmission lines and associated breakers. The 115-kV switchyard is connected to two 115-kV transmission lines: one transmission line is the Lighthouse Hill -FitzPatrick line No. 3, the other transmission line is the Nine Mile - FitzPatrick line No. 4. The South 115-kV bus and the North 115-kV bus are connected by a normally closed electrically operated disconnected switch. The 115-kV reserve power source is stepped down to 4.6 kV by Reserve Station Service Transformers (RSST) 71T2 and 71T3. The lines connecting to the RSSTs to the 115-kV transmission lines are arranged such that a failure of either line does not result in the loss of the other line. The JAFNPP main generator provides power at 24 kV to two main transformers connected in parallel and to the Normal Station Service Transformer (NSST) 71T4. Both normal (from main generator) or reserve power (115-kV line #3 or line #4) is supplied to the plant by 4.16-kV emergency buses. Separate connections to the 115-kV switchyard and the 345-kV switchyard provide independent and reliable offsite power sources to the Class 1E systems. If normal power from NSST 71T4 is lost, the reserve power, RSSTs 71T2 and 71T3 will automatically energize all plant buses. If the RSSTs were to fail, the emergency diesel generator (EDG) subsystems would automatically energize their respective buses. The network detailed description of the 115-kV and 345-kV AC power supply circuits to the plant Class 1E emergency buses is found in the JAFNPP's UFAR, Chapter 8.

Two physically independent and redundant sources of offsite power are available on an immediately basis for the shutdown of either unit. The normal station service transformer (NSST 71T4) normally energizes its related 4.16 kV AC Class 1E buses. In the event this transformer becomes unavailable to its normally fed Class 1E buses, power is made available from the other reserve station service transformers by an automatic transfer. With the proposed change, however, the transfer of safety-related buses to the alternate source would be limited to one 115 kV line #4 only due to the unavailability of the affected Reserve AC power line #3 and/ or its reserve station transformer.

The Reserve AC Line #4 and its associated reserve station transformer has the capacity to carry the required Class 1E loads of the unit during all modes of operation. In the event that all offsite power sources become unavailable, redundant emergency diesel generators (EDGs) will automatically start to power the ESF buses.

The onsite standby AC power source for 4.16 kV emergency buses system at JAFNPP are designed to provide reliable and adequate power for Class 1E loads, and consists of two independent and redundant EDG subsystems that are self contained and independent of normal, backfeed, and reserve sources to ensure safe plant shutdown in the event normal and reserve ac power sources are not available. The EDGs are physically and electrically independent. With this arrangement, no single failure can jeopardize the proper functioning of redundant ESF loads. The EDGs start automatically on an emergency bus degraded voltage signal, an emergency bus under voltage signal, or a loss of coolant accident signal, independent of or coincident with a LOCA signal; the emergency bus under voltage control logic starts the EDGs. Sequential loading of the EDG is automatically performed.

3.0 EVALUATION

3.1 Deterministic Evaluation

Reserve power 115 kV Line #3 was declared inoperable due to concerns regarding the adequacy of the line as the sole offsite power source to maintain adequate voltage on 4.16 kV Class 1E buses under certain design basis accident (DBA) scenarios. Specifically with the 115-kV Line #4 out of service when the reactor is operating at power and in the event of a DBA, the power is automatically transferred from the normal station service transformer to the reserve station service transformers (RSST). The licensee's preliminary evaluation of 4.16-kV emergency bus voltage for the scenario indicated that the combined loading due to non-Class 1E loads that remain connected to the class 1E buses and the sequencing of the Class 1E loads could result in exceeding the setpoint of the degraded voltage protection system. This would result in tripping the 4.16-kV Class 1E from the offsite power source and sequencing onto the onsite emergency diesel generators. To alleviate these deficiencies, the licensee planned to change the high-voltage taps from the 116 kV position to the 113 kV position and still allow operation of the 4.16 kV buses near rated voltage conditions. The tap setting changes will keep secondary voltage at acceptable limits through all loading conditions.

The licensee further states that the Configuration Risk Management Program (CRMP) will be applied throughout the duration of the extended outage. In addition, methodologies associated with the risk monitoring and contingency action planning currently existing at JAFNPP will provide assurance of continued safe reactor operations during periods of Reserve power 115-kV Line #3 inoperability. The licensee has stated that CRMP will apply throughout the duration

of the requested extended outage, and additionally during the extended LCO, the licensee will monitor the ongoing activities using administrative controls required by the current TS 6.21 which states the following:

- 1. Prohibit any planned work on any other trains or power buses, or any planned emergency diesel generator work.
- 2. Require assessment of the condition of external environmental factors such as expected environmental conditions, severe weather and electrical system stability prior to removing transformers from service for the tap changes.
- 3. The licensee shall not start the work on the second transformer until the first is operable.

3.2 Probabilistic Risk Assessment Evaluation

The staff uses the Regulatory Guides (RGs) 1.177 and 1.174 to evaluate the risk associated with proposed technical specification (TS) allowed outage time (AOT) changes. Although the RGs are intended for permanent TS changes, it is also appropriate in general for the licensee to use for temporary or one-time changes. JAFNPP used the similar approach to evaluate the risk associated with the proposed extension of the AOT for one of the two offsite power sources from seven to 14 days.

The staff's initial review determined the potential risk impact of the proposed change to be small; therefore, the staff's risk evaluation was performed with the rigor and detail commensurate with the initial risk significance determination.

The staff found that the licensee's PRA used to estimate the risk associated with the proposed change was subject to external peer reviews and the BWR Owner's Group probabilistic safety assessment certification process. This evidence along with the staff's evaluation of the licensee's risk-informed TS change amendment on emergency diesel generator (EDG) AOT change in 1999 provided reasonable assurance that the PRA could be used for this particular application. The licensee estimated that the incremental conditional core damage probability (ICCDP) of continued plant operation for additional seven days would be 1.82E-7 for internal initiating events. The value is less than the RG 1.177 guideline for ICCDP, which is 5E-7. Although the licensee did not quantify the impact due to the potential external initiating events, e.g., fire and earthquake, the staff judged that the overall risk impact would not be significant relative to the guideline in RG 1.177. This is based on the staff's experience in reviewing a number of risk-informed TS changes that involve risks from loss of offsite power. In addition, the licensee estimated the risk of shutting down the plant with the 115kV #3 line unavailable to be greater than the risk of remaining at power. Regarding the estimated potential risk increase in large early release frequency (LERF) and incremental conditional large early release probability (ICLERP), the staff believes that due to the risk estimated for the increase in CDF and the ICCDP, the RG 1.177 guideline would still be met. For example, assuming a 0.1 conditional large early containment failure probability given a core damage, the corresponding increase in LERF and the ICLERP would still be below the RG 1.177 guideline. In addition, based on the licensee's risk assessment and the low baseline CDF (2.44E-6/yr), the staff also found that the increase in risk regarding the increase in CDF and LERF is small and still would meet the RG 1.174 guideline.

In order to verify the licensee risk estimate, the staff performed an independent risk evaluation using the NRC Standardized Plant Analysis Risk Model for JAFNPP, Revision 3i, for internal initiating events. The result indicated that the ICCDP would be below 5E-7, confirming the licensee's assessment. Given the licensee's robust design in emergency power sources, the risk impact was expected to be small.

The licensee also indicated that it has a configurational risk management program (CRMP) that would evaluate the risk and control plant activities to assure continued safe reactor operations during periods of equipment inoperability. In accordance with the plant administrative procedure required by current JAFNPP TS 6.21, "Configuration Risk Management Program," the licensee would prohibit any planned work on other trains or power buses, or any planned EDG work. It would also assess the condition of external environmental factors such as expected environmental conditions, severe weather and electrical system stability prior to removing transformers from service. The provisions listed in TS 6.21 are consistent with those in RG 1.177.

In summary, the licensee's risk assessment using a PRA which had been subjected to external reviews, including the staff's review for the previous EDG AOT extension request in 1999, showed that the risk impact of the proposed one-time change would be small, meeting the guidelines in both RG 1.177 and 1.174. The staff's independent evaluation also confirmed the licensee's assessment. In addition, the licensee's CRMP provides additional reasonable assurance that the risk associated with the proposed extended AOT would be evaluated and appropriate compensatory actions would also be taken as required. In conclusion, the staff found that the licensee's application met the intent of the applicable RGs 1.174 and 1.177; therefore, the staff concludes that risk results and insights support the proposed extension of the AOT for one reserve offsite power source.

3.3 Summary of Evaluation

The staff has evaluated the licensee's submittal and determined that during the requested extended LCO, the licensee's compensatory measures are appropriate. Additionally, the staff evaluated the PRA aspects (addressed in Section 3.2) and determined the associated risks were commensurate with RG 1.174 and 1.177, and, therefore, the requested one-time extension of the LCO allowable outage time from 7 to 14 days is acceptable.

4.0 FINAL NO SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION

The Commission's regulations in 10 CFR 50.92(c) state that the Commission may make a final determination that a license amendment involves no significant hazards consideration if operation of the facility in accordance with the amendment would not:

- (1) Involve a significant increase in the probability or consequences of an accident previously evaluated; or,
- (2) Create the possibility of a new or different kind of accident from any previously evaluated; or,
- (3) Involve a significant reduction in a margin of safety.

The licensee provided an analysis to address these three questions. The NRC staff performed its own analysis, which is set forth below:

(1) Loss of offsite emergency power was not considered an initiating event for any of the previously evaluated design basis accidents. Therefore, the proposed amendment cannot increase the probability of any accident previously evaluated.

The consequences of a postulated accident occurring during the extended allowable out-of-service time are the same as the consequences of a postulated accident occurring during the existing allowable out-of-service time. Therefore, extending the allowable out-of-service time does not increase the consequences of an accident previously evaluated.

- (2) The proposed amendment does not physically alter the plant, does not place the system in new configurations, and does not result in operating the system in different manners. Therefore, the proposed amendment will not create the possibility of a new or different kind of accident.
- (3) Since no design, operation procedure, or analysis methodology will be changed, the proposed amendment will not adversely affect the performance characteristics of the system nor will it affect the ability of the system to perform its intended functions. Therefore, the proposed amendment does not involve a significant reduction in a margin of safety.

Based on the above considerations, the NRC staff concludes that the amendment meets the three criteria of 10 CFR 50.92. Therefore, the NRC staff has made a final determination that the proposed amendment does not involve a significant hazards consideration.

5.0 EMERGENCY CIRCUMSTANCES

In its September 14, 2001, application and supplement the licensee requested that this amendment be treated under emergency circumstances. In accordance with 10 CFR 50.91(a)(5), the licensee provided information (reproduced verbatim below) regarding why this emergency situation occurred and how it could not be avoided.

This additional information is provided to clarify why the requested Technical Specification should be considered on an emergency basis in accordance with 10 CFR 50.91(a)5. The following chronology summarizes events leading to entry into limiting condition for operation in accordance with Technical Specification 3.9.B.1:

9/7/01 - Entergy notified of potential problem with 115 kV offsite line #3 by Niagara Mohawk [Power Corporation] staff as a result of transmission system modeling program for evaluating line voltages. The modeling conducted was specific to Nine Mile Point Unit 1 which has a similar 115 kV offsite power configuration.

9/8/01 - Entergy engineering staff request Niagara Mohawk transmission operator to model applicable scenarios for determining voltages at FitzPatrick when using 115 kV offsite line #3 alone.

9/9/01 - Upon review of model results, 115 kV offsite power line #3 declared inoperable for FitzPatrick Nuclear Power Plant. LCO 3.9.B.1 entered for seven day limiting condition of operation. Entergy engineering staff sent to Niagara Mohawk power operator to review and validate transmission model assumptions.

The Niagara Mohawk power control staff use a software model to determine real time grid voltage conditions as a normal course of maintaining grid voltage regulation. Only recently has use of this model begun to predict post-transient bus voltages. Additionally, the use of this model is outside of Entergy's control and required Entergy engineering staff to spend additional time validating model assumptions and confirming correct inputs. As a result, this request for one-time-only extension to the license requirements was unavoidable.

The NRC staff reviewed the licensee's chronology of events leading to the emergency circumstances. The NRC staff finds that an emergency situation exists, in that failure to act in a timely way would result in required shutdown of JAFNPP. The NRC staff has presented its final no significant hazards consideration determination. Accordingly, the NRC staff finds that the requirements in 10 CFR 50.91(a)(5) have been met and that the licensee has not abused the emergency provision of this regulation. The requested amendment can be issued without prior notice and opportunity for a hearing or for public comment.

6.0 STATE CONSULTATION

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

7.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to the 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 NRC staff has made a final no significant hazards finding with respect to this amendment. 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.

8.0 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 Contributors: N. Le

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Date: September 15, 2001