

September 18, 2002

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

SUBJECT: INDIAN POINT NUCLEAR GENERATING UNIT NO. 2 - AMENDMENT RE:
GAS TURBINE GENERATOR FUEL OIL STORAGE (TAC NO. MB3919)

Dear Mr. Kansler:

The Commission has issued the enclosed Amendment No. 233 to Facility Operating License No. DPR-26 for the Indian Point Nuclear Generating Unit No. 2. The amendment consists of changes to the Technical Specifications (TSs) in response to your application transmitted by letter dated January 8, 2002, as supplemented on August 22, 2002.

The amendment revised TS Section 3.7.C, "Gas Turbine Generators," and Section 4.6, "Emergency Power System Periodic Tests," to change the minimum amount of fuel oil required to be stored from 54,200 gallons to 94,870 gallons. The proposed amendment also revised the minimum electrical output of the gas turbine generator that is required to be tested monthly to 2000 kW from the previous value of 750 kW.

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/

Patrick D. Milano, Sr. Project Manager, Section 1
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-247

Enclosures: 1. Amendment No. 233 to DPR-26
2. Safety Evaluation

cc w/encls: See next page

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Accession Number: ML022210010

*See previous concurrence

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NAME	PMilano	SLittle	EWeiss	CHolden	RWeisman	RLaufer
DATE	09/17/02	09/18/02	08/26/02	08/27/02	09/11/02	09/19/02

Official Record Copy

DATED: September 18, 2002

AMENDMENT NO. 233 TO FACILITY OPERATING LICENSE NO. DPR-26 INDIAN POINT
UNIT 2

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ENERGY NUCLEAR INDIAN POINT 2, LLC

ENERGY NUCLEAR OPERATIONS, INC.

DOCKET NO. 50-247

INDIAN POINT NUCLEAR GENERATING UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 233
License No. DPR-26

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Entergy Nuclear Operations, Inc. (the licensee) dated January 8, 2002, as supplemented on August 22, 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-26 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 233, 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 of the date of issuance.

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: September 18, 2002

ATTACHMENT TO LICENSE AMENDMENT NO. 233

FACILITY OPERATING LICENSE NO. DPR-26

DOCKET NO. 50-247

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

3.7-3
3.7-8
4.6-2
4.6-4

Insert Pages

3.7-3
3.7-8
4.6-2
4.6-4

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 233 TO FACILITY OPERATING LICENSE NO. DPR-26

ENTERGY NUCLEAR OPERATIONS, INC.

INDIAN POINT NUCLEAR GENERATING UNIT NO. 2

DOCKET NO. 50-247

1.0 INTRODUCTION

By letter dated January 8, 2002, as supplemented on August 22, 2002, Entergy Nuclear Operations, Inc. (ENO or the licensee) submitted a request for changes to the Indian Point Nuclear Generating Unit No. 2 (IP2) Technical Specifications (TSs). The requested changes would revise TS Section 3.7.C, "Gas Turbine Generators," and Section 4.6, "Emergency Power System Periodic Tests," to change the minimum amount of fuel oil required to be stored from 54,200 gallons to 94,870 gallons. The proposed change would also revise the minimum electrical output of the gas turbine (GT) generator that is required to be tested monthly to 2000 kilowatts (kW) from the previous value of 750 kW. The August 22, 2002, letter provided clarifying information that did not change the initial proposed no significant hazards consideration determination.

2.0 REGULATORY EVALUATION

The U.S. Nuclear Regulatory Commission (NRC) staff finds that ENO in its January 8, 2002, application identified the applicable regulatory requirements. The regulatory requirements which the staff considered in reviewing the proposed amendment are as follows:

1. Section III.G.3, "Fire Protection of Safe Shutdown Capability," of Appendix R, "Fire Protection Program for Nuclear Power Facilities Operating Prior to January 1, 1979," to Part 50 of Title 10 of the *Code of Federal Regulations* (10 CFR Part 50) requires fire protection features to be provided for structures, systems, and components important to safe shutdown.
2. Section III.L, "Alternative and Dedicated Shutdown Capability," of Appendix R to 10 CFR Part 50 establishes the required capability of alternative and dedicated shutdown capability for a specific fire area.
3. 10 CFR 50.63, "Loss of All Alternating Current [AC] Power," sets forth, in part, requirements for the capability of an alternate AC source power source to cope with station blackout (SBO).

4. Section 8.2.1, "Network Interconnections," of the Updated Final Safety Analysis Report for IP2 states that the operability and surveillance requirements for the GTs ensure that the GTs can provide an alternate backup power source in case of loss of onsite emergency power and concurrent loss of offsite power as well as required auxiliary power for alternate safe shutdown systems equipment. In addition, it states that the minimum fuel inventory ensures that one GT will be capable of supplying the maximum electrical load for the alternate safe shutdown system for at least 3 days. Each GT generator is individually capable of supplying the required electrical load for alternate safe shutdown.

3.0 TECHNICAL EVALUATION

3.1 Background

Offsite power to IP2 is available from several sources consisting of two 138 kilovolt (kV) overhead supplies from the Buchanan 138 kV substation, three underground feeders from the 13.8 kV Buchanan substation, and three 13.8 kV combustion GTs. Each of the circuits is designed to be available in sufficient time following a loss of all onsite AC power supplies and other offsite electric power circuits to ensure that specified acceptable fuel design limits and design conditions of the reactor coolant pressure boundary are not exceeded. The independent alternate power systems are provided with adequate capacity and testability to supply the required engineered safety features and protection systems.

The normal source of auxiliary power for 6.9-kV buses 5 and 6 and standby power required during plant startup, shutdown, and after reactor trip is the station auxiliary transformer, which is supplied from the 138 kV system by either of two separate overhead lines from the Buchanan substation. Since the loss of this transformer would interrupt the 138 kV supply to the station, an alternate 13.8/6.9-kV supply is provided. Alternate feeds from the Buchanan 13.8 kV system are also available for immediate manual connection to the auxiliary buses. In addition, three GTs with blackstart (no auxiliary power) capability are available. The transfer from the normal to the reserve supply (or vice versa) must be accomplished manually. The three GTs may also serve to supply emergency shutdown power. The capacities of these GTs require that the station load be reduced to a minimum during startup.

Maximum flexibility of routing is provided by the inter-ties at the Buchanan substation (138 kV and 13.8 kV buses) and at the IP2 site (138 kV site switchyard and GT substation 6.9 kV bus tie). GT-1 is located adjacent to the IP Unit 1 turbine building. The position indication and controls for associated breakers are located on a panel in the Central Control Room. GT-2 and GT-3 are located at the Buchanan substation. Either of these GTs can supply power to the IP2 auxiliary electrical system through the Buchanan 13.8 kV distribution system connections or through the 138 kV tie lines.

The TSs regarding the operability and surveillance requirements for the GTs ensure that the GTs can provide an alternate backup power source in case of loss of onsite emergency power and concurrent loss of offsite power as well as required auxiliary power for alternate safe shutdown systems equipment. At least one GT is maintained operable at all times. This provides an additional contingency of backup electrical power for maintaining the plant in a safe shutdown condition.

The TS requirements also ensure that adequate onsite and offsite fuel inventories are maintained for both the diesel generators and the GT generators. The onsite fuel supply for GT-1 consists of two 30,000-gallon fuel oil tanks sufficient for operation at full load for 30 hours or at one-half load for 48 hours. The fuel supply for GT-2 and GT-3 at Buchanan is supplied from a 200,000-gallon storage tank located at the Buchanan substation site. Currently, a minimum of 54,200 gallons of fuel is maintained available and dedicated for the required GT. This minimum fuel inventory ensures that one GT will be capable of supplying the maximum electrical load for the IP2 alternate safe shutdown power supply system for at least 3 days. Additional fuel oil suitable for the emergency diesel engines is stored on the site for GT-1 and at Buchanan for GT-2 and GT-3. A minimum additional storage of 29,000 gal is maintained in the storage tanks dedicated for diesel-generator use. This storage is sufficient for operation of two diesels for 112 hours at the minimum engineered safeguards load.

3.2 Station Blackout

In response to the SBO Rule (10 CFR 50.63), the licensee credited the GT generators as an alternate ac (AAC) power source. As an AAC source, the GTs are available within 1 hour of the onset of the SBO event and have sufficient capacity and capability to operate the systems necessary for coping with an SBO for a duration of 8 hours.

3.3 Alternate Safe Shutdown

The IP2 alternate safe shutdown system provides the necessary functions to maintain the plant in a safe shutdown condition following a fire that damages the capability to power and control essential equipment from normal and emergency IP2 sources. The alternate safe shutdown system including its functions, components, and operation is described in the "Indian Point Unit 2 Fire Protection Program Plan."

3.4 TS Changes for Fuel Oil Inventory

In its January 8 application, the licensee stated that a revised calculation, that now indicates that the minimum level of fuel oil currently specified in the TS, does not ensure that there is sufficient GT generator fuel oil to power the auxiliary boiler feedwater (AFW) pump with the limiting combination of additional loads that may be required for post-fire safe shutdown for 72 hours.

The current TS Section 3.7.C, specifies that 54,200 gallons of fuel oil are required to assure that one GT generator will be capable of supplying the required electrical load for post-fire safe shutdown for 72 hours. A revised calculation was performed to include the loading for the motor-driven AFW pump and also includes more conservative assumptions. More conservative assumptions included assuming that the no-load fuel consumption is about 30% of the full load nominal consumption. The prior analysis had assumed no fuel oil was consumed at the no-load condition. Also, the revised calculation applies corrections to the nominal consumption curve to account for factors such as aging. Thus, the new minimum fuel oil inventory required was calculated to be 94,870 gallons.

3.5 Surveillance Requirement for Load Testing

The tests specified in the TSs for the GTs are designed to assure that at least one GT will be available to provide power for operation of equipment, if required. The current IP2 alternate TS 4.6.D.1 assumed that the safe-shutdown power supply system demand would be for a maximum electrical load of approximately 750 kW. Thus, 750 kW was included as the required minimum test load in TS 4.6.D.1 to demonstrate adequate capability.

3.6 Staff Evaluation

As set forth below, the specified test frequencies for the GTs and associated fuel supply will be adequate to identify and correct any mechanical or electrical deficiency before it can result in a component malfunction or failure. Based on the more conservative fuel oil consumption rates for the GTs, the licensee has increased the amount of fuel oil required in TS 3.7.C for the operable GT from 54,200 gallons to 94,870 gallons. The value was also revised in the associated basis. In increasing this value, the licensee will continue to meet the requirement that the GT will be capable of supplying more than the maximum electrical load for safe shutdown for 3 days (72 hours).

On the basis of the required loading and coping duration for an SBO event, the minimum fuel oil requirement of 8 hours for an SBO event is bounded by the 72-hour requirement for post-fire safe shutdown.

The licensee stated that the revised calculation also indicated that the electrical capacity required to be tested by TS is not sufficient to demonstrate capability to power post-fire safe shutdown loads. The current TS SR Section 4.6.D, "Gas Turbine Generators," specifies that the GT generators shall be tested at a minimum load of 750 kW. For 10 CFR Part 50 Appendix R compliance, the licensee noted that the motor-driven AFW pump is available as a backup to the turbine-driven AFW pump. The previous minimum load rating considered only the minimum required loads and did not include the load from the motor-driven AFW pump. The revised load rating of 1600 kW includes the motor-driven AFW pump in addition to the limiting combinations of additional loads that might be used for post-fire safe shutdown. The licensee's proposal to add a 2000 kW test requirement to the TS is conservative, and confirms the ability of the GT generators to supply the loads needed to ensure post-fire safe shutdown.

3.7 Summary

The proposed TS changes are based on a revised calculation that uses more conservative assumptions to determine the minimum inventory of fuel oil required and to determine the minimum load rating to be tested for the GTs. The proposed change increases the minimum GT fuel oil inventory and electrical output test loading in order to assure compliance with the SBO and alternate safe shutdown requirements of 10 CFR 50.62 and Appendix R to 10 CFR Part 50. These changes make the TSs consistent with the most current calculations regarding GT generator fuel oil supply and loading capability. Therefore, the staff finds the proposed TS changes 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 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 (67 FR 10012). 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 Contributors: D. Frumkin
J. Knox

Date: September 18, 2002