



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

January 25, 2011

Vice President, Operations
Entergy Nuclear Operations, Inc.
Indian Point Energy Center
450 Broadway, GSB
P.O. Box 249
Buchanan, NY 10511-0249

SUBJECT: INDIAN POINT NUCLEAR GENERATING UNIT NO. 3 - ISSUANCE OF
AMENDMENT RE: EMERGENCY DIESEL GENERATOR TESTING
(TAC NO. ME2869)

Dear Sir or Madam:

The Commission has issued the enclosed Amendment No. 242 to Facility Operating License No. DPR-64 for the Indian Point Nuclear Generating Unit No. 3. The amendment consists of changes to the Technical Specifications (TS) in response to your application dated November 19, 2009, as supplemented by letters dated January 28 and December 16, 2010.

The amendment revises the test acceptance criteria specified in TS Surveillance Requirement (SR) 3.8.1.10 for the emergency diesel generator endurance test surveillance. The amendment revises the load ranges and power factor values specified for the endurance test for consistency with the associated plant safety analyses. The amendment also revises notes in SRs 3.8.1.7, 3.8.1.8, 3.1.8.9, 3.8.1.10, 3.8.1.12, and 3.8.4.2 consistent with changes previously made to the Standard Technical Specifications.

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,

A handwritten signature in cursive script that reads "John P. Boska".

John P. Boska, Senior Project Manager
Plant Licensing Branch I-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-286

Enclosures:

1. Amendment No. 242 to DPR-64
2. Safety Evaluation

cc w/encls: Distribution via Listserv



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

ENTERGY NUCLEAR INDIAN POINT 3, LLC

ENTERGY NUCLEAR OPERATIONS, INC.

DOCKET NO. 50-286

INDIAN POINT NUCLEAR GENERATING UNIT NO. 3

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 242
License No. DPR-64

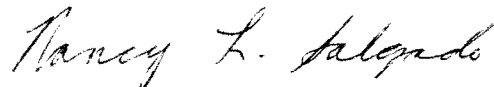
1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Entergy Nuclear Operations, Inc. (the licensee) dated November 19, 2009, as supplemented on January 28 and December 16, 2010, complies with the standards and requirements of the Atomic Energy 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-64 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 242, are hereby incorporated in the license. ENO 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 120 days.

FOR THE NUCLEAR REGULATORY COMMISSION



Nancy L. Salgado, 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: January 25, 2011

ATTACHMENT TO LICENSE AMENDMENT NO. 242

FACILITY OPERATING LICENSE NO. DPR-64

DOCKET NO. 50-286

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

3.8.1-7

3.8.1-8

3.8.1-9

3.8.1-10

3.8.4-2

Insert Pages

3.8.1-7

3.8.1-8

3.8.1-9

3.8.1-10

3.8.1-11

3.8.4-2

- (4) ENO pursuant to the Act and 10 CFR Parts 30, 40 and 70, to receive, possess, and use in amounts as required any byproduct, source or special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components; Amdt. 203
11/27/00
- (5) ENO pursuant to the Act and 10 CFR Parts 30 and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility. Amdt. 203
11/27/00
- C. This amended license shall be deemed to contain and is subject to the conditions specified in the following Commission regulations in 10 CFR Chapter I: Part 20, Section 30.34 of Part 30, Section 40.41 of Part 40, Sections 50.54 and 50.59 of Part 50, and Section 70.32 of Part 70; and is subject to all applicable provisions of the Act and to the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:
- (1) Maximum Power Level
- ENO is authorized to operate the facility at steady state reactor core power levels not in excess of 3216 megawatts thermal (100% of rated power).
- (2) Technical Specifications
- The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 242, are hereby incorporated in the License. ENO shall operate the facility in accordance with the Technical Specifications.
- (3) (DELETED) Amdt. 205
2-27-01
- (4) (DELETED) Amdt. 205
2-27-01
- D. (DELETED) Amdt.46
2-16-83
- E. (DELETED) Amdt.37
5-14-81
- F. This amended license is also subject to appropriate conditions by the New York State Department of Environmental Conservation in its letter of May 2, 1975, to Consolidated Edison Company of New York, Inc., granting a Section 401 certification under the Federal Water Pollution Control Act Amendments of 1972.

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.4	Verify each day tank contains \geq 115 gal of fuel oil.	31 days
SR 3.8.1.5	Check for and remove accumulated water from each day tank.	31 days
SR 3.8.1.6	Verify the fuel oil transfer system operates to automatically transfer fuel oil from DG storage tank to the day tank.	31 days
SR 3.8.1.7	<p>-----NOTE-----</p> <p>This Surveillance shall not normally be performed in MODE 1 or 2. However this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced.</p> <p>-----</p> <p>Verify manual transfer of AC power sources from the normal offsite circuit to the alternate offsite circuit.</p>	24 months

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.8.1.8 -----NOTES-----</p> <ol style="list-style-type: none"> 1. This Surveillance shall not normally be performed in MODE 1 or 2. However this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. 2. Only required to be met if 138 kV offsite circuit is supplying 6.9 kV bus 5 and 6 and the Unit Auxiliary Transformer is supplying 6.9 kV bus 2 or 3. <p>-----</p> <p>Verify automatic transfer of AC power for 6.9 kV buses 2 and 3 from the unit auxiliary transformer to 6.9 kV buses 5 and 6.</p>	<p>24 months</p>
<p>SR 3.8.1.9 -----NOTE-----</p> <p>This Surveillance shall not normally be performed in MODE 1 or 2. However this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced.</p> <p>-----</p> <p>Verify each DG's automatic trips are bypassed on actual or simulated loss of voltage signal on the emergency bus concurrent with an actual or simulated ESF actuation signal except:</p> <ol style="list-style-type: none"> a. Engine overspeed; b. Low lube oil pressure; and c. Overcrank relay. 	<p>24 months</p>

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.8.1.10 -----NOTES-----</p> <ol style="list-style-type: none"> 1. Momentary transients outside the load and power factor ranges do not invalidate this test. 2. This Surveillance shall not normally be performed in MODE 1 or 2. However this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. 3. If performed with DG synchronized with offsite power, it shall be performed at a power factor of ≤ 0.85 for EDG 31, ≤ 0.87 for EDG 32, and ≤ 0.84 for EDG 33. However, if grid conditions do not permit, the power factor limit is not required to be met. Under this condition the power factor shall be maintained as close to the limit as practicable. 4. Prior to performing SR 3.8.1.10 while connected to the 13.8 kV offsite power, the grid condition must be evaluated to show that conditions exist to reasonably allow the required power factor limits to be met or perform the SR while connected to the 138 kV offsite power. <p>-----</p> <p>Verify each DG operates for ≥ 8 hours:</p> <ol style="list-style-type: none"> a. For ≥ 105 minutes loaded ≥ 1925 kW and ≤ 1941 kW; and b. For the remaining hours of the test loaded ≥ 1700 kW and ≤ 1750 kW. 	<p>24 months</p>
<p>SR 3.8.1.11 -----NOTE-----</p> <p>Load timers associated with equipment that has automatic initiation capability disabled are not required to be operable.</p> <p>-----</p> <p>Verify each time delay relay functions within the required design interval.</p>	<p>18 months</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SR 3.8.1.12

-----NOTES-----

1. All DG starts may be preceded by an engine prelube period.
2. This Surveillance shall not normally be performed in MODE 1, 2, 3, or 4. However portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced.
3. This SR may be performed on safeguards power trains one at a time, or simultaneously. Appropriate plant conditions must be established when testing three safeguards power trains simultaneously.

Verify on an actual or simulated loss of offsite power signal in conjunction with an actual or simulated ESF actuation signal:

- a. De-energization of emergency buses;
- b. Load shedding from emergency buses; and
- c. DG auto-starts from standby condition and:
 1. energizes permanently connected loads in ≤ 10 seconds,
 2. energizes auto-connected emergency loads through individual load timers,
 3. achieves steady state voltage ≥ 422 V and ≤ 500 V,
 4. achieves steady state frequency ≥ 58.8 Hz and ≤ 61.2 Hz, and
 5. supplies permanently connected and auto-connected emergency loads for ≥ 5 minutes.

24 months

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.8.1.13 -----NOTE-----</p> <ol style="list-style-type: none"> 1. All DG starts may be preceded by an engine prelube period. 2. Performance of SR 3.8.1.12 may be used to satisfy the requirements of this SR if all three diesel generators are started simultaneously. <p>-----</p> <p>Verify when started simultaneously from standby condition, each DG achieves:</p> <ol style="list-style-type: none"> a. in ≤ 10 seconds, voltage ≥ 422 V and frequency ≥ 58.8 Hz; and b. steady state voltage ≥ 422 V and ≤ 500V, and frequency ≥ 58.8 Hz and ≤ 61.2 Hz. 	<p>10 years</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.8.4.1 Verify battery terminal voltage on float charge is within the following limits:</p> <p style="margin-left: 40px;">a. ≥ 125.7 V for battery 31;</p> <p style="margin-left: 40px;">b. ≥ 123.5 V for battery 32; and</p> <p style="margin-left: 40px;">c. ≥ 127.8 V for batteries 33 and 34.</p>	31 days
<p>SR 3.8.4.2 -----NOTE-----</p> <p style="margin-left: 40px;">This Surveillance shall not normally be performed in MODE 1, 2, 3, or 4. However, portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced.</p> <p style="margin-left: 40px;">-----</p> <p style="margin-left: 40px;">Verify each battery charger supplies its associated battery at the voltage and current adequate to demonstrate battery charger capability requirements are met.</p>	24 months
<p>SR 3.8.4.3 -----NOTES-----</p> <p style="margin-left: 40px;">This Surveillance shall not be performed in MODE 1, 2, 3, or 4.</p> <p style="margin-left: 40px;">-----</p> <p style="margin-left: 40px;">Verify battery capacity is adequate to supply, and maintain in OPERABLE status, the required emergency loads for the design duty cycle when subjected to a battery service test or a modified performance discharge test.</p>	24 months

(continued)



UNITED STATES
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WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 242 TO FACILITY OPERATING LICENSE NO. DPR-64
ENTERGY NUCLEAR OPERATIONS, INC.
INDIAN POINT NUCLEAR GENERATING UNIT NO. 3

DOCKET NO. 50-286

1.0 INTRODUCTION

By letter dated November 19, 2009 (Agencywide Document Access and Management System (ADAMS) Accession No. ML093360508), as supplemented by letters dated January 28, 2010 (ADAMS Accession No. ML100490107) and December 16, 2010 (ADAMS Accession No. ML103620560), Entergy Nuclear Operations, Inc., (Entergy or the licensee) requested an amendment to Appendix A, Technical Specifications (TS), of the Facility Operating License for Indian Point Nuclear Generating Unit No. 3 (IP3). The changes would revise the test acceptance criteria specified in TS Surveillance Requirement (SR) 3.8.1.10 for the emergency diesel generator (EDG) endurance test surveillance. Specifically, the licensee has proposed revising the load ranges and power factor values specified for the endurance test for consistency with the associated plant safety analyses. The changes also modify notes in SRs 3.8.1.7, 3.8.1.8, 3.1.8.9, 3.8.1.10, 3.8.1.12, and 3.8.4.2 consistent with changes to the Standard Technical Specifications (STS) in accordance with TS Task Force (TSTF) - 283-A, Revision 3. These changes modify notes in the EDG surveillances and direct current power system surveillances to allow the tests to be performed in previously prohibited plant operating modes in order to reestablish component operability provided an assessment determines that the safety of the plant is maintained or enhanced.

The supplements dated January 28 and December 16, 2010, 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.

2.0 REGULATORY EVALUATION

The following explains the applicability of the General Design Criteria (GDC) for IP3. The construction permit for IP3 was issued by the Atomic Energy Commission (AEC) on August 13, 1969, and the operating license was issued on December 12, 1975. The plant GDC are discussed in the Final Safety Analysis Report (FSAR) Chapter 1.3, "General Design Criteria," with more details given in the applicable FSAR sections. The AEC published the final rule that added Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, Appendix A, "General Design Criteria for Nuclear Power Plants," in the *Federal Register* (36 FR 3255) on February 20,

1971, with the rule effective on May 21, 1971. In accordance with an NRC staff requirements memorandum from S. J. Chilk to J. M. Taylor, "SECY-92-223 - Resolution of Deviations Identified During the Systematic Evaluation Program," dated September 18, 1992 (ADAMS Accession No. ML003763736), the Commission decided not to apply the Appendix A GDC to plants with construction permits issued prior to May 21, 1971. Therefore, the GDC which constitute the licensing bases for IP3 are those in the updated FSAR (UFSAR).

Based on a review of the IP3 UFSAR, the NRC staff identified the following GDC as being applicable to the proposed amendment:

IP3 UFSAR Section 8.1.1 states: An emergency power source shall be provided and designed with adequate independency, redundancy, capacity, and testability to permit the functioning of the engineered safety features and protection systems required to avoid undue risk to the health and safety of the public. This power source shall provide this capacity assuming a failure of a single component.

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

Paragraph 50.36(c)(2)(ii) of 10 CFR, "Technical specifications," requires that "[a] technical specification limiting condition for operation [LCO] of a nuclear reactor must be established for each item meeting one or more of the [criteria set forth in 10 CFR 50.36(c)(2)(ii)(A)-(D)]."

Paragraph 50.36(c)(3) of 10 CFR, "Technical specifications," requires that TSs include SRs, which "are requirements relating to test, calibration, or inspection to assure that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and that the limiting conditions for operation will be met."

While IP3 is not currently committed to either of the following NRC guidance documents, the NRC staff used these documents as a technical reference during its review of the license amendment request:

Safety Guide 9, "Selection of Diesel Generator Set Capacity for Standby Power Supplies," describes an acceptable basis for the selection of EDG sets of sufficient capacity and margin to implement GDC 17.

Regulatory Guide (RG) 1.9, "Selection, Design, Qualification, and Testing of Emergency Diesel Generators Units Used As Class 1E Onsite Electric Power Systems at Nuclear Power Plants," provides guidance with respect to design and testing of safety-related EDGs.

3.0 TECHNICAL EVALUATION

The normal sources of auxiliary power during IP3 operation are both the generator and offsite power. Power for plant startup and shut down is provided by connections to the offsite power system. The plant has two offsite circuits – the normal or 138 kilo-Volt (kV) circuit and the alternate or 13.8 kV circuit. The 138 kV (i.e., normal) offsite circuit has a dedicated 138kV/6.9 kV Station Auxiliary Transformer (SAT). The 138 kV side of the SAT is connected to the Buchanan substation through a 138 kV preferred and a backup feeder. The 6.9 kV side of the SAT is connected to plant 6.9 kV Buses 5 and 6. Each of these 6.9 kV buses has an alternate feed via a 13.8 kV/6.9 kV autotransformer which is connected to the Buchanan substation.

480 V engineered safety features (ESF) buses are connected to the 6.9 kV buses through the 6.9 kV/480 V station service transformers. The safety-related 480 V buses are provided with EDG back-up in the event of voltage failure.

The IP3 onsite power system has three EDGs. As described in Section 8.2.3 of the IP3 UFSAR, the EDGs consist of an Alco model 16-251-E engine coupled to a Westinghouse 2188 kilo-Volt amperes (KVA), 0.8 power factor, 900 rpm, 3 phase, 60 cycle, 480 V generator. Each EDG is rated for 1750 kilowatts (kW) continuous power with a 2-hour rating of 1950 kW and a 30-minute rating of 2000 kW. The diesels are started automatically on an under voltage of their respective buses. The EDGs are each connected to their respective ESF buses to supply emergency shutdown power in the event of loss of all other AC auxiliary power. There are no automatic ties between the buses associated with each diesel generator. Each diesel will be started automatically on a safety injection signal or upon the occurrence of undervoltage on its associated 480 volt bus. Any two diesels have adequate capacity to supply the ESF for the design basis accident concurrent with loss of offsite power. This capacity is adequate to provide a safe and orderly plant shutdown in the event of loss of outside electrical power. Interlocks are provided so that a fault on any bus will lock out all possible sources of power to that bus. Interlocks are provided to prevent circuit breakers connecting EDGs No. 31, 32, and 33 to 480 V Buses No. 2A, 6A, and 5A, respectively, from automatically closing if there is voltage on the bus.

The 125 volt direct current (DC) system is divided into five buses with one battery and battery charger (supplied from the 480 volt system) serving each. The battery chargers supply the normal DC loads as well as maintaining proper charges on the batteries. One battery charger is available to each battery so that the five batteries are maintained at full charge in anticipation of a loss-of-alternating-current power incident. This ensures that adequate DC power is available for starting the emergency generators and other emergency uses.

The DC system is designed such that a single random failure will not result in the loss of redundant DC power and/or distribution panels due to a common mode electrical failure.

3.1 Evaluation of Changes to TS 3.8.1.10

During an NRC inspection of IP3, it was determined that the licensee did not use the most limiting design inputs in the analyses and surveillance test acceptance criteria for EDG loading. Specifically, the endurance test load ranges for EDG 32 did not ensure loading to at-least the maximum possible load during an accident. This was due to the fact that the loading values in

the test were based on the diesel's rating and guidance in the Improved Technical Specifications (ITS) and not the actual loading conditions at the plant. The licensee agreed that the test was non-conservative and that there was a need to submit an amendment to correct the issue.

In the process of revising the SR, the licensee also found that the power factor requirement of the test also required revision. Since this test is performed at IP3 by synchronizing to the power grid, the revised power factor cannot always be met because of grid conditions. Because of this case, a note was added to the surveillance test to require the power factor to be kept as close as practicable to the target value. This change is consistent with the STS.

The licensee proposed revising SR 3.8.1.10 as follows (proposed additions are underlined; proposed deletions are struck-out):

-----Notes-----

1. Momentary transients outside the load and power factor ranges do not invalidate this test.
2. This Surveillance shall not normally be performed in MODE 1 or 2. However this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced.
3. If performed with DG synchronized with offsite power, it shall be performed at a power factor of ≤ 0.85 for EDG 31, ≤ 0.87 for EDG 32, and ≤ 0.84 for EDG 33. However, if grid conditions do not permit, the power factor limit is not required to be met. Under this condition, the power factor shall be maintained as close to the limit as practicable.
4. Prior to performing SR 3.8.1.10 while connected to the 13.8 kV offsite power, the grid condition must be evaluated to show that conditions exist to reasonably allow the required power factor limits to be met or perform the SR while connected to the 138 kV offsite power.

Verify each DG ~~operating at a power factor of ≤ 0.9~~ operates for ≥ 8 hours:

- a. For ≥ 105 minutes loaded ~~≥ 4837~~ 1925 kW and ~~≤ 4925~~ 1941 kW; and
- b. For the remaining hours of the test loaded ~~≥ 4575~~ 1700 kW and ≤ 1750 kW.

The change to Note 2 will be discussed in Section 3.2.

Evaluation of Proposed EDG Loading Acceptance Criteria

The peak loading conditions for the IP3 EDGs are identified in the licensee's calculation IP3-CALC-ED-00207. This evaluation accounts for the time-dependent electrical power requirements of various safeguards components as the accident scenario progresses. During the previously mentioned NRC inspection, the peak loading calculations were found to be in error because they used non-conservative brake horsepower values and did not account for the

maximum frequency limit allowed by the TS limit of 61.2 hertz (Hz). As a result, existing IP3 TS SR 3.8.1.10 does not ensure testing to the peak loading conditions identified in the IP3 calculations. The licensee took corrective action to define a bounding EDG load and demonstrate operability by testing. The licensee is currently administratively controlling EDG frequency between 59.7 Hz and 60.3 Hz. The licensee analyzed the effect of an increase in the load due to an over frequency of 60.3 Hz in IP3-CALC-ED-00207, Revision 7, "480V Buses 2A, 3A, 5A, & 6A and EDG's 31, 32 and 33 Accident Loading." The licensee has since revised the brake horsepower (BHP) calculations in IP-CALC-04-0809, Revision 2, "Brake Horsepower Values Related to Certain Pumps and Fans for EDG Electrical Loading," CN-CRA-08-11, Revision 0, "Indian Point Unit 3 Fan Cooler Unit (FCU) Horsepower Under LOCA [loss-of-coolant accident] Conditions." The NRC staff's review of these calculations was limited to IP3 EDG loading characteristics considering design factors such as EDG capacity, load size, power factor, and loading sequence. Based on its review, the NRC staff finds that the licensee has addressed the concerns raised in the NRC inspection. Furthermore, the NRC staff confirmed that EDG 32 has the worst case loading at IP3. According to the licensee's calculations, the bounding value of 1924.4 kW has dropped to a maximum loading of 1915.15 kW and EDG 31 and 33 have smaller maximum loads of 1868.55 kW and 1691.9 kW, respectively. All three diesels are below 1700 kW within 105 minutes for the remainder of the time, which is within the continuous rating of 1750 kW.

The new SR acceptance criterion of ≥ 1925 kW to ≤ 1941 kW for ≥ 105 minutes bounds these peak loading conditions, without exceeding the EDG 2-hour rating limit. The new SR acceptance criterion of ≥ 1700 kW to ≤ 1750 kW for the balance of the 8 hours bound the calculated loads, without exceeding the continuous rating limit of 1750 kW.

The NRC staff finds that the enhanced load testing criteria for TS SR 3.8.1.10 will more realistically test the IP3 EDGs to calculated conditions that would be expected to occur during an accident.

Evaluation of Power Factor Acceptance Criteria

According to the licensee, the existing TS SR 3.8.1.10 acceptance criterion for power factor (≤ 0.90) was used because the STS had this value in brackets indicating plant-specific numbers were used and insufficient analysis was used to determine the correct number. Prior to conversion to the ITS, a test acceptance criterion for power factor was not specified in the IP3 TS. The power factor assumed in the IP3 load calculations (IP3-CALC-ED-00207, Revision 7) was 0.85. When the licensee revised the loading calculation, the power factor was revised as well. Specifically, the licensee revised the power factors as follows: ≤ 0.85 for EDG 31, ≤ 0.87 for EDG 32 and ≤ 0.84 for EDG 33.

The licensee asserts that these power factor values are achievable during EDG testing when tied to the 138 kV offsite power source under the test conditions applicable for this surveillance based on a review of past test results. The licensee noted that when tied to the 13.8 kV offsite power source there can be problems meeting the power factor during periods of high grid voltage because the 13.8 kV transformer does not have an adjustable tap changer and, therefore, the power factor has to be controlled by regulation of the grid. The EDGs are normally synchronized to the 138 kV offsite power source for testing. However, there may be times during an outage when testing is required and the EDG must be synchronized to the 13.8 kV

offsite power source. Past practice has been to retest the EDG while attached to the 138 kV offsite power source at a later time if the power factor is not met. The licensee added Note 4 to SR 3.8.1.10 to specify that if connected through the 13.8 kV transformer, the grid condition must be evaluated to show that conditions exist to reasonably allow the required power factor limits to be met, or else perform the SR while connected through the 138 kV transformer.

Based on its review of IP3 calculation IP3-CALC-ED-00207, Revision 7, the NRC staff finds that the revised power factors will more realistically test the EDGs to the calculated conditions that would be expected to occur during an accident.

The NRC staff's review of the supplied IP3 calculations was limited to the EDG loading profile considering factors such as EDG capacity, load size, power factor, and loading sequence.

Based on its review of the information contained in the license amendment request and the supplied IP3 calculations, the NRC staff finds that the proposed EDG loading and power factor values envelop the design-basis accident criteria. Therefore, the NRC staff finds that these changes will ensure that the EDGs will perform their intended design function.

3.2 Evaluation of Changes Regarding TSTF-283-A

In order to maintain consistency with the STS, the licensee proposed other changes to the EDG endurance test and other surveillances. The changes involve allowing specific SRs to be performed in plant modes of operation that were previously not allowed in order to demonstrate operability of the equipment. The condition of performing these tests in the previously prohibited modes is that an assessment will be performed by the licensee that will show that the safety of the plant is maintained or enhanced by the performance of the surveillance. The TS Bases changes, which are consistent with TSTF-283-A, state that this assessment shall contain, as a minimum, the potential outcomes and transient associated with any outcome of the surveillance and what operator procedures would be needed to cope with those outcomes.

Originally, the licensee also requested changes to TS SRs 3.8.4.3 and 3.8.4.4 in accordance with TSTF-283-A revisions to the STS. The licensee subsequently removed those proposed changes from the amendment, by letter dated January 28, 2010.

The licensee proposed the following changes:

- The note in SR 3.8.1.7 will be changed to the following:

This Surveillance shall not normally be performed in MODE 1 or 2. However this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced.

- Note 1 in SR 3.8.1.8 will be changed to the following:

This Surveillance shall not normally be performed in MODE 1 or 2. However this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced.

- The note in SR 3.8.1.9 will be changed to the following:

This Surveillance shall not normally be performed in MODE 1 or 2. However this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced.

- Note 2 in SR 3.8.1.10 will be changed to the following:

This Surveillance shall not normally be performed in MODE 1 or 2. However this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced.

- Note 2 in SR 3.8.1.12 will be changed to the following:

This Surveillance shall not normally be performed in MODE 1, 2, 3, or 4. However portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced.

- The note in 3.8.4.2 will be changed to the following:

This Surveillance shall not normally be performed in MODE 1, 2, 3, or 4. However portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced.

These changes will allow the licensee to perform these surveillances to reestablish OPERABILITY while at power and during other previously restricted modes of operation provided the assessment determines that the safety of the plant is maintained or enhanced. As described in TSTF 283-A and the proposed TS Bases, this would allow testing in situations like post work testing following maintenance, corrective modification, and other unanticipated operability concerns on the equipment. To ensure that these changes can either improve or maintain safety, each of the above modified notes requires the licensee to perform an assessment to determine whether the safety of the plant would be maintained or enhanced. The details of the required assessment are described in TSTF-283-A and the proposed TS Bases for IP3. Specifically, the licensee's assessment would examine the impacts of running the surveillance in a previously prohibited Mode and consider all of the possible transients and outcomes associated with both a successful and unsuccessful performance of that test. These outcomes would then be measured against the avoided risk of shutting down the unit. The changes are also, in general, consistent with STS (NUREG-1431, Revision 3).

The NRC staff finds these changes acceptable since the changes would require either maintaining or improving safety prior to performance of the surveillance activity.

3.3 Conclusion

Based on its review, the NRC staff finds that the changes will ensure that the IP3 EDGs will perform their intended design function. The NRC staff concludes that the revisions to the IP3 TSs provide reasonable assurance of the continued availability of the required EDG capacity to maintain the reactor in a safe condition after an anticipated operational occurrence or a postulated design-basis accident. The NRC staff also concludes that the TS changes are consistent with TSTF 283-A, Revision 3, in accordance with 10 CFR 50.36, and meet the intent of the GDC in the IP3 UFSAR. Therefore, the NRC staff finds the 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 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 (75 FR 10829). 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: January 25, 2011

DATED: January 25, 2011

AMENDMENT NO. 242 TO FACILITY OPERATING LICENSE NO. DPR-64 INDIAN POINT
UNIT 3

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January 25, 2011

Vice President, Operations
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Indian Point Energy Center
450 Broadway, GSB
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SUBJECT: INDIAN POINT NUCLEAR GENERATING UNIT NO. 3 - ISSUANCE OF
AMENDMENT RE: EMERGENCY DIESEL GENERATOR TESTING
(TAC NO. ME2869)

Dear Sir or Madam:

The Commission has issued the enclosed Amendment No. 242 to Facility Operating License No. DPR-64 for the Indian Point Nuclear Generating Unit No. 3. The amendment consists of changes to the Technical Specifications (TS) in response to your application dated November 19, 2009, as supplemented by letters dated January 28 and December 16, 2010.

The amendment revises the test acceptance criteria specified in TS Surveillance Requirement (SR) 3.8.1.10 for the emergency diesel generator endurance test surveillance. The amendment revises the load ranges and power factor values specified for the endurance test for consistency with the associated plant safety analyses. The amendment also revises notes in SRs 3.8.1.7, 3.8.1.8, 3.1.8.9, 3.8.1.10, 3.8.1.12, and 3.8.4.2 consistent with changes previously made to the Standard Technical Specifications (STS).

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. 50-286

Enclosures:

1. Amendment No. 242 to DPR-64
2. Safety Evaluation

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