

August 27, 1976

Docket No. 50-286

Consolidated Edison Company
of New York, Inc.
ATTN: Mr. William J. Cahill, Jr.
Vice President
4 Irving Place
New York, New York 10003

Gentlemen:

Enclosed is a signed original of an Order for Modification of License, dated August 27, 1976, issued by the Commission for the Indian Point Nuclear Generating Unit No. 3. This Order amends Facility Operating License DPR-64 by modifying the Technical Specification limit for the total nuclear peaking factor (F₀) to 2.31. This Order also requires submittal of a corrected ECCS analysis as soon as possible.

A copy of the Order is being filed with the Office of the Federal Register for publication.

Sincerely,

Original Signed by

Robert W. Reid, Chief
Operating Reactors Branch #4
Division of Operating Reactors

Enclosure:
Order for Modification
of License

cc w/enclosure:
See next page

8111050150 760827
PDR ADDCK 05000286
P PDR

8/27/76

DOR:ORB-2	DOR:ORB-4	OELD	DOR:AD/OT
MFletcher	RIngram	DEisenhut	
8/27/76	8/27/76	8/27/76	8/27/76

OFFICE >	DOR:ORB-4	DOR:ORB-4	DOR:AD/ORS	DOR:DIR	NRR: D/DIR	NRR: DIR
SURNAME >	perickson:rm	RWReid	KRGoller	VStello	ECase	BCRusche
>	8/27/76	8/27/76	8/27/76	8/27/76	8/27/76	8/27/76

Consolidated Edison Company

cc w/enclosures:

Mrs. Kay Winter, Librarian
Hendrick Hudson Free Library
31 Albany Post Road
Montrose, New York 10548

Leonard M. Trosten, Esq.
LeBoeuf, Lamb, Leiby & MacRae
1757 N Street, N.W.
Washington, D. C. 20036

Anthony Z. Roisman, Esquire
Berlin, Roisman & Kessler
1712 N Street, N.W.
Washington, D. C. 20036

Honorable Paul S. Shemin
Assistant Attorney General
State of New York
80 Centre Street
New York, New York 10013

Angus Macbeth, Esquire
Richard M. Hall, Esquire
15 West 44th Street
New York, New York 10036

Honorable George Begany
Mayor, Village of Buchanan
188 Westchester Avenue
Buchanan, New York 10511

Dr. William E. Seymour
Staff Coordinator
New York State Atomic Energy Council
New York State Department of Commerce
99 Washington Street
Albany, New York 12210

Power Authority of the
State of New York
ATTN: Mr. George T. Berry
General Manager and
Chief Engineer
10 Columbus Circle
New York, New York 10019

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of)
)
CONSOLIDATED EDISON COMPANY)
OF NEW YORK, INC.) Docket No. 50-286
)
(Indian Point Nuclear Generating)
Unit No. 3))

ORDER FOR MODIFICATION OF LICENSE

I.

The Consolidated Edison Company of New York, Inc. (the Licensee), is the holder of Facility Operating License No. DPR-64 which authorizes the operation of a nuclear power reactor known as Indian Point Nuclear Generating Unit No. 3 (the facility) at steady state reactor power levels not in excess of 2760 thermal megawatts. The facility is a pressurized water reactor (PWR) located at the Licensee's site in Westchester County, New York.

II.

In conformance with evaluations of the performance of the Emergency Core Cooling System (ECCS) of the facility submitted by the Licensee on October 10, 1975, November 12, 1975, March 11, 1976, and April 1, 1976, the Technical Specifications issued April 5, 1976, for the facility limit the reactor total nuclear peaking factor (F_Q) to 2.32. The ECCS performance evaluation submitted by the Licensee was based upon a previously approved ECCS evaluation model developed by Westinghouse Electric

8111050154 760827
PDR ADDCK 05000286
P PDR

Corporation (Westinghouse), the designer of the facility, to conform with requirements of the Commission's ECCS Acceptance Criteria, 10 CFR Part 50, §50.46 and Appendix K. The evaluation indicated that with a total nuclear peaking factor limited as set forth above, and with the other limits set forth in the facility's Technical Specifications, the ECCS cooling performance for the facility would conform with the criteria contained in 10 CFR §50.46(b) which govern calculated peak clad temperature, maximum cladding oxidation, maximum hydrogen generation, coolable geometry and long term cooling.

Due to the configuration of the Westinghouse reactor vessel design, a small portion of reactor inlet water which is cooler than outlet water is directed through several nozzles located on the periphery of the vessel to cool the upper portion of the vessel head. Accordingly, upper head temperatures used in evaluating ECCS performance were assumed to be equal to the reactor inlet water temperature. However, recent operating data gathered at the Connecticut Yankee facility has indicated that, contrary to this expectation, the temperature of the water in the upper head is higher than the reactor inlet water temperature, by about 60% of the difference between reactor inlet and reactor outlet temperature. This higher upper head water temperature would have the effect of increasing the calculated peak clad temperature in the event of a loss of coolant accident.

In a meeting with the staff on August 9, 1976, Westinghouse presented generic evaluations of the effect on calculated peak clad temperature for the worst break identified in previous calculations for each type of Westinghouse reactor and fuel design using an upper head water temperature exceeding reactor inlet water temperature by an amount equal to 75% of the reactor inlet - reactor outlet differential. On August 12, 1976, the staff instructed the licensee to submit an analysis similar to the Westinghouse evaluation with the clearly conservative assumption of upper head water temperature equal to reactor outlet temperature (100% of the reactor outlet - reactor inlet differential) and to operate the facility in accordance with the results of this analysis. The results of the evaluation submitted for the Indian Point Unit No. 3 reactor indicated that with this modification of the upper head water temperature the calculated peak clad temperature for the worst case break would exceed the Commission's ECCS performance criteria by about 8° F.

Extensive sensitivity studies, submitted with previous calculations submitted in connection with assessment of Westinghouse evaluation models, have established a relationship between the reactor total nuclear peaking factor (F_Q) and calculated peak clad temperature such that if F_Q is reduced by 0.01 the calculated peak clad temperature for the reactor would not exceed 2200°F.

As directed by the NRC staff, the Licensee agreed to operate the facility with the total nuclear peaking factor reduced by 0.01 to 2.31. The staff believes that the Licensee's action, under the circumstances, is appropriate and that this action should be confirmed by NRC Order.

The staff expects that, when revised calculations for the facility are submitted using an approved evaluation model with correct input for upper head water temperature, or assuming that the upper head water temperature equals reactor vessel outlet water temperature, such calculations will demonstrate that operation with this total nuclear peaking factor would conform to the criteria of 10 CFR §50.46(b). Such revised calculations fully conforming to the requirements of 10 CFR §50.46 are to be provided for the facility as soon possible. The additional limitations set forth in this Order will provide reasonable assurance that the public health and safety will not be endangered.

Copies of the following documents are available for public inspection in the Commission's Public Document Room, 1717 H Street, N. W., Washington, D. C., 20555 and at the Hendrick Hudson Free Library, 31 Albany Post Road, Montrose, New York, (1) letters from Consolidated Edison dated October 10, 1975, November 12, 1975, March 11, 1976, and April 1, 1976, (2) DPR-64 License Amendment dated April 5, 1976, (3) letter from Consolidated Edison dated August 18, 1976, and (4) This Order for

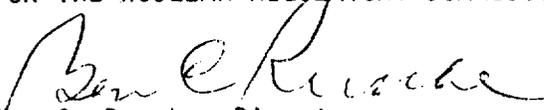
Modification of License, In the Matter of Consolidated Edison Company of New York, Inc., Indian Point Nuclear Generating Unit No. 3, Docket No. 50-286.

III.

Accordingly, pursuant to the Atomic Energy Act of 1954, as amended, and the Commission's Rules and Regulations in 10 CFR Parts 2 and 50, IT IS ORDERED THAT Facility Operating License No. DPR-64 is hereby amended by adding the following new provisions:

1. As soon as possible, the Licensee shall submit a reevaluation of ECCS cooling performance calculated in accordance with an approved Westinghouse Evaluation Model, with appropriate correction for upper head water temperature.
2. Until further authorization by the Commission, the Technical Specification limit for total nuclear peaking factor (F_Q) shall be reduced to 2.31.

FOR THE NUCLEAR REGULATORY COMMISSION


Ben C. Rusche, Director
Office of Nuclear Reactor Regulation

Dated in Bethesda, Maryland
this 27th day of August 1976.