May 24, 1999

Mr. James Knubel
Chief Nuclear Officer
Power Authority of the State
of New York
123 Main Street
White Plains, NY 10601

SUBJECT: INDIAN POINT NUCLEAR GENERATING UNIT NO. 3 - ISSUANCE OF AMENDMENT RE: RELOCATION OF TECHNICAL SPECIFICATION REGARDING TIME RESTRICTION FOR MOVEMENT OF IRRADIATED FUEL (TAC NO. MA4663)

Dear Mr. Knubel:

The Commission has issued the enclosed Amendment No. 189 to Facility Operating License No. DPR-64 for the Indian Point Nuclear Generating Unit No. 3 (IP3). The amendment consists of changes to the Technical Specifications (TSs) in response to your application transmitted by letter dated January 25, 1999. The amendment allows you to relocate the time restriction for movement of irradiated fuel and its related bases page from the TSs to the IP3 Final Safety Analysis Report (FSAR).

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

Sincerely,

original signed by:
George F. Wunder, Project Manager, Section 1
Project Directorate 1
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-286

Enclosures: 1. Amendment No. 189 to DPR-64
2. Safety Evaluation

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

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George F. Wunder, Project Manager, Section 1
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Docket No. 50-286

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2. Safety Evaluation

cc w/encls: See next page

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

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.189
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 25, 1999, 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. 189 , 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 and shall be implemented within 30 days. Implementation shall consist of the relocation of the TS requirements to the FSAR.

FOR THE NUCLEAR REGULATORY COMMISSION

S. Singh Bajwa, Chief, Section 1
Project Directorate 1
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: May 24, 1999

ATTACHMENT TO LICENSE AMENDMENT NO. 189

FACILITY OPERATING LICENSE NO. DPR-64

DOCKET NO. 50-286

Replace the following pages of the Appendix A Technical Specifications with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Remove Pages	Insert Pages
3.8-2	3.8-2
3.8-6	3.8-6
3.8-7	3.8-7

8. The Containment Building 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 145 hours. In addition, movement of fuel in the reactor before the reactor has been subcritical for equal to or greater than 421* 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.

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 dead load 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:

* Movement of irradiated VANTAGE + fuel assemblies before the reactor has been subcritical for ≥550 hours requires operation of the Containment Building Vent and Purge System through the HEPA filters and charcoal adsorbers.

The requirement for the fuel storage building emergency ventilation system to be operable is established in accordance with standard testing requirements to ensure that the system will function to reduce the offsite dose to within acceptable limits in the event of a fuel handling accident. The fuel storage building emergency ventilation system must be operable whenever irradiated fuel is being moved. However, if the irradiated fuel has had a continuous 45 day decay period, the fuel storage building emergency ventilation system is not technically necessary, even though the system is required to be operable during all fuel handling operations. Fuel Storage Building isolation is actuated upon receipt of a signal from the area high activity alarm or by manual operation. The emergency ventilation bypass assembly is manually isolated, using manual isolation devices, prior to movement of any irradiated fuel. This ensures that all air flow is directed through the emergency ventilation HEPA filters and charcoal adsorbers. The ventilation system is tested prior to all fuel handling activities to ensure the proper operation of the filtration system.

When fuel in the reactor is moved before the reactor has been subcritical for at least 421 hours (See footnote on page 3.8-2), the limitations on the Containment Building 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.

As shown in Figure 3.8-3, the maximum density spent fuel storage racks consist of two regions: Region 1 (Columns SS-ZZ, Rows 35-64) and Region 2 (Columns A-RR, Rows 1-34). Each region has been separately analyzed for close packed storage, where all cells in that region contain fuel of the highest allowable reactivity.

The Region 1 area has also been analyzed for storage of high-enrichment and low-burnup fuel. Figure 3.8-1 categorizes Region 1 fuel assemblies as a function of their initial enrichment and current burnup into Types A, B, and C. Each type has different restrictions as to how it may be stored in Region 1. The least reactive assemblies, which are Type A assemblies, may be stored anywhere in Region 1. The most reactive assemblies, which are Type C assemblies, are stored only in Region 1 with the restrictions of Technical Specification 3.8.C.7.b.3, due to their high reactivity. Type C assemblies cannot be stored face-adjacent to anything more reactive than Type A fuel assemblies. There are no additional restrictions defining storage requirements for diagonally-adjacent fuel assemblies in Region 1. In addition, to prevent a criticality interaction with Region 2 fuel assemblies, Type C assemblies cannot be stored in Column ZZ or Row 64.

The following criteria should be used to categorize Region 1 fuel assemblies. Unburned fuel assemblies at or below 4.2 w/o enrichment are Type A. Unburned fuel assemblies at or below 4.6 w/o enrichment (but greater than 4.2 w/o enrichment) are Type B. Fuel assemblies whose burnup puts them on or above the diagonal line below the Type A zone are defined as Type A.

Fuel assemblies to be stored in Region 2 of the spent fuel racks must have a minimum burnup exposure as a function of initial enrichment as specified in Figure 3.8-2. Administrative controls will provide verification that each fuel assembly to be placed in Region 2 satisfies the burnup criterion.

Mechanical stops incorporated on the bridge rails of the fuel storage building crane make it impossible for the bridge of the crane to travel further north than a point directly over the spot in the spent fuel pit that is reserved for the spent fuel cask. Therefore, it will be impossible to carry any object over the spent fuel storage areas north of the spot in the pit that is reserved for the cask with either the 40 or 5-ton hook of the fuel storage building crane. It is possible to use the fuel storage building crane to carry objects over the spent fuel storage areas that are directly east of the spot in the pit that is reserved for the cask. However, the technical specifications and plant procedures prevent any object weighing more than 2,000 pounds from being moved over any region of the spent fuel pit. Therefore, the storage areas directly east of the spot in the pit that is reserved for the cask are protected from heavy load handling by administrative controls.

Dead load tests 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

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 189 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

1.0 INTRODUCTION

By letter dated January 25, 1999, the Power Authority of the State of New York (the licensee) submitted a request for a license amendment to revise the administrative controls section of the Indian Point Nuclear Generating Unit No. 3 (IP3) Technical Specifications (TSs). The amendment would relocate the time restriction for movement of irradiated fuel and its related bases page from TS 3.8.A.9 to the IP3 Final Safety Analysis Report (FSAR).

2.0 EVALUATION

In 10 CFR 50.36(c)(2)(ii), the criteria for determining what goes in the TSs are set forth. A TS limiting condition for operation (LCO) must be established for each item that meets one or more of the following four criteria:

> Criterion 1 - Installed instrumentation that is used to detect, and indicate in the control room, a significant abnormal degradation of the reactor coolant pressure boundary.
>
> Criterion 2 - A process variable, design feature, or operating restriction that is an initial condition of a design basis accident or transient analysis that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.
>
> Criterion 3 - A structure, system, or component that is part of the primary success path and which functions or actuates to mitigate a design basis accident or transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.
>
> Criterion 4 - A structure, system, or component which operating experience or probabilistic risk assessment has shown to be significant to public health and safety.

The time restriction on movement of irradiated fuel does not meet the first criterion. The waiting time of 267 hours before unloading over 76 assemblies is not an assumption used in the dose calculation for the fuel handling accident; neither is not permitting movement of irradiated fuel for a specified period following shutdown used for detecting significant abnormal degradation of a reactor coolant pressure boundary.

The time restriction on movement of irradiated fuel does not meet the second criterion. The Fuel handling accident is a postulated accident that involves damage to irradiated fuel. The release of radioactivity following such an accident is limited by other TS requirements; specifically, 1) the requirement for a minimum level of water above the fuel during refueling, 2) the requirement for an operable containment vent and purge system during refueling, 3) the requirement that the containment vent and purge system be operable and aligned to discharge through HEPA filters and charcoal absorbers for a specified minimum number of hours following reactor shutdown, and 4) the requirement to have containment penetrations having direct access to the atmosphere isolated and the containment ventilation and purge system capable of being closed by operable isolation instrumentation.

The time restriction on movement of irradiated fuel does not meet the third criterion. Spent fuel pool cooling is not a part of the primary success path, nor does it function or actuate to mitigate a design basis accident that assumes the failure of or presents a challenge to the integrity of a fission product barrier.

The time restriction on movement of irradiated fuel does not meet the fourth criterion. Operating experience has not shown that this restriction is significant to public health and safety. The fuel handling accident was not modeled in the IP3 individual plant evaluation; however, this TS is not important to limiting the likelihood of a fuel handling accident. The waiting time is to ensure that the maximum pool water temperature will be within design objectives as stated in the FSAR. The waiting time is not the initiator of an accident and the proposed change does not alter fundamental system operation, design, configuration, or operational setpoints.

Because the true restrictions on movement of fuel does not meet any of the criteria of 10 CFR 50.36(c)(2)(ii), those restrictions need not be in TS but may, as the licensee has requested, be moved to the FSAR where any changes would be subject to the controls of 10 CFR 50.59.

3.0 STATE CONSULTATION

In accordance with the Commission's regulations, the New York State official was notified of the proposed issuance of the amendment. The State official had no comments.

4.0 ENVIRONMENTAL CONSIDERATION

The amendment relocates requirements to the FSAR. The NRC 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 the amendment involves no significant hazards consideration, and there has been no public comment on such finding (64 FR 19562). Accordingly, the 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 the amendment.

5.0 CONCLUSION

The Commission 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, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: G. Wunder

Date: May 24, 1999