arch 30, 1990

Docket No. 50-286

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

Dear Mr. Brons:

SUBJECT: ISSUANCE OF AMENDMENT (TAC NO. 71855)

The Commission has issued the enclosed Amendment No. 94 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 December 30, 1988.

The amendment revises the Technical Specifications to change the Limiting Conditions for Operation (LCO) for the Isolation Valve Seal Water System and the Weld Channel and Penetration Pressurization System (WC&PPS) to more closely reflect the system design and the appropriate Westinghouse Standard Technical Specifications. The change will also relocate an LCO for the WC&PPS to Section 3.3 from Section 4.4, Surveillance Requirements.

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

Sincerely,

ORIGINAL SIGNED BY:

Joseph D. Neighbors, Senior Project Manager
Project Directorate I-1
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Enclosures:
1. Amendment No.94 to DPR-64
2. Safety Evaluation

cc: w/enclosures
See next page

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

March 30, 1990

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Executive Vice President - Nuclear Generation
Power Authority of the State of New York
123 Main Street
White Plains, New York 10601

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Sincerely,

Joseph D. Neighbors

Joseph D. Neighbors, Senior Project Manager
Project Directorate I-1
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

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2. Safety Evaluation

cc: w/enclosures
See next page

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

Indian Point 3 Nuclear Power Plant

cc:

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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. 94
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 December 30, 1988, 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:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 94 , 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

Donald S. Brinkman

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

Attachment:
Changes to the Technical Specifications

Date of Issuance: March 30, 1990

ATTACHMENT TO LICENSE AMENDMENT NO. 94

FACILITY OPERATING LICENSE NO. DPR-64

DOCKET NO. 50-286

Revise Appendix A as follows:

Remove Pages	Insert Pages
ii	ii
3.3-7	3.3-7
3.3-8	3.3-8
3.3-18	3.3-18
3.3-19	3.3-19
3.3-20	3.3-20
4.4-2	4.4-2
4.4-3	4.4-3

C. Isolation Valve Seal Water System (IVSWS)

1. The reactor shall not be brought above cold shutdown unless the following requirements are met:

   a. The IVSW System shall be operable.

   b. The IVSW System tank shall be maintained at a minimum pressure of 45 psig and contain a minimum of 144 gallons of water.

2. The requirements of 3.3.C.1 may be modified to allow any one of the following components to be inoperable at any one time:

   a. Any one header of the IVSWS may be inoperable for a period not to exceed 7 consecutive days.

   b. Any valve required for the functioning of the system during and following accident conditions provided it is restored to an operable status within 7 days and all valves in the system that provide a duplicate function are demonstrated to be operable.

3. If the IVSW System is not restored to an operable status within the time period specified, then:

   a. If the reactor is critical, it shall be brought to the hot shutdown condition utilizing normal operating procedures. The shutdown shall start no later than at the end of the specified time period.

   b. If the reactor is subcritical, the reactor coolant system temperature and pressure shall not be increased more than 25°F and 100 psi, respectively, over existing values.

   c. In either case, if the IVSW System is not restored to an operable status within an additional 48 hours, the reactor shall be brought to the cold shutdown condition utilizing normal operating procedures. The shutdown shall start no later than the end of the 48 hour period.

D. <u>Weld Channel and Penetration Pressurization System (WC & PPS)</u>

1. The reactor shall not be brought above cold shutdown unless:

   a. All required portions of the four WC & PPS zones are pressurized above 41 psig.

   b. The uncorrected air consumption for the WC & PPS is less than or equal to 0.2% of the containment volume per day.

2. The requirements of 3.3.D.1 may be modified as follows:

   a. Any one of the four WC & PPS zones may be inoperable for a period not to exceed seven consecutive days.

   b. The uncorrected air consumption for the WC & PPS may not be in excess of 0.2% of the containment volume per day except for a period not to exceed seven consecutive days. If at any time it is determined that this limit is exceeded, repairs shall be initiated immediately.

3. If the WC & PP System is not restored to an operable status within the time period specified, then:

   a. If the reactor is critical, it shall be brought to the hot shutdown condition utilizing normal operating procedures. The shutdown shall start no later than at the end of the specified time period.

   b. If the reactor is subcritical, the reactor coolant system temperature and pressure shall not be increased more than 25°F and 100 psi, respectively, over existing values.

   c. In either case, if the WC & PP System is not restored to an operable status within an additional 48 hours, the reactor shall be brought to the cold shutdown condition utilizing normal operating procedures. The shutdown shall start no later than the end of the 48 hour period.

The seven day out of service period for the Weld Channel and Penetration Pressurization System and the Isolation Valve Seal Water System is consistent with W Standardized Technical Specifications. This is allowable because no credit has been taken for operation of these systems in the calculation of off-site accident doses should an accident occur. No other safeguards systems are dependent on operation of these systems.[11] The minimum pressure settings for the IVSWS and WC & PPS during operation assures effective performance of these systems for the maximum containment calculated peak accident pressure of 40.6 psig.[12] A WC & PPS zone is considered that portion of piping downstream of the air receiver discharge check valve up to the last component pressurized by that system portion.

The Component Cooling System is not required during the injection phase of a loss-of-coolant accident. The component cooling pumps are located in the Primary Auxiliary Building and are accessible for repair after a loss-of-coolant accident.[6] During the recirculation phase following a loss-of-coolant accident, only one of the three component cooling pumps is required for minimum safeguards.[7]

A total of six service water pumps are installed, only two of the set of three service water pumps on the header designated the essential header are required immediately following a postulated loss-of-coolant accident.[8] During the recirculation phase of the accident, two service water pumps on the non-essential header will be manually started to supply cooling water for one component cooling system heat exchanger, one control room air conditioner, and one diesel generator; the other component cooling system heat exchanger, the other control room air conditioner, the two other diesel generators and remaining safety related equipment are cooled by the essential service water header.[14]

Two full rated recombination systems are provided in order to control the hydrogen evolved in the containment following a loss-of-coolant accident. Either system is capable of preventing the hydrogen concentration from exceeding 2% by volume within the containment. Each of the systems is separate from the other and is provided with redundant features. Power supplies for the blowers and ignitors are separate, so that loss of one power supply will not affect the remaining system. Hydrogen gas is used as the externally supplied fuel. Oxygen gas is added to the containment atmosphere through a separate containment feed to prevent depletion of oxygen in the air below the concentration required for stable operation of the combustor (12%).

The containment hydrogen monitoring system consists of two safety related hydrogen concentration measurement cabinets with sample lines which pass through the containment penetrations to each containment fan cooler unit plenum. Two of the five sampling lines (from containment fan cooler units nos. 32 and 35) are routed to a common source line and then to a hydrogen monitor. The other three sample lines (from containment fan cooler units nos. 31, 33 and 34) are likewise headered and routed to the other hydrogen monitor. Each monitor has a separate return line. The design hydrogen concentration for operating the recombiner is established at 2% by volume. Conservative calculations indicate that the hydrogen content within the containment will not reach 2% by volume until 12 days after a loss-of-coolant accident.[10] There is, therefore, no need for immediate operation of the recombiner following an accident, and the quantity of hydrogen fuel stored at the site will be only for periodic testing of the recombiners.

Auxiliary Component Cooling Pumps are provided to deliver cooling water for the two Recirculation Pumps located inside the containment. Each recirculation pump is fed by two Auxiliary Component Cooling Pumps. A single Auxiliary Component Cooling Pump is capable of supplying the necessary cooling water required for a recirculation pump during the recirculation phase following a loss-of-coolant accident.

The control room ventilation is designed to filter the control room atmosphere for intake air and/or for recirculation during control room isolation conditions. The control room system is designed to automatically start upon control room isolation and to maintain the control room pressure to the design positive pressure so that all leakage should be out leakage.

The OPS has been designed to withstand the effects of the postulated worst case Mass Input (i.e., single safety injection pump) without exceeding the 10 CFR 50, Appendix G curve. Curve III on Figure 3.1.A-3 provides the setpoint curve of the OPS PORVs which is sufficiently below the Appendix G curve such that PORVs overshoots would not exceed the allowable Appendix G pressures. Therefore, only one safety injection pump can be available to feed water into the RCS when the OPS is operable. The other pumps must be prevented from injecting water into the RCS. This may be accomplished, for example, by placing the SI pump switches in the trip pull-out position, or by closing and locking (if manual) or de-energizing (if motor operated) at least one valve in the flow path from these pumps to the RCS.

For conditions when the OPS is inoperable, additional restrictions are imposed on the RCS temperature, and pressurizer pressure and level. See Specification 3.1.A.6.b.(3).

<u>References</u>

1) FSAR Section 9
2) FSAR Section 6.2
3) FSAR Section 6.2
4) FSAR Section 6.3
5) FSAR Section 14.3.5
6) FSAR Section 1.2
7) FSAR Section 8.2
8) FSAR Section 9.6.1
9) FSAR Section 14.3
10) FSAR Section 6.8
11) FSAR Section 6.5
12) Response to Question 14.6, FSAR Volume 7
13) FSAR Appendix 14C
14) Response to Question 9.35, FSAR Volume 7

d. Closure of the containment isolation valves for the purpose of the test shall be accomplished by the means provided for normal operation of the valves.

2. Acceptance Criteria

The measured leakage rate shall be less than 0.75 L_a where L_a is equal to 0.1 w/o per day of containment steam air atmosphere at 40.6 psig and 263°F, which are the peak accident pressure and temperature conditions.

3. Frequency

A set of three leakage rate tests shall be performed (during plant shutdown), at approximately equal intervals during each 10-year service period. The third test of each set shall be conducted when the plant is shutdown for the 10-year plant in service inspection.

B. DELETED

C. Sensitive Leakage Rate

1. Test

A sensitive leakage rate test shall be conducted with the containment penetrations, weld channels, and certain double gasketed seals and isolation valve interspaces at a minimum pressure of 41 psig and with the containment building at atmospheric pressure.

2. Acceptance Criteria

The test shall be considered satisfactory if the leak rate for the containment penetrations, weld channel and other pressurized zones is equal to or less than 0.2% of the containment free volume per day.

3. Frequency

A sensitive leakage rate test shall be performed at a frequency of at least every other refueling but in no case at intervals greater than 3 years.

D. Air Lock Tests

1. The containment air locks shall be tested at a minimum pressure of 40.6 psig and at a frequency of every 6-months. The acceptance criteria is included in E.2a. The equipment hatch is to be leak rate tested after every reinsertion prior to requiring containment integrity.

2. Whenever containment integrity is required, verification shall be made of proper repressurization to at least 41 psig of the double-gasket air lock door seal upon closing an air lock door.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 94 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 December 30, 1988, the Power Authority of the State of New York (the licensee) requested an amendment to Facility Operating License No. DPR-64 for the Indian Point Nuclear Generating Unit No. 3. This amendment would revise the Technical Specifications related to the Weld Channel and Penetration Pressurization System (WC&PPS) and the Isolation Valve Seal Water System (IVSWS).

DISCUSSION AND EVALUATION

WELD CHANNEL AND PENETRATION PRESSURIZATION SYSTEM:

The WC&PPS serves two functions. The WC&PPS prevents leakage from the containment to the environment during an accident by providing a regulated supply of air to the containment penetrations and inner liner welds at a pressure in excess of the calculated peak accident pressure. The WC&PPS also provides a mechanism for determining containment leak tightness by continuously recording the air consumption required to maintain the WC&PPS at the specified pressure.

Technical Specification 3.3.D.1 requires that the electrical and mechanical penetrations and liner weld channels be continuously pressurized above 41 psig when the reactor is above cold shutdown. Technical Specification 3.3.D.2 modifies this requirement to allow any one header of the nitrogen or air pressurization system to be inoperable for a period not to exceed four consecutive days. The licensee states that this LCO can be misinterpreted to mean that all three sources of air/nitrogen be capable of supplying proper pressure where the intent of 3.3.D.2 was to allow temporary relief from maintaining pressure above 41 psig (as required by 3.3.D.1) at the penetrations and weld channels supplied by any one individual header (or zone) of the WC&PPS system. Therefore, to eliminate misinterpretation, the wording of Technical Specifications 3.3.D.1 and 3.3.D.2 would be revised to explicitly apply to the piping and components of each individual zone. Page 3.3-18 of the Basis will also be revised to reflect this applicability. These proposed word changes will still encompass an operability requirement on the nitrogen or air supplies. That is, the supply headers would be considered inoperable if they could not be pressurized by either air or nitrogen, which would in turn render the zones inoperable.

Consistent with the Westinghouse Standard Technical Specifications, Technical Specification 3.3.D.2 will also be revised to allow one zone of the WC&PPS to be inoperable for a period not to exceed seven consecutive days. The change to a seven day allowable out-of-service (OOS) time for the WC&PPS is acceptable as WC&PPS operation was not assumed in the LOCA offsite dose calculation. This OOS change for the WC&PPS is also consistent with the 7 day OOS for continuous containment leakage which is measured by the WC&PPS makeup air supply rate. Furthermore, no other safeguards systems are dependent on the operation of the WC&PPS.

Technical Specification 4.4.B establishes an upper limit for this leakage at 0.2% containment volume/day of uncorrected air consumption by the pressurization system. Exceeding this limit requires immediate repair to correct leakage. Shutdown is required after 7 days if leakage cannot be corrected. This operability requirement and LCO are being relocated to the WC&PPS Sections 3.3.D.1 and 3.3.D.2 to maintain consistency with the Appendix A current LCO format.

ISOLATION VALVE SEAL WATER SYSTEM (IVSWS):

This system operates to limit fission product release from containment during accident conditions through injection of seal water (or gas in some cases) to block leakage past the seats of selected containment isolation valves (CIVs). The system consists of one seal water supply tank pressurized to a minimum of 45 psig by its own nitrogen (N_2) cylinder tank. This tank in turn supplies seal water to CIVs (or piping between them) through various branch headers off of four IVSWS stations. A separate header off the N_2 tank supplies N_2 at a pressure above 150 psig to CIVs which could experience higher pressures due to various pump heads of safeguards systems.

Technical Specification 3.3.C.1 requires the IVSWS to be operable with its supply tank filled to at least 144 gallons at 45 psig. Relaxation from this operability requirement is provided by Technical Specification 3.3.C.2. For any one inoperable header or individual valve required for system functioning, four days are allowed for restoration to operable status before plant shutdown is required. The proposed change to paragraph 3.3.C.2 would extend this out-of-service (OOS) time from four days to seven days.

Adding three days to the OOS time for this LCO will have little or no impact on plant risk. Operability of the IVSWS is not considered in the accident analysis and no other safety system is dependent on its operation. The system does provide additional assurance that containment leak rate, in the event of an accident, will be lower than assumed.

One typographical error related to the acronym, "IVSWS," is corrected.

In summary, the changes discussed above would clarify the LCOs for the WC&PPS and extend the out-of-service time for both the WC&PPS and the IVSWS. Based on our review and the fact that neither system is taken credit for in the safety analysis, we conclude that the proposed changes are acceptable.

ENVIRONMENTAL CONSIDERATION

This amendment involves a change in a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The staff has determined that 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: March 30, 1990

PRINCIPAL CONTRIBUTOR:

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