



Callaway Plant

June 22, 1992


U. S. Nuclear Regulatory Commission
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ULNRC-2653

Gentlemen:

**DOCKET NUMBER 50-483
CALLAWAY PLANT UNIT 1
FACILITY OPERATING LICENSE NPF-30
LICENSEE EVENT REPORT 92-007-00
REACTOR TRIP ON LOW LEVEL STEAM GENERATOR 'C'
DUE TO A FAILED RELAY DRIVER CARD WHICH
CAUSED A FEEDWATER ISOLATION VALVE TO FAST CLOSE**

The enclosed Licensee Event Report is submitted pursuant to 10CFR50.73(a)(2)(iv) concerning Reactor Protection System, i.e. reactor trip, and Engineering Safety Feature Actuations, i.e. feedwater isolation.


J. D. Blosser
Manager, Callaway Plant

JDB/TPS/MAH/lrj

Enclosure

cc: Distribution attached

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LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) **Callaway Plant Unit 1** DOCKET NUMBER (2) **0 5 0 0 0 4 8 3** PAGE (3) **1 OF 0 4**

TITLE (4) **Reactor Trip On Low Level Steam Generator 'C' Due To A Failed Relay Driver Card Which Caused A Feedwater Isolation Valve To Fast Close**

| EVENT DATE (5) | | | LER NUMBER (6) | | | REPORT DATE (7) | | | OTHER FACILITIES INVOLVED (8) | | | | | | | | | | | | |
|----------------|-----|------|----------------|-------------------|----------|-----------------|-----|------|-------------------------------|---|------------------|---|---|---|---|---|---|---|---|--|--|
| MONTH | DAY | YEAR | YEAR | SEQUENTIAL NUMBER | REV. NO. | MONTH | DAY | YEAR | FACILITY NAMES | | DOCKET NUMBER(S) | | | | | | | | | | |
| 0 | 5 | 2 | 9 | 2 | 0 | 0 | 7 | 0 | 0 | 6 | 2 | 2 | 9 | 2 | 0 | 5 | 0 | 0 | 0 | | |

OPERATING MODE (9) **1** THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR : (Check one or more of the following) (11)

| | | | | | |
|-------------------|-------------------------------------|---------------------|--------------------------|-----------------------|--------------------------|
| 20.402(b) | <input checked="" type="checkbox"/> | 50.73(a)(2)(iv) | <input type="checkbox"/> | 73.71(b) | <input type="checkbox"/> |
| 20.405(a)(1)(i) | <input type="checkbox"/> | 50.73(a)(2)(v) | <input type="checkbox"/> | 73.71(c) | <input type="checkbox"/> |
| 20.405(a)(1)(ii) | <input type="checkbox"/> | 50.73(a)(2)(vi) | <input type="checkbox"/> | OTHER (Specify in | <input type="checkbox"/> |
| 20.405(a)(1)(iii) | <input type="checkbox"/> | 50.73(a)(2)(vii)(A) | <input type="checkbox"/> | Abstract below and in | <input type="checkbox"/> |
| 20.405(a)(1)(iv) | <input type="checkbox"/> | 50.73(a)(2)(vii)(B) | <input type="checkbox"/> | Text, NRC Form 365A) | <input type="checkbox"/> |
| 20.405(a)(1)(v) | <input type="checkbox"/> | 50.73(a)(2)(viii) | <input type="checkbox"/> | | <input type="checkbox"/> |

LICENSEE CONTACT FOR THIS LER (12) **Thomas P. Sharkey, Supervising Engineer, Site Licensing** TELEPHONE NUMBER **3 1 4 6 7 6 - 8 3 3 6**

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

| CAUSE | SYSTEM | COMPONENT | MANUFACTURER | REPORTABLE TO NRC'S | CAUSE | SYSTEM | COMPONENT | MANUFACTURER | REPORTABLE TO NRC'S |
|-------|--------|-----------|--------------|---------------------|-------|--------|-----------|--------------|---------------------|
| X | S | J | | 9 4 | C | 5 | 6 | 0 | N |
| | | | | | | | | | |

SUPPLEMENTAL REPORT EXPECTED (14) YES (if yes, complete EXPECTED SUBMISSION DATE) NO

EXPECTED SUBMISSION DATE (15) MONTH DAY YEAR

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

On 5/23/92, at 1713 CDT, Steam Generator 'C' Feedwater Isolation Valve, AEFV0041, fast closed causing a low level Steam Generator reactor trip and subsequent Feedwater Isolation. The cause was the failure of a relay driver card in the Main Steam and Feedwater Isolation System Train 'A' Cabinet SA075A. The card was replaced. The plant was in Mode 1 at 97% power with the Reactor Coolant System at 585 degrees F and 2230 psig at the time of the trip. The licensed operators responded to the trip per plant procedures.

The plant was returned to Mode 1 - Power Operations at 1142 on 5/26/92. Corrective actions include testing of the relay driver card. An evaluation will be made on options to improve the reliability of the system.

**LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION**

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|--|--|----------------|-------------------|----------|----------|-------|
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| | | YEAR | SEQUENTIAL NUMBER | REV. NO. | OF | PAGES |
| | | 9 2 | 0 0 7 | 0 0 | 0 2 | 0 4 |

TEXT (If more space is required, use additional NRC Form 365A's)(17)

BASIS FOR REPORTABILITY:

On 5/23/92, at 1713 CDT, Steam Generator (S/G) 'C' Feedwater Isolation Valve (FWIV) AEFV0041⁽¹⁾ fast closed, causing a low level S/G reactor trip and subsequent Feedwater Isolation Signal (FWIS)⁽²⁾. There was no detrimental effect on plant equipment as a result of the actuations. There were no abnormal indications or degraded trends in equipment performance observed. This event is reportable per 10CFR50.73(a)(2)(iv) to report the Reactor Protection System and Engineered Safety Feature Actuations.

CONDITION AT TIME OF EVENT:

Mode 1 - Power Operations

97% reactor power

Reactor Coolant System (RCS): Temperature (average) - 585 degrees F;

Pressure - 2230 psig

DESCRIPTION OF EVENT:

On 5/23/92, at 1713 CDT, S/G 'C' FWIV AEFV0041 fast closed, causing a low level S/G reactor trip and subsequent FWIS. No maintenance activities were in progress at the time of the failure. The licensed operators responded to the trip per plant procedures. The plant was returned to Mode 1 - Power Operations at 1142 on 5/26/92.

ROOT CAUSE:

The root cause of the event was the failure of a relay driver card⁽³⁾ in the Main Steam and Feedwater Isolation System (MSFIS) train 'A' cabinet⁽⁴⁾ (SA075A). The cause of failure on this card is currently under investigation.

**LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION**

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TEXT (if more space is required, use additional NRC Form 305A's)(17)

CORRECTIVE ACTIONS:

The relay driver card was replaced. Testing of the relay driver card is being conducted to determine why it failed. An evaluation will be made on options to improve the reliability of the system.

SAFETY SIGNIFICANCE:

This reactor trip was caused by the failure of the relay driver card. The reactor trip system and FWIVs performed as required. There was no detrimental effect on plant equipment as a result of the actuations. Therefore, there was no threat to the public health and safety.

PREVIOUS OCCURRENCES:

There have been two occurrences involving the failure of input buffer cards in the MSFIS cabinets. These events involved the fast closing of FWIVs which resulted in a FWIS and reactor trip. A faulty capacitor was identified as the cause of failure in these cards. The capacitors on MSFIS input buffer cards were upgraded. There have been no subsequent failure of MSFIS input buffer cards. The current investigation of the relay driver card does not indicate a capacitor failure, therefore, corrective action for these two previous occurrences could not have prevented this event.

LER 85-052-00, transmitted on 1/08/85, via ULNRC-1235.

LER 86-022-01, transmitted on 1/30/87, via ULNRC-1438.

FOOTNOTES:

The system and component codes below are from the IEEE Standards 805-1983 and 803A-1983, respectively.

1. System-SJ, Component-ISV
2. System-JC

**LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION**

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

3. System-SJ, Component-94

Manufacturer - Consolidated Controls Corp.

Model Number - 6N232

Serial Number - 129

4. System-SJ, Component-CAB