NRC FORM 195 (2-76)

U.S. NUCLEAR REGULATORY COMMISSION

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DESCRIPTION

LTR, RO 50-289/76-5/IT ON 2-3-76.....
LICENSEE EVENT REPORT CONCERNING INOPERABLE AUTO-ACTUATION LOGIC RELAY IN REACTOR COOLANT CHANNEL "3B".....

ENCLOSURE

POOR ORIGINAL

PLANT NAME: THREE MILE ISLAND #1

NOTE: IF PERSONNEL EXPOSURE IS INVOLVED SEND DIRECTLY TO KREGER/J. COLLINS

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METROPOLITAN EDISON COMPANY SUBSIDIARY OF GENERAL PUBLIC UTILITIES CORPORATION

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February 13, 1976
GQL 0207

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U.S. NUCLEAR REGULATORY COMMISSION
Mail Section

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

DOCKET NO. 50-289
OPERATING LICENSE NO. DPR-50

Dear Sir:

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: ER 76-5/IT

(2) Report Date: February 13, 1976

(2b) Event Date: February 3, 1976

(3) Facility: Three Mile Island Nuclear Station Unit 1

(4) Identification of Event:

Title: Inoperable Auto-Actuation Logic Relay in Reactor Coolant Channel "3B".

Type: An abnormal occurrence as defined by the Technical Specifications, paragraph 1.8, in that an inoperable auto-actuation logic relay threatened to cause an Engineered Safeguard feature or system to be incapable of performing its intended functions.

(5) Conditions Prior to Event:

Power: Core: 100%
Elec.: 852 MWe (Gross)

RC Flow: 139×10^6 lbs./hr.
RC Pressure: 2162 psig
RC Temp: $580^{\circ}F$
Przr Level: 241 inches
Przr Temp.: $655^{\circ}F$

1515

1490 076

DOCKET NO. 50-289
OPERATING LICENSE NO. DPR-50

(6) Description of Event:

At 0110 hours on February 3, 1976, while performing Surveillance Procedure (SP) 1303-4.13 (Reactor Building Emergency Cooling and Isolation System Analog Channels) an auto-actuation relay (62x3/RC3B) in Reactor Coolant Channel "3B" failed to go to its ES position upon receipt of an ES trip signal. This relay is part of the two (2) out of three (3) auto-logic for Actuation B, Block 4 components. It failed again when Channel RC3B was reset and tripped once more. The 62x3/RC3B relay then went to its ES position when its armature was tapped.

Immediately, the redundant Actuation "A" channels relays were tested and verified operable.

(7) Designation of Apparent Cause of Event:

The cause of this event has been determined to be material in that slight mechanical binding of the armature and contact linkage appeared to be the cause for the relay failure. Disassembly of the relay revealed some metal chips which may have caused, or contributed to the relay binding.

(8) Analysis of Event:

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

a. The relay logic for redundant Actuation "A" Channels was fully operational.

b. One (1) Actuation is sufficient to actuate the Engineered Safeguard components required for operation in the event of a loss of coolant accident.

c. Actuation B Channels for Load Blocks 1, 2 and 3 were fully operational and the respective components would have actuated in the event of a loss of coolant accident. Although the failure of 62x3/RC3B placed Load Block 4 components in Actuation B in a two (2) out of two(2) logic mode instead of the normal two (2) out of three (3) logic, these components would have still operated in the event of an ES signal.

DOCKET NO. 50-289
OPERATING LICENSE NO. DPR-50

(9) Corrective Action:

In addition to the immediate action described above, the faulty 62x3/RC3B relay was replaced with an identical spare. The relay and its associated circuitry were verified operable by functional tests, including actuation of affected components.

The monthly surveillance test (SP 1303-4.13) is sufficient to detect any future relay problems in this system. No further long term corrective action is required.

(10) Failure Data:

Manufacturer: The Clark Controller Co.

Type: PM Relay

Cat. No.: 5U12-11
10 AMP, 600VAC
Bulletin 7305

Coil No.: TB130-1 (120V 60hz)

Similar Events: None

Sincerely,

R. C. ARNOLD
VICE PRESIDENT

RCA:JMC:rk