February 16, 1990

Docket No. 50-247

Mr. Stephen B. Bram
Vice President, Nuclear Power
Consolidated Edison Company
of New York, Inc.
Broadway and Bleakley Avenue
Buchanan, New York 10511

Dear Mr. Bram:

SUBJECT: ISSUANCE OF AMENDMENT (TAC NO. 73353)

The Commission has issued the enclosed Amendment No. 147 to Facility Operating License No. DPR-26 for the Indian Point Nuclear Generating Unit No. 2. The amendment consists of changes to the Technical Specifications in response to your application transmitted by letter dated May 26, 1989.

The amendment revises Technical Specification 3.3 and its associated Bases to provide additional operational flexibility by decreasing the refueling water storage tank low level alarm setpoint and by increasing the minimum required concentration of sodium hydroxide in the spray additive tank.

A copy of the related Safety Evaluation is enclosed. A Notice of Issuance will be included in the Commission's next regular bi-weekly Federal Register notice.

Sincerely,

ORIGINAL SIGNED BY:
Daniel S. McDonald

Donald S. Brinkman, Senior Project Manager
Project Directorate I-1
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Enclosures:
1. Amendment No. 147 to DPR-26
2. Safety Evaluation

cc: w/enclosures
See next page

OFC	:LA:PDI-1	:PM:PDI-1	: EMTB	: SRLB	: SICB	: OGC	: D:PDI-1
NAME	:KVogan	:DBrinkman	:CYCheng	:CMcCracken	:SNewberry	:	:RCapra
DATE	: 1/31/90	: 1/31/90	: 2/1/90	: 2/5/90	: 2/9/90	: 2/12/90	: 2/16/90

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DATED: February 16, 1990

AMENDMENT NO. 147TO FACILITY OPERATING LICENSE NO. DPR-26 - INDIAN POINT

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

CONSOLIDATED EDISON COMPANY OF NEW YORK, INC.

DOCKET NO. 50-247

INDIAN POINT NUCLEAR GENERATING UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 147
License No. DPR-26

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Consolidated Edison Company of New York, Inc. (the licensee) dated May 26, 1989, 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. 147, 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 is to be implemented within 30 days.

FOR THE NUCLEAR REGULATORY COMMISSION

for Robert A. Capra, Director
Project Directorate I-1
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: February 16, 1990

ATTACHMENT TO LICENSE AMENDMENT NO. 147

FACILITY OPERATING LICENSE NO. DPR-26

DOCKET NO. 50-247

Revise Appendix A as follows:

Remove Pages	Insert Pages
3.3-2	3.3-2
3.3-3	3.3-3
3.3-13	3.3-13

g. Valves 842 and 843 in the mini-flow return line from the discharge of the safety injection pumps to the RWST are de-energized in the open position.

h. Valves 856A, C, D and E, in the discharge header of the safety injection header are in the open position. Valves 856B and F, in the discharge header of the safety injection header are in the closed position. The hot leg valves (856B and F) shall be closed with their motor operators de-energized by locking out the circuit breakers at the Motor Control Centers.

i. The four accumulator isolation valves shall be open with their motor operators de-energized by locking out the circuit breakers at the Motor Control Centers.

j. Valve 1810 on the suction line of the high-head SI pumps and valves 882 and 744, respectively on the suction and discharge line of the residual heat removal pumps, shall be blocked open by de-energizing the valve-motor operators.

k. The refueling water storage tank low level alarms are operable and set to alarm between 74,200 gallons and 99,000 gallons of water in the tank.

2. During power operation, the requirements of 3.3.A.1 may be modified to allow any one of the following components to be inoperable at any one time. If the system is not restored to meet the requirements of 3.3.A.1 within the time period specified, the reactor shall be placed in the hot shutdown condition utilizing normal operating procedures. If the requirements of 3.3.A.1 are not satisfied within an additional 48 hours the reactor shall be placed in the cold shutdown condition utilizing normal operating procedures.

a. One safety injection pump may be out of service, provided the pump is restored to operable status within 24 hours and the remaining two pumps are demonstrated to be operable.

b. One residual heat removal pump may be out of service, provided the pump is restored to operable status within 24 hours and the other residual heat removal pump is demonstrated to be operable.

c. One residual heat removal exchanger may be out of service provided that it is restored to operable status within 48 hours.

d. Any valve required for the functioning of the system during and following accident conditions may be inoperable provided that it is restored to operable status within 24 hours and all valves in the system that provide the duplicate function are demonstrated to be operable.

e. One channel of heat tracing may be out of service for 48 hours.

f. One refueling water storage tank low level alarm may be inoperable for up to 7 days provided the other low level alarm is operable.

3. When RCS temperature is less than or equal to 295°F, the requirements of Table 3.1.A-2 regarding the number of safety injection (SI) pumps allowed to be energized shall be adhered to.

B. Containment Cooling and Iodine Removal Systems

1. The reactor shall not be made critical unless the following conditions are met:

a. The spray additive tank contains not less than 4000 gallons of solution with a sodium hydroxide concentration of not less than 33% by weight.

b. The five fan cooler-charcoal filter units and the two spray pumps, with their associated valves and piping, are operable.

2. During power operation, the requirements of 3.3.B.1 may be modified to allow any one of the following components to be inoperable. If the system is not restored to meet the requirements of 3.3.B.1 within the time period specified, the reactor shall be placed in the hot shutdown condition utilizing normal operating procedures. If the requirements of 3.3.B.1 are not satisfied within an additional 48 hours, the reactor shall be placed in the cold shutdown condition utilizing normal operating procedures.

a. One fan cooler unit may be inoperable during normal reactor operation for a period not to exceed 7 days provided both containment spray pumps are operable.

b. One containment spray pump may be inoperable during normal reactor operation, for a period not to exceed 72 hours, provided the five fan cooler units and the remaining containment spray pump are operable.

c. Any valve required for the functioning of the system during and following accident conditions may be inoperable provided it is restored to operable status within 7 days or 24 hours for the fan cooler or containment spray systems respectively, and all valves in the system that provide the duplicate function are operable.

The control room ventilation sytem is equipped with a toxic gas detection system consisting of redundant monitors capable of detecting chlorine, anhydrous ammonia, and hydrogen cyanide. These toxic gas detection systems are designed to isolate the control room from outside air upon detection of toxic concentration of the monitored gases in the control room ventilation system. The operability of the toxic gas detection systems provides assurance that the control room operators will have adequate time to take protective action in the event of an accidental toxic gas release. Selection of the gases to be monitored and the setpoint established for the monitors are based on the results described in the Indian Point Unit No. 2 Control Room Habitability Study dated May, 1981.

The cable tunnel is equipped with two temperature controlled ventilation fans. Each fan has a capacity of 21,000 cfm and is connected to a 480v bus. One fan will start automatically when the temperature in the tunnel reaches 100°F. Under the worst conditions, i.e. loss of outside power and all the Engineered Safety Features in operation, one ventilation fan is capable of maintaining the tunnel temperature below 104°F. Under the same worst conditions, if no ventilation fans were operating, the natural air circulation through the tunnel would be sufficient to limit the gross tunnel temperature below tolerable value of 140°F. However, in order to provide for ample tunnel ventilation capacity, the two ventilation fans are required to be operable when the reactor is made critical. If one ventilation fan is found inoperable, the other fan will ensure that cable tunnel ventilation is available.

Valves 856A, C, D and E are maintained in the open position during plant operation to assure a flow path for high-head safety injection during the injection phase of a loss-of-coolant accident. Valves 856B and F are maintained in the closed position during plant operation to prevent hot leg injection during the injection phase of a loss-of-coolant accident. As an additional assurance of preventing hot leg injection, the valve motor operators are de-energized to prevent spurious opening of these valves. Power will be restored to these valves at an appropriate time in accordance with plant operating procedures after a loss-of-coolant accident in order to establish hot leg recirculation.

Valves 842 and 843 in the mini-flow return line from the discharge of the safety injection pumps to the refueling water storage tank are de-energized in the open position to prevent an extremely unlikely spurious closure which would cause the safety injection pumps to overheat if the reactor coolant system pressure is above the shutoff head of the pumps.

The specified quantities of water for the RWST include unavailable water (4687 gal) in the tank bottom, inaccuracies (24,800 gal) in the alarm setpoints, the minimum quantity required during the injection phase (246,000 gal)(12) for accident mitigation and the minimum quantity required during the recirculation phase (60,000 gal) for post-LOCA NaOH requirements inside containment. The minimum RWST inventory (i.e., 345,000 gal) provides approximately 9,500 gallons margin.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 147 TO FACILITY OPERATING LICENSE NO. DPR-26

CONSOLIDATED EDISON COMPANY OF NEW YORK, INC.

INDIAN POINT NUCLEAR GENERATING UNIT NO. 2

DOCKET NO. 50-247

1.0 INTRODUCTION

By letter dated May 26, 1989, the Consolidated Edison Company of New York, Inc. (the licensee) requested a license amendment to change Technical Specifications (TS) 3.3.A.1.k. and 3.3.B.1.a. and the Bases for these TS. The proposed changes would (1) increase the range of the Refueling Water Storage Tank (RWST) low level alarm band from 92,800-99,000 gallons to 74,200-99,000 gallons, (2) increase the minimum required concentration of sodium hydroxide in the spray additive tank from 30% by weight to 33% by weight, and (3) make corresponding changes in the associated Bases for these TS. The following evaluation addresses the licensee's proposed changes.

2.0 EVALUATION

Two instrument channels (LT-920 and LT-5751) are provided to monitor RWST water level. The current TS require that during power operation, both of these instrument channels be operable and set to alarm between 92,800 and 99,000 gallons of water remaining in the tank. This corresponds to a 95,900 gallon nominal alarm setpoint with a + or - 3100 gallon error band to account for setpoint errors and drift. However, recent inspections and surveillance tests have found that neither of these two instrument channels were sufficiently accurate to ensure that an actual low level alarm would occur within the TS band. Instrument channel LT-920 has an accuracy of + or - 9070 gallons and instrument channel LT-5751 has an accuracy of + or - 3390 gallons. Therefore, the measurement inaccuracies of both channels were greater than the TS requirement and neither channel would ensure that an actual low level alarm would occur within the TS band. Consequently the licensee proposed to change the TS to increase the RWST low level alarm band from 92,800-99,000 gallons to 74,200-99,000 gallons. As an interim measure, the licensee also shortened the alarm surveillance interval from 18 months to 1 month.

The proposed change would be achieved by reducing the lower allowable limit of liquid in the RWST from 92,800 gallons to 74,200 gallons, but without changing the upper allowable limit of 99,000 gallons left in the RWST after the injection phase. In this way the volume of the liquid available during the inspection phase for the safety injection and containment spray system remains unchanged. However, this change will reduce the volume of RWST liquid available for the containment spray system during the recirculation phase from 80,000 gallons to 60,000 gallons. Since this remaining volume of liquid is used to introduce sodium hydroxide solution from the spray additive tank to the containment sump during the recirculation phase, less sodium hydroxide would be added to the sump and the resulting sump pH may be below the required value if the concentration of the sodium hydroxide solution in the spray additive tank remains at its original value. In order to maintain the proper pH in the sump the licensee proposed to increase the concentration of sodium hydroxide in the spray additive tank from the original minimum concentration of 30% by weight to 33% by weight.

In support of the proposed technical specification change, the licensee referenced a containment integrity analysis which assumed one containment spray pump and 3 containment fan coolers in operation, and took no credit for recirculation spray. This analysis was previously approved by the staff in License Amendment No. 132 issued on June 29, 1988. The analysis assumed that the RWST was completely drained (340,000 gallons injected) prior to switchover to the recirculation phase. The proposed change in the RWST alarm band would reduce the reserved RWST water volume for sodium hydroxide addition from 80,000 gallons to 60,000 gallons. The licensee provided the following justification to support the TS changes.

1. The containment integrity analysis assumed that the RWST was completely drained prior to switchover to the recirculation phase for the RHR and SI pumps. Actually, the operators would begin to initiate the changeover to the recirculation phase soon after 246,000 gallons of water from the RWST had been injected into the containment. Therefore, more RWST water is available for containment spray than necessary for pressure suppression of the containment atmosphere for the limiting design basis accident.

2. An 80,000 gallon reserved water volume in the RWST for the recirculation phase is unnecessary. The 60,000 gallon reserved water volume available following the change in the alarm setpoint provides sufficient margin.

3. The increase (from 30% to 33%) in sodium hydroxide concentration in the spray additive tank will compensate for the 20,000 gallon decrease in the RWST water volume reserved for the containment spray pumps for addition of sodium hydroxide into the containment and will ensure adequate post-accident radioactive iodine removal and retention. The post-LOCA containment spray water pH will be the same as that assumed in the current FSAR analyses.

4. The RWST will not be completely drained prior to initiation of the recirculation mode in order to maintain sufficient NPSH for operation of the SI and RHR pumps. This will also ensure that an adequate amount of sodium hydroxide is available to be sprayed into the containment via the containment spray system during the injection and recirculation phases.

The staff has reviewed the licensee's analysis and performed an independent evaluation; the staff finds that the licensee has provided the necessary margin in the containment integrity analysis to ensure that broadening the RWST low level alarm band will not affect the ability of the containment spray system to perform its safety function. Further, the staff finds that the increase in sodium hydroxide concentration in the spray additive tank will ensure adequate post-LOCA pH in the spray water for radioactive iodine retention.

The staff also reviewed the licensee's proposed revision to expand the operating band of the RWST low-level alarm instrument. The proposed revision will correct the chronic instrument loop error problem of instruments having larger error bands than the instruments normal operating bands. The proposed revision to the low-level alarm operating band would make the operating band wider than the most limiting instrument loop error. The staff concludes that the proposed revision is acceptable.

3.0 ENVIRONMENTAL CONSIDERATION

This amendment changes a requirement with respect to the installation or use of a facility component located within the restricted area, as defined in 10 CFR Part 20. The staff has determined that this amendment involves no significant change in the types or significant increase in the amounts 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 this amendment involves no significant hazards consideration and there has been no public comment on such finding. Accordingly, this amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR Sec 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 this amendment.

4.0 CONCLUSION

We have 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, and (2) such activities will be conducted in compliance with the Commission's regulations and the issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.

Dated: February 16, 1990

PRINCIPAL CONTRIBUTORS: J. S. Guo
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