June 7, 2006

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

SUBJECT: INDIAN POINT NUCLEAR GENERATING UNIT NOS. 2 AND 3 - ISSUANCE OF AMENDMENTS RE: SETPOINT VERIFICATION OF TRIP ACTUATING DEVICES (TAC NOS. MC6956 AND MC6957)

Dear Mr. Kansler:

The Commission has issued the enclosed Amendment No. 247 to Facility Operating License No. DPR-26 for the Indian Point Nuclear Generating Unit No. 2 (IP2) and Amendment No. 231 to Facility Operating License No. DPR-64 for the Indian Point Nuclear Generating Unit No. 3 (IP3). The amendments consist of changes to the Technical Specifications (TSs) in response to your application dated April 22, 2005.

The amendments revise the surveillance requirements (SRs) for TS 3.3.5, "Loss of Power (LOP) Diesel Generator (DG) Start Instrumentation." Specifically, a note was added to IP2 SR 3.3.5.2 to indicate that the verification of the setpoint is not required for the 480 volt (V) bus degraded voltage function when performing the trip actuating device operational test. A similar note was added to IP3 SR 3.3.5.1 for the 480 V degraded voltage and undervoltage functions.

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 Nos. 50-247 and 50-286

Enclosures:
1. Amendment No. 247 to DPR-26
2. Amendment No. 231 to DPR-64
3. Safety Evaluation

cc w/encls: See next page

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cc w/encls: See next page
ADAMS Accession Number: ML051470108 Package: ML061580536
See previousconcurrence

OFFICE	LPL1-1\PM	LPL1-1\LA	EEEB\BC	ITSB\BC	OGC	LPL1-1\BC
NAME	JBoska	SLittle*	GWilson	TKobetz	SHamrick	RLaufer
DATE	5/04/06	8/15/05	5/24/06	5/24/06	6/02/06	6/05/06

Official Record Copy

DATED: June 7, 2006

AMENDMENT NO. 247 TO FACILITY OPERATING LICENSE NO. DPR-26 INDIAN POINT UNIT 2 AND AMENDMENT NO. 231 TO FACILITY OPERATING LICENSE NO. DPR-64 INDIAN POINT UNIT 3

PUBLIC
LPL1-1 R/F
RidsNrrDorlLpla
RidsNrrPMJBoska
RidsNrrLASLittle
RidsNrrDeEeeb
RidsNrrDirsItsb
G. Cobey, RI
G. Hill (4)
RidsOGCMailCenter
RidsAcrsAcnwMailCenter

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Indian Point Nuclear Generating Unit Nos. 2 & 3

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ENTERGY NUCLEAR INDIAN POINT 2, LLC

ENTERGY NUCLEAR OPERATIONS, INC.

DOCKET NO. 50-247

INDIAN POINT NUCLEAR GENERATING UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 247
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 April 22, 2005, 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. 247, 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 30 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 Technical
Specifications

Date of Issuance: June 7, 2006

ATTACHMENT TO LICENSE AMENDMENT NO. 247

FACILITY OPERATING LICENSE NO. DPR-26

DOCKET NO. 50-247

Replace the following page of the Appendix A Technical Specifications with the attached revised page. The revised page is identified by amendment number and contains a marginal line indicating the area of change.

Remove Page	Insert Page
3.3.5-4	3.3.5-4

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. 231
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 April 22, 2005, 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. 231, 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 30 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 Technical
Specifications

Date of Issuance: June 7, 2006

ATTACHMENT TO LICENSE AMENDMENT NO. 231

FACILITY OPERATING LICENSE NO. DPR-64

DOCKET NO. 50-286

Replace the following page of the Appendix A Technical Specifications with the attached revised page. The revised page is identified by amendment number and contains a marginal line indicating the area of change.

Remove Page	Insert Page
3.3.5-2	3.3.5-2

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 247 TO FACILITY OPERATING LICENSE NO. DPR-26

AND AMENDMENT NO. 231 TO FACILITY OPERATING LICENSE NO. DPR-64

ENTERGY NUCLEAR OPERATIONS, INC.

INDIAN POINT NUCLEAR GENERATING UNIT NOS. 2 AND 3

DOCKET NOS. 50-247 AND 50-286

1.0 INTRODUCTION

By letter dated April 22, 2005 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML051230310), Entergy Nuclear Operations, Inc. (the licensee) submitted a request for changes to the Indian Point Nuclear Generating Unit Nos. 2 and 3 (IP2 and IP3) Technical Specifications (TSs). The requested changes would revise the surveillance requirements (SRs) for TS 3.3.5, “Loss of Power (LOP) Diesel Generator (DG) Start Instrumentation.” Specifically, a note would be added to IP2 SR 3.3.5.2 to indicate that the verification of the setpoint is not required for the 480 volt (V) bus degraded voltage function when performing the trip actuating device operational test (TADOT). A similar note would be added to IP3 SR 3.3.5.1 for the 480 V degraded voltage and undervoltage functions.

2.0 REGULATORY EVALUATION

The Nuclear Regulatory Commission (NRC) staff finds that the licensee in its April 22, 2005, letter identified the applicable regulatory requirements. The regulatory requirements for which the staff based its acceptance are stated below.

General Design Criterion (GDC) 13, “Instrumentation and control,” of Appendix A, "General Design Criteria for Nuclear Power Plants," to Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50. GDC 13 in part requires instrumentation to monitor variables and systems over anticipated ranges for normal operation, anticipated operational occurrences, and accident conditions. Appropriate controls shall be provided to maintain these variables and systems within prescribed operating ranges.

Criterion 3 in Section 50.36(c)(2)(ii) of 10 CFR Part 50 requires that a TS limiting condition for operation (LCO) be established for a structure, system or component that is part of the primary success path and which functions or actuates to mitigate a design-basis accident or transient. Section 50.36(c)(3) states, in part, that SRs are requirements relating to test, calibration or inspection to assure that facility operation will be within safety limits and that the limiting conditions for operation (LCOs) will be met.

3.0 TECHNICAL EVALUATION

3.1 Background

At IP2 and IP3, the 480 V electrical system consists of seven buses, each supplied from a 6900 V bus via a station service transformer. Four of these 480 V buses, nos. 2A, 3A, 5A and 6A, are supplied from 6900 V buses 2, 3, 5, and 6, respectively, and comprise the safety-related 480 V (safeguards) system. The required safeguards equipment circuits are dispersed among these buses. These buses are provided with backup power from the emergency diesel generators (EDGs) in the event of voltage failure on a safety-related 480 V bus, and are protected against a sustained undervoltage condition when supplied from a 6900 V bus, which could cause misoperation of, or damage to, safeguards equipment. In addition, the EDGs will be started automatically on a safety injection (SI) signal. One EDG is connected to bus 5A, one to bus 6A, and the third to the combination of buses 2A and 3A. The undervoltage relay scheme was designed so that loss of 480 V power does not prevent the relay scheme from functioning properly.

For IP2, the LOP DG start instrumentation consists of three different sets of undervoltage detection relays: station blackout (SBO) relays, undervoltage relays, and degraded voltage relays. The SBO relays provide a fast response under complete LOP conditions on 480 V bus 5A or 6A. The undervoltage relays detect an undervoltage condition on any of the four 480 V safeguards buses and include a time delay to prevent spurious actuation. The undervoltage relays provide input signals to the sequencing logic and EDG start circuitry. The degraded voltage relays detect a degraded voltage condition on any of the four 480 V safeguards buses and include a time delay to ensure proper coordination with plant electrical transients such as large motor starts. The degraded voltage function will actuate after a short time delay, if there is a concurrent SI signal, and after a longer time delay, if no concurrent SI signal is present. The degraded voltage relays are subject to a TADOT every 31 days and the SBO relays and undervoltage relays are subject to a TADOT and actuation logic test every 24 months. All the relays are subject to a channel calibration every 24 months.

For IP3, the LOP DG start instrumentation consists of independent undervoltage relays and degraded voltage relays. The undervoltage relays detect an undervoltage condition on any of the four 480 V safeguards buses. The undervoltage relays initiate load stripping, EDG start, bus transfer, and sequencing of safeguards loads in the event of extreme reductions in bus voltage. There is no explicit time delay for this function because of the use of induction type disc relays which decrease the actual time to trip as a function of voltage decrease below the setpoint. The degraded voltage relays initiate bus disconnection from the offsite power source by opening the bus supply breaker upon the occurrence of a sustained period of voltage low enough to cause misoperation of, or damage to, safeguards equipment. The degraded voltage relays and undervoltage relays are subject to a TADOT every 31 days. The undervoltage relays are subject to a channel calibration every 24 months. The degraded voltage relays are subject to a channel calibration every 18 months.

3.2 Proposed TS Changes

IP2 SR 3.3.5.2 on TADOT of the 480 V degraded voltage function would be revised by the addition of a note stating that the verification of the setpoint is not required for the 480 V bus degraded voltage function when performing the TADOT.

IP3 SR 3.3.5.1 on TADOT of the 480 V degraded and undervoltage functions would be revised by the addition of a note stating that the verification of the setpoint is not required for the 480 V bus degraded voltage and the undervoltage functions when performing the TADOT.

3.3 Staff Evaluation

In its April 22, 2005, application, the licensee stated that the current TS SRs require the performance of a TADOT every 31 days on the 480 V degraded voltage function at IP2 and the 480 V degraded voltage and undervoltage functions at IP3.

The definition of a TADOT in Section 1.1, "Definitions," of the IP2 TSs is identical to the definition of a TADOT in NUREG-1431, "Standard Technical Specifications - Westinghouse Plants," Volume 1, Revision 3.

> A TADOT shall consist of operating the trip actuating device and verifying the OPERABILITY of all devices in the channel required for trip actuating device OPERABILITY. The TADOT shall include adjustment, as necessary, of the trip actuating device so that it actuates at the required setpoint within the necessary accuracy. The TADOT may be performed by means of any series of sequential, overlapping, or total channel steps.

The definition of a TADOT in the IP3 TSs is consistent with but not identical to this definition.

The design of the 480 V degraded voltage function at IP2 and IP3 includes 2 relays per safeguards bus that each sense bus voltage. A degraded voltage function trip signal requires both relays to sense and actuate (2 out of 2 logic) on the degraded voltage. The actuation of these relays then energizes one or both time delay relays (short and longer time delay) and starts the timing sequence. Once the time delay relay times out, a contact closes that trips the respective bus supply breaker, which in turn actuates the undervoltage circuit.

For the 480 V undervoltage function at IP3, the design includes 2 undervoltage relays per safeguards bus. If either one of these relays sense an undervoltage condition, it will actuate a trip signal. Unlike the degraded voltage function, there are no time delay relays that must also actuate. Thus, when either undervoltage relay trips, it actuates the logic to trip the respective bus supply breaker, initiate load shedding, start the associated EDG for that bus, and initiate load sequencing.

The licensee stated that the undervoltage and degraded voltage relays would need to be removed from the circuitry and bench tested in order to measure and adjust the setpoints. In addition to the difficulty in removal, the removal of a degraded voltage relay from the circuitry will make the LOP DG actuation circuit inoperable, defeating the automatic actions of the degraded voltage function, and make the associated EDG inoperable per TSs, for the period until reinstallation. The removal of an undervoltage relay from the circuitry will make the circuit

less reliable since a single failure of the remaining undervoltage relay will defeat the automatic actuations for bus undervoltage.

In its application, the licensee stated that the 480 V degraded and undervoltage relays are stable and not subject to setpoint drift that would warrant a setpoint verification every 31 days. Setpoint verification is performed during the channel calibration required by SR 3.3.5.5 at IP2 on a test frequency of 24 months and SR 3.3.5.2 at IP3 on a test frequency of 18 months for the degraded voltage circuit and 24 months for the undervoltage circuit. A channel calibration is the adjustment, as necessary, of the channel output such that it responds within the necessary range and accuracy to known values of the parameter that the channel monitors. The channel calibration encompass all devices in the channel required for channel operability. Thus, the channel calibration is a complete check of the instrument loop, including the sensor, and verifies that the sensor responds within the necessary range and accuracy. The frequency of calibration is based on operating experience, and consistency with industry practice. The licensee stated that calibration results for 128 surveillances at IP2 and IP3 were reviewed and the as found conditions met acceptance criteria in 125 of the surveillance tests. This experience indicates that the relays are reliable for the proposed setpoint verification intervals.

In addition, the licensee has proposed to modify the applicable TS Bases 3.3.5 in accordance with the licensee-controlled TS Bases Control Program. The Bases for the SRs would acknowledge the addition of the TS SR notes stating that verification of the setpoint is not required for the TADOT. The current discussion in the TS Bases about the non-conservatism of the existing SR that states that the intent of the SR was never to require pulling relays for bench testing will be removed. The statement that the non-conservative SR was being treated as a non-conforming condition under NRC Generic Letter 91-18 with administrative control would also be removed. The NRC staff has no objection to the changes proposed to TS Bases 3.3.5.

The NRC staff has reviewed the information provided by the licensee to support its application. The staff finds that the setpoint drift for degraded and undervoltage sensing relays is stable based on the results of the periodic channel calibrations. In addition, the staff notes that the monthly frequency for the TADOTs was selected to measure, test, and adjust, as necessary, those devices that are more susceptible to changes in setpoint. This is not the case for the degraded and undervoltage sensing relays. On the basis of the observed stability of these relay setpoints and the testing during the periodic channel calibration, the staff concludes that setpoint verification of the degraded and undervoltage sensing relays is not required as part of the TADOT done on a 31 day interval. Thus, the staff finds that proposed addition of the note stating this fact is 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 (70 FR 33213). 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: P. Milano

Date: June 7, 2006