

LICENSEE EVENT REPORT (LER)

APPROVED OMB NO. 3150-0104 EXPIRES - 3/31/85

| | | | |
|---------------------|--|-------------------|----------|
| FACILITY NAME (1) | | DOCKET NUMBER (2) | PAGE (3) |
| INDIAN POINT UNIT 2 | | 05000247 | 1 OF 03 |

TITLE (4) DEFECTIVE RELAY CAUSED TEST FAILURE OF MANUAL SAFETY INJECTION

| EVENT DATE (5) | | | LER NUMBER (6) | | REPORT DATE (7) | | | OTHER FACILITIES INVOLVED (8) | |
|----------------|-----|------|----------------|-------------------|-----------------|-------|-----|-------------------------------|------------------|
| MONTH | DAY | YEAR | YEAR | SEQUENTIAL NUMBER | REVISION NUMBER | MONTH | DAY | YEAR | FACILITY NAMES |
| 01 | 17 | 86 | 86 | 003 | 01 | 06 | 04 | 86 | |
| | | | | | | | | | DOCKET NUMBER(S) |
| | | | | | | | | | 05000 |

OPERATING MODE (9) N

POWER LEVEL (10) 0010

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 50. (Check one or more of the following) (11)

| | | | |
|-------------------|------------------|---------------------|--|
| 20.402(a) | 20.406(e) | 50.73(a)(2)(iv) | 73.71(a) |
| 20.406(a)(1)(i) | 50.38(a)(1) | 50.73(a)(2)(v) | 73.71(a) |
| 20.406(a)(1)(ii) | 50.38(a)(2) | X 50.73(a)(2)(vi) | OTHER (Specify in Abstract below and in Text, NRC Form 366A) |
| 20.406(a)(1)(iii) | 50.73(a)(2)(i) | 50.73(a)(2)(vii)(A) | |
| 20.406(a)(1)(iv) | 50.73(a)(2)(ii) | 50.73(a)(2)(vii)(B) | |
| 20.406(a)(1)(v) | 50.73(a)(2)(iii) | 50.73(a)(2)(ix) | |

LICENSEE CONTACT FOR THIS LER (12)

| | |
|-------------------------|------------------|
| NAME | TELEPHONE NUMBER |
| JOSEPH GOEBEL, ENGINEER | 914 526-5180 |

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

| CAUSE | SYSTEM | COMPONENT | MANUFACTURER | REPORTABLE TO NRC | CAUSE | SYSTEM | COMPONENT | MANUFACTURER | REPORTABLE TO NRC |
|-------|--------|-----------|--------------|-------------------|-------|--------|-----------|--------------|-------------------|
| X | J E | R L Y W | L 2 0 | Y | | | | | |

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE) NO

EXPECTED SUBMISSION DATE (15)

| MONTH | DAY | YEAR |
|-------|-----|------|
| | | |

ABSTRACT (Limit to 1400 words, i.e., approximately 11 lines single-space typewritten text) (16)

During cold shutdown for a refueling outage, there was a partial failure of the planned test of the Safety Injection System. The failure (the two manual trains did not actuate) occurred after previous successful actuations of one train during the test. Automatic actuation of the system was available. Non-actuation is attributed to wear on a relay latching mechanism which reduced clearance between the latch screw and latch plate. The latch screw clearance for these relays was subsequently adjusted to permit proper latching. Latch screw clearance of the other relays in the system will be checked, and adjusted where necessary. The Safety Injection System will be retested during the refueling outage.

The public health and safety were not affected by this test failure.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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| | | YEAR | SEQUENTIAL NUMBER | REVISION NUMBER | | | |
| | | 8 6 | 0 0 3 | 0 1 | 0 2 | OF | 0 3 |

TEXT (if more space is required, use additional NRC Form 366A) (17)

Plant and System Identification:

Westinghouse 4-loop Pressurized Water Reactor - 900 MWe.

Identification of Occurrence:

Two out of two independent manual channels in the Safety Injection System were tested and found inoperable.

Event Date:

January 17, 1986

Reference:

Significant Occurrence Report No. 86-27

Past Similar Occurrences:

None.

Description of Occurrence:

Unit 2 was at cold shutdown for a refueling outage that began January 14, 1986. The test, "PT-R-13 - Safety Injection System", was in progress on January 17, 1986 (Technical Specification 4.5A.1.a.) when manual safety injection Train B would not actuate. During continuation of the test, manual safety injection Train A also failed to actuate despite several previous successful actuations. Train A - Phase A containment isolation did not maintain the Train A - Phase A valves closed when safety injection was reset. The valves opened instead of remaining closed as designed.

Before the test there were no existing indications of inoperability that could have contributed to these test failures.

Automatic safety injection pump breakers tested satisfactorily. Valve sequencing and timing tested satisfactorily for those valves which were operable. Valves which were inoperable were in the fail-safe position.

Non-actuation of both manual safety injection trains and Train A - Phase A containment isolation is attributed to failure of the latching mechanism on Westinghouse MG-6 relays.

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| | | | | | 0 3 | OF | 0 3 |

TEXT (If more space is required, use additional NRC Form 366A) (17)

Analysis of Occurrence:

This occurrence is a reportable event because the condition of the Westinghouse MG-6 relay caused two manual trains to become inoperable in the Safety Injection System (emergency core cooling system). This condition developed during the test as described above. Automatic operation of the system was available if required. Even in the absence of one automatic train, minimum engineered safety features would still have been available and the inoperable train could have been restored by procedure on a component by component basis. System operation is not required at cold shutdown. The public health and safety were not affected.

Cause of Occurrence:

Examination of the latching mechanism of the relays indicated that wear of the pivoting surfaces had reduced the clearance between the latch screw and latch plate which prevented the relays from latching after actuation. Adjustment of the clearance to specification restored normal operation of the relays, confirming the cause of the malfunction.

The failure of the Train A - Phase A containment isolation relay to maintain the Train A - Phase A valves closed involved the failure of contacts within the relay's coil circuit to actuate, latch and de-energize the coil. Although the coil had appeared to latch, it had not latched, and the coil only de-energized when safety injection Train A was reset.

Corrective Action:

The reduced clearance between the latch screw and latch plate, which prevented the relays from latching after actuation, was corrected by adjusting the latching screw clearance to specification in the three relays.

Each of the safety injection trains has six relays. A check of the clearances in the nine remaining relays will be conducted and where necessary they will be adjusted to specification.

Investigation of similar failures at other utilities indicated comparable corrective action was taken.

All retesting of the system will be completed during the 1986 refueling outage.

To permit additional failure analysis as soon as two replacement relays can be obtained, and an outage of sufficient duration occurs, we plan to replace two of the relays that required adjustment of the latching screw.