

FROM: Metropolitan Edison Co. Reading, PA R. C. Arnold			DATE OF DOC 6-13-74	DATE REC'D 6-18-74	LTR X	TWX	RPT	OTHER
TO: J. P. O'Reilly			ORIG 1	CC	OTHER	SENT AEC PDR <u>XXX</u> SENT LOCAL PDR <u>XXX</u>		
CLASS	UNCLASS	PROP INFO	INPUT	NO CYS REC'D		DOCKET NO:		
	XXX			1		50-289		

DESCRIPTION:

Ltr furn info re enviro incident #EI 50-289/74-4 of 6-6-74 re excessive total chlorine concentration at the plant river discharge....

PLANT NAME: THREE MILE ISLAND UNIT #1

ENCLOSURES:

**ACKNOWLEDGED
DO NOT REMOVE**

FOR ACTION/INFORMATION 6-19-74 GMC

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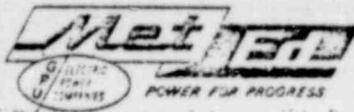
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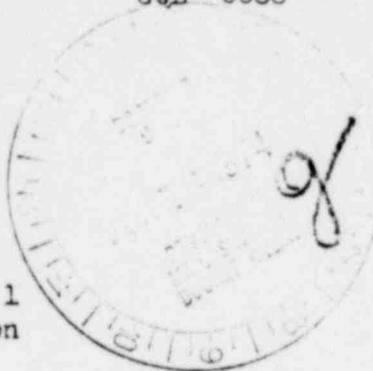


METROPOLITAN EDISON COMPANY

POST OFFICE BOX 542 READING, PENNSYLVANIA 19603

TELEPHONE 215 - 929-3601

June 13, 1974
GQL 0068



Mr. J. P. O'Reilly, Director
Regulatory Operations Region 1
U. S. Atomic Energy Commission
631 Park Avenue
King of Prussia, Pennsylvania 19406

Dear Mr. O'Reilly:

Operating License DPR-50
Docket #50-289

In accordance with the Environmental Technical Specifications for Three Mile Island Nuclear Station, Unit 1, we are reporting the following Environmental Incident:

- (1) Reporting Number: E.I. 50-289/74-4
- (2a) Report Date: June 13, 1974
- (2b) Occurrence Date: June 6, 1974
- (3) Facility: Three Mile Island Nuclear Generating Station, Unit 1
- (4) Identification of Incident:

Excessive Total Chlorine Concentration at the Plant River Discharge
which is a violation of Environmental Technical Specifications, paragraph 2.2.1a, and constitutes exceeding a limiting condition for operation.

- (5) Conditions Prior to Occurrence: Reactor critical, power escalation test at 0% of rated power in progress with major plant parameters as follows:

1459 220

5502

Power: Core: 0
Elec: 0

RC Flow: 144×10^6 #/hr.

RC Pressure: 2155 psig

RC Temperature: 532°F

PRZR Level: 100 in.

PRZR Temp.: 650°F

- (6) Description of Incident: During a periodic evolution conducted to chlorinate the systems cooled by the mechanical draft cooling tower, the plant river discharge sample taken 10 minutes after commencement of the evolution indicated a chlorine concentration of .215 ppm, at 30 minutes - .22 ppm, and at 50 minutes - .25 ppm.

In that chlorine addition had been terminated about 15 minutes after commencement of the evolution, it was determined that there were no additional actions which could be taken to get the reading within the specification limit.

- (7) Designation of Apparent Cause of Incident:

- a. The most probable cause of the incident was Personnel, in that an improperly prepared pH-4 buffer solution was used in the analysis of total chlorine. Normal procedure is to use a pH-4 buffer solution prepared by site personnel. In the case of this incident, however, the buffer solution used was obtained from another source, and was not checked for accuracy of preparation prior to being used in the plant river discharge total chlorine analysis.

The technician who performed the analyses suspected the possibility of an error in the analyses and, therefore, performed a free and total chlorine analysis on a sample of demineralized water. This analysis indicated that the sample contained .04 ppm free chlorine and .274 ppm total chlorine, which was higher than any of the values obtained for the plant river discharge samples. The analysis was then repeated on another sample of demineralized water using a new batch of buffer solution. It was found that this sample analysis indicated no detectable free chlorine and no total chlorine. From this, it appears that use of the improperly prepared buffer solution yielded higher-than-actual values for the river discharge chlorine samples, although there is no way of

1459 221

knowing the magnitude of the errors.

- b. Additional possible causes that were considered in the analysis, but not thought to be probable causes of this incident, were procedure and component failure.
- (8) Analysis of Incident: It is believed that the total chlorine level did not exceed the technical specifications limit by a severe enough degree or for a long enough duration to have caused environmental damage, in that the values measured for total chlorine were most likely higher than the actual values and, based on the degree of error indicated on the demineralized samples, actual values were most likely well within specification limits.
- (9) Corrective Action: As explained in the above analysis, there were no immediate corrective actions which could have been taken to reduce the total chlorine level to within specification limits and no immediate actions were taken.

As also explained in the above analysis, the monitoring technician performed additional analyses to determine the reliability of the pH-4 buffer solution.

The Station Superintendent was notified of the incident; he informed the Vice President-Generation and, to provide for an additional precautionary measure, it was then decided to decrease the chlorination feed from 250 lbs/day to 200 lbs/day prior to the next chlorination period.

Subsequent discussions among the Vice President-Generation, Manager-Generation Engineering, and Station Superintendent have resulted in a decision to have the Met-Ed Operational Quality Assurance Department perform an audit of the station chlorine analysis procedures and the implementation thereof.

Additional long term corrective actions relating to this same problem were stated in EI 50-289/74-3 seven day letter dated June 5, 1974, and EI 50-289/74-4 seven day letter dated June 12, 1974, and will consist of:

- a. meeting with a consultant to discuss terms of a contract to evaluate
 - 1. if, and how, chlorine addition rates should be established as a function of existing conditions, and
 - 2. the reliability of the chlorine monitoring apparatus, and

- b. utilizing the yet to be established 90-day period referenced in the Environmental Technical Specifications, paragraph 2.2.1.b, to further evaluate (9)a.1. and (9)a.2. above.

(10) Failure Data:

- a. Previous Failures: Although possible malfunction of the chlorine monitoring apparatus is not believed to be the cause of this incident, this possibility has been previously noted in EI's 50-289/74-2 and 3 seven-day letters dated June 5 and June 12, 1974, respectively.
- b. Equipment Identification: It will not be possible to ascertain if the monitoring apparatus failed until the additional technical analyses mentioned in (9)a. and (9)b. above are completed; however, on the basis of what information is available, failure of the equipment is considered to be unlikely.

Sincerely,

Signed - R. C. Arnold

R. C. Arnold
Vice President

RCA:JFV:eg

cc: Director
Directorate of Licensing
U. S. Atomic Energy Commission
Washington, D.C. 20545

1459 223