NRC FORM 366
(7 77)

U. S. NUCLEAR REGULATORY COMMISSION

LICENSEE EVENT REPORT

CONTROL BLOCK (1) (PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

0 1 | P A T M I 1 (2) | 0 0 - 0 0 0 0 0 - 0 0 (3) | 4 1 1 1 1 (4) | (5)

7 8 9 LICENSEE CODE 14 15 LICENSE NUMBER 25 26 LICENSE TYPE 30 57 CAT 58

CON'T

0 1 | REPORT SOURCE L (6) | 0 5 0 0 0 2 8 9 (7) | 0 9 1 6 8 3 (8) | 1 0 1 9 8 3 (9)

7 8 60 61 DOCKET NUMBER 68 69 EVENT DATE 74 75 REPORT DATE 80

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)

0 2 | While in hot shutdown condition Surveillance Procedure 1303-11.10 (ES Emergency

0 3 | Sequence and Power Transfer Test) was being performed. The 4160V 1E Bus was

0 4 | loaded on the Diesel Generator. Make-Up Pump (MU-P-1C) failed to reenergize. The

0 5 | test was halted and the cause investigated. MU-P-1C would not have remained

0 6 | energized if a safeguards signal was followed by a loss of off-site power. This

0 7 | is considered reportable per T.S. 6.9.2.B(3). Public health and safety were

0 8 | unaffected.

7 8 9 80

SYSTEM CODE | CAUSE CODE | CAUSE SUBCODE | COMPONENT CODE | COMP SUBCODE | VALVE SUBCODE

0 9 | E D (11) | E (12) | A (13) | R E L A Y X (14) | J (15) | Z (16)

7 8 9 10 11 12 13 15 19 20

(17) LER/RO REPORT NUMBER | EVENT YEAR | SEQUENTIAL REPORT NO. | OCCURRENCE CODE | REPORT TYPE | REVISION NO.

21 22 23 24 26 27 28 29 30 31 32

8 3 | — | 0 2 7 | / | 0 3 | L | — | 0

ACTION TAKEN | FUTURE ACTION | EFFECT ON PLANT | SHUTDOWN METHOD | HOURS (22) | ATTACHMENT SUBMITTED | NPRD-4 FORM SUB | PRIME COMP SUPPLIER | COMPONENT MANUFACTURER

33 34 35 36 37 40 41 42 43 44 47 48

X (18) | A (19) | Z (20) | Z (21) | 0 0 0 0 | Y (23) | N (24) | X (25) | G 2 7 2 (26)

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)

1 0 | The cause of MU-P-1C tripping off was traced to a variable time delay relay

1 1 | (27 XBTD) which was suspected of not operating properly. A visual inspection

1 2 | of the relay was performed and the relay cycled to verify operability and drop-

1 3 | out time. The surveillance test was successfully completed. The existing relay

1 4 | will be replaced with a different type timer.

7 8 9 80

FACILITY STATUS | % POWER | OTHER STATUS (30) | METHOD OF DISCOVERY | DISCOVERY DESCRIPTION (32)

1 5 | X (28) | 0 0 0 (29) | NRC Order | B (31) | Surveillance Testing

7 8 9 10 12 13 44 45 46 80

ACTIVITY RELEASED | CONTENT OF RELEASE | AMOUNT OF ACTIVITY (33) (34) (35) | LOCATION OF RELEASE (36)

1 6 | Z (33) | Z (34) | N/A | N/A

7 8 9 10 11 44 45 80

PERSONNEL EXPOSURES: NUMBER | TYPE | DESCRIPTION (39)

1 7 | 0 0 0 (37) | Z (38) | N/A

7 8 9 11 12 13 80

PERSONNEL INJURIES: NUMBER | DESCRIPTION (41)

1 8 | 0 0 0 (40) | N/A

7 8 9 11 12 80

LOSS OF OR DAMAGE TO FACILITY: TYPE | DESCRIPTION (43)

1 9 | Z (42) |

7 8 9 10 80

8311010260 831019
PDR ADOCK 05000289
S PDR

IE22

PUBLICITY: ISSUED | DESCRIPTION (45)

2 0 | N (44) | N/A

7 8 9 10 66 68 69 80

NRC USE ONLY

NAME OF PREPARER R. A. Szczech PHONE (717) 948-8833

MAKE-UP PUMP LUBE OIL TRIP RELAY (27XBTD) TIMER FAILURE

DURING ESAS SURVEILLANCE TESTING

I. CURRENT ACTIVITIES AT THE TIME OF THE OCCURRENCE

TMI Unit 1 was in a hot shutdown condition. Four (4) RCP's in operation and SP 1303-11.10 (ES Emergency Loading and Power Transfer Test) was in progress on the "B" side, per Tech. Spec. 4.5.1.1.b.

II. CIRCUMSTANCES LEADING TO THE OCCURRENCE

On September 16, 1983, during ESAS testing of the "B" side, the following evolutions had taken place prior to MU-P-1C tripping:

1. An ES test signal was initiated, starting ES loads (including MU-P-1C).

2. The"B" diesel generator came up to speed and was ready to accept load.

3. Undervoltage was simulated which tripped the 4160V 1E Bus.

4. The Diesel Generator ("B") breaker (G11-02) was closed into the 4160V 1E Bus.

At this point MU-P-1C should have reenergized; however, it was noted that MU-P-1C breaker had tripped. The test was halted pending an investigation as to why MU-P-1C tripped. The Diesel Generator ("B") carried the 4160V 1E bus loading for approximately 2 hours before the test was terminated and plant load was returned to off-site power. This is considered reportable per Tech. Spec. 6.9.2.B.(3).

III. DESCRIPTION

The cause of MU-P-1C tripping off was traced to a variable time delay relay 27XBTD which was suspected of not operating properly.

The purpose of the 27XBTD is to allow the MU Pump Lube Oil Motor approximately 6 seconds to raise the oil pressure above the minimum setpoint. If the minimum oil setpoint is not met, the 27XBTD will time out and close, causing the trip coil to trip MU-P-1C.

A close examination of the 27XBTD relay revealed no visible physical problems. The relay was then electrically cycled approximately 15 times in place. The 27XBTD relay was energized and timed out as designed. Additional checks revealed the timer latch would intermittently not engage properly.

IV. RESULTANT EVENTS

As a result of the 27XBTD malfunctioning, MU-P-1C would not stay energized if a safeguards signal was followed by a loss of off-site power. MU-P-1C would be operable for a safeguards signal if off-site power was available. No other resultant events occurred.

V. PREVIOUS EVENTS OF A SIMILAR NATURE

Similar relay failures occurred on 3/18/78 and were reported by LER 78-10/1T.

VI. ROOT CAUSE

The root cause may have been improper latching of the timing mechanism due to being energized for a long period of time.

This problem is intermittent due to poor relay reliability.

VII. IMMEDIATE CORRECTIVE ACTION

A visual inspection of relay and associated wires was performed. The relay was cycled to check drop out time and verify operability. The surveillance test was successfully completed.

VIII. LONG TERM CORRECTIVE ACTION

Existing 27XBTD relay will be replaced with a different type timer.

IX. COMPONENT FAILURE DATA

Clark (GTE Sylvania) Type PHT 7313 AC on/off Time Delay Relay Model D713UPF (on delay).

GPU Nuclear

GPU Nuclear Corporation
Post Office Box 480
Route 441 South
Middletown, Pennsylvania 17057-0191
717 944-7621
TELEX 84-2386
Writer's Direct Dial Number:

October 19, 1983
5211-83-307

Dr. Thomas E. Murley
Region I, Regional Administrator
U. S. Nuclear Regulatory Commission
631 Park Avenue
King of Prussia, PA 19406

Dear Sir:

Three Mile Island Nuclear Station, Unit 1 (TMI-1)
Operating License No. DPR-50
Docket No. 50-289
LER 83-027/03L-0

This letter transmits Licensee Event Report 83-027/03L-0 concerning failure of Make-Up Pump (MU-P-1C) to energize after ES Bus power transfer. Public health and safety were unaffected.

Sincerely,

H. D. Hukill
Director, TMI-1

HDH:RAS:vjf

Attachments

cc: J. Van Vliet
Document Management Branch

IE27
1/1