



Entergy Nuclear Northeast
Entergy Nuclear Operations, Inc.
Indian Point Energy Center
295 Broadway, Suite 1
P.O. Box 249
Buchanan, NY 10511-0249

March 28, 2002

Re: Indian Point Unit No. 2
Docket No. 50-247
NL-02-025

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Mail Stop 0-P1-17
Washington, DC 20555-0001

SUBJECT: License Amendment Request (LAR No. 02-006) – Relocation of the Requirements for the Gas Turbine Generators from the Indian Point Nuclear Generating Unit No. 2 Technical Specifications

References: 1. Entergy Nuclear Operations, Inc. letter to the NRC, dated January 8, 2002, "Indian Point Nuclear Generating Unit No. 2 License Amendment Request (LAR No. 02-002) – Gas Turbine Generator Fuel Oil Storage Requirements"

Pursuant to 10CFR50.90, Entergy Nuclear Operations, Inc. (ENO) hereby requests an amendment to the Indian Point Nuclear Generating Unit No. 2 (IP2) Technical Specifications (TS) Section 3.7, "Auxiliary Electrical Systems," and Section 4.6, "Emergency Power System Periodic Tests." The purpose of this License Amendment Request is to relocate the limiting conditions for operations and surveillance requirements for gas turbine generators from the IP2 Technical Specifications to the UFSAR and the plans, programs and procedures that document and control the credited functions of these systems, structures and components. The continued applicability of the existing gas turbine generators to the current IP2 design and licensing basis is addressed by docketed NRC commitments regarding any credit taken for this equipment in response to various regulatory initiatives. The relocation of these requirements from the IP2 TS will reduce the duplication associated with the present controls over the operation, maintenance, testing and modification of these systems, structures and components by allowing these factors to be addressed under the applicable NRC regulations. Therefore, the proposed change will provide a significant cost savings and increased operational flexibility to IP2 without any decrease in the level of safety and protection provided to the public and is consistent with the guidance in NUREG-1431, "Standard Technical Specifications – Westinghouse Plants," Rev. 2 (ITS).

Attachment 1 to this letter provides the description and evaluation of the proposed change. The revised TS pages and TS Bases pages are provided in Attachment 2 (strikeout and shaded format).

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ENO requests approval of the proposed change by October 31, 2002 with an implementation date within 60 days of approval. Issuance of this license amendment will relocate the requirements of the IP2 TS Sections that were the subject of the license amendment request, submitted to the NRC on January 8, 2002 (Ref. 1), and negate the need for NRC action on that proposal.

The Station Nuclear Safety Committee (SNSC) and the Entergy Nuclear Northeast (ENN) Safety Review Committee (SRC) have reviewed the proposed change. Both committees concur that the proposed change does not involve a significant hazards consideration as defined by 10 CFR 50.92(c).

In accordance with 10 CFR 50.91, a copy of this submittal and the associated attachments are being submitted to the designated New York State official.

Commitments made by the licensee in this letter are listed in Attachment 3 to this letter.

Should you or your staff have any questions regarding this submittal, please contact Mr. John F. McCann, Manager, Nuclear Safety and Licensing at (914) 734-5074.

Sincerely,

A handwritten signature in black ink, appearing to read 'Fred Dacimo', with a stylized flourish at the end.

Fred Dacimo
Vice President – Operations
Indian Point 2

Attachments

cc: See page 3

cc:

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

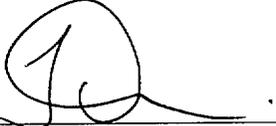
In the Matter of)
ENERGY NUCLEAR OPERATIONS, INC.) Docket No. 50-247
Indian Point Nuclear Generating Unit No. 2)

APPLICATION FOR AMENDMENT
TO OPERATING LICENSE

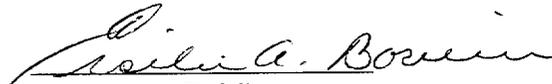
Pursuant to Section 50.90 of the Regulations of the U. S. Nuclear Regulatory Commission (NRC), Entergy Nuclear Operations, Inc., as holder of Facility Operating License No. DPR-26, hereby applies for amendment of the Technical Specifications contained in Appendix A of this license.

The specific proposed Technical Specification revision is set forth in Attachment 2 (strikeout and shaded format). The associated assessment demonstrates that the proposed change does not involve a significant hazards consideration as defined in 10CFR50.92(c).

As required by 10CFR50.91(b)(1), a copy of this Application and our evaluation concluding that the proposed change does not involve a significant hazards consideration has been provided to the designated New York State official.

BY: 
Fred Dacimo
Vice President – Operations
Indian Point 2

Subscribed and sworn to
before me this 28 day
MARCH, 2002.


Notary Public

ERSILIA A. BOVIERO
Notary Public, State of New York
No. 01AM6038689
Qualified in Westchester County
Commission Expires March 20, 2004

ATTACHMENT 1 TO NL-02-025

LICENSE AMENDMENT REQUEST

**RELOCATION OF GAS TURBINE GENERATOR REQUIREMENTS
FROM IP2 TECHNICAL SPECIFICATIONS**

LICENSE AMENDMENT REQUEST

DESCRIPTION OF THE PROPOSED CHANGE

Entergy Nuclear Operations, Inc. (ENO) is requesting a change to the Indian Point Nuclear Generating Unit No. 2 (IP2) Technical Specifications (TS) Section 3.7, "Auxiliary Electrical Systems," and Section 4.6, "Emergency Power System Periodic Tests," to relocate the requirements for an operable gas turbine generator (GT). This includes revising TS 3.7.B.2 and deleting Sections 3.7.C, 3.7.D, 4.6.D, 4.6.E and their associated Bases from the IP2 TS.

REASONS FOR THE CHANGE

The functions provided by the Indian Point gas turbine generators do not meet any of the criteria in 10 CFR Part 50, Section 50.36, "Technical specifications," thus not warranting their inclusion in the IP2 Technical Specifications. Relocating the requirements for Limiting Conditions for Operation and the Surveillance Requirements for the Gas Turbine Generators will allow the operations, maintenance, testing and modification of these systems, structures and components to be controlled by the licensee's implementation of IP2 License Condition 2.K and 10 CFR Part 50, Section 50.48, "Fire protection," Section 50.59, "Changes, tests and experiments," Section 50.63, "Loss of all alternating current power," and Section 50.65, "Requirements for monitoring the effectiveness of maintenance at nuclear power plants."

EVALUATION OF THE PROPOSED CHANGE

The gas turbine generators have been credited in the response to several different scenarios over the time that they have been installed at Indian Point. The ability of the gas turbine generators to support a blackstart of the unit was described in the proposed Technical Specifications included in Supplement 15 to the Final Safety Analysis Report, November 1970. The Technical Specifications issued with the Facility Operating License No. DPR-26 on October 19, 1971 consisted of portions of the previously submitted Technical Specifications with appropriate additions directed to the operations of fuel loading and subcritical testing. Section 3.7 was not included, however Addition A4, "Auxiliary Electrical Systems," was added to address the availability of electrical power for instrumentation and for boric acid addition. This addition did not address the gas turbine generators. The U. S. Atomic Energy Commission (AEC) issued Amendment No. 1 to the Facility Operating License on April 20, 1973, which allowed power operation up to 551 megawatts thermal (20% of the rated power level of the facility). The Technical Specifications included with the license amendment removed Addition A.4 and added Section 3.7, which remained identical to the original version (Supplement 15 to the Final Safety Analysis Report) with respect to the unit blackstart capability. This capability is being deleted by this application. Since the Safety Evaluation by the Division of Reactor Licensing, U. S. Atomic Energy Commission, of the initial Facility Operating License, DPR-26, issued November 16, 1970, did not mention the existence of gas turbine generators, the design feature was not credited in the conclusion that reasonable assurance existed that the activities authorized by the

operating license could be conducted without endangering the health and safety of the public, and that such activities would be conducted in compliance with the regulations of the Commission set forth in 10 CFR Chapter 1.

Consolidated Edison provided a response, dated December 12, 1978, to an NRC request for additional information regarding the credit taken for the gas turbine generators in the response to Branch Technical Position 9.5-1 and included in the Indian Point Fire Protection Program Report. The NRC staff had requested that limiting conditions for operation and surveillance requirements for the gas turbine generators, the associated switchgear and breakers and the fuel supply be added to the IP2 Technical Specifications and Consolidated Edison committed to submit a License Amendment to incorporate for the requested changes to the IP2 Technical Specifications.

These changes to the IP2 Technical Specifications were requested in Con Edison letter dated January 10, 1979 and, were subsequently approved by the NRC in Amendment No. 60 to the Facility Operating License issued January 28, 1980.

After the Three Mile Island accident, IP2 committed to certain actions to provide assurance that the public health and safety would not be endangered by the continued operation of Indian Point Unit No. 2. These commitments were documented in Con Edison letter to the NRC, dated February 1, 1980 and incorporated into the IP2 Facility Operating License by NRC Confirmatory Order dated February 11, 1980. The Order contained two items regarding the gas turbine generators. The first item stated:

“C. Within 60 days of the date of the Order, the Licensee shall: ...

5. Examine methods of establishing the highest reliability for the gas turbines and submit the results to the NRC. The licensee specifically shall:
 - (1) Provide details of gas turbine controls, modes of operation, and other relevant information;
 - (2) Evaluate possible improvements to the starting and running reliability of the gas turbines;
 - (3) Evaluate and initiate actions which will ensure that a gas turbine can be brought on line within one hour after loss of off-site power;
 - (4) Determine how gas turbine power can be provided to Indian Point Unit 3; and
 - (5) Evaluate the limitation that Indian Point Unit 2 not be operated if the gas turbines are out-of-service.”

The second item stated:

- “E. The following measures shall be implemented within 120 days of the date of the Order:
1. The licensee shall examine key plant system vulnerability areas with the intent of maximizing the reliability in the subject areas. Specifically, the licensee shall: ...
 - f. Verify that the gas turbine station has black-start capability.”

Con Edison responded with a letter to the NRC, dated April 11, 1980, summarizing the actions taken to comply with the 60 day requirements in the Order. The following responses were provided to requested items:

Response to C.5(1):

“There are three (3) gas turbines associated with the Indian Point Unit No. 2 plant. Two of these gas turbines are located at the Buchanan Substation and the third is located at the Indian Point site. Each gas turbine is located in its own enclosed building, has separate local operation panels, and “black-start” capability.

Gas turbine power can be provided to Indian Point Unit No. 2 from any of the three gas turbines via either of the two –13.8Kv underground feeders or two 138 Kv overhead feeders which connect off-site power to the unit. Maximum flexibility of routing is provided by interties at the Buchanan Substation (138 Kv and 13.8 Kv buses) and at the Indian Point site (138 Kv site switchyard and gas turbine substation 6.9 Kv bus tie).

The operating mode of the gas turbines is manual. This manual start is applicable for both regular and “black-start” modes of operation.”

Response to C.5(2)

“We are currently investigating improved maintenance and testing procedures and criteria for operability of the gas turbines. This study requires technical communications between Con Edison and the gas turbine manufacturer (Westinghouse). The expected completion date for this investigation is June, 1980, and we will report any significant findings to the Commission shortly thereafter.”

Response to C.5(3):

“Each gas turbine has “black-start” capability. The black-start capability can be accomplished within an hour during the condition of loss of off-site power.

We are in the process of developing surveillance procedures which will demonstrate the availability/operability of the gas turbines within one (1) hour after loss of off-site power.”

Response to C.5(4) :

“Similar to Indian Point Unit 2, gas turbine power can be provided to Indian Point Unit 3 from any of the three gas turbines via either of the two –13.8 Kv underground feeders or two 138 Kv overhead feeders which connect off-site power to the unit. Maximum flexibility of routing is provided by interties at the Buchanan Substation (138 Kv and 13.8 Kv buses) and at the Indian Point site (138 Kv site switchyard and gas turbine substation 6.9 Kv bus tie).”

Response to C.5(5):

The present Indian Point Unit No. 2 Technical Specifications require that one gas turbine generator shall be operable at all times. If this requirement cannot be met, then, within the next seven days, either the inoperable condition shall be corrected or an alternative independent power system shall be established. If the above mentioned requirements cannot be satisfied, the reactor shall be placed in the hot shutdown condition utilizing normal operating procedures. If the previously mentioned requirements cannot be met within an additional 48 hours, the reactor shall be placed in the cold shutdown condition utilizing normal operating procedures.

The diversity and flexibility inherent in the offsite power supply system available to Indian Point make it a highly reliable system. Independent power sources enter the Buchanan Substation (located adjacent to the site) from the Consolidated Edison power grid, and two (2) 138 Kv overhead transmission lines and two (2) 13.8 Kv underground feeders supply the Indian Point site from the substation. Existing interties permit cross-feeding from any incoming power line to any unit. Indian Point Unit No. 2 is designed to maintain a safe shutdown condition and mitigate postulated accidents even without the availability of the offsite power supply. This emergency power is provided by three onsite diesel generators. The gas turbines, therefore, provide a third contingency AC power source available to the site in the highly unlikely event that the offsite power source is lost and all three diesel generators are inoperable. It should be noted that any one of the three (3) gas turbines has more than enough capacity to operate engineered safeguards equipment and maintain the plant in a safe shutdown condition.

Therefore, considering the probability of having both the offsite power system and all three diesel generators inoperable during a specific seven day period when all three gas turbines might be inoperable, we believe that the present technical specification limitations on gas turbine operability are sufficient.”

This response was followed by Consolidated Edison letter to the NRC, dated August 27, 1980, which stated that the required response to the 60 day Interim Action Items C.5(2) and (3) had been completed. The letter included additional specific commitments to improve the reliability/availability of the three gas turbines.

Additionally, Consolidated Edison reiterated to the NRC, in letters dated September 2, 1981 and June 15, 1981, in response to Generic Letter 81-04, “Emergency Procedures and Training for Station Blackout,” that:

"It is noteworthy that Indian Point Unit No. 2 has a four (4) battery, three (3) power train electrical system with capability for switchover. Local power supply is available from three (3) diesel generators, plus one gas turbine on site and two gas turbines adjacent to the site. The Indian Point Unit No. 2 Technical Specifications include limiting conditions for operation of the gas turbines. In view of the above, a total station blackout is considered to be a highly improbable event."

A letter from the NRC to Consolidated Edison, dated December 18, 1984, summarizes the licensing basis for the gas turbine generators at Indian Point Unit No. 2 as of the subject date. The letter states:

"By letter dated January 28, 1980 we issued Amendment 60 to Facility Operating License No. DPR-26 for Indian Point Nuclear Generating Station Unit No. 2 which contains changes in the technical Specifications regarding the operability and surveillance requirements for the gas turbines. Consolidated Edison has proposed to use available gas turbines as an alternate emergency backup power source in case of loss of onsite emergency power and concurrent loss of offsite power at IP-2."

This is followed by a reiteration of Appendix A, Item C.5 from the confirmatory order, acknowledgement of Consolidated Edison's response and the NRC's concurrence that the response would accomplish the directions of the Order for the subject item.

On July 5, 1985, the NRC issued a Rescission of Order for the Indian Point Nuclear Generating Unit No. 2 in NRC letter to Consolidated Edison. This rescission was based on the Commission's Decision CLI-85-06 dated May 7, 1985 and rescinded the requirements of the February 11, 1980 Order unless they were required to fulfill generic requirements applicable to similar types of reactors, or were required to meet other license requirements for the Indian Point units.

The rescission goes on to state:

"Some of the requirements in Appendix A of the February 11, 1980 Order can be rescinded in full. Other items have been completed and the action is irreversible. In the case of the completed items, no further action is required. Items in these categories are:"

Items C.5 and E.1.f were listed as complete and therefore required no further action. Although no rescission was specifically stated for these two items, the statement, that no further actions were required, relieved Consolidated Edison of any action under the Order and was therefore a rescission of the Order for said items.

By letter dated February 6, 1986, the NRC requested information related to high winds risk assessment at Indian Point Unit 2. On February 18, 1986, Consolidated Edison responded to that request and as part of the response to one item noted: "...IP-2 technical specifications contain operability and surveillance requirements for the gas turbines." Other than this being a factual statement, the relocation of the gas turbines from the technical specifications to an owner-controlled document does not affect the

assessment or conclusions contained in that response.

The NRC published a revised 10 CFR 50.48 and a new Appendix R to 10 CFR 50 regarding fire protection features of nuclear power plants on November 19, 1980, which became effective on February 17, 1981. These regulatory requirements expanded on or superceded the previous provisions of Appendix A to Branch Technical Position BTP PCSB 9.5-1. The NRC acknowledged, in a letter dated November 24, 1980, that Indian Point Unit No. 2 had no "open Items" concerning the fire protection features previously required by the branch technical position and only needed to implement the backfit requirements in three sections of the Appendix to be in compliance with the new regulations.

A series of NRC Generic Letters intended to clarify and simplify the implementation of the intended requirements were then issued by the NRC. Generic Letter 83-33 offered clarifications to licensees in the interpretation of Appendix R requirements. Generic Letter 86-10 presented further guidance in interpretations of Appendix R, including a request that licensees incorporate the fire protection program that had been approved by the NRC, including the fire hazards analysis and major commitments that formed the basis for the fire protection program, into the FSAR update required by 10 CFR 50.71(e). The licensees could then request modification of the Facility Operating License Conditions and applicable Technical Specifications for the Fire Protection Program to one standardized license condition allowing restricted changes to the approved program without prior NRC approval. Finally, Generic Letter 88-12 was issued providing specific guidance in the preparation of a license amendment request to implement the recommendation in Generic License 86-10 on removal of fire protection requirements from the technical specifications.

The NRC issued Generic Letter 81-04, "Emergency Procedures and Training for Station Blackout Event," on February 25, 1981, which requested all licensees of operating nuclear power plants to review their current plant operations to determine their capability to mitigate a station blackout event and promptly implement, as necessary, emergency procedures and a training program for station blackout events.

Consolidated Edison letter to the NRC, dated June 15, 1981, provided an assessment of the existing or planned procedures and training programs with respect to the matters described in the generic letter. The assessment relied heavily on the Westinghouse Owners Group's ongoing effort to develop improved emergency operating procedures in response to NUREG-0737, Item I.C.1 and included the following statement:

"With regard to your letter, it is important to note that Indian Point Unit No. 2 has a 4 battery, 3 power train electrical system with capability for switchover. Local power supply is available from 3 diesels plus one gas turbine on site and two gas turbines immediately adjacent to the site. The Indian Point Unit No. 2 Technical Specifications include limiting conditions for operation of the gas turbines. As a result, a total station blackout is a highly improbable event."

The NRC evaluation of the response, dated December 11, 1981, rejected the reliance

on the Westinghouse Owners Group's effort due to the length of the implementation schedule and requested Consolidated Edison to "expedite implementation of emergency procedures for training for station blackout such that they will be in effect by about January 1, 1982." Consolidated Edison responded to the NRC in a letter dated January 15, 1982 (NL-82-004), that the procedures would be implemented by January 31, 1982, which the NRC stated was acceptable in a letter dated February 16, 1982

On July 21, 1988 10 CFR Part 50 was amended to include a new Section 50.63, titled, "Loss of All Alternating Current Power," (Station Blackout Rule). The station blackout (SBO) rule required each light-water-cooled nuclear power plant to be able to withstand and recover from a SBO of specified duration.

Consolidated Edison responded by letters dated April 14, 1989 and March 27, 1990, proposing to use existing internal combustion gas turbines (GT-1, GT-2 or GT-3) as an alternate ac (AAC) power source. The NRC issued a Safety Evaluation on the Consolidated Edison response in a letter dated November 21, 1991, which found the response and the proposed method of dealing with an SBO to be acceptable, subject to receipt of confirmation that recommendations identified in the SE had been or would be implemented.

Consolidated Edison responded with the requested confirmation in a letter dated December 23, 1991 and the NRC replied with a Supplemental Safety Evaluation dated June 4, 1992, which found the confirmations and commitments as well as the technical clarifications included in Consolidated Edison's letter to be acceptable. By letter dated October 22, 1993 Consolidated Edison proposed a modification to the accepted method of dealing with a station blackout and in a letter dated November 30, 1993 notified the NRC that the modification was completed and initial tests conducted to demonstrate the ability to power the shutdown buses (480V Buses 2A, 3A, 5A and 6A) within one hour of a station blackout were successfully completed for each of the three gas turbines. The NRC, in a letter dated June 6, 1994, stated that the staff found the modifications to be acceptable and that the successful tests met the requirements stated in the previous Safety Evaluations.

On June 16, 1994, Consolidated Edison submitted a proposed Technical Specification amendment to revise the fire protection requirements consistent with Generic Letter 88-12, "Removal of Fire Protection Requirements from Technical Specifications", and Generic Letter 86-10, "Implementation of Fire Protection Requirements". The NRC subsequently requested that the proposed License Condition 2.K include the dates of fire protection related NRC Safety Evaluation Reports (SERs) and Consolidated Edison responded, in a letter dated February 6, 1995, with the requested revised license condition and an evaluation of the continued applicability of each subject SER. The NRC issued License Amendment No. 186 in a letter dated March 26, 1996 approving the relocation of the limiting conditions for operation and surveillance requirements related to fire protection suppression systems, fire detection systems, and fire brigade staffing and training to the FPPP; deleted the requirements for special reports for inoperable fire protection suppression and detection equipment; added an additional responsibility for the Station Nuclear Safety Committee to review the fire protection

program and implementing procedures; and revised Licensing Condition 2.K as specified in GLs 88-12 and 86-10.

Although the limiting conditions for operation and surveillance requirements for the gas turbine generators were added to the Technical Specifications due to their being credited in the Indian Point Fire Protection Program Report submitted to the NRC, the license amendment request did not mention relocating the limiting conditions for operations and surveillance requirements for the gas turbine generators from the Technical Specifications to the FPPP.

This may have been due to the credit taken for the gas turbine generators in the response to station blackout rule. The NRC contractor's Technical Evaluation Report accompanying the NRC's Safety Evaluation Report, dated November 21, 1991, which accepted Consolidated Edison's response to the SBO rule, stated:

"The licensee did not identify any changes to current technical specifications for the involved SBO equipment. Our review of the licensee's approach indicates that the equipment necessary to cope with an SBO (gas turbines, EDGs, AFW, CST, batteries, etc.) is already covered by technical specification."

Regulatory Guide 1.155, "Station Blackout," states the technical specification for maintenance, limiting conditions, FSAR, etc. "should be consistent with the Interim Commission Policy Statement on Technical Specifications (Federal Register Notice 52 FR 3789) as applicable." This is reflected in the NRC Safety Evaluation Report, which stated:

"The technical specifications (TS) for the SBO equipment are currently being considered generically by the NRC in the context of the TS Improvement Program and remains an open item at this time. However, the staff would expect that the plant procedures will reflect the appropriate testing and surveillance requirements to ensure the operability of the necessary SBO equipment. If the staff later determines that TS regarding the SBO equipment is warranted, the licensee will be notified of the implementation requirements."

As stated in the SER for License Amendment No. 186, in justifying the relocation of the fire protection program elements, these TS do not impact reactor operations, do not identify a parameter which is an initial condition assumption for a design-basis accident or transient, do not identify a significant abnormal degradation of the reactor coolant pressure boundary, and do not provide any mitigation of a design-basis event.

The fire protection program is required by 10 CFR 50.48 and the capability to withstand and recover from a station blackout is required by 10 CFR 50.63. Neither of these two sections specifies Technical Specifications for the equipment supporting the required functions. 10 CFR 50.36 does define the requirements for inclusion in Technical Specification and the gas turbine generators at Indian Point Unit No. 2 do not qualify.

Additionally, the deletion of the option in TS 3.7.B.2.b that allows power operation to continue for 72 hours with a gas turbine as the only available source of 13.8 kV power will result in the plant being in the more restrictive 24 hour action statement of TS 3.7.B.3, if 13.8 kV offsite power sources are not available. The allowable outage time may still be extended beyond the 24 hours provided the limiting condition is reported to the NRC within the subsequent 24-hour period with an outline of the plans for restoration of offsite power, as allowed by existing TS 3.7.B.3.

In conclusion, based on the considerations above, (1) there is a 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.

NO SIGNIFICANT HAZARDS CONSIDERATION EVALUATION

ENO has determined that this proposed Technical Specification change does not involve a significant hazard consideration as defined by 10CFR50.92(c).

1. **Operation of the facility in accordance with the proposed amendment would not involve a significant increase in the probability of occurrence or consequences of an accident previously evaluated.**

The Gas Turbine Generators only provide a Licensing Basis Event mitigating function. There is no previously evaluated accident or event that is initiated by the Gas Turbine Generators or the associated fuel storage system. The ability of the Gas Turbine Generators to provide power, as a backup to the Emergency Diesel Generators, is not affected by the location of the description of their licensing basis.

Therefore, the proposed changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. **Operation of the facility in accordance with the proposed amendment would not create the possibility of a new or different kind of accident from any accident previously evaluated.**

There is no physical change to the plant. The currently existing gas turbine generators and associated fuel oil storage facilities will still be used. The only change is to relocate the limiting conditions for operations, surveillance requirements and associated bases from the Technical Specifications to other licensee controlled documents.

Therefore, the proposed change does not create a new accident initiator or precursor, or create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Operation of the facility in accordance with the proposed amendment would not involve a significant reduction in the margin of safety.

The deletion of the limiting conditions for operation and surveillance requirements for the gas turbine generators from the Technical Specifications does not alter the method of operation, the design requirements or the current licensing basis that the gas turbine generators be able to power all the loads required by 10 CFR Part 50, Appendix R to place the plant into a safe shutdown condition following a fire and maintain safe shutdown for three days. It also does not remove the licensing basis requirement of 10 CFR Part 50, Section 50.63, that the unit must have the capacity to withstand and recover from a station blackout. The current licensing basis will continue to credit the gas turbine generators as the alternate ac (AAC) power source in the event of a station blackout unless modified under the control of 10 CFR Part 50, Section 50.59.

Therefore, operation of the facility in accordance with the proposed amendment would not involve a significant reduction in the margin of safety.

CONCLUSIONS

Based on the above evaluation, ENO has concluded that the proposed change will not result in a significant increase in the probability or consequences of any accident previously analyzed; will not result in a new or different kind of accident from any accident previously analyzed, and does not result in a reduction in any margin of safety. Therefore, operation of IP2 in accordance with the proposed amendment does not involve a significant hazards consideration. In addition, both the Station Nuclear Safety Committee (SNSC) and the Entergy Nuclear Northeast (ENN) Safety Review Committee (SRC) have reviewed the proposed change to the TS and the committees concur that the proposed change does not involve a significant hazards consideration.

ENVIRONMENTAL ASSESSMENT

An environmental assessment is not required for the above proposed change because the requested change to the Indian Point Unit No. 2 Technical Specifications conforms to the criteria for "actions eligible for categorical exclusion," as specified in 10CFR51.22(c)(9). The requested change will have no impact on the environment. The proposed change does not involve a significant hazards consideration as discussed in the preceding section. The proposed change does not involve a significant change in the types or significant increase in the amounts of any effluents that may be released offsite. In addition, the proposed change does not involve a significant increase in individual or cumulative occupational radiation exposure.

ATTACHMENT 2 TO NL-02-025

**INDIAN POINT UNIT NO. 2
TECHNICAL SPECIFICATION PAGES IN
STRIKEOUT/SHADED FORMAT**

Deleted text is shown as ~~strikeout~~.

Added text is shown as shaded.

B. During power operation, the following components may be inoperable:

1. Power operation may continue for seven days provided the 138 kV and the 13.8 kV sources of offsite power are available in compliance with 3.7.A with any combination of or all of the following inoperable:
 - a. One diesel generator unavailable provided the remaining diesel generators with their associated fuel oil systems and the required engineered safety features associated with these diesel generator buses are operable,
 - b. One diesel generator fuel oil system unavailable. This system consists of a fuel oil storage tank with 6,334 gallons of fuel available, a fuel oil transfer pump and associated piping, valves and instrumentation, or
 - c. One diesel fuel oil supply header unavailable.

If a diesel generator becomes inoperable due to any cause other than planned maintenance or testing, the remaining diesel generators shall be tested to ensure operability.

2. Power operation may continue for 72 hours provided the 138 kV power source from Buchanan Substation is supplying 6.9 kV buses 5 and 6 through the 138/6.9 kV Station Auxiliary Transformer and the three diesel generators are operable with either of the following:
 - a. ~~Only one 138 kV line from an offsite source to Buchanan Substation is operable, (excluding the Refuse Energy Services Company plant).~~
 - b. ~~The 13.8 kV source of offsite power is not available from a 138/13.8 kV transformer at Buchanan Substation, but is available from a gas turbine.~~

This operation may be extended beyond 72 hours provided the limiting condition is reported to the NRC within the subsequent 24-hour period with an outline of the plans for restoration of an offsite 138 kV supply line ~~or re-establishing a 138/13.8 kV supply to Buchanan Substation for the 13.8/6.9 kV supply to buses 5 and 6.~~

3. Power operation may continue for 24 hours, if the entire 138 kV or the entire 13.8 kV source of power is lost, provided the three diesel generators are operable. This operation may be extended beyond 24 hours provided the limiting condition is reported to the NRC within the subsequent 24-hour period with an outline of the plans for restoration of offsite power.
4. When 6.9 kV buses 5 and 6 are supplied through a 13.8/6.9 kV transformer, in addition to satisfying the requirements of Specification 3.7.B.3 above, the 6.9 kV bus tie breaker control switches 1-5, 2-5, 3-6, and 4-6 in the CCR shall be placed in the "pull-out" position and tagged to prevent an automatic transfer of the 6.9 kV buses 1, 2, 3 and 4.
5. One battery may be inoperable for 24 hours provided the other batteries and four battery chargers remain operable with one battery charger carrying the dc load of the failed battery's supply system.
6. One battery charger may be inoperable for 24 hours provided the following conditions are satisfied:
 - a. The other three battery chargers and their associated batteries are operable; and
 - b. The affected battery shall have the Specification 4.6.C.1 surveillance initiated within one hour of the time the battery charger is determined to be inoperable and the surveillance shall be repeated every eight hours thereafter to determine battery operability. This surveillance frequency shall be maintained until the battery is declared inoperable or until the battery charger is declared operable.

~~C. Gas Turbine Generators:~~

- ~~1. At least one gas turbine generator (GT-1, GT-2 or GT-3) and associated switchgear and breakers shall be operable at all times.~~
- ~~2. A minimum of 54,200 gallons of fuel for the operable gas turbine generator shall be available at all times.~~

3. ~~If the requirements of 3.7.C.1 or 3.7.C.2 cannot be met, then, within the next seven (7) days, either the inoperable condition shall be corrected or an alternate independent power system shall be established.~~
4. ~~If the requirements of 3.7.C.3 cannot be satisfied, the reactor shall be placed in the hot shutdown condition utilizing normal operating procedures. If the requirements of 3.7.C.3 cannot be met within an additional 48 hours, the reactor shall be placed in the cold shutdown condition utilizing normal operating procedures.~~

The requirements of Specification 3.7.A may be modified for an emergency "Black Start" of the unit by using the requirements of either Specification 3.7.D.1 or 3.7.D.2 below:

- D.1. ~~a. all 138 kV lines to Buchanan de-energized,~~
 - b. ~~the 13.8 kV line de-energized,~~
 - c. ~~the 6.9 kV buses 5 and 6 energized from the onsite gas turbine through the 13.8/6.9 kV transformer,~~
 - d. ~~the four 480-volt buses 2A, 3A, 5A and 6A energized from the diesels and the tie breakers between buses 5A and 2A and between buses 3A and 6A open,~~
 - e. ~~three diesel generators operable with a minimum onsite supply of 6,334 gallons of fuel available in each of the individual storage tanks and 29,000 gallons of fuel available at the Buchanan Substation, or onsite other than the normal supply tanks,~~
 - f. ~~station batteries Nos. 21, 22, 23 & 24 and their associated battery chargers and dc distribution systems operable, and~~
 - g. ~~the 480-volt supply breakers 52/2A, 52/3A, 52/5A and 52/6A open.~~
- D.2. ~~a. establish 138 kV bus sections at Buchanan with at least 37 MW power (nameplate rating) from any combination of gas turbines at Buchanan and onsite,~~

- b. ~~two 138 kV lines to Buchanan energized from the gas turbines with breakers to Millwood, the 138/345 kV tie to Buchanan and to the Refuse Energy Services Company plant open,~~
- c. ~~the 13.8 kV line to Buchanan operable and the 13.8/6.9 kV transformer available to supply 6.9 kV power,~~
- d. ~~the 6.9 kV buses energized from the 138 kV source,~~
- e. ~~the four 480-volt buses 2A, 3A, 5A and 6A energized and the bus tie breakers between buses 5A and 2A and between buses 3A and 6A open,~~
- f. ~~three diesel generators operable with a minimum onsite supply of 6,334 gallons of fuel available in each of the individual storage tanks and 29,000 gallons of fuel available at the Buchanan Substation, or onsite other than the normal supply tanks, and~~
- g. ~~station batteries Nos. 21, 22, 23 & 24 and their associated battery chargers and dc distribution systems operable.~~

E.C Whenever the reactor is critical, the circuit breaker on the electrical feeder to emergency lighting panel 218 inside containment shall be locked open except when containment access is required.

Basis

The electrical system equipment is arranged so that no single contingency can inactivate enough safeguards equipment to jeopardize plant safety. The 480-volt equipment is arranged in four buses. The 6.9 kV equipment is supplied from six buses.

In addition to the unit transformer, three separate sources supply station service power to the plant⁽¹⁾.

There are three sources of 138 kV offsite power to Buchanan Substation. These sources consist of two 138 kV feeders from Con Edison's Millwood 138 kV substation and one connection from the Buchanan 345 kV substation through a 345/138 kV transformer. These 138 kV sources are each capable of supplying all auxiliaries for Indian Point 1, 2 and 3 as well as the Buchanan Substation customer load and can be used to satisfy 3.7.A.1. There is also an additional 138 kV connection to Buchanan Substation from the Westchester Refuse Energy

Services Company (RESCO) plant. The RESCO plant alone does not have the capability to supply all expected loads for Indian Point 2 and 3 and connected customer loads supplied by the Buchanan 13.8 kV substation. Therefore, the RESCO plant can not be used to satisfy 3.7.A.1 or 3.7.B.2.a.

The plant auxiliary equipment is arranged electrically so that multiple items receive their power from different sources. The charging pumps are supplied from the 480-volt buses Nos. 3A, 5A, and 6A. The five containment fans are divided among the 480-volt buses. The two residual heat pumps are on separate 480-volt buses. Valves are supplied from separate motor control centers.

The station auxiliary transformer ~~or a gas turbine~~ is capable of providing sufficient power for plant startup. The station auxiliary transformer can supply the required plant auxiliary power during normal operation.

There are two 13.8/6.9 kV transformers which can be used to supply 6.9 kV power to Indian Point 2. One transformer is associated with Feeder 13W92 and Indian Point 2, the other is associated with Feeder 13W93 and Indian Point 3. Each transformer is capable of supplying maximum safeguards loads and safe shutdown loads for both Indian Point 2 and 3 taken simultaneously. While during normal operation each unit will take credit for its associated transformer, during the time frame required to perform scheduled maintenance or to replace failed equipment both units may take credit for the same 13.8/6.9 kV transformer. Neither 13.8/6.9 kV transformer is capable of supplying all auxiliaries for either unit. Therefore, the automatic transfer of 6.9 kV buses 1, 2, 3 and 4 is defeated when the 13.8 kV source is supplying power to buses 5 and 6.

The bus arrangements specified for operation ensure that power is available to an adequate number of safeguards auxiliaries. With additional switching, more equipment could be out of service without infringing on safety.

Two diesel generators have sufficient capacity to start and run, within design ratings, the minimum required equipment. If one diesel is inoperable, the minimum required equipment associated with the remaining two diesels must be operable. Equipment that is not required such as a third non-essential service water pump, a third charging pump or a third component cooling water pump associated with the remaining two diesels is not required to be operable when a diesel is inoperable as long as the remaining two diesels can not be overloaded by this configuration. Component Cooling Pump 22 can not be inoperable while either Diesel Generator 21 or 23 is out of service because this configuration would overload one of the remaining two diesels.

The basis for the minimum total required fuel oil quantity is to provide for operation of two diesel generators for 7 days. The specified minimum quantity of fuel oil is based on operation of two diesel generators for 7 days at the maximum load profile permitted by the diesel generator rating. Each diesel is rated for operation for 0.5 hours of operation out of any 24 hours at 2300 kW plus 2.0 hours of operation out of any 24 hours at 2100 kW with the remaining 21.5 hours of operation out of any twenty four hours at 1750 kW. Operation of the diesel generators at the maximum load profile ratings bounds the postulated accident load profile. Using this maximum load profile and the associated fuel consumption rates, the total fuel oil consumed by 2 diesel generators for 168 hours is approximately 43,500 gallons. This quantity of fuel oil necessary to operate two diesel generators is conservatively less than the specified minimum fuel oil requirement of 48,000 gallons by approximately 4,500 gallons.

There are three onsite fuel oil storage tanks adjacent to the diesels. Each tank has an associated fuel oil transfer pump, which has the capability to automatically feed two of the three diesels through either of two redundant supply headers. If one of the three storage tanks is not available, there is sufficient fuel oil available in the remaining two tanks to run two diesels at the maximum load profile for at least 45 hrs. Similarly, if three diesels are available, there is sufficient fuel oil in the three associated storage tanks for at least 45 hours of operation at the maximum load profile. Additional fuel oil suitable for use in the diesel generators will be stored either onsite or at the Buchanan Substation. If one EDG storage tank or transfer pump is unavailable, the remaining tanks or pumps with the additional 29,000 gallons of fuel oil can supply the two diesels if required to supply at least minimum engineered safeguards equipment for at least 160 hours.⁽²⁾ Commercial oil supplies and trucking facilities exist to assure deliveries within one day's notice.

If a diesel generator is out of service due to planned maintenance or testing, testing of the remaining diesel generators is not required. In this case, testing is not required because a planned emergency diesel generator maintenance or testing outage does not directly affect the availability or reliability of the remaining emergency diesel generators and is not indicative of a potential failure in the remaining emergency diesel generators.

One battery charger shall be in service on each battery so that the batteries will always be at full charge in anticipation of a loss-of-ac power incident. This ensures that adequate dc power will be available for starting the emergency diesel generators and other emergency uses.

The plant can be safely shut down without the use of offsite power since all vital loads (safety systems, instruments, etc.) can be supplied from the emergency diesel generators.

Any two of three diesel generators, the station auxiliary transformer or the separate 13.8 to 6.9 kV transformer are each capable of supplying the minimum safeguards loads and therefore

provide separate sources of power immediately available for operation of these loads. Thus, the power supply system meets the single failure criteria required of the safety systems.

~~Three (3) gas turbine generators are directly available to the Indian Point site. One is located onsite (GT-1) and two additional units are located at the adjacent Buchanan Substation (GT-2 and GT-3). One gas turbine generator is more than adequate to provide an additional contingency of backup electrical power for maintaining the plant in a safe shutdown condition. The specified gas turbine generator minimum fuel inventory of 54,200 gallons assures that one gas turbine generator will be capable of supplying more than the maximum electrical load for~~

~~the Indian Point Unit No. 2 alternate safe shutdown power supply system (i.e., 750 kW) for at least three (3) days. Commercial oil supplies and trucking facilities exist to assure deliveries of additional fuel oil within one day's notice.~~

~~Conditions of a system-wide blackout could result in a unit trip. Since normal offsite power supplies as required in Specification 3.7.A are not available for startup, it is desirable to be able to blackstart this unit with onsite power supplies as a first step in restoring the system to an operable status and restoring power to customers for essential service. Specification 3.7.D.1 provides for startup using the onsite gas turbine to supply the 6.9 kV loads and the diesels to supply the 480-volt loads. Tie breakers between the 6.9 kV and 480-volt systems are open so that the diesels would not be jeopardized in the event of any incident and would be able to continue to supply 480-volt safeguards power. The scheme consists of starting two reactor coolant pumps, one condensate pump, 2 circulating water pumps and necessary auxiliaries to bring the unit up to approximately 10% power. At this point, loads can be assumed by the main generator and power supplied to the system in an orderly and routine manner.~~

~~Specification 3.7.D.2 is identical with normal start-up requirements as in Specification 3.7.A except that offsite power is supplied exclusively from gas turbines with a minimum total power of 37 MW (nameplate rating), which is sufficient to carry out normal plant startup.~~

As a result of an investigation of the effect components, that might become submerged following a LOCA, may have on ECCS, containment isolation, and other safety-related functions, a fuse and a locked-open circuit breaker were provided on the electrical feeder to emergency lighting panel 218 inside containment. With the circuit breaker in the open position, containment electrical penetration H-70 is de-energized during the accident condition. Personnel access to containment may be required during power operation. Since it is highly improbable that a LOCA would occur during this short period of time, the circuit breaker may be closed during that time to provide emergency lighting inside containment for personnel safety.

When the 138 kV source of offsite power is out of service, the automatic transfer of 6.9 kV Buses 1, 2, 3 and 4 to offsite power after a unit trip could result in overloading of the 20 MVA 13.8 kV/6.9 kV auto-transformer. Accordingly, the intent of Specification 3.7.B.4 is to prevent the automatic transfer when only the 13.8 kV source of offsite power is available. However, this specification is not intended to preclude subsequent manual operations or bus transfers once sufficient loads have been stripped to assure that the 20 MVA auto-transformer will not be overloaded by these manual actions.

References

- (1) UFSAR Section 8.2.1
- (2) UFSAR Section 8.2.3

B. DIESEL FUEL TANKS

A minimum oil storage of 48,000 gallons will be maintained for the station at all times.

C. STATION BATTERIES (NOS. 21, 22, 23, & 24)

1. Every month, the voltage of each cell, the specific gravity and temperature of a pilot cell in each battery and each battery voltage shall be measured and recorded.
2. Every 3 months, each battery shall be subjected to a 24-hour equalizing charge, and the specific gravity of each cell, the temperature reading of every fifth cell, the height of electrolyte, and the amount of water added shall be measured and recorded.
3. Each time data is recorded, new data shall be compared with old to detect signs of abuse or deterioration.
4. At least once every Refueling Interval (R##) each battery shall be subjected to a load test and a visual inspection of the plates.

~~D. GAS TURBINE GENERATORS~~

- ~~1. At monthly intervals, at least one gas turbine generator shall be started and synchronized to the power distribution system for a minimum of thirty (30) minutes with a minimum electrical output of 750 kW.~~

E. ~~GAS TURBINE FUEL SUPPLY~~

- ~~1. At weekly intervals, the minimum gas turbine fuel volume shall be verified to be available and shall be documented in the plant log.~~

Basis

The tests specified in Specifications 4.6.A, 4.6.B and 4.6.C are designed to demonstrate that the diesel generators will provide power for operation of equipment. They also assure that the emergency diesel generator system controls and the control systems for the safeguards equipment will function automatically in the event of a loss of all normal 480v ac station service power.

The testing frequency specified will be often enough to identify and correct any mechanical or electrical deficiency before it can result in a system failure. The fuel supply is continuously monitored. An abnormal condition in these systems would be signaled without having to place the diesel generators themselves on test.

Each diesel generator has a continuous rating of 1750 kW with a 2 hours within an 24 hour period rating of 2100 kW and a 1/2 hour within any 24 hour period rating of 2300 kW. Two diesels operating within these ratings can power the minimum safeguards loads. A minimum oil storage of 48,000 gallons will provide for operation of the minimum required engineered safeguards on emergency diesel power for a period of 168 hours.

Station batteries will deteriorate with time, but precipitous failure is extremely unlikely. The surveillance specified is that which has been demonstrated over the years to provide an indication of a cell becoming unserviceable long before it fails. The periodic equalizing charge will ensure that the ampere-hour capability of the batteries is maintained.

The Refueling Interval load test for each battery, together with the visual inspection of the plates, will assure the continued integrity of the batteries.

The batteries are of the type that can be visually inspected, and this method of assuring the continued integrity of the battery is proven standard power plant practice.

~~The tests specified in Specifications 4.6.D and 4.6.E are designed to assure that at least one gas turbine generator will be available to provide power for operation of equipment if required. Since the Indian Point Unit No. 2 alternate safe shutdown power supply system could demand a maximum electrical load of approximately 750 kW, the required minimum test load will demonstrate adequate capability. In addition, the minimum gas turbine fuel oil storage volume of 54,200 gallons will conservatively assure at least three (3) days of operation of a gas turbine generator.~~

~~The specified test frequencies for the gas turbine generator(s) 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.~~

Reference

UFSAR Section 8.2

ATTACHMENT 3 TO NL-02-025

COMMITMENTS

ENERGY NUCLEAR OPERATIONS, INC
INDIAN POINT UNIT NO. 2
DOCKET NO. 50-247

Commitments

No.	Commitment Description	Implementation Schedule
1.	The requirements relocated from the IP2 Technical Specifications will be verified to be contained in the UFSAR, Fire Protection Program Plan or other applicable plant programs, plans and procedures as appropriate.	Within 60 days of License Amendment issue.