NRC FORM 366 (7-77)

U. S. NUCLEAR REGULATORY COMMISSION

LICENSEE EVENT REPORT

"UPDATE REPORT-PREVIOUS REPORT DATE -APRIL 6, 1978"

CONTROL BLOCK: (1) (PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

01 LICENSEE CODE: N Y I P S 2 (2) LICENSE NUMBER: 0 0 - 0 0 0 0 0 - 0 0 (3) LICENSE TYPE: 4 1 1 1 1 (4) CAT (5)

CON'T 01 REPORT SOURCE: L (6) DOCKET NUMBER: 0 5 0 0 0 2 4 7 (7) EVENT DATE: 0 3 2 3 7 8 (8) REPORT DATE: 0 1 1 2 7 9 (9)

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)

02 While shutdown for refueling on March 30, 1978, we were advised by
03 Westinghouse that they had identified a generic error in their NRC
04 approved ECCS Evaluation Model. The calculational code did not fully
05 account for the Zircaloy/water reaction heating effect which, by itself
06 yielded higher calculated maximum peak clad temperatures for
07 Westinghouse plants. This event was of the type described in Tech. Spec.
08 6.9.1.7.1.(h).

09 SYSTEM CODE: Z Z (11) CAUSE CODE: X (12) CAUSE SUBCODE: Z (13) COMPONENT CODE: Z Z Z Z Z Z (14) COMP. SUBCODE: Z (15) VALVE SUBCODE: Z (16)

(17) LER/RO REPORT NUMBER: EVENT YEAR: 7 8 — SEQUENTIAL REPORT NO.: 0 1 0 / OCCURRENCE CODE: 0 1 REPORT TYPE: X — REVISION NO.: 1

ACTION TAKEN: X (18) FUTURE ACTION: Z (19) EFFECT ON PLANT: Z (20) SHUTDOWN METHOD: Z (21) HOURS (22): 0 0 0 0 ATTACHMENT SUBMITTED: Y (23) NPRD-4 FORM SUB.: N (24) PRIME COMP. SUPPLIER: Z (25) COMPONENT MANUFACTURER: Z 9 9 9 (26)

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)

10 Short-term corrective action required a reduction in maximum peaking
11 factor (F_Q) from 2.32 to 2.24. Subsequent reanalysis using an NRC app-
12 roved modified Westinghouse ECCS Evaluation Model (Feb. 1978) demon-
13 strated that with a maximum F_Q of 2.31, the calculated maximum PCT
14 would remain below the 10CFR50, App. K, acceptance criterion of 2200°F.

15 FACILITY STATUS: H (28) % POWER: 0 0 0 (29) OTHER STATUS (30): NA METHOD OF DISCOVERY: D (31) DISCOVERY DESCRIPTION (32): Vendor Notification

16 ACTIVITY RELEASED: Z (33) CONTENT OF RELEASE: Z (34) AMOUNT OF ACTIVITY (35): NA LOCATION OF RELEASE (36): NA

17 PERSONNEL EXPOSURES NUMBER: 0 0 0 (37) TYPE: Z (38) DESCRIPTION (39): NA

18 PERSONNEL INJURIES NUMBER: 0 0 0 (40) DESCRIPTION (41): NA

19 LOSS OF OR DAMAGE TO FACILITY (43) TYPE: Z (42) DESCRIPTION: NA

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20 PUBLICITY ISSUED: N (44) DESCRIPTION (45): NA

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GPO 917-926

ATTACHMENT I

Docket No. 50-247

LER-78-010/01X-1

Consolidated Edison Co. of N.Y., Inc.

Indian Point Unit No. 2

On March 23, 1978, Consolidated Edison was advised by Westinghouse Electric Corporation that they had identified a generic error in their NRC approved Emergency Core Cooling System (ECCS) Evaluation Model for compliance with the Final Acceptance Criteria (FAC) of Appendix K to 10 CFR Part 50. Westinghouse had determined that their ECCS calculational code did not fully account for the heating effect of the Zircaloy/water reaction following a postulated loss-of-coolant accident (LOCA). The correction for the code deficiency at the time yielded higher calculated maximum peak clad temperatures (PCT) for all Westinghouse plants. The event was of the type described in Technical Specification 6.9.1.7.1.(h).

At the time of the event, discussions between Westinghouse and the Regulatory Staff resulted in the determination that a reduction in the maximum total nuclear peaking factor (F_Q) would adequately offset the generic deficiency on a temporary basis until selected plant specific reanalyses could be performed with a corrected Westinghouse ECCS Evaluation Model. For Indian Point Unit No. 2, it was determined that a reduction in the maximum allowable F_Q to 2.24 would assure that the calculated maximum PCT remained below the 10 CFR 50, Appendix K, acceptance criterion of 2200^{o}F. This was documented in an April 17, 1978 letter from Mr. William J. Cahill, Jr. (Consolidated Edison) to Mr. A. Schwencer (NRC). On April 27, 1978, the Commission issued an Order for Modification of License imposing a new maximum F_Q of 2.24 and requiring reanalysis using a corrected ECCS evaluation model as soon as possible. The imposition of an F_Q of 2.24 had no effect on the full power operation of the unit.

Subsequent to this event, a specific Indian Point Unit No. 2 ECCS large break reanalysis was performed by Westinghouse using the recently approved February 1978 Westinghouse ECCS Evaluation Model. This reanalysis included evaluation of a spectrum of breaks (i.e., C_D=1.0, 0.8, 0.6 and 0.4) and was performed in accordance with the Commission's April 27, 1978 Order for Modification of License. The reanalysis incorporated lower required accumulator water volumes and a reduction in the maximum total nuclear peaking factor (F_Q) from 2.32 to 2.31. The results of the specific reanalysis yielded a new limiting break size, C_D=0.6. For this worst case break, the calculated maximum peak clad temperature (PCT) was 2172.5^{o}F. Thus, the maximum PCT remains below the 10 CFR 50, Appendix K, acceptance criterion of 2200^{o}F.

The specific Indian Point Unit No. 2 ECCS Reanalysis and results were forwarded to the NRC Regulatory Staff by letter dated January 5, 1979 from Mr. William J. Cahill, Jr. to Mr. Harold R. Denton.