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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 submitted as AO-50-289/75-40 ENCLOSURES:
on 11-12-75 re stuck voltage relays contacts
of the "A" diesel generator....

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ACKNOWLEDGED

PLANT NAME: Three Mile Island Unit 1

FOR ACTION/INFORMATION

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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 50-289/75-40
- (2) Report Date: November 21, 1975
- (3) Occurrence Date: November 12, 1975
- (3) Facility: Three Mile Island Nuclear Station Unit 1
- (4) Identification of Occurrence:



Title: Stuck Voltage Relays Contacts of the "A" Diesel Generator

Type: An abnormal occurrence as defined by the Technical Specifications, paragraph 1.8d, in that the stuck voltage relays contacts threatened to cause an Engineering Safeguards feature or system to be incapable of performing its intended functions.

- (5) Conditions Prior to Occurrence:

Power: Core: 100%
Elec.: 840 MWe (Gross)
RC Flow: 139×10^6 lbs/hr.
RC Pressure: 2155 psig
RC Temp.: 579°F
PRZR Level: 250 in.
PRZR Temp.: 650°F

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(6) Description of Occurrence:

On November 12, 1975, the three up to voltage relays on the 1A Diesel Generator were found to have stuck contacts. The stuck contacts resulted in the relays remaining in the energized condition even though the 1A Diesel Generator was shut down. This condition could have caused premature closure of the 1A Diesel Generator Breaker in the event the generator was required to automatically start and energize the safeguards bus. The 1A Diesel Generator had last been run on November 6, 1975 and the relay contacts had apparently been stuck since that time.

Immediately, the stuck voltage relays on the 1A Diesel Generator were manually reset and the relays on the 1B Diesel Generator were inspected and verified to be reset.

(7) Designation of Apparent Cause of Occurrence:

The cause of this occurrence has been determined to be material/design in that the voltage relay contact pits slightly due to frequent operation. In the system's present design, each voltage relay has a separate auxiliary relay. When the Diesel Generator voltage increases above setpoint, the contact in the voltage relay closes, causing the auxiliary relay to energize. Conversely, when the voltage goes below setpoint, the voltage relay contact should open allowing the auxiliary relay to de-energize. However, the slight pitting resulted in sporadic relay contact stickings.

(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. The failure mode of the relays was such that generator breaker closure was permitted. It is unlikely that the relay problem, in itself, would have resulted in any failure if automatic generator start and automatic breaker closure had been required. The generator would probably have operated properly because field flashing takes place while generator is coming up to speed. Adequate voltage is normally present when the generator reaches rated speed. The frequency relays would have prevented breaker closure until generator was up to speed. In addition, the frequency relays require voltage to operate, although, they would allow the breaker to close at a lower than desired voltage.
- b. In the event that the 1A Diesel Generator had been prevented from operating properly, the 1B Diesel Generator was available.

(9) Corrective Action:

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

- a. A design change will be submitted to generation engineering to permanently solve the problem.

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- b. Until a satisfactory solution is obtained, the relays will be inspected for proper condition each time the diesel generators are operated. A temporary procedure change has been implemented to assure that this inspection is accomplished.

(10) Failure Data:

Diesel Generator 1A

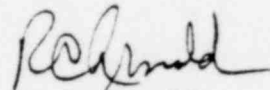
Relay Designations: 59-1, 59-2, 59-3 Up to Voltage Relays

Voltage Relay Type: Westinghouse CV-7
Style #1875524A

Auxiliary Relay: Westinghouse MG-6

Similar Occurrences: None

Sincerely,



R. C. Arnold
Vice President

RCA:JMC:tas

File: 20.1.1 / 7.7.3.5.1

cc: Office of Inspection & Enforcement, Region 1

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