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U. S. ATOMIC ENERGY COMMISSION

DIVISION OF REACTOR LICENSING

REPORT TO THE ADVISORY COMMITTEE ON REACTOR SAFEGUARDS

IN THE MATTER OF

PRELIMINARY ASPECTS OF CONSOLIDATED EDISON COMPANY OF NEW YORK, INC.

INDIAN POINT NUCLEAR GENERATING UNIT NO. 3

Note by the Director, Division of Reactor Licensing

The attached report has been prepared by the Division of Reactor Licensing for consideration by the Advisory Committee on Reactor Safeguards.

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On April 25, 1967, the Consolidated Edison Company of New York, Inc., submitted an application for a construction permit for Indian Point Nuclear Generating Station No. 3. The proposed reactor is to be located at the Indian Point site, adjacent to Units Nos. 1 and 2, on the east bank of the Hudson River at Buchanan, New York, 24 miles north of New York City.

The proposed reactor is a four-loop Westinghouse pressurized water reactor with a design thermal rating of 3025 MW and an ultimate ("stretch") capability of 3217 MW(t). The physical plant will be essentially identical to the Indian Point Unit No. 2 facility. Differences in coolant flow rate, weights of core components, etc., as observed in the PSAR's for the two units, represent the results of improved calculations, rather than actual physical differences between the facilities. Containment design is identical to that of Indian Point Unit No. 2.

The major design differences between Units 2 and 3 consist of the following:

1. Increased power level from 2758 MW to 3025 MW resulting from a decrease in hot channel factors to those proposed for recent Westinghouse PWR's (e.g., Surry, Diablo Canyon).
2. Elimination of the reactor pit crucible ("core catcher").
3. Increased fuel enrichments and fuel burnup, and
4. Substitution of sodium thiosulfate spray for charcoal filters as the halogen removal system.

Our evaluation will focus on the areas listed above as well as those items being considered on a continuing basis (e.g., the effect of the moderator coefficient on blowdown analysis, pressure vessel cold water shock during safety injection, core thermal transient following blowdown, and forces on vessel internals during the loss-of-coolant accident). In addition, owing to the proximity of the site to a large

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population center, we will investigate in detail the analyses of accidents less severe than the rupture of a primary system line.

The significant areas of concern for the proposed Indian Point Unit No. 3 are presently identified as (1) the use of a chemical additive (sodium thiosulfate) to the containment spray to remove halogen activity, and (2) the increase in core average power density.