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(TEMPORARY FORM)

CONTROL NO: 13356

FILE: INCIDENT REPORT FILE

FROM: Met. Edison Co. Reading, Pa. 19603 R.C. Arnold		DATE OF DOC 11-21-75	DATE REC'D 11-25-75	LTR XX	TWX	RPT	OTHER
TO: NRC		ORIG 1 signed	CC	OTHER	SENT AEC PDR XX SENT LOCAL PDR XX		
CLASS	UNCLASS XXX	PROP INFO	INPUT	NO CYS REC'D 1	DOCKET NO: 50-289		

DESCRIPTION: Ltr reporting AO-50-289/75-39 on  
11-12-75 re inoperable control rods  
during power operation....

ENCLOSURES:

PLANT NAME: Three Mile Island Unit 1

## FOR ACTION/INFORMATION

DHL 12-2-75

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## EXTERNAL DISTRIBUTION

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1 - TIC (ABERNATHY) (1)(2)(10)	1 - W. PENNINGTON, Rm E-201 GT	1 - BROOKHAVEN NAT LAB
1 - NSIC (BUCHANAN)	1 - CONSULTANTS	1 - G. ULRIKSON, ORNL
1 - ASLB	NEWMARK/BLUME/AGBABIAN	1 - AGMED (RUTH GUSSMAN) Rm B-127 GT
1 - Newton Anderson		1 - J. D. RUNKLES, Rm E-201 GT
1 - ACRS SENT TO LIC ASST R. Ingram 12-2-75		
** SEND ONLY TEN DAY REPORTS		

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Regulatory Docket File

METROPOLITAN EDISON COMPANY

POST OFFICE BOX 542 READING, PENNSYLVANIA 19603

TELEPHONE 215 - 929-3601

November 21, 1975  
GQL 1741

Director of Nuclear Reactor Regulation  
U. S. Nuclear Regulatory Commission  
Washington, D.C. 20555

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 abnormal occurrence.

- (1) Report Number: AO 50-289/75-39
- (2a) Report Date: November 21, 1975
- (2b) Occurrence Date: November 12, 1975
- (3) Facility: Three Mile Island Nuclear Station Unit 1
- (4) Identification of Occurrence:

Title: Inoperable Control Rods During Power Operation

Type: An abnormal occurrence as defined by the Technical Specifications, paragraph 1.8b, in that more than one control rod became inoperable during power operation, which constitutes a violation of Technical Specification 3.5.2.2.a.

- (5) Conditions Prior to Occurrence:

Power: Core: 100%

Elec.: 845 MWe (Gross)

RC Flow:  $138 \times 10^6$  lb/hr.

RC Pressure: 2150 psig

RC Temp.: 579°F



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PRZR Level: 242 in.

PRZR Temp.: 650°F

(6) Description of Occurrence:

On November 12, 1975, and during 100% power operation, Control Rod 4 in Group 7 dropped into the core from approximately the 15% withdrawn position due to stator winding failure. The dropped rod resulted in an asymmetric rod signal, thereby, initiating an automatic power reduction (runback). The runback resulted in Group 6 and Group 7 rods being inserted.

As Group 7 was moving in, Group 7 Rod 5 became misaligned from the Group 7 average position by more than the allowable nine (9) inches and was therefore declared inoperable. Group 7 Rod 5 did not move in with the remaining rods in the Group because of a temporary system lineup which was being used to minimize motion on Rod 5 due to a suspected stator winding problem. In this temporary lineup, all Group 7 rods except Rod 5 were connected to auxiliary power while Rod 5 remained on normal power.

The operator assumed manual control at about 70% power to minimize the feed-water oscillations that developed during the automatic runback. The plant was stabilized and power was manually reduced to 60% power within approximately twenty (20) minutes after Group 7 Rod 4 was dropped. Subsequently, an attempt was made to exercise Group 7 Rod 4. The rod could not be removed and therefore became the second rod in Group 7 to be declared inoperable. Since operation with more than one (1) inoperable rod in the regulating rod banks is a violation of Technical Specification 3.5.2.2.a, an orderly shutdown was commenced without moving Rod 5. The generator was subsequently taken off line approximately one (1) hour and twenty (20) minutes after Group 7 Rod 4 was dropped.

During the inspection for blown fuses on Group 7 Rod 4, a blown fuse was also observed on Group 5 Rod 12. This rod dropped when Group 5 insertion began during the power reduction.

(7) Designation of Apparent Cause of Occurrence:

The cause of this occurrence has been determined to be material in that the dropped rod resulted from a failed stator winding. A problem of failed stator windings has been experienced due to a possible material problem. Group 7 Rod 4 winding failure may have been due to a missing upper "O" ring where the stator assembly seals to the Control Rod Drive motor tube. The missing "O" ring may have allowed moisture to enter the stator cavity resulting in winding failure.

(8) Analysis of Occurrence:

It has been determined that this occurrence did not constitute a threat to the health and safety of the public in that:

- a. in the event of a manual or automatic trip of the reactor, the affected rods would have dropped into the core and,

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- b. an orderly reactor shutdown was commenced immediately after the two rods were declared inoperable and completed within approximately one (1) hour.

(9) Corrective Action:

In addition to the immediate action described above, long term corrective actions are as follows:

- a. The failed stator winding was replaced and the remaining stators were tested to assure that there were no apparent weak windings.
- b. A maintenance procedure change will be implemented to assure inspection of both upper and lower "O" rings on the stator assembly during the installation of stators.

(10) Failure Data:

Control rod drive stator windings 4 pole, 6 phase, 15a reluctance stepping motor.

Diamond Power Specialist/Royal Industries

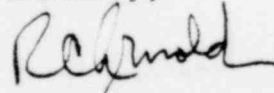
Group 1 Rod 4: 703460-1-263  
120-J-341-1Rev. L  
Serial No. 95

Group 7 Rod 5: 703460-1-174  
120-J-341-Rev. L  
Serial No. R-70-063

Group 5 Rod 12: 703460-1-29  
RO-J-341-Rev. H  
Serial No. R-70-063

Similar Occurrences: AO 5C-289/75-39

Sincerely,



R. C. Arnold  
Vice President

RCA:JMC:tas

cc: Office of Inspection & Enforcement, Region 1

File: 20.1.1 / 7.7.3.5.1

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