November 30, 1977

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

Gentlemen:

The Commission has issued the enclosed Amendment No. 36 to Facility Operating License No. DPR-26 and Amendment No. 10 to Facility Operating License No. DPR-64 for the Indian Point Nuclear Generating Units Nos. 2 and 3, respectively. These amendments consist of changes to the Technical Specifications in response to your applications transmitted by letters dated July 20, 1977.

These amendments incorporate fire protection Technical Specifications on the existing fire protection equipment and administrative controls at your facilities, which were agreed to by your staff in discussions with the NRC staff.

In order to provide a period of time to modify procedures to conform with the details of the enclosed interim Technical Specifications and to complete required personnel training where necessary, these amendments become effective 30 days after the date of issue.

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

Sincerely,

Robert W. Reid, Chief
Operating Reactors Branch #4
Division of Operating Reactors

Enclosures:
1. Amendment No. 36 to DPR-26
2. Amendment No. 10 to DPR-64
3. Safety Evaluation
4. Notice

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of New York, Inc.

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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. 36
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) sworn to July 15, 1977, 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.

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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 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. 36, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment becomes effective 30 days after the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Robert W. Reid

Robert W. Reid, Chief
Operating Reactors Branch #4
Division of Operating Reactors

Attachment:
Changes to the Technical
Specifications

Date of Issuance: November 30, 1977

ATTACHMENT TO LICENSE AMENDMENT NO. 36

FACILITY OPERATING LICENSE NO. DPR-26

DOCKET NO. 50-247

Revise Appendix A as follows:

Remove Pages	Insert Pages
ii	ii
iv	iv
-	3.13-1 thru 3.13-3
4.1-1	4.1-1
-	4.14-1 thru 4.14-4
6-1	6-1
6-5	6-5
6-10	6-10
6-13	6-13

Remove Tables	Insert Tables
-	3.13-1
4.1-3 (2 pages)	4.1-3 (2 pages)

Remove Figure	Insert Figure
6.2-1	6.2-1

Changes on the revised pages are shown by marginal lines.

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	Shutdown Reactivity	3.10-1
	Power Distribution Limits	3.10-1
	Quadrant Power Tilt Limits	3.10-4
	Rod Insertion Limits	3.10-5
	Rod Misalignment Limitations	3.10-6
	Inoperable Rod Position Indicator Channels	3.10-6
	Inoperable Rod Limitations	3.10-7
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	Rod Position Monitor	3.10-7
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3.13 FIRE PROTECTION AND DETECTION SYSTEMS

Applicability

This specification applies to the operability of fire protection and detection systems provided for protection of safe shutdown systems.

Objective

To assure the operability of fire protection and detection systems.

Specification

A. High Pressure Water Fire Protection System

1. The high pressure water fire protection system shall have:

   a. Two(2) main fire pumps operable and properly aligned to the high pressure fire header.

   b. Automatic initiation circuitry for each of the main fire pumps in 3.13.A.1.a operable.

   c. All piping and valves necessary for proper functioning of any portion of the system required for protection of safe shutdown systems operable.

   d. A minimum available water volume of 360,000 gallons contained in the City Water Tank for fire protection purposes.

2. With less than the equipment required by 3.13.A.1 operable, the inoperable equipment shall be restored to operable status within 7 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 plans and procedures to be used for restoring the inoperable equipment to operable status.

3. With no main fire pumps operable:

   a. An alternate fire protection system shall be established within 24 hours.

   b. The Region I Office of Inspection and Enforcement shall be notified within 24 hours of identification by telephone and confirmed by telegraph, mailgram or facsimile transmission no later than the first working day following the event.

   c. A Special Report shall be submitted in accordance with specification 6.9.2.d within 14 days following the event outlining the action taken, the cause of the inoperability and the plans and schedule for restoring the system to operable status.

d. If the requirement of 3.13.A.3.a cannot be satisfied within the time period specified, the reactor shall be placed in the hot shutdown condition utilizing normal operating procedures. If the requirement of 3.13.A.3.a cannot be satisfied within an additional 48 hours, the reactor shall be placed in the cold shutdown condition utilizing normal operating procedures.

B. Fire Protection Spray Systems

1. The following spray systems shall be operable whenever equipment in the area is required to be operable:

   a. Electrical Tunnel Fire Protection Water Spray System (El-33' in Control Building to El-68' in PAB).

   b. Diesel Generator Building Water Spray System (El-67' in D.G. Building).

   c. Containment Fan Cooler Charcoal Filter Dousing System (El-68' in Containment).

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

   a. A continuous fire watch with backup fire suppression equipment shall be established for the accessible unprotected area(s) within 1 hour.

   b. The inoperable spray system(s) 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 inoperability and the plans for restoring the spray system(s) to operable status.

C. Penetration Fire Barriers

1. The following penetration fire barriers shall be functional at all times or a continuous fire watch shall be established on at least one side of the affected penetration within one hour:

   a. Penetration fire barriers between the central control room floor and the cable spreading room.

   b. Penetration fire barriers between the 480 V switchgear room and the cable spreading room.

   c. Penetration fire barrier between the PAB and the electrical tunnel.

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 accessiblity 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')

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.

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.

Table 3.13-1

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. Containment Spray Pump Area (PAB: El-68')	N/A	3
10. Containment Fan Cooler Units (Containment: El-68')	11 per FC unit	N/A

*temperature detector/trip devices

4.1 OPERATIONAL SAFETY REVIEW

Applicability

Applies to items directly related to safety limits and limiting conditions for operation.

Objective

To specify the minimum frequency and type of surveillance to be applied to plant equipment and conditions.

Specification

a. Calibration, testing and checking of analog channels, and testing of logic channels shall be performed as specified in Table 4.1-1.

b. Sampling and equipment tests shall be conducted as specified in Tables 4.1-2 and 4.1-3, respectively.

c. Performance of any surveillance test outlined in these specifications is not immediately required if the plant condition is the same as the condition into which the plant would be placed by an unsatisfactory result of that test. Such tests will be performed before the plant is removed from the subject condition that has precluded the immediate need to run the test. If the test provisions require that a minimum higher system condition must first be established, the test will be performed promptly upon achieving this minimum condition. The following surveillance tests, however, must be performed without the above exception:

- Table 4.1-1 Items 3, 19, and 27
- Table 4.1-2 Items 1, 2, and 10
- Table 4.1-3 Items 2, 6, 11 and 12

Basis

A surveillance test is intended to identify conditions in a plant that would lead to a degradation of reactor safety. Should a test reveal such a condition, the Technical Specifications require that either immediately, or after a specified period of time, the plant be placed in a condition which mitigates or eliminates the consequences of additional related casualties or accidents. If the plant is already in a condition which satisfies the failure criteria of the test, then plant safety is not compromised and performance of the test yields information that is not necessary to determine safety limits or limiting conditions for operation of the plant. The surveillance test need not be performed, therefore, as long as the plant remains in this condition. However, this surveillance test should be performed prior to removing the plant from the subject condition that has precluded the immediate need to run the

TABLE 4.1-3

FREQUENCIES FOR EQUIPMENT TESTS

		Check	Frequency	Maximum Time Between Tests
1.	Control Rods	Rod drop times of all full length rods	Each refueling shutdown	18 months**
2.	Control Rod	Partial movement of all full length rods	Every 2 weeks during reactor critical operations	20 days
3.	Pressurizer Safety Valves	Set point	Each refueling shutdown	18 months**
4.	Main Steam Safety Valves	Set point	Each refueling shutdown	18 months**
5.	Containment Isolation System	Automatic Actuation	Each refueling shutdown	18 months**
6.	Refueling System Interlocks	Functioning	Prior to each refueling shutdown	NA*
7.	Primary System Leakage	Evaluate	5 days/week	NA*
8.	Diesel Fuel Supply	Fuel Inventory	Weekly	10 days
9.	Turbine Steam Stop, Control Valves	Closure	Monthly	45 days
10.	Cable Tunnel Ventilation Fans	Functioning	Monthly	45 days
11.	Control Room and Fuel Handling Building Filtration System	Charcoal Filter Pressure Drop Test < 5 inches of water visual inspection Freon - 112 (or equivalent) test ≥ 99.5% at ambient conditions	Prior to each refueling outage***	18 months**

TABLE 4.1-3 (CONTINUED)

FREQUENCIES FOR EQUIPMENT TESTS

	Check	Frequency	Maximum Time Between Tests
12. Containment Air Filtration System	Visual Inspection	Every six months for the first two years and every refueling thereafter***	9 months (18 months)
	Pressure Drop Test < 5 inches of water	Each refueling***	18 months**
	Charcoal coupons: iodine and ignition temperature 50% removal for methyl iodine, no ignition below 300° C.	Every six months for the first two years and every refueling thereafter	9 months (18 months)
	HEPA filters DOP ≥ 99% efficiency	Each refueling***	18 months**

* NA - Not Applicable
** Except for the first fuel cycle
*** Or at any time work on the filters could alter their integrity

4.14 FIRE PROTECTION AND DETECTION SYSTEMS

Applicability

This specification applies to the surveillance requirements of fire protection and detection systems provided for protection of safe shutdown systems.

Objective

To verify the operability of fire protection and detection systems.

Specification

A. High Pressure Water Fire Protection System Testing:

1. Testing Requirements:

Item	Frequency
a. City Water Tank Minimum Water Volume.	once/week
b. Main Fire Pump Operability- Each pump operating for at least 15 minutes.	once/month
c. Valve Position Check- Verification that each valve (manual, power operated or automatic) in the flow path necessary for proper functioning of any portion of this system required for protection of safe shutdown systems is in its correct position. If the valve has an installed monitoring system, the valve position can be checked via that monitoring system.	once/month
d. Valve Cycling Test- Exercise each valve necessary for proper functioning of any portion of this system required for protection of safe shutdown systems through at least one complete cycle:	
(i) Valves testable with plant on-line.	once/12 months
(ii) Valves not testable with plant on-line.	once/18 months

e.	System Functional Test- Verification of proper actuation of this system throughout its operating sequence.	once/18 months
f.	Main Fire Pump Capacity and System Flow Check- Pumps shall be verified to have a capacity of at least 1500 gpm each at a net pressure of 93 psig.	once/18 months
g.	System Flow Test- Performance of a flow test in accordance with Chapter 5, Section 11 of the Fire Protection Handbook, 14th Edition, published by the National Fire Protection Association for any portion of this system required for protection of safe shutdown systems.	once/3 years

B. Electrical Tunnel, Diesel Generator Building and Containment Fan Cooler Fire Protection Spray Systems Testing:

1. Testing Requirements:

	Item	Frequency
a.	Valve Cycling Test- Exercise each valve necessary for proper functioning of any portion of this system required for protection of safe shutdown systems through at least one complete cycle:	
	(i) Valves testable with plant on-line.	once/12 months
	(ii) Valves not testable with plant on-line.	once/18 months
b.	System Functional Test- Includes simulated automatic actuation of spray system and verification that automatic valves in the flow path actuate to their correct position.	once/18 months

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-	once/6 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 Stations Testing:

1. Fire hose stations 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 to assure all required equipment is at the station.	once/month
b. Hose Removal Check- Removal of the hose for inspection and replacement of all degraded gaskets in couplings.	once/18 months
c. Hose Flow Test- Partial opening of each hose station valve to verify valve operability and no flow blockage.	once/3 years
d. Hose Hydrostatic Test- Conduct a hose hydrostatic test at a pressure at least 50 psig greater than the maximum pressure available at that hose station.	once/3 years

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.

6.0 ADMINISTRATIVE CONTROLS

6.1 RESPONSIBILITY

6.1.1 The Plant Manager shall be responsible for overall facility operation and shall delegate in writing the succession to this responsibility during his absence.

6.2 ORGANIZATION

FACILITY MANAGEMENT AND TECHNICAL SUPPORT

6.2.1 The organization for facility management and technical support shall be as shown on Figure 6.2-1.

FACILITY STAFF

6.2.2 The Facility organization shall be as shown on Figure 6.2-2 and:

a. Each on duty shift shall be composed of at least the minimum shift crew composition shown in Table 6.2-1.

b. At least one licensed Operator shall be in the control room when fuel is in the reactor.

c. At least two licensed Operators shall be present in the control room during reactor startup, scheduled reactor shutdown, and during recovery from reactor trips.

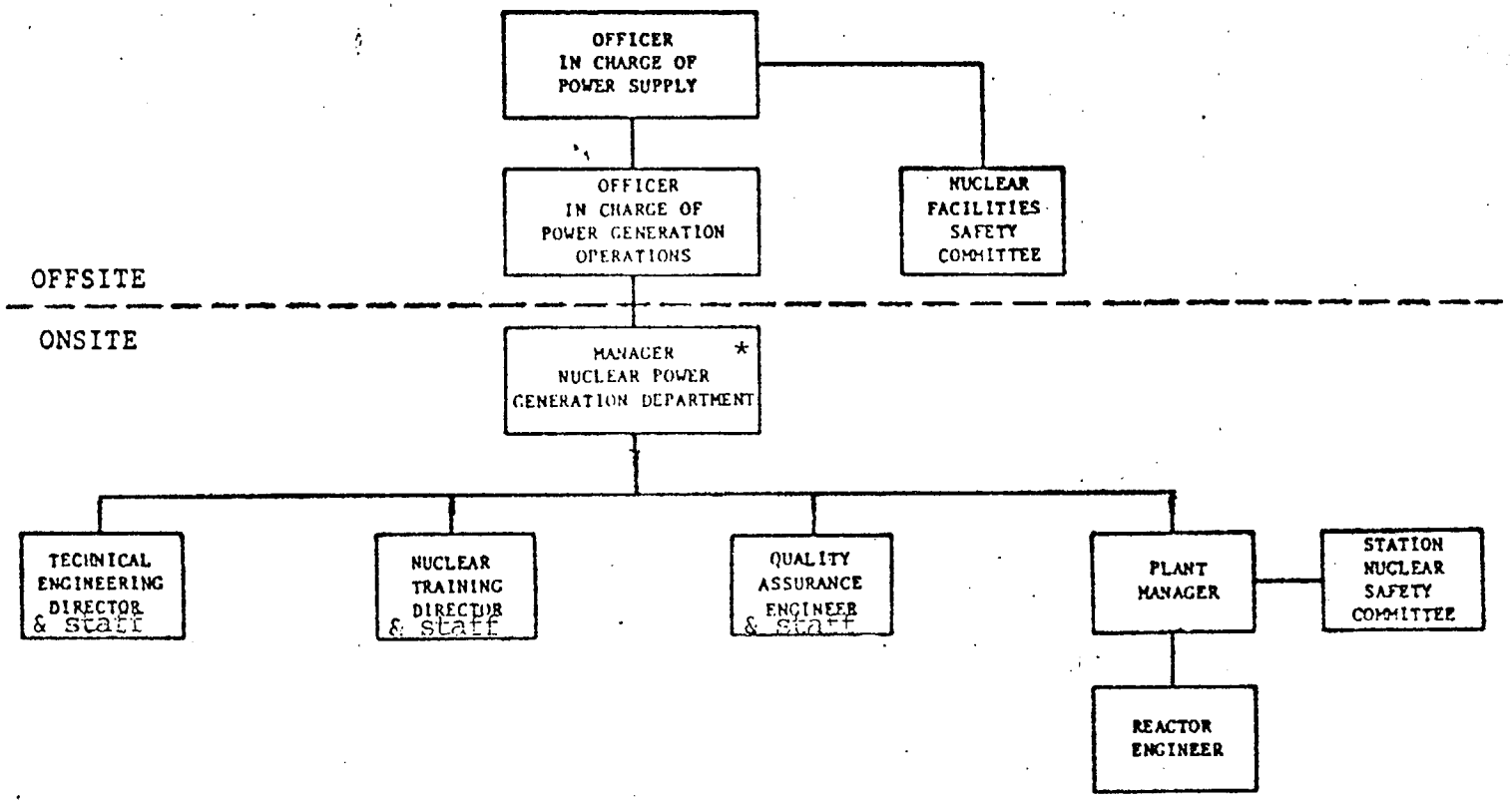
d. An individual qualified in radiation protection procedures shall be on site when fuel is in the reactor.

e. All CORE ALTERATIONS after the initial fuel loading shall be directly supervised by either a licensed Senior Reactor Operator or Senior Reactor Operator Limited to Fuel Handling. This individual shall have no other concurrent responsibilities during this operation.

f. A Fire Brigade of at least five members shall be maintained on site at all times. This excludes four members of the minimum shift crew necessary for safe shutdown of the plant and any personnel required for other essential functions during a fire emergency. During periods of cold shutdown, the Fire Brigade will exclude two members of the minimum shift crew.

6.3 FACILITY STAFF QUALIFICATIONS

6.3.1 Each member of the facility staff shall meet or exceed the minimum qualifications of ANSI N18.1-1971 for comparable positions.



* Responsible for performance and monitoring of the Fire Protection Program

Figure 6.2-1 Facility Management and Technical Support Organization

6.4 TRAINING

6.4.1 A retraining and replacement training program for the facility staff shall be maintained under the direction of the Nuclear Training Director and shall meet or exceed the requirements and recommendations of Section 5.5 of ANSI N18.1-1971 and Appendix "A" of 10 CFR Part 55.

6.4.2 A training program for the Fire Brigade shall be maintained under the direction of the Nuclear Training Director and shall meet or exceed the requirements of Section 27 of the NFPA Code-1976 with the exception of the training program schedule.

6.5 REVIEW AND AUDIT

6.5.1 STATION NUCLEAR SAFETY COMMITTEE (SNSC)

FUNCTION

6.5.1.1 The Station Nuclear Safety Committee shall function to advise the Plant Manager on all matters related to nuclear safety.

6.5.1.2 The Station Nuclear Safety Committee shall be composed as follows:

Chairman:	Plant Manager
Member:	Technical Engineering Director
Member:	Quality Assurance Engineer
Member:	Chief Operations Engineer
Member:	Security Supervisor
Member:	Test and Performance Engineer
Member:	Instrument and Control Engineer
Member:	Maintenance Engineer
Member:	Chemistry and Radiation Safety Director
Member:	Reactor Engineer
Member:	Manager NPG

ALTERNATES

6.5.1.3 Alternate members shall be appointed in writing by the SNSC Chairman to serve on a temporary basis; however, no more than two alternates shall participate in SNSC activities at any one time.

MEETING FREQUENCY

6.5.1.4 The SNSC shall meet at least once per calendar month and as convened by the SNSC Chairman.

g. Reportable Occurrences, as defined in Regulatory Guide 1.16, Revision 4.

h. Any indication of an unanticipated deficiency in some aspect of design or operation of safety related structures, systems, or components.

i. Reports and meeting minutes of the Station Nuclear Safety Committee.

AUDITS

6.5.2.8 Audits of facility activities shall be performed under the cognizance of the NFSC. These audits shall encompass:

a. The conformance of facility operation to all provisions contained within the Technical Specifications and applicable license conditions at least once per year.

b. The performance, training and qualifications of the entire facility staff at least once per year.

c. The results of all actions taken to correct deficiencies occurring in facility equipment, structures, systems or method of operation that affect nuclear safety at least once per six months.

d. The performance of all activities required by the Quality Assurance Program to meet the criteria of Appendix "B", 10 CFR 50, at least once per two years.

e. The Facility Emergency Plan and implementing procedures at least once per two years.

f. The Facility Security Plan and implementing procedures at least once per two years.

g. Any other area of facility operation considered appropriate by the NFSC or the Senior Company Officer in charge of Power Supply.

h. The Facility Fire Protection Program and implementing procedures at least once per two years.

i. A fire protection and loss prevention inspection and audit shall be performed annually utilizing either qualified offsite licensee personnel or an outside fire protection firm.

j. An inspection and audit of the fire protection and loss prevention program shall be performed by an outside qualified fire consultant at intervals no greater than 3 years.

AUTHORITY

6.5.2.9 The NFSC shall report to and advise the Senior Company Officer in charge of Power Supply on those areas of responsibility specified in Sections 6.5.2.7 and 6.5.2.8.

6.9 REPORTING REQUIREMENTS

ROUTINE AND REPORTABLE OCCURRENCE REPORTS.

6.9.1 Information to be reported to the Commission, in addition to the reports required by Title 10, Code of Federal Regulations, shall be in accordance with the Regulatory Position in Revision 4 of Regulatory Guide 1.16, "Reporting of Operating Information - Appendix "A" Technical Specifications".

SPECIAL REPORTS

6.9.2 Special reports shall be submitted to the Director of Region 1, Office of Inspection and Enforcement within the time period specified for each report. These reports shall be submitted covering the activities identified below pursuant to the requirements of the applicable reference specification:

a. Each containment integrated leak rate test shall be the subject of a summary technical report including results of the local leak rate tests since the last report. The report shall include analyses and interpretations of the results which demonstrate compliance in meeting the leak rate limits specified in the Technical Specifications.

b. A report covering the X-Y xenon stability tests within three months upon completion of the tests.

c. To provide the Commission with added verifications of the safety and reliability of the pre-pressurized Zircaloy-clad nuclear fuel, a limited program of non-destructive fuel inspections will be conducted. The program shall consist of a visual inspection (e.g., underwater TV, periscope, or other) of the two lead burnup assemblies in each region during the first, second, and third refueling shutdowns. Any condition observed by this inspection which would lead to unacceptable fuel performance may be the object of an expanded surveillance effort. If another domestic plant which contains pre-pressurized fuel of a similar design reaches fuel exposures equal to or greater than at Indian Point Unit No. 2, and if a limited inspection program is or has been performed there, then the program may not have to be performed at Indian Point Unit No. 2. However, such action requires approval of the Nuclear Regulatory Commission. The results of these inspection will be reported to the Nuclear Regulatory Commission.

d. Inoperable fire protection and detection equipment (Specification 3.13).

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

CONSOLIDATED EDISON COMPANY OF NEW YORK, INC.

POWER AUTHORITY OF THE STATE OF NEW YORK

DOCKET NO. 50-286

INDIAN POINT NUCLEAR GENERATING UNIT NO. 3

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 10
License No. DPR-64

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

   A. The application for amendment by Consolidated Edison Company of New York, Inc. and Power Authority of the State of New York (the licensees) sworn to July 15, 1977, 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.

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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 paragraph 2.C.(2) of Facility Operating License No. DPR-64 is hereby amended to read as follows:

   (2) Technical Specifications

   The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 10, are hereby incorporated in the license. The operator shall operate the facility in accordance with the Technical Specifications.

3. This license amendment becomes effective 30 days after the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Robert W. Reid, Chief
Operating Reactors Branch #4
Division of Operating Reactors

Attachment:
Changes to the Technical
Specifications

Date of Issuance: November 30, 1977

ATTACHMENT TO LICENSE AMENDMENT NO. 10

FACILITY OPERATING LICENSE NO. DPR-64

DOCKET NO. 50-286

Revise Appendix A as follows:

Remove Pages	Insert Pages
ii	ii
iv	iv
-	3.14-1 thru 3.14-3
-	4.12-1 thru 4.12-4
6-1	6-1
6-5	6-5
6-11 & 6-12	6-11 & 6-12
6-15 & 6-16	6-15 & 6-16
Remove Tables	**Insert Tables**
-	3.14-1
4.1-2 (pg. 2)	4.1-2 (pg. 2)
4.1-3	4.1-3
Remove Figure	**Insert Figure**
6.2-1	6.2-1

Changes on the revised pages are shown by marginal lines. Pages 6-11, 6-15, and Table 4.1-2 (page 2) are unchanged and are included for convenience only.

Section	Title	Page
3.10	Control Rod and Power Distribution Limits	3.10-1
	Shutdown Reactivity	3.10-1
	Power Distribution Limits	3.10-1
	Quadrant Power Tilt Limits	3.10-4
	Rod Insertion Limits	3.10-5
	Rod Misalignment Limitations	3.10-6
	Inoperable Rod Position Indication Channels	3.10-6
	Inoperable Rod Limitations	3.10-7
	Rod Drop Time	3.10-7
	Rod Position Monitor	3.10-8
	Notification	3.10-8
3.11	Movable In-Core Instrumentation	3.11-1
3.12	River Level	3.12-1
3.13	Shock Suppressors (Snubbers)	3.13-1
3.14	Fire Protection and Detection Systems	3.14-1
4	Surveillance Requirements	4.1-1
4.1	Operational Safety Review	4.1-1
4.2	Primary System Surveillance	4.2-1
4.3	Reactor Coolant System Integrity Testing	4.3-1
4.4	Containment Tests	4.4-1
	Integrated Leakage Rate	4.4-1
	Continuous Leak Detection Testing via the Containment Weld Channel and Penetration Pressurization System	4.4-2
	Sensitive Leakage Rate	4.4-3
	Air Lock Tests	4.4-3
	Containment Isolation Valves	4.4-4
	Containment Modifications	4.4-5
	Report of Test Results	4.4-5
	Annual Inspection	4.4-5
	Residual Heat Removal System	4.4-6
4.5	Tests for Engineered Safety Features and Air Filtration Systems	4.5-1
	System Tests	4.5-1
	Safety Injection System	4.5-1
	Containment Spray System	4.5-2
	Hydrogen Recombiner System	4.5-2
	Containment Air Filtration System	4.5-3
	Control Room Air Filtration System	4.5-4
	Fuel Handling Building Air Filtration System	4.5-5
	Component Tests	4.5-7
	Pumps	4.5-7
	Valves	4.5-7
4.6	Emergency Power System Periodic Tests	4.6-1
	Diesel Generators	4.6-1
	Station Batteries	4.6-2
4.7	Main Steam Stop Valves	4.7-1
4.8	Auxiliary Feedwater System	4.8-1
4.9	Steam Generator Tube Inservice Surveillance	4.9-1
	Inspection Requirements	4.9-1
	Corrective Measures	4.9-4
	Reports	4.9-4
4.10	Seismic Instrumentation	4.10-1
4.11	Shock Suppressors (Snubbers)	4.11-1
4.12	Fire Protection and Detection Systems	4.12-1

LIST OF TABLES

Title

Table No.	
3.5-1	Engineered Safety Features Initiation Instrument Setting Limits
3.5-2	Reactor Trip Instrumentation Limiting Operating Conditions
3.5-3	Instrumentation Operating Condition for Engineered Safety Features
3.5-4	Instrument Operating Conditions for Isolation Functions
3.5-5	Table of Indicators and/or Recorders Available to the Operator
3.6-1	Containment Isolation Valves Open During Plant Operation
3.13-1	Safety Related Shock Suppressors (Snubbers)
3.14-1	Fire Detection Instruments
4.1-1	Minimum Frequencies for Checks, Calibrations and Tests of Instrument Channels
4.1-2	Frequencies for Sampling Tests
4.1-3	Frequencies for Equipment Tests
4.2-1	Inservice Inspection Requirements for Indian Point Unit No. 3
4.4-1	Containment Isolation Valves
4.9-1	Steam Generator Tube Inspection
4.10-1	Seismic Monitoring Instrumentation
4.10-2	Seismic Monitoring Instrumentation Surveillance Requirements
6.2-1	Minimum Shift Crew Composition
6.12-1	Protection Factors for Respirators

3.14 FIRE PROTECTION AND DETECTION SYSTEMS

Applicability

This specification applies to the operability of fire protection and detection systems provided for protection of safe shutdown systems.

Objective

To assure the operability of fire protection and detection systems.

Specification

A. High Pressure Water Fire Protection System

1. The high pressure water fire protection system shall have:

   a. Two(2) main fire pumps operable and properly aligned to the high pressure fire header.

   b. Automatic initiation circuitry for each of the main fire pumps in 3.14.A.1.a operable.

   c. All piping and valves necessary for proper functioning of any portion of the system required for protection of safe shutdown systems operable.

   d. A minimum available water volume of 360,000 gallons contained in the City Water Tank for fire protection purposes.

2. With less than the equipment required by 3.14.A.1 operable, the inoperable equipment shall be restored to operable status within 7 days or a Special Report shall be prepared and submitted to the Commission pursuant to specification 6.9.2.f within the next 30 days outlining the plans and procedures to be used for restoring the inoperable equipment to operable status.

3. With no main fire pumps operable:

   a. An alternate fire protection system shall be established within 24 hours.

   b. The Region I Office of Inspection and Enforcement shall be notified within 24 hours of identification by telephone and confirmed by telegraph, mailgram or facsimile transmission no later than the first working day following the event.

   c. A Special Report shall be submitted in accordance with specification 6.9.2.f within 14 days following the event outlining the action taken, the cause of the inoperability and the plans and schedule for restoring the system to operable status.

d. If the requirement of 3.14.A.3.a cannot be satisfied within the time period specified, the reactor shall be placed in the hot shutdown condition utilizing normal operating procedures. If the requirement of 3.14.A.3.a cannot be satisfied within an additional 48 hours, the reactor shall be placed in the cold shutdown condition utilizing normal operating procedures.

B. Fire Protection Spray Systems

1. The following spray systems shall be operable whenever equipment in the area is required to be operable:

   a. Electrical Tunnel Fire Protection Water Spray System (El-34' and El-43').

   b. Diesel Generator Building Water Spray System (El-15' in D.G. Building).

   c. Containment Fan Cooler Charcoal Filter Dousing System (El-68' in Containment).

2. If the requirements of 3.14.B.1 cannot be satisfied:

   a. A continuous fire watch with backup fire suppression equipment shall be established for the accessible unprotected area(s) within 1 hour.

   b. The inoperable spray system(s) 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.f within the next 30 days outlining the cause of inoperability and the plans for restoring the spray system(s) to operable status.

C. Penetration Fire Barriers

1. The following penetration fire barriers shall be functional at all times or a continuous fire watch shall be established on at least one side of the affected penetration within one hour:

   a. Penetration fire barriers between the central control room floor and the cable spreading room.

   b. Penetration fire barriers between the 480 V switchgear room and the cable spreading room.

D. Fire Detection Systems

1. As a minimum, the fire detection instrumentation for each location shown in Table 3.14-1 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 3.14-1:

   a. A fire watch patrol shall be established within 1 hour where accessiblity 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 3.14-1 shall be restored within 14 days or a Special Report shall be prepared and submitted to the Commission pursuant to specification 6.9.2.f 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 Reel No. 32
      (Turbine Building: El. - 15')

   b. Hose Reel No. 33
      (Turbine Building: El. - 33')

   c. Hose Reel No. 34
      (Turbine Building: El. - 53')

2. If the requirements of 3.14.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.

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.

Table 3.14-1

Fire Detection Instruments

Instrument Location	Minimum Instruments Operable	
	Heat	Smoke (ionization detectors)
1. Cable Spreading Room (Control Building: El-33')	N/A	7
2. Switchgear Room (Control Building: El-15')	N/A	7
3. Electrical Tunnels:		
Upper (El-43')	34*	4
Lower (El-34')	38*	4
4. Electrical Penetration Areas:		
Upper (Fan House: El-46')	N/A	3
Lower (Fan House: El-34')	N/A	4
5. Diesel Generator Building (El-15')	4 per D.G.	N/A
6. Containment Fan Cooler Units (Containment: El-68')	11 per FC unit	N/A

*temperature detector/trip devices

TABLE 4.1-2 (Sheet 2 of 2)

FREQUENCIES FOR SAMPLING TESTS

FOOTNOTES:

(1) A gross activity analysis shall consist of the quantitative measurement of the total radioactivity of the primary coolant in units of μCi/cc.

(2) A radiochemical analysis shall consist of the quantitative measurement of each radionuclide with half life greater than 10 minutes making up at least 95% of the total activity of the primary coolant.

(3) $\bar{E}$ determination will be started when the gross activity analysis indicates $\geq$ 10 μCi/cc and will be redetermined if the primary coolant gross radioactivity changes by more than 10 μCi/cc in accordance with Specification 3.1.D.

(4) Whenever the Gross Failed Fuel Monitor is inoperable, the sampling frequency shall be increased to twice per day, five days per week. The maximum time between analyses shall be sixteen hours for the two samples taken on a given day and three days between daily analysis. This accelerated sampling frequency need only be performed until the Gross Failed Fuel Monitor is declared operable.

(5) Once per 4 hours whenever the DOSE EQUIVALENT I-131 exceeds 1.0 μCi/cc or one sample after two hours but before six hours following a thermal power change exceeding 15 percent of the rated thermal power within a one-hour period.

TABLE 4.1-3 (Sheet 1 of 1)

FREQUENCIES FOR EQUIPMENT TESTS

		Check	Frequency
1.	Control Rods	Rod drop times of all full length rods	R
2.	Control Rod	Partial movement of all full length rods	Every 2 weeks during reactor critical operations
3.	Pressurizer Safety Valves	Set point	R
4.	Main Steam Safety Valves	Set point	R
5.	Containment Isolation System	Automatic actuation	R
6.	Refueling System Interlocks	Functioning	Prior to each refueling outage
7.	Primary System Leakage	Evaluate	5 days/week
8.	Diesel Fuel Supply	Fuel Inventory	Weekly
9.	Turbine Steam Stop, Control Valves	Closure	Monthly
10.	L.P. Steam Dump System (6 Lines)	Closure	Monthly
11.	Service Water System	Each pump starts and operates for 15 minutes (unless already operating)	Monthly
12.	City Water Connections to Charging Pumps and Boric Acid Piping	Temporary connections available and valves operable	R
13.	RHR Valves 730 and 731	Automatic isolation and interlock action	R*

R Each refueling outage

* If not done during the previous 18 months, the check will be performed the next time the plant is cooled down.

4.12 FIRE PROTECTION AND DETECTION SYSTEMS

Applicability

This specification applies to the surveillance requirements of fire protection and detection systems provided for protection of safe shutdown systems.

Objective

To verify the operability of fire protection and detection systems.

Specification

A. High Pressure Water Fire Protection System Testing:

1. Testing Requirements:

Item	Frequency
a. City Water Tank Minimum Water Volume.	once/week
b. Main Fire Pump Operability- Each pump operating for at least 15 minutes.	once/month
c. Valve Position Check- Verification that each valve (manual, power operated or automatic) in the flow path necessary for proper functioning of any portion of this system required for protection of safe shutdown systems is in its correct position. If the valve has an installed monitoring system, the valve position can be checked via that monitoring system.	once/month
d. Valve Cycling Test- Exercise each valve necessary for proper functioning of any portion of this system required for protection of safe shutdown systems through at least one complete cycle:	
(i) Valves testable with plant on-line.	once/12 months
(ii) Valves not testable with plant on-line.	once/18 months

e.	System Functional Test- Verification of proper actuation of this system throughout its operating sequence.	once/18 months
f.	Main Fire Pump Capacity and System Flow Check- Pumps shall be verified to have a capacity of at least 1500 gpm each at a net pressure of 93 psig.	once/18 months
g.	System Flow Test- Performance of a flow test in accordance with Chapter 5, Section 11 of the Fire Protection Handbook, 14th Edition, published by the National Fire Protection Association for any portion of this system required for protection of safe shutdown systems.	once/3 years

B. Electrical Tunnel, Diesel Generator Building and Containment Fan Cooler Fire Protection Spray Systems Testing:

1. Testing Requirements:

	Item	Frequency
a.	Valve Cycling Test- Exercise each valve necessary for proper functioning of any portion of this system required for protection of safe shutdown systems through at least one complete cycle:	
	(i) Valves testable with plant on-line.	once/12 months
	(ii) Valves not testable with plant on-line.	once/18 months
b.	System Functional Test- Includes simulated automatic actuation of spray system and verification that automatic valves in the flow path actuate to their correct position.	once/18 months

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 4.12.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 3.14.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 3.14.D.1 including the actuation of appropriate alarms (Channel Functional Test) shall be verified as follows:

Item	Frequency
a. Smoke Detectors-	once/6 months
b. Heat Detectors-	
(i) Those associated with the Diesel Generator Building (item 5 in Table 3.14-1).	once/6 months
(ii) Those associated with the Electrical Tunnels (item 3 in Table 3.14-1).	once/12 months
(iii) Those associated with the Containment Fan Cooler Units (item 6 in Table 3.14-1).	once/18 months

E. Fire Hose Stations Testing:

1. Fire hose stations described in specification 3.14.E.1 shall be demonstrated operable by the following surveillance testing requirements:

Item	Frequency
a. Visual Inspection Test- Visual inspection of the hose stations to assure all required equipment is at the station.	once/month
b. Hose Removal Check- Removal of the hose for inspection and replacement of all degraded gaskets in couplings.	once/18 months
c. Hose Flow Test- Partial opening of each hose station valve to verify valve operability and no flow blockage.	once/3 years
d. Hose Hydrostatic Test- Conduct a hose hydrostatic test at a pressure at least 50 psig greater than the maximum pressure available at that hose station.	once/3 years

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.

6.0 ADMINISTRATIVE CONTROLS

6.1 RESPONSIBILITY

6.1.1 The Plant Manager shall be responsible for overall facility operation and shall delegate in writing the succession to this responsibility during his absence.

6.2 ORGANIZATION

FACILITY MANAGEMENT AND TECHNICAL SUPPORT

6.2.1 The organization for facility management and technical support shall be as shown on Figure 6.2-1.

FACILITY STAFF

6.2.2 The Facility organization shall be as shown on Figure 6.2-2 and:

a. Each on duty shift shall be composed of at least the minimum shift crew composition shown in Table 6.2-1.

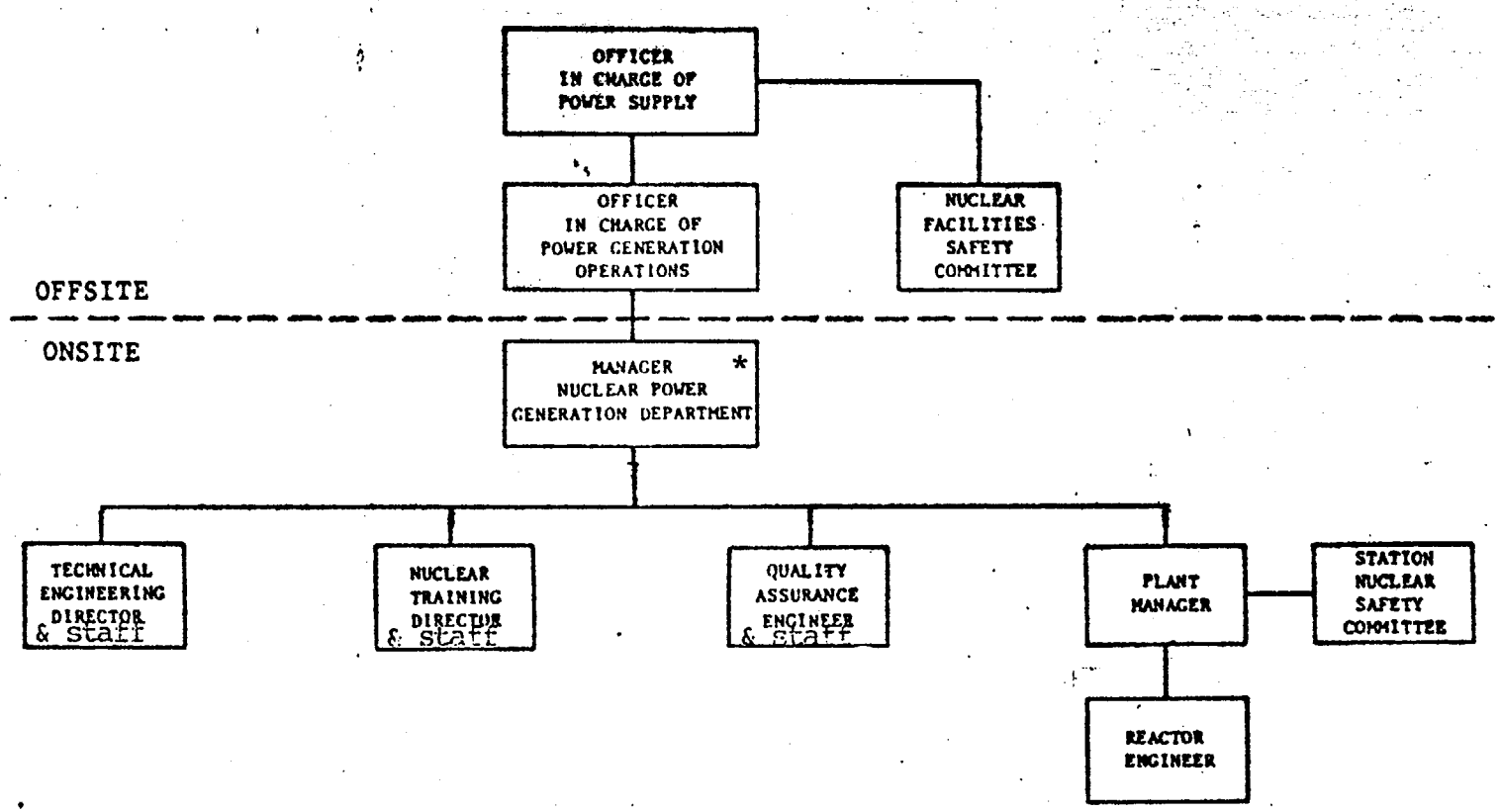
b. At least one licensed Operator shall be in the control room when fuel is in the reactor.

c. At least two licensed Operators shall be present in the control room during reactor startup, scheduled reactor shutdown, and during recovery from reactor trips.

d. An individual qualified in radiation protection procedures shall be on site when fuel is in the reactor.

e. All CORE ALTERATIONS after the initial fuel loading shall be directly supervised by either a licensed Senior Reactor Operator or Senior Reactor Operator Limited to Fuel Handling. This individual shall have no other concurrent responsibilities during this operation.

f. A Fire Brigade of at least five members shall be maintained on site at all times. This excludes four members of the minimum shift crew necessary for safe shutdown of the plant and any personnel required for other essential functions during a fire emergency. During periods of cold shutdown, the Fire Brigade will exclude two members of the minimum shift crew.



* Responsible for performance and monitoring of the Fire Protection Program

Figure 6.2-1 Facility Management and Technical Support Organization

6.3 FACILITY STAFF QUALIFICATIONS

6.3.1 Each member of the facility staff shall meet or exceed the minimum qualifications of ANSI N18.1-1971 for comparable positions.

6.4 TRAINING

6.4.1 A retraining and replacement training program for the facility staff shall be maintained under the direction of the Nuclear Training Director and shall meet or exceed the requirements and recommendations of Section 5.5 of ANSI N18.1-1971 and Appendix "A" of 10 CFR Part 55.

6.4.2 A training program for the Fire Brigade shall be maintained under the direction of the Nuclear Training Director and shall meet or exceed the requirements of Section 27 of the NFPA Code-1976 with the exception of the training program schedule.

6.5 REVIEW AND AUDIT

6.5.1 STATION NUCLEAR SAFETY COMMITTEE (SNSC)

FUNCTION

6.5.1.1 The Station Nuclear Safety Committee shall function to advise the Plant Manager on all matters related to nuclear safety.

6.5.1.2 The Station Nuclear Safety Committee shall be composed as follows:

Chairman:	Plant Manager
Member:	Technical Engineering Director
Member:	Quality Assurance Engineer
Member:	Chief Operations Engineer
Member:	Security Supervisor
Member:	Test and Performance Engineer
Member:	Instrument and Control Engineer
Member:	Maintenance Engineer
Member:	Chemistry and Radiation Safety Director
Member:	Reactor Engineer
Member:	Manager NPG

ALTERNATES

6.5.1.3 Alternate members shall be appointed in writing by the SNSC Chairman to serve on a temporary basis; however, no more than two alternates shall participate in SNSC activities at any one time.

e. Violations of applicable statutes, codes, regulations, orders, Technical Specifications, license requirements, or of internal procedures or instructions having nuclear safety significance.

f. Significant operating abnormalities or deviations from normal and expected performance of plant equipment that affect nuclear safety.

g. REPORTABLE OCCURRENCES, as defined in Section 1.0 of these Technical Specifications.

h. Any indication of an unanticipated deficiency in some aspect of design or operation of safety related structures, systems, or components.

i. Reports and meeting minutes of the Station Nuclear Safety Committee.

Audits

6.5.2.8 Audits of facility activities shall be performed under the cognizance of the NFSC. These audits shall encompass:

a. The conformance of facility operation to all provisions contained within the Technical Specifications and applicable license conditions at least once per year.

b. The performance, training and qualifications of the entire facility staff at least once per year.

c. The results of all actions taken to correct deficiencies occurring in facility equipment, structures, systems or method of operation that affect nuclear safety at least once per six months.

d. The performance of all activities required by the Quality Assurance Program to meet the criteria of Appendix B , 10 CFR 50, at least once per two years.

e. The Facility Emergency Plan and implementing procedures at least once per two years.

f. The Facility Security Plan and implementing procedures at least once per two years.

g. Any other area of facility operation considered appropriate by the NFSC or the Senior Company Officer in charge of Power Supply.

h. The Facility Fire Protection Program and implementing procedures at least once per two years.

i. A fire protection and loss prevention inspection and audit shall be performed annually utilizing either qualified offsite licensee personnel or an outside fire protection firm.

j. An inspection and audit of the fire protection and loss prevention program shall be performed by an outside qualified fire consultant at intervals no greater than 3 years.

Authority

6.5.2.9 The NFSC shall report to and advise the Senior Company Officer in charge of Power Supply on those areas of responsibility specified in Sections 6.5.2.7 and 6.5.2.8.

Records

6.5.2.10 Records of NFSC activities shall be prepared, approved and distributed as indicated below:

a. Minutes of each NFSC meeting shall be prepared, approved and forwarded to the Senior Company Officer in charge of Power Supply within 14 days following each meeting.

b. Reports of reviews encompassed by Section 6.5.2.7 e, f, g and h, above, shall be prepared, approved and forwarded to the Senior Company Officer in charge of Power Supply within 14 days following completion of the review.

c. Audit reports encompassed by Section 6.5.2.8, above, shall be forwarded to the Senior Company Officer in charge of Power Supply and to the management positions responsible for the areas audited within 30 days after completion of the audit.

6.8.3 A mechanism shall exist for making temporary changes, and they shall only be made by approved management personnel in accordance with the requirements of ANSI 18.7-1972. The change shall be documented, and reviewed by the SNSC within 7 days of implementation.

6.9 REPORTING REQUIREMENTS

Routine and Reportable Occurence Reports

6.9.1 Information to be reported to the Commission, in addition to the reports required by Title 10, Code of Federal Regulations, shall be in accordance with the Regulatory Position in Revision 4 of Regulatory Guide 1.16, "Reporting of Operating Information - Appendix A Technical Specifications."

Special Reports

6.9.2 Special reports shall be submitted to the Director of Region 1, Office of Inspection and Enforcement,within the time period specified for each report. These reports shall be submitted covering the activities identified below pursuant to the requirements of the applicable reference specification:

a. A special report will be prepared covering performance of the Low Pressure Steam Dump System during tests performed at a power level higher than 85% of the license application rating. Test results will be extrapolated to verify performance at the design conditions for the license application rating (3025 MWt). The report will be submitted within 90 days of completion of the test.

b. Sealed source leakage on excess of limits (Specification 3.9)

c. Inoperable seismic monitoring instrumentation (Specification 4.10)

d. Seismic event analysis (Specification 4.10)

e. Primary coolant activity in excess of limits (Specification 3.1.D).

f. Inoperable fire protection and detection equipment (Specification 3.14).

6.10 RECORD RETENTION

6.10.1 The following records shall be retained for at least five years:

a. Records and logs of facility operation covering time interval at each power level.

b. Records and logs of principal maintenance activities, inspections, repair and replacement of principal items of equipment related to nuclear safety.

c. REPORTABLE OCCURRENCE REPORTS

d. Records of surveillance activities, inspections and calibrations required by these Technical Specifications.

e. Records of reactor tests and experiments.

f. Records of changes made to Operating Procedures.

g. Records of radioactive shipments.

h. Records of sealed source leak tests and results.

i. Records of annual physical inventory of all source material of record.

6.10.2 The following records shall be retained for the duration of the Facility Operating License:

a. Record any drawing changes reflecting facility design modifications made to systems and equipment described in the Final Safety Analysis Report.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
SUPPORTING AMENDMENT NO. 36 TO LICENSE NO. DPR-26 AND
AMENDMENT NO. 10 TO LICENSE NO. DPR-64

CONSOLIDATED EDISON COMPANY OF NEW YORK, INC.
POWER AUTHORITY OF THE STATE OF NEW YORK

INDIAN POINT NUCLEAR GENERATING UNITS NOS. 2 AND 3

DOCKETS NOS. 50-247 AND 50-286

INTRODUCTION

Following a fire at the Browns Ferry Nuclear Station in March 1975, we initiated an evaluation of the need for improving the fire protection programs at all licensed nuclear power plants. As part of this continuing evaluation, in February 1976 we published a report entitled "Recommendations Related to Browns Ferry Fire", NUREG-0050. This report recommended that improvements in the areas of fire prevention and fire control be made in most existing facilities and that consideration be given to design features that would increase the ability of nuclear facilities to withstand fires without the loss of important functions. To implement the report's recommendations, the NRC initiated a program for reevaluation of the fire protection programs at all licensed nuclear power stations and for a comprehensive review of all new license applications.

We have issued new guidelines for fire protection programs in nuclear power plants. These guidelines reflect the recommendations in NUREG-0050. These guidelines are contained in the following documents:

"Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants," NUREG-75/087, Section 9.5.1, "Fire Protection," May 1976, which includes "Guidelines for Fire Protection for Nuclear Power Plants," (BTP APCSB 9.5-1), May 1, 1976.

"Guidelines for Fire Protection for Nuclear Power Plants"(Appendix A to BTP APCSB 9.5-1), August 23, 1976.

"Supplementary Guidance on Information Needed for Fire Protection Program Evaluation," September 30, 1976.

"Nuclear Plant Fire Protection Functional Responsibilities, Administrative Controls and Quality Assurance," June 14, 1977.

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The Consolidated Edison Company of New York, Inc. (licensee) submitted a description of the fire protection program for Indian Point Nuclear Generating Units Nos. 2 and 3 by letters dated December 15, 1976, as revised by letters dated March 3, 1977, and April 15, 1977. This program is under detailed review by the NRC. In the interim, until we complete our detailed review, we have concluded that it is appropriate to amend the facility licenses by incorporating into the Technical Specifications operability and surveillance requirements for the existing fire protection equipment and systems. In addition, the amendments would include administrative requirements for the implementation of the fire protection program.

By letter dated September 30, 1976, we requested the licensee to submit Technical Specifications for the presently-installed fire protection equipment at these facilities. By letter of December 2, 1976, we issued sample Technical Specifications and reiterated that these specifications were for existing systems only.

Based on our review and consideration of the responses of licensees, we modified certain action statements and surveillance frequencies in order to provide more appropriate and consistent specifications which we forwarded to the licensee by letter of June 16, 1977. That letter also requested submittal of appropriately revised specifications.

The licensee proposed Technical Specifications by letters dated July 20, 1977. We have reviewed the licensee's response and have made modifications where necessary to assure conformance to the fullest extent practicable with our requirements as set forth in the sample Technical Specifications pending completion of our ongoing detailed review of fire protection at these facilities. We have discussed these modifications with the licensee, and he has agreed to all modifications. However, it will be necessary to provide a period of time to modify procedures to conform with the details of the modifications to the Technical Specifications and to provide time to complete the required personnel training where necessary; therefore, these amendments would become effective 30 days after the date of issue.

DISCUSSION AND EVALUATION

The guidelines for Technical Specifications that we developed and sent to all licensees are based on assuring that the fire protection equipment currently installed for the protection of safety related areas of the plant is operable. This assurance is obtained by requiring periodic surveillance of the equipment and by requiring certain corrective actions to be taken if the limiting conditions for operation cannot be met. These guidelines also include administrative features for the overall fire protection program such as interim fire brigade requirements, training, procedures, management review and periodic independent fire protection and loss prevention program inspections.

The equipment and components existing at these facilities and included in the scope of these Technical Specification requirements are fire detectors, the fire suppression systems, the hose stations, and penetration fire barriers for piping and cabling penetrations. Operability of the fire detection instrumentation provides warning capability for the prompt detection of fires, to reduce the potential for damage to safety related equipment by allowing rapid response of fire suppression systems. In the event that the minimum coverage of fire detectors cannot be met, hourly fire patrols are required in the affected area until the inoperable instrumentation is restored to operability. The operability of the fire suppression systems provides capability to confine and extinguish fires. In the event that portions of the fire suppression systems are inoperable, alternate backup fire fighting equipment is required to be made available in the affected areas until the inoperable equipment is returned to service. In the event that the fire suppression water system becomes inoperable, a backup fire protection water system is required within 24 hours and a report to the NRC is required within 24 hours to provide for prompt evaluation of the acceptability of the corrective measures for adequate fire suppression capability. The functional integrity of the penetration fire barriers provides protection to confine or retard fires from spreading to adjacent portions of the facilities. During periods of time when a fire barrier is not functional, a continuous fire watch is required to be maintained in the vicinity of the affected barrier to provide fire prevention methods and prompt detection and suppression in the event of a fire.

We have reviewed the licensee's proposed interim Technical Specifications against our requirements as implemented in the sample Technical Specifications. We have made some modifications to the Specifications that were proposed by the licensee in order to make them conform to our requirements. One of the proposed specifications that we changed involves the minimum size of the on-site fire brigade. In our previous sample Technical Specifications we did not identify the number of members on a fire brigade that we would find acceptable. We have now concluded that minimum number for a typical commercial nuclear power plant to be five (5). The basis for this conclusion is presented in an attachment to this SER entitled "Staff Position Minimum Fire Brigade Shift Size."

In the report of the Special Review Group on the Browns Ferry Fire (NUREG-0050) dated February 1976, consideration of the safety of operation of all operating nuclear power plants pending the completion of our detailed fire protection evaluation was presented. The following quotations from the report summarize the basis for our conclusion that the operation of the plants, until we complete our review, does not present an undue risk to the health and safety of the public.

"A probability assessment of public safety or risk in quantitative terms is given in the Reactor Safety Study (WASH-1400). As the result of the calculation based on the Browns Ferry fire, the study concludes that the potential for a significant release of radioactivity from such a fire is about 20% of that calculated from all other causes analyzed. This indicates that predicted potential accident risks from all causes were not greatly affected by consideration of the Browns Ferry fire. This is one of the reasons that urgent action in regard to reducing risks due to potential fires is not required. The study (WASH-1400) also points out that 'rather straightforward measures, such as may already exist at other nuclear plants, can significantly reduce the likelihood of a potential core melt accident that might result from a large fire.' The Review Group agrees.

"Fires occur rather frequently; however, fires involving equipment unavailability comparable to the Browns Ferry fire are quite infrequent (see Section 3.3 [of NUREG-0050]). The Review Group believes that steps already taken since March 1975 (see Section 3.3.2) have reduced this frequency significantly.

"Based on its review of the events transpiring before, during and after the Browns Ferry fire, the Review Group concludes that the probability of disruptive fires of the magnitude of the Browns Ferry event is small, and that there is no need to restrict operation of nuclear power plants for public safety. However, it is clear that much can and should be done to reduce even further the likelihood of disabling fires and to improve assurance of rapid extinguishment of fires that occur. Consideration should be given also to features that would increase further the ability of nuclear facilities to withstand large fires without loss of important functions should such fires occur."

Subsequent to the Browns Ferry fire and prior to the Special Review Group's investigation, the Office of Inspection and Enforcement took steps with regard to fire protection. Special bulletins were sent to all licensees of operating power reactors on March 24, 1975, and April 3, 1975, directing the imposition of certain controls over fire ignition sources, a review of procedures for controlling maintenance and modifications that might affect fire safety, a review of emergency procedures for alternate shutdown and cooling methods, and a review of flammability of materials used in floor and wall penetration seals.

Special inspections covering the installation of fire stops in electrical cables and in penetration seals were completed at all operating power reactors in April and May 1975. Inspection findings which reflected non-compliance with NRC requirements resulted in requiring corrective action by licensees. Follow-up inspections have confirmed that licensees are taking the required corrective actions and that administrative control procedures are in place.

Since these inspection activities and the subsequent Special Review Group recommendations in the 1975 to 1976 time period, there has been no new information to alter the conclusions of the Special Review Group, and the ongoing fire protection program flowing from those conclusions is still adequate.

Therefore, we have found these specifications acceptable on an interim basis until such time that our overall review is complete, required equipment is installed and operable, and final specifications have been developed and issued.

ENVIRONMENTAL CONSIDERATION

We have determined that the amendments do 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 amendments involve 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 these amendments.

CONCLUSION

We have concluded, based on the considerations discussed above, that: (1) because the amendments do not involve a significant increase in the probability or consequences of accidents previously considered and do not involve a significant decrease in a safety margin, the amendments do 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 these amendments will not be inimical to the common defense and security or to the health and safety of the public.

Date: November 30, 1977

Staff Position

Minimum Fire Brigade Shift Size

INTRODUCTION

Nuclear power plants depend on the response of an onsite fire brigade for defense against the effects of fire on plant safe shutdown capabilities. In some areas, actions by the fire brigade are the only means of fire suppression. In other areas, that are protected by correctly designed automatic detection and suppression systems, manual fire fighting efforts are used to extinguish: (1) fires too small to actuate the automatic system; (2) well developed fires if the automatic system fails to function; and (3) fires that are not completely controlled by the automatic system. Thus, an adequate fire brigade is essential to fulfill the defense in depth requirements which protect safe shutdown systems from the effects of fires and their related combustion by-products.

DISCUSSION

There are a number of factors that should be considered in establishing the minimum fire brigade shift size. They include:

1) plant geometry and size;
2) quantity and quality of detection and suppression systems;
3) fire fighting strategies for postulated fires;
4) fire brigade training;
5) fire brigade equipment; and
6) fire brigade supplements by plant personnel and local fire department(s).

In all plants, the majority of postulated fires are in enclosed windowless structures. In such areas, the working environment of the brigade created by the heat and smoke buildup within the enclosure, will require the use of self-contained breathing apparatus, smoke ventilation equipment, and a personnel replacement capability.

Certain functions must be performed for all fires, i.e., command brigade actions, inform plant management, fire suppression, ventilation control, provide extra equipment, and account for possible injuries. Until a site specific review can be completed, an interim minimum fire brigade size of five persons has been established. This brigade size should provide a minimum working number of personnel to deal with those postulated fires in a typical presently operating commercial nuclear power station.

If the brigade is composed of a smaller number of personnel, the fire attack may be stopped whenever new equipment is needed or a person is injured or fatigued. We note that in the career fire service, the minimum engine company manning considered to be effective for an initial attack on a fire is also five, including one officer and four team members.

It is assumed for the purposes of this position that brigade training and equipment is adequate and that a backup capability of trained individuals exist whether through plant personnel call back or from the local fire department.

POSITION

1. The minimum fire brigade shift size should be justified by an analysis of the plant specific factors stated above for the plant, after modifications are complete.

2. In the interim, the minimum fire brigade shift size shall be five persons. These persons shall be fully qualified to perform their assigned responsibility, and shall include:

   One Supervisor - This individual must have fire tactics training. He will assume all command responsibilities for fighting the fire. During plant emergencies, the brigade supervisor should not have other responsibilities that would detract from his full attention being devoted to the fire. This supervisor should not be actively engaged in the fighting of the fire. His total function should be to survey the fire area, command the brigade, and keep the upper levels of plant management informed.

   Two Hose Men - A 1.5 inch fire hose being handled within a windowless enclosure would require two trained individuals. The two team members are required to physically handle the active hose line and to protect each other while in the adverse environment of the fire.

   Two Additional Team Members - One of these individuals would be required to supply filled air cylinders to the fire fighting members of the brigade and the second to establish smoke ventilation and aid in filling the air cylinder. These two individuals would also act as the first backup to the engaged team.

UNITED STATES NUCLEAR REGULATORY COMMISSION

DOCKETS NOS. 50-247 AND 50-286

CONSOLIDATED EDISON COMPANY OF NEW YORK, INC.

POWER AUTHORITY OF THE STATE OF NEW YORK

NOTICE OF ISSUANCE OF AMENDMENTS TO FACILITY

OPERATING LICENSES

The U. S. Nuclear Regulatory Commission (the Commission) has issued to Consolidated Edison Company of New York, Inc. (Con Ed), Amendment No. 36 to Facility Operating License No. DPR-26 for the Indian Point Nuclear Generating Unit No. 2, and has issued to Con Ed and the Power Authority of the State of New York, Amendment No. 10 to Facility Operating License No. DPR-64 for the Indian Point Nuclear Generating Unit No. 3. These amendments revised Technical Specifications for operation of Indian Point Units Nos. 2 and 3 located in Buchanan, Westchester County, New York. The amendments become effective 30 days after the date of issuance.

The amendments incorporate fire protection Technical Specifications on the existing fire protection equipment and add administrative controls related to fire protection at the facilities. This action is being taken pending completion of the Commission's overall fire protection review of the facilities.

The applications for the amendments comply 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 amendments. Prior public notice of these amendments was not required since the amendments do not involve a significant hazards consideration.

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The Commission has determined that the issuance of these amendments 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 the issuance of these amendments.

For further details with respect to this action, see (1) the applications for amendments transmitted by letters dated July 20, 1977, (2) Amendment No. 36 to License No. DPR-26, (3) Amendment No. 10 to License No. DPR-64, and (4) 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) through (4) 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 30th day of November 1977.

FOR THE NUCLEAR REGULATORY COMMISSION

Robert W. Reid

Robert W. Reid, Chief
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