

November 21, 1985

Docket No. 50-286

Mr. John C. Brons
Senior Vice President - Nuclear Generation
Power Authority of the State of New York
123 Main Street
White Plains, New York 10601

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Dear Mr. Brons:

The Commission has issued the enclosed Amendment No. 62 to Facility Operating License No. DPR-64 for the Indian Point Nuclear Generating Unit No. 3. The amendment consists of changes to the Technical Specifications in response to your application transmitted by letter dated March 15, 1985.

The amendment revises Technical Specifications Section 3.5, "Instrumentation Systems", Section 3.6, "Containment System", and Section 4.13, "Containment Vent and Purge System". These changes limit the opening angle of the containment vent valves to 60° and verify that the containment purge supply and exhaust isolation valves are closed.

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

Sincerely,

/s/JDNeighbors

Joseph D. Neighbors, Project Manager
Operating Reactors Branch #1
Division of Licensing

Enclosures:

1. Amendment No. 62 to DPR-64
2. Safety Evaluation

cc: w/enclosures
See next page

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Mr. John C. Brons
Power Authority of the State
of New York

Indian Point 3 Nuclear
Generating

CC:
Regional Administrator, Region I
U.S. Nuclear Regulatory Commission
631 Park Avenue
King of Prussia, Pennsylvania 19406

Resident Inspector
Indian Point Nuclear Generating
U.S. Nuclear Regulatory Commission
Post Office Box 337
Buchanan, New York 10511

Mr. Gerald C. Goldstein
Assistant General Counsel
Power Authority of the State
of New York
10 Columbus Circle
New York, New York 10019

Mr. Robert L. Spring
Nuclear Licensing Engineer
Consolidated Edison Company
of New York, Inc.
4 Irving Place
New York, New York 10003

Ms. Ellyn Weiss
Harmon, Weiss and Jordan
2001 S Street, N.W., Suite 430
Washington, DC 20009

Mr. A. Klausmann, Vice President
Quality Assurance
Power Authority of the State
of New York
10 Columbus Circle
New York, New York 10019

Dr. Lawrence R. Quarles
Apartment 51
Kendal at Longwood
Kennett Square, Pennsylvania 19348

Mayor, Village of Buchanan
236 Tate Avenue
Buchanan, New York 10511

Mr. George M. Wilverding, Manager
Nuclear Safety Evaluation
Power Authority of the State
of New York
123 Main Street
White Plains, New York 10601

Mr. F. X. Pindar
Quality Assurance Superintendent
Indian Point 3 Nuclear Power Plant
Post Office Box 215
Buchanan, New York 10511

Director, Technical Development
Programs
State of New York Energy Office
Agency Building 2
Empire State Plaza
Albany, New York 12223

S. S. Zulla, Vice President
Nuclear Support
Power Authority of the State
of New York
123 Main Street
White Plains, New York 10601

Mr. Leroy W. Sinclair
Power Authority of the State
of New York
123 Main Street
White Plains, New York 10601

Mr. William Josiger
Resident Manager
Indian Point 3 Nuclear Power Plant
Post Office Box 215
Buchanan, New York 10511

Power Authority of the State
of New York

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Indian Point 3

cc
Ezra I. Bialik
Assistant Attorney General
Environmental Protection Bureau
New York State Department of Law
2 World Trade Center
New York, New York 10047

P. Kokolakis, Director
Nuclear Licensing
Power Authority of the State
of New York
123 Main Street
White Plains, New York 10601

Mr. Jay Dunkleberger
Division of Policy Analysis
and Planning
New York State Energy Office
Agency Building 2, Empire
State Plaza
Albany, New York 12223



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

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.62
License No. DPR-64

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Power Authority of the State of New York (the licensee) dated March 15, 1985, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. DPR-64 is hereby amended to read as follows:

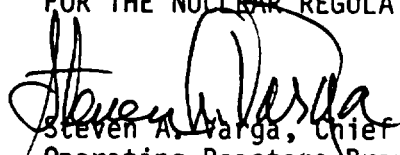
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(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 62, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

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

FOR THE NUCLEAR REGULATORY COMMISSION


Steven A. Varga, Chief
Operating Reactors Branch #1
Division of Licensing

Attachment:
Changes to the Technical
Specifications

Date of Issuance: November 21, 1985

ATTACHMENT TO LICENSE AMENDMENT NO. 62

FACILITY OPERATING LICENSE NO. DPR-64

DOCKET NO. 50-286

Revise Appendix A as follows:

<u>Remove Pages</u>	<u>Insert Pages</u>
3.5-6	3.5-6
3.6-2	3.6-2
3.6-3	3.6-3
4.13-1	4.13-1
4.13-2	4.13-2

Feedwater Line Isolation

The feedwater lines are isolated upon actuation of the Safety Injection System in order to prevent excessive cooldown of the reactor coolant system. This mitigates the effect of an accident such as steam break which in itself causes excessive coolant temperature cooldown. Feedwater line isolation also reduces the consequences of a steam line break inside the containment, by stopping the entry of feedwater.

Containment Vent and Purge

The containment vent and purge valves are isolated upon actuation of the Safety Injection System, Containment Spray System, or upon receipt of a high containment radiation signal. In the event of an accident, this action prevents a continuous radioactive release via the Containment Vent and Purge System.

Setting Limits

1. The Hi-Level containment pressure limit is set at about 10% of containment design pressure. Initiation of Safety Injection protects against loss of coolant⁽²⁾ or steam line break⁽³⁾ accidents as discussed in the safety analysis.
2. The Hi-Hi Level containment pressure limit is set at about 50% of containment design pressure. Initiation of Containment Spray and Steam Line Isolation protects against large loss of coolant⁽²⁾ or steam line break accidents⁽³⁾ as discussed in the safety analysis.
3. The pressurizer low pressure limit is set substantially below system operating pressure limits. However, it is sufficiently high to protect against a loss of coolant accident as shown in the safety analysis⁽²⁾. The trip is bypassed below 2000 psig to prevent inadvertent actuation of the Engineered Safeguards when the reactor is shutdown.

C. Containment Temperature

The reactor shall not be taken above the cold shutdown condition unless the containment ambient temperature is greater than 50°F.

D. Containment Vent and Purge System

The reactor shall not be taken above the cold shutdown condition unless the containment vent isolation valves (PCV-1190, -1191, -1192) are closed or limited to a maximum valve opening angle of 60° (90° = full open) by mechanical means.

The reactor shall not be taken above the cold shutdown condition unless the containment purge supply and exhaust isolation valves (FCV-1170, -1171, -1172, - 1173) are closed.

If the above conditions cannot be met within one hour, the reactor shall be in the hot shutdown condition within six hours and in the cold shutdown condition within the next 30 hours.

BASIS

The Reactor Coolant System conditions of cold shutdown assure that no steam will be formed and hence there would be no pressure buildup in the containment if a Reactor Coolant System rupture were to occur.

The shutdown margins are selected on the type of activities that are being carried out. The 10% $\Delta k/k$ shutdown margin when the head is off precludes criticality under any circumstances, even though fuel is being moved. When the reactor head is not to be removed, the specified cold shutdown margin of 1% $\Delta k/k$ precludes criticality in any occurrence.

Regarding internal pressure limitations, the containment design pressure of 47 psig would not be exceeded if the internal pressure before a major loss-of-coolant accident were as much as 6.4 psig.⁽¹⁾ The containment can withstand an internal vacuum of 3 psig.⁽²⁾ The 2.0 psig vacuum specified as an operating limit avoids any difficulties with motor cooling.

The requirement of a 50°F minimum containment ambient temperature is to assure that the minimum service metal temperatures of the containment liner is well above the NDT + 30°F criterion for the linear material.⁽³⁾

Table 3.6-1 lists non-automatic valves that are designated as part of the containment isolation function.⁽⁴⁾ During periods of normal plant operations requiring containment integrity, valves on this Table will be open either continuously or intermittently depending on requirements of the particular protection, safeguards or essential service systems. Those valves to be open intermittently are under administrative control and are open only as long as necessary to perform their intended function. In all cases, however, the valves listed in Table 3.6-1 are closed during the post accident period in accordance with plant procedures and consistent with requirements of the related protection, safeguards, or essential service systems.

The opening angle of the containment vent isolation valves is being limited as an analysis demonstrates valve operability against accident containment pressures provided the valves are limited to a maximum opening angle of 60°. The containment purge supply and exhaust isolation valves are required to be closed during plant operation above cold shutdown.

REFERENCES

- (1) FSAR - Volume 7, Response to Question 14.6
- (2) FSAR - Appendix 5A, Section 3.1.8
- (3) FSAR - Section 5.1.1.1
- (4) FSAR - Section 5.2

Containment Vent and Purge SystemApplicability

This specification applies to the surveillance requirements of the containment vent and purge system during normal operations and when reactor fuel is anticipated to be moved before the reactor has been subcritical for at least 365 hours.

Objective

To verify the operability of the containment vent and purge system.

Specification

The following surveillance shall be performed as stated.

A. Isolation Valves

1. Each month verify that the containment purge supply and exhaust isolation valves are closed during operation above cold shutdown.
2. Each refueling verify that the mechanical stops on the containment vent isolation valve (PCV - 1190, - 1191, - 1192) actuator is limited to the valve opening angle to 60° (90° = full open).

B. HEPA Filters and Charcoal Absorbers

If fuel movement is to take place before the reactor has been subcritical for at least 365 hours, the containment vent and purge system shall be demonstrated operable as follows:

1. Within 18 months prior to fuel movement and (1) after each complete or partial replacement of a HEPA filter or charcoal adsorber bank within 18 months prior to fuel movement, or (2) after structural maintenance on the HEPA filter or charcoal adsorber housing within 18 months prior to fuel movement, which could effect system operation:
 - a. Verify that the charcoal adsorbers remove >99% of halogenated hydrocarbon refrigerant test gas when they are tested in-place while operating the ventilation system at the operating flow $\pm 10\%$.
 - b. Verifying that the HEPA filter banks remove >99% of the DOP when they are tested in-place while operating the ventilation system at the operating flow rate $\pm 10\%$.
2. Within 18 months prior to fuel movement and after every 720 hours of system operation, subject a representative sample of carbon from the charcoal adsorbers to a laboratory analysis and verify within 31 days a removal efficiency of >90% for radioactive methyl iodine at an operating air flow velocity $\pm 20\%$ per test 5.b in Table 2 of Regulatory Guide 1.52, March 1978.

Basis

The containment purge supply and exhaust isolation valves are required to be closed during plant operation above cold shutdown. Containment purge supply or exhaust isolation valve closure may be verified by way of the position indication lights, the weld channel and penetration pressurization system or visual means. The maximum opening angle of the containment vent isolation valves is being limited as an analysis demonstrates valve operability against accident containment pressures provided the valves are limited to an opening angle of 60°.

The operability of the HEPA filter and charcoal absorber system and the resulting iodine removal capacity are consistent with accident analyses. The representative carbon sample will be two inches in diameter with a length equal to the thickness of the bed.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 62 TO FACILITY OPERATING LICENSE NO. DPR-64
POWER AUTHORITY OF THE STATE OF NEW YORK
INDIAN POINT NUCLEAR GENERATING UNIT NO. 3
DOCKET NO. 50-286

Introduction

By letter dated March 15, 1985, the Power Authority of the State of New York (the licensee) proposed to amend Appendix A of Facility Operating License No. DPR-64 for the Indian Point Nuclear Generating Unit No. 3. The amendment would change certain Technical Specifications (TS) regarding containment purge/vent system usage. The proposed changes are in response to the December 17, 1984, NRC letter, which transmitted the NRC's Safety Evaluation concerning containment venting and purging at Indian Point 3.

Discussion and Evaluation

The Safety Evaluation dated December 17, 1984 concluded that containment venting and purging practices at Indian Point 3 were acceptable pending:

- (1) a commitment to install valve override annunciation in the control room and the submittal of a technical specification to ensure the operability of radiation monitoring instrumentation;
- (2) a commitment to strengthen the vent/purge steam;
- (3) a commitment to establish a goal (acceptable to the NRC staff) for use of the 36-inch purge system;
- (4) review and approval of proposed technical specifications.

The licensee has incorporated certain plant design changes and has proposed changes to the Indian Point 3 Technical Specifications, namely, Section 3.5, Instrumentation Systems, Section 3.6, Containment System, and Section 4.13, Containment Vent and Purge System, to satisfy staff concerns in items 1 and 4, above. With respect to item 2, the licensee installed several supports in the vent system ductwork to protect against the effects of a high energy line break. With respect to item 3, the purge system ductwork has not been similarly modified, and, as a result, the licensee has committed as reflected in the Technical Specifications to keep these purge valves closed.

Item 1, above, sought a commitment from the licensee to install an annunciator that would alert personnel of any attempt to manually override or block an ESF actuation signal to the containment purge and vent isolation valves. The licensee's description of the logic circuitry design indicates that during normal operations, an initial ESF actuation signal cannot be blocked; but the operator can, by procedure, block a continuously present ESF actuation signal during the reset phase to gain manual control of safety system components. Existing console status lights provide appropriate indication of an ESF actuation signal block. Furthermore, a high containment radiation signal cannot be overridden; the vent and purge valves can then only be opened by the actuation of a permissive switch in the control room and a remote switch in the valve circuitry. We conclude that the logic circuitry design and console status lights provide adequate protection against ESF actuation signal override for the purge/vent valves during normal operation, and adequate indication of ESF actuation signal block during the reset phase.

The licensee's proposed changes to Sections 3.5, 3.6, and 4.13 of the TS include additional requirements on containment purge/vent system usage. These changes are itemized as follows:

(1) TS page 3.5-6, Section 3.5, Instrumentation Systems

The licensee proposes to insert the following to the specification regarding purge/vent system isolation valve actuation:

"The containment vent and purge valves are isolated upon actuation of the Safety Injection System, Containment Spray System, or upon receipt of a high containment radiation signal. In the event of an accident, this action prevents a continuous radioactive release via the Containment Vent and Purge Systems."

(2) TS page 3.6-2, Section 3.6, Containment System

The licensee proposes to add a new subsection to the Specification that limits the opening angle of the vent valves and precludes use of the purge system in operating modes 1 through 4, as follows:

"D. Containment Vent and Purge System

"The reactor shall not be taken above the cold shutdown condition unless the containment vent isolation valves (PCV-1190, -1181, -1182) are closed or limited to a maximum valve opening angle of 60° (90° = full open) by mechanical means.

"The reactor shall not be taken above the cold shutdown condition unless the containment purge supply and exhaust isolation valves (PCV-1170, -1171, -1172, -1173) are closed.

"If the above conditions cannot be met within one hour, the reactor shall be in the hot shutdown condition within six hours and in the cold shutdown condition within the next 30 hours."

(3) TS page 4.13-1, Section 4.13, Containment Vent and Purge System

The licensee proposes to rewrite the "Specification" statement by adding surveillance requirements for the purge and vent system isolation valves. A new Subsection A will be inserted and the existing Section will be changed to Subsection B. The new Subsection A is as follows:

"A. Isolation Valves

- "1. Each month verify that the containment purge supply and exhaust isolation valves are closed during operation above cold shutdown.
- "2. Each refueling verify that the mechanical stops on the containment vent isolation valve (PCV-1190, -1191, -1192), actuation is limited to the valve opening angle to 60° (90° = full open)."

The proposed TS changes did not address surveillance requirements for periodic leakage integrity testing of the purge/vent system isolation valves. Such testing is recommended for all plants utilizing valves with resilient seats. However, Indian Point 3 utilizes a weld channel and penetration pressurization system (WCPPS) to continuously pressurize the spaces between the isolation valves. The WCPPS, therefore, serves as a continuous on-line monitoring system to detect leakage from the purge/vent isolation valves, and is an acceptable alternative to the staff's generic recommendation of periodic leakage testing.

The revised specifications more explicitly state the isolation signals the purge and vent valves receive, the required closed position status of the purge valves during operating modes above cold shutdown (i.e., Operating Modes 1 through 4) and the maximum allowable opening angle for the vent valves, along with appropriate surveillance requirements.

In summary, we conclude, based on our review, that the four issues identified in the staff's letter dated December 17, 1984, and the proposed Technical Specifications concerning containment venting and purging at Indian Point 3 have been satisfactorily resolved.

Environmental Consideration

This amendment involves a change in the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that this amendment involves no significant hazards consideration and there has been no public comment on such finding. Accordingly, this amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR Sec 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of this amendment.

Conclusion

We have concluded, based on the considerations discussed above, that:

(1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (2) such activities will be conducted in compliance with the Commission's regulations and the issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.

Dated: November 21, 1985

Principal Contributors:

J. Guo, CSB
D. Neighbors, ORB#1