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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 176 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

1.0 INTRODUCTION

By letter dated December 10, 1993, as supplemented by letter dated August 11, 1994, the Consolidated Edison Company of New York (the licensee) submitted a request for changes to the Indian Point Nuclear Generating Unit No. 2 Technical Specifications (TSs). The requested changes would revise TS Section 5.3.A., "Reactor Core," to allow the use of VANTAGE + fuel with ZIRLO cladding and of fuel with filler rods to permit fuel reconstitution. The amendment would also revise the Basis for TS Section 2.1, "Safety Limit: Reactor Core," to more accurately describe the basis of the departure from nucleate boiling (DNB) correlations and how they are applied to ensure that the design criteria are met. The August 11, 1994, submittal provided a revised TS page to incorporate a change resulting from the issuance of Amendment No. 173 and also provided a change in the wording of the Basis. It did not change the initial proposed no significant hazards consideration and was not outside the scope of the original Federal Register notice.

The licensee plans to utilize Westinghouse 15 X 15 VANTAGE + fuel. The VANTAGE + fuel uses ZIRLO as its cladding material rather than Zircaloy-4. The NRC staff documented its acceptance of the use of VANTAGE + fuel in a letter from A. Thadani (NRC) to S. Tritch (Westinghouse) dated July 1, 1991. The staff's approval was limited to a rod-average burnup of 60 MWd/kgM and did not include related loss-of-coolant accident (LOCA) analyses methods, which were to be addressed in a separate evaluation report. The licensee has proposed changes to TS Section 5.3.A. to allow the use of VANTAGE + fuel with ZIRLO cladding and to the Basis for TS Section 2.1, "Safety Limit: Reactor Core," to more accurately describe the basis of the DNB correlations and how they are applied to ensure that the design criteria are met.

The licensee has also proposed changes to TS Section 5.3.A. to allow the use of fuel with filler rods to permit fuel reconstitution. Fuel assembly reconstitution involves replacing leaking or damaged fuel rods with filler rods of either ZIRLO, stainless steel, or zirconium alloy. This permits the continued use of fuel assemblies that would otherwise be discharged from the core.

Westinghouse Electric Corporation evaluated the use of reconstituted fuel assemblies as documented in Topical Report WCAP-13060-P.A., "Westinghouse Fuel Assembly Reconstitution Evaluation Methodology." NRC staff approval of this evaluation was documented in a letter from A. Thadani (NRC) to S. Tritch (Westinghouse) dated March 30, 1993. The licensee's submittal dated December 10, 1993, stated that the methodology described in this Topical Report or other approved methodologies will be used for each cycle where reconstituted fuel assemblies are used.

On February 1, 1990, the NRC issued Generic Letter (GL) 90-02 to provide licensees with flexibility in repairing fuel assemblies containing damaged and leaking fuel rods. GL 90-02 included model TSs that permitted licensees to substitute Zircaloy-4 fuel rods with dummy rods or vacant water spaces if the substitution is justified by cycle-specific reload analyses using an NRC-approved methodology. However, the model TSs also provided for fuel configurations which unfortunately were beyond the scope of application for any currently NRC-approved methodologies. On July 31, 1992, the NRC issued Supplement 1 to GL 90-02 to clarify the limitations on applying current NRC-approved analytical methods used in the reconstituted fuel and to revise the previous model TSs to be consistent with realistic reconstitution configurations. The licensee's submittal dated December 10, 1993, proposed changes that are consistent with the model TSs in Supplement 1 to GL 90-02.

2.0 EVALUATION

The licensee has proposed that TS Section 5.3.A.1. be revised to read as follows:

> The core shall contain 193 fuel assemblies. Each fuel assembly shall consist of 204 Zircaloy-4 or ZIRLO clad fuel rods. Limited substitutions of Zircaloy-4, ZIRLO, or stainless steel filler rods for fuel rods, in accordance with NRC approved applications of fuel rod configurations, may be used. Fuel assembly configurations shall be limited to those fuel designs that have been analyzed with applicable NRC staff-approved codes and methods, and shown by test or cycle-specific reload analyses to comply with all fuel safety design basis. Each fuel rod shall have a nominal active fuel length of 144 inches. A limited number of lead test assemblies that have not completed representative testing may be placed in non-limiting core regions.

The staff finds that the proposed changes to TS 5.3.A.1. are acceptable since they are consistent with the staff's previous approval of the use of VANTAGE + fuel with ZIRLO cladding and with the model TSs in Supplement 1 to GL 90-02. In addition, use of the methodology in the approved report ensures that core configurations are determined consistent with applicable limits in the safety analyses.

The licensee has also proposed that changes be made to TS Sections 5.3.A.5. and 5.3.B.1. and to the References for Section 5.3 to reflect the redesignation of references. The staff finds these changes to be acceptable since they are administrative and required for consistency with the changes to TS Section 5.3.A.1.

The licensee has proposed that the Basis for TS Section 2.1 be changed to more accurately describe the basis of the DNB correlations and how they are applied to ensure that the design criteria are met. The staff has no objections to these Basis changes since they are descriptive and will more accurately describe the DNB methodology used.

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 changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. 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 (59 FR 10003). 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:
J. Menning

Date: September 29, 1994

September 29, 1994

Docket No. 50-247

Mr. Stephen B. Bram
Vice President, Nuclear Power
Consolidated Edison Company
of New York, Inc.
Broadway and Bleakley Avenue
Buchanan, New York 10511

Dear Mr. Bram:

SUBJECT: ISSUANCE OF AMENDMENT FOR INDIAN POINT NUCLEAR GENERATING UNIT NO. 2 (TAC NO. M88463)

The Commission has issued the enclosed Amendment No. 176 to Facility Operating License No. DPR-26 for the Indian Point Nuclear Generating Unit No. 2. The amendment consists of changes to the Technical Specifications (TSs) in response to your application transmitted by letter dated December 10, 1993, as supplemented by letter dated August 11, 1994.

The amendment revises TS Section 5.3.A., "Reactor Core," to allow the use of VANTAGE + fuel with ZIRLO cladding and of fuel with filler rods to permit fuel reconstitution. The amendment also revises the Basis for TS Section 2.1, "Safety Limit: Reactor Core," to more accurately describe the basis of the departure from nucleate boiling correlations and how they are applied to ensure that the design criteria are met.

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:
Francis J. Williams, Jr., Project Manager
Project Directorate I-1
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Enclosures:
1. Amendment No. 176 to DPR-26
2. Safety Evaluation

cc w/enclosures:
See next page

PDI-1:LA	PDI-1:PM	PDI-1:PM	NRR/SRXB	OGC	PDI-1:D
SVogan	JMenning:avl	FWilliams	~~TCollins~~ RJones		~~MBoyle~~ MCase
8/18/94	8/19/94	8/19/94	8/29/94	9/23/94	9/29/94

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