NRC FORM 195 (2-76)

U.S. NUCLEAR REGULATORY COMMISSION

DOCKET NUMBER 50-289

FILE NUMBER INCIDENT REPORT

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TO: J.P.O'REILLY	FROM: METROPOLITAN EDISON CO. READING, PA. J.G.HERBEIN	DATE OF DOCUMENT 5/27/77 DATE RECEIVED 6/3/77

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DESCRIPTION
LTR: TRANS THE FOLLOWING.....

(4P)

ENCLOSURE
LICENSEE EVENT REPORT FOR RO # 77-10, CONCERNING A SIGNIFICANT DIFFERENCE THAT WAS NOTED BETWEEN GENERATED MEGA WATTS AND THE COMPUTER CALIBRATED CORE THERMAL POWER.....

(1P)

ACKNOWLEDGED

PLANT NAME: THREE MILE ISLAND # 1
SAB

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FOR ACTION/INFORMATION

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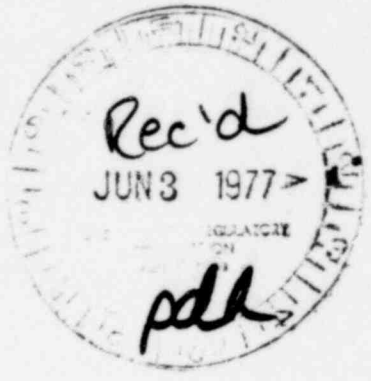
May 27, 1977
GQL 0735



Mr. J. P. O'Reilly, Director
Office of Inspections and Enforcement, Region 1
U. S. Nuclear Regulatory Commission
631 Park Avenue
King of Prussia, Pennsylvania 19406

Dear Sir:

Docket No. 50-289
Operating License No. DPR-50

In accordance with the Technical Specifications of our Three Mile Island Nuclear Station Unit 1 (TMI-1), we are reporting the following reportable occurrence:

(1) Report Number: 77-10/1T
(2a) Required Report Date: 5/31/77
(2b) Date of Occurrence: 5/17/77
(3) Facility: Three Mile Island Nuclear Station - Unit 1
(4) Identification of Occurrence:

Title: Incorrect calculation of core thermal power.

Type: A reportable occurrence as defined by Technical Specification 6.9.2.A(9) in that an incorrect calculation of core thermal power resulted in a nonconservative setting of Nuclear Instruments.

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(5) Conditions Prior to Occurrence:

Power:	Core: 1240 MWt
	Elec: 417 MWe Gross
RC Flow:	143 x 10^6 lbs/hr
PC Pressure:	2173 psia
RC Temp:	579°F T ave
PRZR Level:	213 inches
PRZR Temp:	650°F

(6) Description of Occurrence:

A nuclear instrumentation heat balance calibration was being performed at forty (40) percent indicated power when a significant difference was noted between generated megawatts and the expected value of computer-calculated core thermal power. Investigation revealed that the calculated core thermal power was in error due to a failed steam pressure transmitter which inputs to the computer (turbine header pressure transmitter SP1QA-PT2).

Software was modified to use a redundant transmitter and actual core power was determined to be approximately ten (10) percent higher than previously calculated. Since earlier nuclear instrument calibrations had been based upon incorrect computer calculations, the instruments were indicating low by the following amounts:

CHANNEL	ERROR (% Power)
NI-5	-8.15
NI-6	-7.91
NI-7	-7.97
NI-8	-9.96

The nuclear instruments were immediately recalibrated to the proper values.

This event is reportable under paragraph 6.9.2.A.(9) of the Technical Specifications since the safety analysis assumes a maximum nuclear instrument error of 6.5%.

(7) Apparent Cause of Occurrence:

The cause of this occurrence has been determined to be both material and procedural in that:

1) The cause of the incorrect core thermal power calculation was the failure of Turbine Header Pressure Transmitter SP10A-PT2 which is used for the Steam Pressure input to the heat balance.

2) A contributing factor was that the procedure for performing a heat balance adjustment does not require that the values for the parameters used in the calculation be printed out and evaluated prior to nuclear instrument adjustment.

(8) Analysis of Occurrence:

It has been determined that this event did not constitute a threat to the health and safety of the public in that the Reactor Protection System high flux setpoints had previously been reduced from the normal value of 105% down to sixty (60) percent for startup physics testing.

(9) Corrective Action:

IMMEDIATE: The core thermal power calculations were modified to use a redundant transmitter (Turbine Header Pressure Transmitter SP10A-PT1). The nuclear instruments were immediately recalibrated to the proper value.

LONG TERM: The procedure for performing heat balance adjustment of the nuclear instruments will be modified to require print out and evaluation of the parameters that input the calculation prior to nuclear instrument adjustment.

(9) Corrective Action (continued)

The Plant Operations Review Committee and Unit Superintendent have reviewed and approved the above corrective action and have taken steps to assure its completion.

(10) Failure Data:

Manufacturer:	Foxboro
Model:	611GM-CS1
Calibrated Range:	600-1200 psig
Output Range:	10-50 ma

Similar Occurrences:

None

Sincerely,

J. G. Herbein
Vice President

JGH:DGM:rk
Attachment: Licensee Event Report

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