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Docket No. 50-247

Mr. William J. Cahill, Jr.
Vice President
Consolidated Edison Company
of New York, Inc.
4 Irving Place
New York, New York 10003

Dear Mr. Cahill:

The Commission has issued the enclosed Amendment No. 60 to Facility Operating License No. DPR-26 for the Indian Point Nuclear Generating Unit No. 2. This amendment consists of changes to the license and to the appended Technical Specifications in response to your applications transmitted by letters dated January 10, 1979, July 27, 1979, October 1, 1979 and December 31, 1979.

The amendment changes the Technical Specifications to include operability and surveillance requirements for the gas turbines, cable spreading room halon system, additional fire detectors and the auxiliary feedwater pumps; to limit control rod misalignment; and modifies the license to require a secondary water chemistry monitoring program.

Copies of the Safety Evaluation and the Notice of Issuance are also enclosed.

Sincerely,

Original Signed By

A. Schwencer, Chief
Operating Reactors Branch #1
Division of Operating Reactors

Enclosures:
1. Amendment No. 60 to DPR-26
2. Safety Evaluation
3. Notice of Issuance

cc: w/enclosures
See next page

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#15

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

January 28, 1980

Docket No. 50-247

Mr. William J. Cahill, Jr.
Vice President
Consolidated Edison Company
of New York, Inc.
4 Irving Place
New York, New York 10003

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A. Schwencer

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Division of Operating Reactors

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cc: w/enclosures
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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. 60
License No. DPR-26

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

   A. The applications for amendment by Consolidated Edison Company of New York, Inc. (the licensee) dated January 10, 1979, July 27, 1979, October 1, 1979 and December 31, 1979 comply 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.

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2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and by changing paragraph 2.C.(2), renumbering paragraph 2.D to 2.D.(1) and adding paragraph 2.D.(2) to read as follows:

C.(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 60 , are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

D.(2) Secondary Water Chemistry Monitoring

The licensee shall implement a secondary water chemistry monitoring program to inhibit steam generator tube degradation. This program shall include:

(a) Identification of a sampling schedule for the critical parameters and control points for these parameters;

(b) Identification of the procedures used to quantify parameters that are critical to control points;

(c) Identification of process sampling points;

(d) Procedure for the recording and management of data;

(e) Procedures defining corrective actions for off control point chemistry conditions; and

(f) A procedure identifying the authority responsible for the interpretation of the data, and the sequence and timing of administrative events required to initiate corrective action.

3. This license amendment is effective as of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

A. Schwencer

A. Schwencer, Chief
Operating Reactors Branch #1
Division of Operating Reactors

Attachment:
Changes to the Technical
Specifications

Date of Issuance: January 28, 1980

ATTACHMENT TO LICENSE AMENDMENT NO. 60

FACILITY OPERATING LICENSE NO. DPR-26

DOCKET NO. 50-247

Revise Appendix A as follows:

Remove Pages	Insert Pages
ii	ii
3.4-1	3.4-1
3.7-1	3.7-1
3.7-2	3.7-2
3.7-3	3.7-3
3.7-4	3.7-4
3.7-5	3.7-5
	3.7-6
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3.10-15	3.10-15
3.13-3	3.13-3
	3.13-4
Table 3.13-1	Table 3.13-1 (2 sheets)
4.6-1	4.6-1
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4.6-3	4.6-3
	4.6-4
4.14-3	4.14-3
4.14-4	4.14-4
	4.14-5

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3.4 STEAM and POWER CONVERSION SYSTEM

Applicability

Applies to the operating status of the Steam and Power Conversion System.

Objective

To define conditions of the turbine cycle steam-relieving capacity. Auxiliary Feedwater System and Service Water System operation is necessary to ensure the capability to remove decay heat from the core.

Specification

A The reactor shall not be heated above 350°F unless the following conditions are met:

(1) A minimum ASME code approved steam-relieving capability of twenty (20) main steam valves shall be operable (except for testing).

(2) Three auxiliary feedwater pumps each capable of pumping a minimum of 400 gpm must be operable.

(3) A minimum of 360,000 gallons of water in the condensate storage tank and a backup supply from the city water supply.

(4) Required system piping, valves, and instrumentation directly associated with the above components operable.

(5) The main steam stop valves are operable and capable of closing in five seconds or less.

(6) The total iodine activity of I-131 and I-133 on the secondary side of the steam generator shall be less than or equal to 0.15 μCi/cc.

B. If during power operations any of the conditions of 3.4.A above can not be met within 72 hours, the reactor shall be placed in the hot shutdown condition within the next 12 hours and subsequently cooled below 350°F using normal operating procedures.

3.7 AUXILIARY ELECTRICAL SYSTEMS

Applicability

Applies to the availability of electrical power for the operation of plant auxiliaries.

Objective

To define those conditions of electrical power availability necessary (1) to provide for safe reactor operation and (2) to provide for the continuing availability of engineered safety features.

Specification

A. The reactor shall not be made critical without:

1. Two 138 kv lines to Buchanan fully operational.

2. The 6.9 kv buses 5 and 6 energized from the 138 kv source.

3. One 13.8 kv source fully operational and the 13.8/6.9 kv transformer available to supply 6.9 kv power.

4. 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.

5. Three diesel generators operable with on-site supply of 19,000 gallons of fuel available in the individual storage tanks and 22,000 gallons of fuel available on-site other than the normal supply tanks.

6. Station Batteries Nos. 21 & 22 and their associated battery chargers and d.c. distribution systems operable.

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

1. Power operation may continue for seven days if one diesel is inoperable provided the 138 kv and the 13.8 kv sources of off-site power are available and the remaining diesel generators are tested daily to ensure operability and the engineered safety features associated with these diesel generator buses are operable.

2. Power operation may continue for 24 hours, if the 138 kv or the 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 failure is reported to the NRC within the subsequent 24-hour period with an outline of the plans for restoration of off-site power.

3. One battery may be inoperable for 24 hours provided the other battery and two battery chargers remain operable with one battery charger carrying the dc load of the failed battery's supply system.

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.

D. 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:

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 on-site 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 on-site supply of 19,000 gallons of fuel available in the individual storage tanks and 22,000 gallons of fuel available on-site other than the normal supply tanks and supplying 480-volt buses.
   f. Station batteries Nos. 21 & 22 and their associated battery chargers and d.c. distribution systems operable.
   g. The 480-volt tie breakers 52/2A, 52/3A, 52/5A and 52/6A open.

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 on-site.
   b. Two 138 kv lines to Buchanan energized from the gas turbines with breakers to Millwood and Orange and Rockland 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 on-site supply of 19,000 gallons of fuel available in the individual storage tanks and 22,000 gallons of fuel available on-site other than the normal supply tanks.
   g. Station batteries Nos. 21 & 22 and their associated battery chargers and d.c. distribution systems operable.

E. 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 the plant safety. The 480-volt equipment is arranged in four buses. The 6900-volt equipment is supplied from six buses.

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

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.

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 at design load the minimum required engineered safeguards equipment.(1) The minimum diesel fuel oil inventory at all times is maintained to assure the operation of two diesels carrying the load of the minimum required engineered safeguards equipment for at least eighty hours.(2) Additional fuel oil

suitable for use in the diesel generators will be stored on site. The minimum storage of 22,000 gallons will assure operation of two diesels for ninety hours at the minimum load for engineered safeguards. Commercial oil supplies and trucking facilities exist to assure deliveries within one day's notice. 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 insures that adequate d.c. power will be available for starting the emergency diesel generators and other emergency uses.

The plant can be safely shutdown without the use of off-site 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 off-site 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 on-site 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 on-site 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.

This Specification (3.7.D.2) is identical with normal start-up requirements as specified in 3.7.A except that off-site 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.

References

1) FSAR - Section 8.2.1

2) FSAR - Section 8.2.3

3.10.5 Rod Misalignment Limitations

3.10.5.1 If a control rod is misaligned from its bank demand position by more than 12 steps (indicated position), then realign the rod or determine the core peaking factors within 2 hours and apply Specification 3.10.2.

3.10.5.2 If the restrictions of Specification 3.10.3 are determined not to apply and the core peaking factors have not been determined within two hours and the rod remains misaligned, the high reactor flux setpoint shall be reduced to 85% of its rated value.

3.10.5.3 If the misaligned control rod is not realigned within 8 hours, the rod shall be declared inoperable.

3.10.6 Inoperable Rod Position Indicator Channels

3.10.6.1 If a rod position indicator channel is out of service then:

a. For operation between 50 percent and 100 percent of rating, the position of the control rod shall be checked indirectly by core instrumentation (excore detectors and/or movable incore detectors) every shift, or subsequent to rod motion exceeding 24 steps, whichever occurs first.

b. During operation below 50 percent of rating, no special monitoring is required.

3.10.6.2 Not more than one rod position indicator channel per group nor two rod position indicator channels per bank shall be permitted to be inoperable at any time.

3.10.6.3 If a control rod having a rod position indicator channel out of service is found to be misaligned from 3.10.6.1a, above, then Specification 3.10.5 will be applied.

Measurements of the hot channel factors are required as part of startup physics tests, at least each effective full power month of operation, and whenever abnormal power distribution conditions require a reduction of core power to a level based on measured hot channel factors. The incore map taken following initial loading provides confirmation of the basic nuclear design basis including proper fuel loading patterns. The periodic monthly incore mapping provides additional assurance that the nuclear design basis remain inviolate and identify operational anomolies which would, otherwise, affect these basis.

For normal operation, it is not necessary to measure these quantities. Instead it has been determined that, provided certain conditions are observed, the hot channel factor limits will be met; these conditions are as follows:

1. Control rods in a single bank move together with no individual rod insertion differing by more than 15 inches from the bank demand position. An indicated misalignment limit of 12 steps precludes a rod misalignment no greater than 15 inches with consideration of maximum instrumentation error.
2. Control Rod banks are sequenced with overlapping banks as described in Technical Specification 3.10.4.
3. The control rod bank insertion limits are not violated.
4. Axial power distribution control procedures, which are given in terms of flux difference control and control bank insertion limits are observed. Flux difference refers to the difference in signals between the top and bottom halves of two-section excore neutron detectors. The flux difference is a measure of the axial offset which is defined as the difference in normalized power between the top and bottom halves of the core.

The permitted relaxation in $F^N_{\Delta H}$ allows radial power shape changes with rod insertion to the insertion limits. It has been determined that provided the above conditions 1 through 4 are observed, these hot channel factors limits are met. In Specification 3.10.2, F_Q is arbitrarily limited for $P \leq 0.5$ (except for low power physics tests).

The procedures for axial power distribution control referred to above are designed to minimize the effects of xenon redistribution on the axial power distribution during load-follow maneuvers. Basically, control of flux difference is required

The intent of the test to measure control rod worth and shutdown margin (Specification 3.10.4) is to measure the worth of all rods less the worth of the worst case for an assumed stuck rod, that is, the most reactive rod. The measurement would be anticipated as part of the initial startup program and infrequently over the life of the plant, to be associated primarily with determinations of special interest such as end of life cooldown, or startup of fuel cycles which deviate from normal equilibrium conditions in terms of fuel loading patterns and anticipated control bank worths. These measurements will augment the normal fuel cycle design calculations and place the knowledge of shutdown capability on a firm experimental as well as analytical basis.

Operation with abnormal rod configuration during low power and zero power testing is permitted because of the brief period of the test and because special precautions are taken during these tests.

The rod position indicator channel is sufficiently accurate to detect a rod ± 7.5 inches away from its demand position. An indicated misalignment $\leq$ 12 steps does not exceed the power peaking factor limits. If the rod position indicator channel is not operable, the operator will be fully aware of the inoperability of the channel, and special surveillance of core power tilt indications, using established procedures and relying on excore nuclear detectors, and/or movable incore detectors, will be used to verify power distribution symmetry. These indirect measurements do not have the same resolution if the bank is near either end of the core, because a 12 step misalignment would have no effect on power distribution. Therefore, it is necessary to apply the indirect checks following significant rod motion.

One inoperable control rod is acceptable provided that the power distribution limits are met, trip shutdown capability is available, and provided the potential hypothetical ejection of the inoperable rod is not worse than the cases analyzed in the safety analysis report. The rod ejection

D. Fire Detection Systems

1. As a minimum, the fire detection instrumentation for each location shown in Table 3.13-1 shall be operable whenever equipment in that location is required to be operable.

2. With the number of operable fire detection instruments less than the minimum required by Table 3.13-1:

   a. A fire watch patrol shall be established within 1 hour where accessibility permits to inspect the location(s) with less than the minimum operable instrumentation at a frequency of at least once per hour.

   b. The minimum operable instrumentation required in Table 3.13-1 shall be restored within 14 days or a Special Report shall be prepared and submitted to the Commission pursuant to specification 6.9.2.d within the next 10 days outlining the cause of the malfunction and the plans for restoring the instrumentation to operable status.

E. Fire Hose Stations

1. The following fire hose stations shall be operable whenever equipment in the area is required to be operable:

   a. Hose Station - Stairwell No. 3
      (Control Building: El. - 15')

   b. Hose Station - Stairwell No. 3
      (Control Building: El. - 33')

   c. Hose Station - Stairwell No. 3
      (Control Building: El. - 53')

   d. Hose Station - Stairwell - East End of Control Building
      (Control Building: El. - 53')

   e. Fire hydrant No. 27 and associated hose house with fire hose and nozzles to serve the diesel generator building.

   f. Fire hydrant No. 25 and associated hose house and nozzles to serve the auxiliary feedwater pump building.

2. If the requirements of 3.13.E.1 cannot be satisfied, an additional equivalent capacity hose shall be routed to the affected area from an operable hose station within one hour.

F. Cable Spreading Room Halon System

1. The Cable Spreading Room Halon System shall be operable at all times with the halon storage tanks having an equivalent of at least 90% of full

charge weight and an equivalent of at least 90% of full charge pressure at standard temperature and pressure (STP) conditions.

2. If the requirements of 3.13.F.1 cannot be satisfied:

   a. A continuous fire watch with backup fire protection equipment shall be established within one (1) hour for the Cable Spreading Room.

   b. The Cable Spreading Room Halon System shall be restored to operable status within 14 days or a Special Report shall be prepared and submitted to the Commission pursuant to specification 6.9.2.d within the next 30 days outlining the cause of the inoperability and the plans for restoring the Halon System to operable status.

Basis

These specifications are established to assure the operability of fire protection and detection systems provided to protect equipment utilized for safe shutdown of the unit. The fire protection and detection systems are described in Revision 1 to "Review of the Indian Point Station Fire Protection Program," submitted to the NRC by letter dated April 15, 1977, and also in the Fire Protection Safety Evaluation Report issued by the NRC Regulatory Staff in conjunction with Amendment No. 46 to DPR-26 on January 31, 1979.

Table 3.13-1 (1 of 2)

Fire Detection Instruments

Instrument Location	Minimum Instruments Operable	
	Heat	Smoke (ionization detectors)
1. Central Control Room (Control Building: El-53')	N/A	4
2. Cable Spreading Room (Control Building: El-33')	N/A	7
3. Switchgear Room (Control Building: El-15')	N/A	7
4. Electrical Tunnel (El-33' to El-68')	38*	3
5. Electrical and Piping Tunnel and Piping Penetration Area (PAB and Fan House: El-68' to El-51')	N/A	2
6. Electrical Penetration Area (Fan House: El-46')	N/A	4
7. Diesel Generator Building (El-67')	11	N/A
8. Boric Acid Transfer Pump Area (PAB: El-80')	N/A	1
9. Contanment Spray Pump/Primary Water Makeup Pump Area (PAB: El-68')	N/A	4
10. Containment Fan Cooler Units (Containment: El-68')	4 per FC unit	N/A
11. Electrical Penetration Area Outer Annulus (Containment: El-46')	N/A	3

*temperature detector/trip devices

Table 3.13-1 (2 of 2)

Fire Detection Instruments

Instrument Location	Minimum Instruments Operable	
	Heat	Smoke (ionization detectors)
12. Auxiliary Boiler Feedwater Pump Area (AFB: El-18')	N/A	2
13. Main Corridor (PAB: El-80')	N/A	5
14. Main Corridor (PAB: El-98')	N/A	3
15. Component Cooling Pump Area (PAB: El-68')	N/A	1
16. RHR Pump 21 Room (PAB: El-15')	N/A	1
17. RHR Pump 22 Room (PAB: El-15')	N/A	1
18. Safety Injection Pump Area (PAB: El-59')	N/A	1
19. Charging Pump 21 Room (PAB: El-80')	N/A	1
20. Charging Pump 22 Room (PAB: El-80')	N/A	1
21. Charging Pump 23 Room (PAB: El-80')	N/A	1

4.6 EMERGENCY POWER SYSTEM PERIODIC TESTS

Applicability

Applies to periodic testing and surveillance requirements of the emergency power systems.

Objective

To verify that emergency power systems will respond promptly and properly when required.

Specification

The following tests and surveillance shall be performed as stated:

A. Diesel Generators

1. Each month each diesel generator shall be manually started and synchronized to its bus or buses and shall be allowed to assume the normal bus load.

2. At each refueling outage each diesel generator shall be manually started, synchronized and loaded up to its nameplate rating.

3. At each refueling outage to assure that each diesel generator will automatically start and assume the required load within 60 seconds after the initial start signal the following shall be accomplished - by simulating a loss of all normal AC station service power supplies and simultaneously simulating a Safety Injection signal observations shall verify automatic start of each diesel generator, required bus load shedding and restoration to operation of particular vital equipment. To prevent Safety Injection flow to the core certain safeguard valves will be closed and made inoperable.

4. Each diesel generator shall be given a thorough inspection at least annually following the manufacturer's recommendations for this class of stand-by service.

The above tests will be considered satisfactory if the required minimum safeguards equipment operated as designed.

B. Diesel Fuel Tanks

A minimum oil storage of 41,000 gallons will be maintained at the station at all times.

C. Station Batteries (Nos. 21 & 22)

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. At each time data is recorded, new data shall be compared with old to detect signs of abuse or deterioration.

4. At each refueling interval, 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 documented in the plant log.

Basis

The tests specified in 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 2000 hr rating of 2000 kw. Two diesels operating at their continuous rating can power the minimum safeguards loads. A minimum oil storage of 41,000 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 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 demands 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

FSAR, Section 8.2.

c. Spray Header Visual Inspection- To verify integrity. — once/18 months

d. Visual Inspection of Each Spray Nozzle- To verify no blockage. — once/18 months

e. Air Flow Test- Perform air flow test through each spray header and verify each spray nozzle is unobstructed. — once/3 years

2. The requirements of 4.14.B.1 shall not apply to self-actuated type spray nozzles which are capable of only one actuation and cannot be periodically cycled or tested. These self-actuated spray nozzles shall be visually inspected at least once per 18 months to verify that no nozzle damage exists and that the nozzles are unobstructed.

C. Penetration Fire Barrier Inspections:

1. The penetration fire barriers listed in specification 3.13.C.1 shall be verified to be functional by visual inspection:

a. At least once per 18 months.

b. Prior to declaring a fire penetration barrier functional following repairs or maintenance.

D. Fire Detection Systems Testing:

1. The operability of the fire detection instruments utilized in satisfying the requirements of specification 3.13.D.1 including the actuation of appropriate alarms (Channel Functional Test) shall be verified as follows:

Item	Frequency
a. Smoke Detectors-	
(i) Those testable during plant operation (i.e., all except item 11 in Table 3.13-1).	once/6 months
(ii) Those not testable during plant operation (item 11 in Table 3.13-1).	once/18 months
b. Heat Detectors-	
(i) Those associated with the Diesel Generator Building (item 7 in Table 3.13-1).	once/6 months

(ii) Those associated with the Electrical Tunnel (item 4 in Table 3.13-1).	once/12 months
(iii) Those associated with the Containment Fan Cooler Units (item 10 in Table 3.13-1).	once/18 months

E. Fire Hose Station and Hydrant Testing:

1. Fire hose stations and hydrants described in specification 3.13.E.1 shall be demonstrated operable by the following surveillance testing requirements:

Item	Frequency
a. Visual Inspection Test--Visual inspection of the hose stations and hose houses to assure all required equipment is at the station or hosehouse.	once/month
b. Hydrant Inspection--	
1. Visually inspect each hydrant barrel to verify it is drained.	once/year (in the fall)
2. Flow test each hydrant to demonstrate its operability.	once/year (in the spring)
c. Hose Removal Check--Removal of the hose for inspection and replacement of all degraded gaskets in couplings.	once/18 months
d. Hose Flow Test--Partial opening of each hose station and hydrant valve to verify valve operability and no flow blockage.	once/3 years
e. Hose Hydrostatic Test--Conduct a hose hydrostatic test at a pressure at least 50 psig greater than the maximum pressure available at any hose station.	once/3 years for interior fire hose; once/year for outside fire hose.

F. Cable Spreading Room Halon System:

1. The Cable Spreading Room Halon System required operable by specification 3.13.F.1 shall be demonstrated operable by the following surveillance requirements:

	Item	Frequency
a.	Halon Storage Tanks- Verification of tank weight and pressure.	once/6 months
b.	System Functional Test- Verification that the system, including ventilation dampers and fans, actuates properly upon receipt of a manual simulated test signal.	once/18 months
c.	Air Flow Test- Performance of an air flow test through headers and nozzles to verify no blockage.	once/18 months

Basis

These specifications establish the surveillance program for fire protection and detection systems provided to protect equipment utilized for safe shutdown of the unit. This surveillance program is intended to verify the operability of these systems and will identify for corrective action any conditions which could prevent any portion of the systems from performing its intended function.

The fire protection and detection systems are described in Revision 1 to "Review of the Indian Point Station Fire Protection Program" submitted to the NRC by letter dated April 15, 1977 and also in the Fire Protection Safety Evaluation Report issued by the NRC Regulatory Staff in conjunction with Amendment No. 46 to DPR-26 on January 31, 1979.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 60 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

Introduction

By letters dated January 10, 1979, July 27, 1979, October 1, 1979 and December 31, 1979, Consolidated Edison Company of New York (the licensee) requested amendment of Facility Operating License No. DPR-26 for the Indian Point Nuclear Generating Unit No. 2. The amendment would make several changes to the Technical Specifications and impose a license condition. The proposed changes would specify operability and surveillance requirements for the gas turbines, the cable spreading room halon system and additional fire detectors; modify the license to incorporate a secondary water chemistry monitoring program requirement; specify operability requirements for the auxiliary feedwater pumps; and limit control rod misalignment.

Gas Turbines, Cable Spreading Room Halon System and Additional Fire Detectors

In Section 3.1.24 of our Fire Protection Safety Evaluation (SER), dated January 31, 1979, the requirement for Technical Specifications to assure availability of the gas turbines was identified. The licensee's January 10, 1979 letter only proposed notification of the NRC if no gas turbines were operable. Following discussion with the NRC staff, the licensee agreed to a clarification which would require that the plant be shutdown (within a time period consistent with other fire protection equipment) if no gas turbines are available and an alternate independent power system cannot be established. On that basis, we conclude that our requirement will be satisfied and that the specifications for operability and surveillance of the gas turbines are acceptable.

In Sections 3.1.12 and 3.1.15 of our January 31, 1979 SER, the requirements for a halon system in the cable spreading room and additional fire detectors in safety related areas were identified. Technical Specifications establishing limiting conditions of operation and surveillance requirements on the modifications were proposed by letter of July 27, 1979. We have reviewed the licensee's proposed Technical Specifications and find them acceptable.

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Secondary Water Chemistry

By letter dated August 1, 1979, we requested that requirement for a secondary water chemistry monitoring program to inhibit steam generator tube degradation be incorporated in the body of the license. By letter of October 1, 1979 the licensee proposed a modification to the license that incorporates the program we requested.

This license condition would provide assurance that the licensee will devote proper attention to controlling secondary water chemistry, while also providing the needed flexibility to allow the licensee to more effectively deal with any off-normal conditions that might arise. Moreover, we have concluded that such a license condition, in conjunction with existing Technical Specifications on steam generator tube leakage and inservice inspection, would provide the most practical and comprehensive means of assuring that steam generator tube integrity is maintained.

Therefore, we find the proposed license condition acceptable.

Auxiliary Feedwater Pumps

By letter dated November 7, 1979 we identified requirements for the auxiliary feedwater (AFW) system. NRC staff recommendation GS-1 called for the licensee to propose a Technical Specification requirement to limit the time that only one AFW system pump and its associated flow train and essential instrumentation can be operable. The proposed Technical Specifications were submitted by letter dated December 31, 1979.

The outage time limit, 72 hours, and subsequent action time, 12 hours, are identical to those in our Recommendation GS-1. We, therefore, conclude that this proposed change to the Technical Specifications is acceptable.

Control Rod Misalignment

By letter dated October 29, 1979, we identified a problem with control rod misalignment specification for Westinghouse-designed reactors. The Westinghouse safety analyses are performed for control rod misalignments up to ± 15 inches, which is equivalent to ± 24 steps. Because the control rod position indication system has an uncertainty of 7.5 inches (12 steps), there could be an actual misalignment of up to 24 steps for an indicated misalignment of 12 steps.

The proposed change to the Technical Specifications, submitted by letter dated December 31, 1979, would limit the indicated control rod misalignment to no more than 12 steps from its control rod bank demand position. We find these proposed Technical Specifications acceptable.

The licensee has committed to interim administrative controls to limit the indicated control rod misalignment to ±12 steps, pending issuance of the amendment.

Environmental Consideration

We have determined that the amendment does not authorize a change in effluent types or total amounts nor an increase in power level and will not result in any significant environmental impact. Having made this determination, we have further concluded that the amendment involves an action which is insignificant from the standpoint of environmental impact and, pursuant to 10 CFR §51.5(d)(4), that an environmental impact statement or negative declaration and environmental impact appraisal need not be prepared in connection with the issuance of this amendment.

Conclusion

We have concluded, based on the considerations discussed above, that: (1) because the amendment does not involve a significant increase in the probability or consequences of accidents previously considered and does not involve a significant decrease in a safety margin, the amendment does not involve a significant hazards consideration, (2) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (3) 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.

Date: January 28, 1980

UNITED STATES NUCLEAR REGULATORY COMMISSION

DOCKET NO. 50-247

CONSOLIDATED EDISON COMPANY OF NEW YORK, INC.

NOTICE OF ISSUANCE OF AMENDMENT TO FACILITY OPERATING LICENSE

The U. S. Nuclear Regulatory Commission (the Commission) has issued Amendment No. 60 to Facility Operating License No. DPR-26, issued to the Consolidated Edison Company of New York, Inc. (the licensee), which revised Technical Specifications for operation of the Indian Point Nuclear Generating Unit No. 2 (the facility) located in Buchanan, Westchester County, New York. The amendment is effective as of the date of issuance.

The amendment changes the Technical Specifications to include operability and surveillance requirements for the gas turbines, cable spreading room halon system, additional fire detectors and the auxiliary feedwater pumps; to limit control rod misalignment; and modifies the license to require a secondary water chemistry monitoring program.

The application for the amendment complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations. The Commission has made appropriate findings as required by the Act and the Commission's rules and regulations in 10 CFR Chapter I, which are set forth in the license amendment. Prior public notice of this amendment was not required since the amendment does not involve a significant hazards consideration.

The Commission has determined that the issuance of this amendment will not result in any significant environmental impact and that pursuant to 10 CFR §51.5(d)(4) an environmental impact statement or negative declaration and environmental impact appraisal need not be prepared in connection with issuance of this amendment.

For further details with respect to this action, see (1) the application for amendment dated January 10, 1979, July 27, 1979, October 1, 1979 and December 31, 1979, (2) Amendment No. 60 to License No. DPR-26, and (3) the Commission's related Safety Evaluation. All of these items are available for public inspection at the Commission's Public Document Room, 1717 H Street, N.W., Washington, D. C. and at the White Plains Public Library, 100 Martine Avenue, White Plains, New York. A copy of items (2) and (3) may be obtained upon request addressed to the U. S. Nuclear Regulatory Commission, Washington, D.C. 20555, Attention: Director, Division of Operating Reactors.

Dated at Bethesda, Maryland, this 28th day of January, 1980.

FOR THE NUCLEAR REGULATORY COMMISSION

A. Schwencer, Chief
Operating Reactors Branch #1
Division of Operating Reactors