NUCLEAR REGULATORY COMMISSION NRC FORM 266 17.77 LICENSEE EVENT REPORT (PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION) CONTROL BLOCK: ]() NYI PS LICENSE NUMBER LICENSEE CODE CONT 5 0 0 0 2 4 7 7 0 8 2 8 7 8 8 0 9 2 7 7 8 REPORT 0 1 LGOL SOURCE DOCKET NUMBER 69 EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10) With Units No. 2 and No. 3 operating at 100% and 90% power respectively, 0 2 calculations performed on 8-28-78 utilizing the equation prescribed by 03 ETSR 2.1.3.1, indicated the heat rejection to the river was in excess 0 4 of the 16.3 x 10<sup>9</sup> BTU/HR maximum permitted by the ETSR. There were no 0 5 adverse effects to the environment as a result of this event 0 6 0 7 08 SYSTEM CODE COMP. CAUSE CAUSE COMPONENT CODE SUBCODE SUBCODE CODE Z | (13) ZZ Z Z ZZ ZZ 1(14 (16) H F (11 D (15 (12) 0 9 19 17 18 REVISION OCCURRENCE SEQUENTIAL REPORT LER/RO EVENT YEAR CODE NO. TYPE REPORT NO: 17 REPORT 7 8 025 04 L 0 30 32 28 72 COMPONENT ATTACHMENT PRIME COMP. ACTION FUTURE EFFECT SHUTDOWN METHOD NPRO-4 HOURS (22) FORM SUB. SUPPLIER MANUFACTURER 19 99 26 Z 20 <u>N</u>24 Z 0 0 0 0 Z (25) (18)G \_**[(**19] Z (21) CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27) The cause of this event is inherent inaccuracies in the computation of 1 0 the heat rejected to the river through use of the equation prescribed by 1 1 [ETSR 2.1.3.1. An alternate more conservative calculational method 1 2 using reactor heat output less net generation showed the heat rejection 1 3 to be considerably less than the ETSR maximum allowable 1 4 9 METHOD OF FACILITY OTHER STATUS DISCOVERY DESCRIPTION (32) ~ POWER E 23 1 0 0 29 NA B (31) Surveillance Testing 115 80 ---- LOCATION OF RELEASE AMOUNT OF ACTIVITY (35) RELEASED\_OF RELEASE <u>z</u> 33 z 1 6 34 NA NA 10 80 71 PERSONNEL EXPOSURES DESCRIPTION (39) TYPE NUMBER 7 80 PERSONNEL INJURIES 13 DESCRIPTION(41) NUMBER \_\_\_\_\_ 0 0 0 0 140 NA 1 8 90 ā 11 12 LOSS OF OR DAMAGE TO FACILITY (43) TYPE DESCRIPTION Z (42) NA 1 9 7810100071 80 10 PUBLICITY ISSUED DESCRIPTION 45 NRC USE ONLY 2 0 80. 5 68 69

## ATTACHMENT I

Docket Nos. 50-3 50-247 50-286

LER-78-025/04L-0

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

Indian Point Unit No. 2

Section 2.1.3.1 of the ETSR prescribes the procedure that must be followed in calculating the heat rejection rate of the Indian Point site. maximum heat rejection rate specified in this Section is 16.3 x  $10^9$ BTU/HR. This maximum is based on the total design heat rejection rate for all three nuclear plants operating at 100% of licensed power with an appropriate allowance for expected fluctuations in power output due to occasional high turbine back pressures. While the formula contained in Section 2.1.3.1 is the appropriate textbook equation for determining the heat rejection rate, the accuracy of the computation is a function of the accuracy of the parameters used in the equation. Section 2.1.3.1 specifies that the circulating water system (CWS) flow to be used in this computation is the rated capacity of the circulating water pumps, and that the temperature differential is the measured AT across the CWS. Since pump flow will deviate from rated capacity and measured water temperatures fluctuate with time, the utilization of these parameters as specified in Section 2.1.3.1 will not produce an accurate result.

As indicated above, use of the ETSR formula for calculating the heat rejection rate can result in an overly conservative determination of the heat rejection rate compared to the actual heat rejection rate which must be lower. For example, calculations performed on August 28, 1978, with Units No. 2 and No. 3 operating at power levels of 100% and 90%, respectively, and Unit No. 1 shut down, indicated a heat rejection rate of  $17.2 \times 10^9$  BTU/HR. An alternative more accurate method for calculating the heat rejection rate which involved the subtraction of the net electrical generation from the total reactor heat output, indicated the heat rejected to the river was only 12.9 x  $10^9$  BTU/HR for the same day. This latter method is conservative in that it assumes no heat loss to the atmosphere.

Heat rejected to the river is a function of the plant designs and their power levels and as such is not operationally controlled and limited. Accordingly, the limitation on heat rejection in the ETSR is inherently met at all licensed power levels. The site heat rejection rate is not a function of the CWS  $\Delta T$ , as the Section 2.1.3.1 formula seems to indicate, but rather the CWS  $\Delta T$  is a function of the heat rejection rate as well as the actual CWS cooling water flow rate. Heat rejection rates calculated per the Section 2.1.3.1 equation provide no additional assurance of protection of the biological community since environmental compatibility is assured by adherence to the limits of the remainder of the ETSR. We are planning to submit a proposed change to the ETSR to eliminate the heat rejection limit to avoid this redundant and confusing requirement. In the interim, we plan to calculate the heat rejection rate using both the ETSR formula and the alternative method described above.

William J. Cahill, Jr.

Consolidated Edison Company of New York, Inc. 4 Irving Place, New York, N Y 10003 Telephone (212) 460-3819

	September 22, 1978	B	73	
Re:	Indian Point Unit Docket No. 50-247 LER-78-026/03L-0	No. 2	78 <b>oct</b> 1	
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Mr. Boyce H. Grier, Director Office of Inspection and Enforcement Region I U. S. Nuclear Regulatory Commission 631 Park Avenue King of Prussia, PA 19406

Dear Mr. Grier:

The attached Licensee Event Report LER-78-026/03L-0 is hereby submitted in accordance with the requirements of Technical Specification 6.9.1.7. This event is of the type described in Technical Specification 6.9.1.7.2.d.

Three copies of this letter and the attachment are enclosed as required.

Very truly yours,

Willeau Kalality

William J. Cahill, Jr. Vice President

Attach.

DUPE

cc: Mr. John G. Davis, Acting Director (30 copies) Office of Inspection and Enforcement c/o Distribution Services Branch, DDC, ADM U. S. Nuclear Regulatory Commission Washington, D. C. 20555

Mr. William G. McDonald, Director (3 copies) Office of Management Information and Program Control c/o Distribution Services Branch, DDC, ADM U. S. Nuclear Regulatory Commission Washington, D. C. 20555

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