

# LICENSEE EVENT REPORT

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

01 | N | Y | I | P | S | 3 | 2 | 0 | 0 | - | 0 | 0 | 0 | 0 | 0 | - | 0 | 0 | 3 | 4 | 1 | 1 | 1 | 1 | 4 | \_\_\_\_\_ | 5  
7 8 9 14 15 25 26 30 57 CAT 58  
LICENSEE CODE LICENSE NUMBER LICENSE TYPE

CON'T  
01 | L | 6 | 0 | 5 | 0 | 0 | 0 | 2 | 8 | 6 | 7 | 0 | 3 | 2 | 9 | 7 | 8 | 8 | 0 | 4 | 1 | 2 | 7 | 8 | 9  
7 8 60 61 68 69 74 75 80  
REPORT SOURCE DOCKET NUMBER EVENT DATE REPORT DATE

### EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)

02 | During normal operation, we were informed by our NSSS, Westinghouse  
03 | Electric Corp., of a computational error in the less conservative di-  
04 | rection in their generic ECCS analysis. Subsequent analysis, as a re-  
05 | sult of this error, indicated the Fq limit should be changed from 2.32  
06 | to 2.23. Since the results of several of the last flux maps showed Fq  
07 | to be below the new limit, plant operation was not affected. Note that  
08 | a similar event was reported in R.O.-76-3-28-(A)

09 | Z | Z | 11 | B | 12 | A | 13 | Z | Z | Z | Z | Z | 14 | Z | 15 | Z | 16 |  
7 8 9 10 11 12 13 18 19 20  
SYSTEM CODE CAUSE CODE CAUSE SUBCODE COMPONENT CODE COMP. SUBCODE VALVE SUBCODE  
17 | 7 | 8 | 17 | 0 | 0 | 5 | 22 | 0 | 1 | 28 | T | 30 | 0 | 32 |  
7 8 21 22 23 24 25 26 27 28 29 30 31 32  
LER/RO REPORT NUMBER EVENT YEAR SEQUENTIAL REPORT NO. OCCURRENCE CODE REPORT TYPE REVISION NO.  
ACTION TAKEN FUTURE ACTION EFFECT ON PLANT SHUTDOWN METHOD HOURS ATTACHMENT SUBMITTED NPRD-4 FORM SUB. PRIME COMP. SUPPLIER COMPONENT MANUFACTURER  
X | X | 18 | 19 | Z | 20 | Z | 21 | 0 | 0 | 0 | 22 | Y | 23 | N | 24 | Z | 25 | Z | 9 | 9 | 9 | 26  
33 34 35 36 37 40 41 42 43 44 47

### CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)

10 | The error was the result of the use of only half the correct volum-  
11 | etric heat generation due to the metal water reaction in the calcu-  
12 | lation of clad temperature in the ECCS analysis. The Facility will be  
13 | administratively controlled to ensure operation at or below  
14 | the new Fq limit.

15 | E | 28 | 0 | 9 | 1 | 29 | NA | 30 | D | 31 | NOTIFICATION FROM NSSS | 32  
7 8 9 10 12 13 44 45 46 80  
FACILITY STATUS % POWER OTHER STATUS METHOD OF DISCOVERY DISCOVERY DESCRIPTION

16 | Z | 33 | Z | 34 | NA | 35 | NA | 36  
7 8 9 10 11 44 45 80  
ACTIVITY CONTENT RELEASED OF RELEASE AMOUNT OF ACTIVITY LOCATION OF RELEASE

17 | 0 | 0 | 0 | 37 | Z | 38 | NA | 39  
7 8 9 10 11 12 13 80  
PERSONNEL EXPOSURES NUMBER TYPE DESCRIPTION

18 | 0 | 0 | 0 | 40 | NA | 41  
7 8 9 10 11 12 80  
PERSONNEL INJURIES NUMBER DESCRIPTION

19 | Z | 42 | NA | 43  
7 8 9 10 80  
LOSS OF OR DAMAGE TO FACILITY TYPE DESCRIPTION

20 | N | 44 | NA | 45 | 811070154 780412 PDR ADOCK 05000286 S PDR  
7 8 9 10 68 69 80  
ISSUED DESCRIPTION PUBLICITY NRC USE ONLY

GPO 91-7-526

## ATTACHMENT I

Docket No. 50-286  
LER-78-005/01T-0

Power Authority of the State of New York  
Indian Point No. 3  
Nuclear Power Plant

The Authority has been advised by the Westinghouse Electric Corporation of an error in their ECCS Evaluation Model. It is our understanding, based on Westinghouse information, that the error resulted from an incorrect derivation of the volumetric heat flux for the Zirconium-water reaction from a calculated surface heat flux. The volumetric heat flux due to Zirconium-water reaction is underestimated by a factor of 2. As a result of this calculational error, the total peaking factor for the Indian Point 3 facility must be revised.

There are several factors which are to be applied to the current full power  $F_{QT}$  limit of 2.32 as documented in the Indian Point technical specifications.

- .20      Penalty to be applied generically to correct the error in the Zirconium-water reaction rate.
- + .07      Credit due to the fact that the original ECCS analysis showed a 75°F margin to the 10 CFR 50.46 Appendix K limit of 2200°F peak clad temperature (each 25°F margin in PCT yielding a 1% in  $F_{QT}$  = 2.32).
- + .01      Credit due to the fact that the blowdown portion (SATAN) of the ECCS calculation was performed at the engineered safeguards power level of 3216 Mwt rather than the 3025 Mwt rated power level.
- + .03      Credit due to the fact the original ECCS analysis employed generic fuel pellet data. Data available regarding manufacturing tolerance of pellet result in a benefit.

Combining the above penalty and credits results in a net penalty of -.09 to be applied to the current Technical Specification limit of 2.32 for  $F_{QT}$ . Thus, the "new" full power  $F_{QT}$  limit is 2.23. As of this date, the Authority will administratively control the operation of Indian Point 3 facility to maintain the  $F_{QT}$  at or below 2.23.

The Indian Point 3 facility is presently administratively limited to operation at 91% of rated power. Based on the information presented above, the Authority could operate the facility at 96% power (i.e.,  $2.23/2.32 \times 100\%$ ) without the requirement for additional in-core surveillance.

The attached figure illustrates the  $F_{QT}$  trend as a function of actual Cycle 1 burnup. It is seen that the  $F_{QT}$  has steadily decreased with burnup. Compared to the 100% and 91% rated power technical specifications limit on  $F_{QT}$  of 2.32 and 2.55 respectively, the current measured value of  $F_{QT}$  is 1.7.

The Authority is currently working with Westinghouse to revise the October, 1975 version of our approved ECCS evaluation model. Once this model is developed and is acceptable to the NRC staff, the Authority intends to recalculate the ECCS analysis per 10 CFR 50.46.

F T VS. CYCLE 1 BURNUP  
(Measurements at 91% Rated Power)

FULL POWER TECH SPEC LIMIT

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