April 2, 1987

Docket No. 50-286

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Mr. John C. Brons
Senior Vice President - Nuclear Generation
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White Plains, New York 10601

Dear Mr. Brons:

The Commission has issued the enclosed Amendment No. 72 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 January 14, 1987.

The amendment revises the Technical Specifications to permit the discharge of more than one region of fuel (72 assemblies) from the reactor after 162 hours have elapsed since shutdown. This elapse time was 400 hours.

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,

Joseph D. Neighbors, Senior Project Manager
PWR Project Directorate #3
Division of PWR Licensing-A, NRR

Enclosures:
1. Amendment No.72 to DPR-64
2. Safety Evaluation

cc: w/enclosures
See next page

PD#3	PD#3	OGC	PD#3
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G.A. Bradley

Mr. John C. Brons
Power Authority of the State
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Indian Point Nuclear Generating
Unit No. 3

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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. 72
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 January 14, 1987, 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. 72 , 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, Director
PWR Project Directorate #3
Division of PWR Licensing-A, NRR

Attachment:
Changes to the Technical Specifications

Date of Issuance:
April 2, 1987

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

ATTACHMENT TO LICENSE AMENDMENT NO. 72

FACILITY OPERATING LICENSE NO. DPR-64

DOCKET NO. 50-286

Revise Appendix A as follows:

Remove Pages	Insert Pages
3.8-2	3.8-2
3.8-5	3.8-5
3.8-6	3.8-6

8. The containment vent and purge system, including the radiation monitors which initiate isolation, shall be tested and verified to be operable within 100 hours prior to refueling operations.

9. No movement of irradiated fuel in the reactor shall be made until the reactor has been subcritical for at least 120 hours. In addition, movement of fuel in the reactor before the reactor has been subcritical for equal to or greater than 365 hours will necessitate operation of the Containment Building Vent and Purge System through the HEPA filters and charcoal absorbers. For this case operability of the Containment Building Vent and Purge System shall be established in accordance with Section 4.13 of the Technical Specifications. In the event that more than one region of fuel (72 assemblies) is to be discharged from the reactor, those assemblies in excess of one region shall not be discharged before the interval of 162 hours has elapsed after shutdown.

10. Whenever movement of irradiated fuel is being made, the minimum water level in the area of movement shall be maintained 23 feet over the top of the reactor pressure vessel flange.

11. Hoists or cranes utilized in handling irradiated fuel shall be dead-load tested before movement begins. The load assumed by the hoists or cranes for this test must be equal to or greater than the maximum load to be assumed by the hoists or cranes during the refueling operation. A thorough visual inspection of the hoists or cranes shall be made after the deadload test and prior to fuel handling. A test of interlocks and overload cutoff devices on the manipulator shall also be performed .

12. The fuel storage building emergency ventilation system shall be operable whenever irradiated fuel is being handled within the fuel storage building. The emergency ventilation system may be inoperable when irradiated fuel is in the fuel storage building, provided irradiated fuel is not being handled and neither the spent fuel cask nor the cask crane are moved over the spent fuel pit during the period of inoperability.

13. To ensure redundant decay heat removal capability, at least two of the following requirements shall be met:

In addition to the above safeguards, interlocks are utilized during refueling to ensure safe handling. An excess weight interlock is provided on the lifting hoist to prevent movement of more than one fuel assembly at a time. The spent fuel transfer mechanism can accommodate only one fuel assembly at a time.

The 120-hour decay time following the subcritical condition and the 23 feet of water above the top of the reactor pressure vessel flange is consistent with the assumptions used in the dose calculation for the fuel-handling accident.

The waiting time of 162 hours required following plant shutdown before unloading more than one region of fuel from the reactor assures that the maximum pool water temperature will be within design objectives as stated in the FSAR. The calculations confirming this are based on an inlet river temperature of 92°F, service water flow to the component cooling heat exchangers of 7000 gpm (FSAR) and component cooling flow to the Spent Fuel Pit heat exchanger of 2800 gpm (FSAR).

The requirement for the fuel storage building emergency ventilation system to be operable is established in accordance with standard testing requirements to assure that the system will function to reduce the offsite dose to within acceptable limits in the event of a fuel-handling accident. The system is actuated upon receipt of a signal from the area high activity alarm or by a manually-operated switch. The system is tested prior to fuel handling and is in a standby basis.

When fuel in the reactor is moved before the reactor has been subcritical for at least 365 hours, the limitations on the containment vent and purge system ensure that all radioactive material released from an irradiated fuel assembly will be filtered through the HEPA filters and charcoal adsorbers prior to discharge to the atmosphere.

The limit to have at least two means of decay heat removal operable ensures that a single failure of the operating RHR System will not result in a total loss of decay heat removal capability. With the reactor head removed and 23 feet of water above the vessel flange, a large heat sink is available for core cooling. Thus, in the event of a single component failure, adequate time is provided to initiate diverse methods to cool the core.

The minimum spent fuel pit boron concentration and the restriction of the movement of the spent fuel cask over irradiated fuel were specified in order to minimize the consequences of an unlikely sideways cask drop.

Fuel assemblies whose initial enrichment is greater than 3.5 w/o U-235 but less than or equal to 4.3 w/o can be stored in the spent fuel pool providing they are placed in a checkerboard array with fuel whose initial enrichment and burnup are sufficient to ensure that K_{eff} is less than 0.95 with no soluble boron present. This is

ensured by categorizing the fuel whose initial enrichment is greater than 3.5 w/o U-235 but less than or equal to 4.3 w/o and whose burnup is below the curve of Figure 3.8-1 as Category 2. This fuel can be stored by checkerboarding with Category 1 fuel which is defined as fuel whose initial enrichment and burnup place it on or above and to the left of the curve in Figure 3.8-1. Category 3 fuel which is less than or equal 3.5 w/o U-235 and below the curve of Figure 3.8-1 cannot be used in the checkerboard with Category 2 fuel. Any Category 1 or 3 fuel can continue to be stored on a repeating x-y array with other non-Category 2 fuel. For the purpose of storing Category 2 fuel, non-fuel material or empty locations can be utilized in place of Category 1 fuel.

When the spent fuel cask is being placed in or removed from its position in the spent fuel pit, mechanical stops incorporated in the bridge rails make it impossible for the bridge of the crane to travel further north than a point directly over the spot reserved for the cask in the pit. Thus, it will be possible to handle the spent fuel cask with the 40-ton hook and to move new fuel to the new fuel elevator with a 5-ton hook, but it will be impossible to carry any object over the spent fuel storage area with either the 40 or 5-ton hook of the fuel storage building crane.

Dead load test and visual inspection of the hoists and cranes before handling irradiated fuel provide assurance that the hoists or cranes are capable of proper operation.

References

(1) FSAR - Section 9.5.2

(2) FSAR - Table 3.2.1-1

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 72 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 January 14, 1987 the Power Authority of the State of New York (the licensee) requested a change to Facility Operating License No. DPR-64 Technical Specifications Section 3.8 of the Indian Point Nuclear Generating Unit No. 3. The proposed change would permit the discharge from the reactor to the spent fuel pool of more than one region of fuel (72 assemblies) after 162 hours have elapsed since shutdown.

DISCUSSION AND EVALUATION

The present Technical Specification prohibits the unloading of more than one region of fuel until 400 hours have elapsed since shutdown. Since the current Technical Specification is more restrictive than present staff guidelines on spent fuel pool temperature, the licensee based its request on the staff guidelines in Standard Review Plan Section 9.1.3, Item III.1.d., which state that for the abnormal maximum heat load condition (full core unload) the temperature of the pool water should be kept below boiling and the liquid level maintained with normal systems in operation.

The licensee provided data which demonstrates that the maximum river water temperature would not exceed 92°F. The licensee's analyses showed that with a normal river water temperature of 87.8°F, and a corresponding component cooling water temperature of 100°F, the spent fuel pool temperature would not exceed 197.7°F. Also, results of a sensitivity study performed by the licensee show that if the river water temperature increased to a maximum of 92°F the pool temperature would increase to 201.9°F. Assuming a river water temperature of 87.8°F the spent fuel pool temperature would be reduced to 150°F in 40 days. The staff has evaluated this analysis and concludes that the approach used is conservative. The staff, therefore, concurs with the assessment that the pool temperature for the core unload condition will remain below the boiling point (212°F).

Spent fuel pool inventory (water level) is maintained by the primary make-up water storage tank. The tank contains sufficient inventory (165,000 gallons) of water to make-up spent fuel pool losses due to evaporation over the 40 day time period needed to bring the spent fuel pool temperature down to 150°F.

Since the guidelines of SRP 9.1.3 Item III.1.d are met, the staff finds the proposed Technical Specification change to the Indian Point 3 Technical Specifications acceptable.

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 §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

The staff has 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: April 2, 1987

PRINCIPAL CONTRIBUTOR:

R. Giardina