

FEB 21 1984

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Docket No. 50-247

Mr. John D. O'Toole, Vice President
Nuclear Engineering and Quality Assurance
Consolidated Edison Company of New York, Inc.
4 Irving Place
New York, New York 10003

Dear Mr. O'Toole:

The Commission has issued the enclosed Amendment No. 86 to Facility Operating License No. DPR-26 for the Indian Point Nuclear Generating Unit No. 2. This amendment consists of changes to the Technical Specifications in response to your application transmitted by letter dated February 14, 1983.

The amendment changes the Technical Specifications to require that no movement of reactor fuel be made unless the reactor has been subcritical for at least 131 hours.

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

Sincerely,

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Roger L. Pedersen, Project Manager
Operating Reactors Branch No. 1
Division of Licensing

Enclosures:

- 1. Amendment No. 86 to DPR-26
- 1. Safety Evaluation

cc w/enclosures:
See attached list

ORB #1 *CP*
CParrish/jm
1/18/84

ORB #1 *RP*
RPedersen
1/20/84

ORB #1 *SW*
Swanga
1/21/84

OELD *2/1/84*
1/21/84

AD: *GA*
Gaines
1/17/84

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[Handwritten signatures and initials]

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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. 86
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) dated February 14, 1983, 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. 86, 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 No. 1
Division of Licensing

Attachment:
Changes to the Technical
Specifications

Date of Issuance: **FEB 21 1984**

ATTACHMENT TO LICENSE AMENDMENT NO. 86

FACILITY OPERATING LICENSE NO. DPR-26

DOCKET NO. 50-247

Revise Appendix A as follows:

Remove Pages

3.8-2
3.8-5

Insert Pages

3.8-2
3.8-5

4. At least one residual heat removal pump and heat exchanger shall be operable.
5. During reactor vessel head removal and while loading and unloading fuel from the reactor, T_{avg} shall be $\leq 140^{\circ}F$ and the minimum boron concentration sufficient to maintain the reactor subcritical by at least 10% $\Delta k/k$. The required boron concentration shall be verified by chemical analysis daily.
6. Direct communication between the control room and the refueling cavity manipulator crane shall be available whenever changes in core geometry are taking place.
7. If the spent fuel pit contains spent fuel, the spent fuel cask shall not be moved over any region of the spent fuel pit until the cask handling system has been reviewed by the Nuclear Regulatory Commission and found to be acceptable. Furthermore, any load in excess of the nominal weight of a spent fuel storage rack and associated handling tool shall not be moved on or above E1.-95' in the Fuel Storage Building. Additionally, loads in excess of the nominal weight of a fuel and control rod assembly and associated handling tool shall not be moved over spent fuel in the spent fuel pit. The weight of installed crane systems shall not be considered part of these loads.
8. The containment vent and purge system, including the radiation monitors which initiate isolation, shall be tested and verified to be operable immediately prior to refueling operations.
9. No movement of fuel in the reactor shall be made until the reactor has been subcritical for at least 131 hours. In the event that more than one region of

the reactor. (2) Periodic checks of refueling water boron concentration insure the proper shutdown margin. Part 6 allows the control room operator to inform the manipulator operator of any impending unsafe condition detected from the main control board indicators during fuel movement.

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 131 hour decay time following plant shutdown and the 23 feet of water above the top of the reactor vessel flanges are consistent with the assumptions used in the dose calculations for fuel-handling accidents both inside and outside of the containment. The analysis of the fuel handling accident inside of the containment is based on an atmospheric dispersion faction (X/Q) of 5.1×10^{-4} sec/m³ and takes no credit for removal of radioactive iodine by charcoal filters. The requirement for the fuel storage building charcoal filtration system to be operating when spent fuel movement is being made provides added assurance that the offsite doses will be within acceptable limits in the event of a fuel-handling accident. The additional month of spent fuel decay time will provide the same assurance that the offsite doses are within acceptable limits and therefore the charcoal filtration system would not be required to be operating.

The waiting time of 400 hours required following plant shutdown before unloading the entire reactor core assures



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 86 TO FACILITY OPERATING LICENSE NO. DPR-26
CONSOLIDATED EDISON COMPANY OF NEW YORK, INC.
INDIAN POINT NUCLEAR GENERATING UNIT NO. 2
DOCKET NO. 50-247

Introduction

By letter dated July 28, 1980, the staff requested that Consolidated Edison Company propose technical specifications for the Indian Point-2 (IP-2) Containment Purge System as a means of reducing the potential offsite radiological consequences of a fuel handling accident inside containment (FHAIC). Subsequently, the staff determined that an equivalent reduction in offsite radiological consequences could be realized with a time of greater than 130 hours of core subcriticality prior to any spent fuel movement in containment. Therefore, the licensee has proposed a change to the Technical Specifications (by letter dated February 14, 1983) requiring a decay time of at least 131 hours before fuel movement.

The February 14, 1983 submittal from Consolidated Edison contained requests for Technical Specification changes dealing with several issues. This SER addresses only one. The other change requests will be the subject of separate licensing actions.

Evaluation

Increasing the decay time before fuel movement, became a feasible solution to the Fuel Handling Accident Inside Containment Generic Issue when it was determined that the X/Q (atmospheric diffusion and transport relative concentration) used in a September 1979 evaluation was erroneously based on a Exclusion Area radius of 330 meters. The actual radius for Indian Point Unit 2 is 520 meters. This is the distance reflected in the SER issued in connection with the operating license for IP Unit 2 on August 25, 1966.

The increased Exclusion Area Boundary distance results in a (0-2 hr.) X/Q of 5.1×10^{-4} sec/m³ in the southwest direction, replacing the previously calculated value of 1.1×10^{-3} for the 330 meter distance in the same direction. With the newly determined X/Q and a revised required cooldown time of 130 hours prior to moving spent fuel in containment, the short-term offsite radiological consequences of a FHAIC were reevaluated and determined to be appropriately within the 10 CFR Part 100 dose guidelines. The assumptions for and the resulting estimates of offsite radiological consequences of the FHAIC are shown in Table 1.

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Summary

As discussed above, the staff has performed an analysis of the postulated FHAIC, yielding estimates of the radiological consequences to an individual located at the Exclusion Area Boundary. The staff concludes that the doses for one equivalent assembly failure are within the guideline values of 10 CFR Part 100. For our conclusion to be valid, the licensee must incorporate technical specifications restricting any fuel handling operations in containment until a spent fuel cooldown time of at least 130 hours has been attained. Therefore, the proposed change in the Technical Specifications to require at least 131 hours of decay time prior to movement of fuel is acceptable to the staff.

Environmental Consideration

We have determined that the amendment does 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 amendment involves 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 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.

Date: **FEB 21 1984**

Principal Contributors:

M. Wohl
R. Pedersen

TABLE 1

ASSUMPTIONS FOR AND POTENTIAL CONSEQUENCES OF THE POSTULATED
FUEL HANDLING ACCIDENT INSIDE CONTAINMENT (FHAIC) AT INDIAN POINT
STATION UNIT 2

Assumptions:

Guidance in Regulatory Guide 1.25

Power Level	2758 Mwt
Fuel Exposure Time	3 years
Power Peaking Factor	1.65
Equivalent Number of Damaged Fuel Assemblies	1
Number of Assemblies in Core	193
Filters assumed	none
Decay time before moving fuel	130 hr.
0-2 hr. X/Q value, Exclusion Area Boundary (ground level release)	$5.1 \times 10^{-4} \text{ sec/m}^3$

Doses, Rem

	<u>Thyroid</u>	<u>Whole Body</u>
Exclusion Area Boundary (EAB) Radiological Consequences	100	0.4