NRC Form 366
(9-83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/85

# LICENSEE EVENT REPORT (LER)

| FACILITY NAME (1) | DOCKET NUMBER (2) | PAGE (3) |
|---|---|---|
| Zion Station, Unit 1 | 0 5 0 0 0 2 9 5 | 1 OF 0 2 |

TITLE (4)
Inadvertent Engineered Safety Features Actuation

| 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 | DOCKET NUMBER(S) |
| 0 6 | 0 7 | 8 5 | 8 5 | 0 1 9 | 0 0 | 0 7 | 0 1 | 8 5 | | 0 5 0 0 0 |
| | | | | | | | | | | 0 5 0 0 0 |

| OPERATING MODE (9) | THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11) | | | |
|---|---|---|---|---|
| 5 | 20.402(b) | 20.405(c) | X 50.73(a)(2)(iv) | 73.71(b) |
| POWER LEVEL (10) 0 0 0 | 20.405(a)(1)(i) | 50.36(c)(1) | 50.73(a)(2)(v) | 73.71(c) |
| | 20.405(a)(1)(ii) | 50.36(c)(2) | 50.73(a)(2)(vii) | OTHER (Specify in Abstract below and in Text, NRC Form 366A) |
| | 20.405(a)(1)(iii) | 50.73(a)(2)(i) | 50.73(a)(2)(viii)(A) | |
| | 20.405(a)(1)(iv) | 50.73(a)(2)(ii) | 50.73(a)(2)(viii)(B) | |
| | 20.405(a)(1)(v) | 50.73(a)(2)(iii) | 50.73(a)(2)(x) | |

LICENSEE CONTACT FOR THIS LER (12)

| NAME | TELEPHONE NUMBER |
|---|---|
| Michael Lesnet | AREA CODE 3 1 2 7 4 6 - 2 0 8 4 |

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

| CAUSE | SYSTEM | COMPONENT | MANUFACTURER | REPORTABLE TO NPRDS | | CAUSE | SYSTEM | COMPONENT | MANUFACTURER | REPORTABLE TO NPRDS | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| B | J E | I M O D | H 0 2 1 | Y | | | | | | | |
| | | | | | | | | | | | |

SUPPLEMENTAL REPORT EXPECTED (14)

| | | EXPECTED SUBMISSION DATE (15) | MONTH | DAY | YEAR |
|---|---|---|---|---|---|
| YES (If yes, complete EXPECTED SUBMISSION DATE) | X NO | | | | |

ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

On 6-7-85 Unit 1 was in cold shutdown and the reactor trip breakers closed and the main steam isolation valves open for testing. In order to investigate a noise problem, the fuses were pulled and then replaced on each of the two source range channels, one channel at a time. This resulted in a reactor trip and an unexpected closure of the main steam isolation valves. Further testing showed that any reactor trip resulted in a high steam flow safeguards actuation and would close all main steam isolation valves. When the reactor trip breakers opened, the safety injection interlock (P4) contacts closed and a spike was seen on the input and output of Turbine Impulse pressure summator 1PM505B. The summator, which provides a reference signal to the high steam flow safeguards comparator, spiked low and caused the main steam isolation valves to close and the safeguards actuation. The module was replaced and testing showed that the spike could no longer be seen on the output of the summator.



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| FACILITY NAME (1) | DOCKET NUMBER (2) | LER NUMBER (6) | | | PAGE (3) |
|---|---|---|---|---|---|
| | | YEAR | SEQUENTIAL NUMBER | REVISION NUMBER | |
| Zion Station, Unit 1 | 0 5 0 0 0 2 9 5 | 8 5 | — 0 1 9 | — 0 0 | 0 2 OF 0 2 |

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

On June 7, 1985, at 1150 hours, Unit 1 was in cold shutdown with the reactor trip breakers closed and the main steam isolation valves open for testing. In order to investigate a noise problem, the fuses were pulled and then replaced on each of the two source range channels, one channel at a time. This gave a reactor trip (as expected), and an unexpected closure of two main steam isolation valves. Further testing showed that any reactor trip resulted in a high steam flow safeguards actuation on steam generators A and D and that all 4 main steam isolation valves would close.

An investigation revealed that the reactor trip breakers had opened and caused the safety injection interlock circuitry (P4) contacts to close in relay module 1PM505Q in the Turbine impulse pressure loop. When these contacts closed a 240 MV spike was seen on the input and output of Summator 1PM505B. The summator, which supplies a reference signal to the high steam flow safeguards comparators, spiked low, causing the main steam isolation valves to shut and a high steam flow with low Tavg/low steam pressure safeguards actuation signal.

The main steam isolation valves were tested several times and it was found that all 4 of the valves closed when a trip signal was received.

The event was attributed to the failure of Summator 1PM505B. The Summator was replaced and testing showed that the large spike could no longer be seen on the output of the module. A contributing factor was the unusual plant lineup with the reactor trip breakers closed and the main steam isolation valves open. The health and safety of the public was not affected.

No further action is necessary.

**Commonwealth Edison**
Zion Generating Station
Shiloh Blvd. & Lake Michigan
Zion, Illinois 60099
Telephone 312/746-2084

July 1, 1985

U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, D.C. 20555

References: 10CFR50

Dear Sir:

The enclosed Licensee Event Report from Zion Generating Station is being transmitted to you in accordance with the requirements of 10CFR50.73(a)(2)(n) which requires a 30 day written report when an event or condition results in manual or automatic actuation of any Engineered Safety Feature.

This report is number 85-019-00, Docket No. 50-2951 DPR-39.

Very truly yours,

T. A Rieck

for K.L. Graesser
Station Manager
Zion Generating Staiton

Enclosure: Licensee Event Report No. 85-019-00

Attachment

cc: J.G. Keppler, NRC Region III Administrator
M. Holzmer, NRC Resident Inspector
INPO Record Center
CECO Distribution List

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