

LICENSEE EVENT REPORT (LER)

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| FACILITY NAME (1) JAMES A. FITZPATRICK NUCLEAR POWER PLANT | DOCKET NUMBER (2) 0 5 0 0 0 3 3 3 1 | PAGE (3) 1 OF 0 4 |
|--|--|----------------------|

TITLE (4) **Engineered Safety Feature Actuations Due to Trip of Reactor Protection System Power Supply as a Result of Protective Relay Failure**

| 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 4 | 1 8 | 8 8 | 8 8 | 0 0 3 | 0 0 | 0 5 | 1 0 | 8 8 | | | 0 5 0 0 0 |
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|--------------------------------|---|--------------------------|-------------------------------------|---------------------|--|--|--|--|--|--|
| OPERATING MODE (9) N | THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR § (Check one or more of the following) (11) | | | | | | | | | |
| POWER LEVEL (10) 1 0 0 | 20.402(b) | 20.406(a) | <input checked="" type="checkbox"/> | 80.73(a)(2)(iv) | 73.71(b) | | | | | |
| | 20.406(a)(1)(i) | 80.36(a)(1) | <input type="checkbox"/> | 80.73(a)(2)(v) | 73.71(a) | | | | | |
| | 20.406(a)(1)(ii) | 80.36(a)(2) | <input type="checkbox"/> | 80.73(a)(2)(vi) | OTHER (Specify in Abstract below and in Text, NRC Form 306A) | | | | | |
| | 20.406(a)(1)(iii) | 80.73(a)(2)(i) | <input type="checkbox"/> | 80.73(a)(2)(vii)(A) | | | | | | |
| | 20.406(a)(1)(iv) | 80.73(a)(2)(ii) | <input type="checkbox"/> | 80.73(a)(2)(vii)(B) | | | | | | |
| 20.406(a)(1)(v) | 80.73(a)(2)(iii) | <input type="checkbox"/> | 80.73(a)(2)(ix) | | | | | | | |

LICENSEE CONTACT FOR THIS LER (12)

| | |
|---|--------------------------------------|
| NAME W. VERNE CHILDS, SENIOR LICENSING ENGINEER | TELEPHONE NUMBER |
| | AREA CODE: 3 1 5 3 4 9 - 6 3 0 5 |

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

| CAUSE | SYSTEM | COMPONENT | MANUFACTURER | REPORTABLE TO NPROS | CAUSE | SYSTEM | COMPONENT | MANUFACTURER | REPORTABLE TO NPROS |
|-------|--------|-----------|--------------|---------------------|-------|--------|-----------|--------------|---------------------|
| X | E, F | 9 4 | G 0 8 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 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

Abstract

On 4/18/88 at 0500 hours during normal operation at 100% rated power, Reactor Protection System (RPS) Motor Generator (MG) [EF] A tripped when the MG drive motor overload protective relay failed. The trip resulted in isolation of the reactor water cleanup [CE], primary containment [NH] drain, reactor water sample, and reactor building ventilation [VA] systems. Isolation of reactor building ventilation caused an auto start of the standby gas treatment [BH] system.

Operating personnel transferred to alternate power and restored systems to normal within 20 minutes. Replacement of the relay was completed and the MG was restored to service in approximately 12 hours. Systems performed as designed.

Corrective actions were to shift to alternate power, restore effected systems to normal, replace the failed relay, and return the MG to service.

No similar events have been caused by relay failures.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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| FACILITY NAME (1) JAMES A. FITZPATRICK NUCLEAR POWER PLANT | DOCKET NUMBER (2) 0 5 0 0 0 3 3 3 8 8 - 0 0 3 - 0 0 0 2 OF 0 4 | LER NUMBER ID: | | | PAGE (3) | |
| | | YEAR | SEQUENTIAL NUMBER | REVISION NUMBER | | |
| | | | | | | |

TEXT (if more space is required, use additional NRC Form 368A's) (17)

Description of Event

On April 18, 1988 at 0500 hours during normal full power (100% rated) operation, Reactor Protection System (RPS) Motor Generator (MG) A [EF] tripped.

The trip of RPS MG A de-energized one-half of the RPS [JC] logic and one-half of the Primary Containment Isolation System (PCIS) [JM] logic. De-energizing half of the logic causes isolation of the reactor water cleanup [CE], primary containment [NH] drain, reactor water sample, and reactor building [NG] ventilation [VA] systems. Isolation of the reactor building ventilation system causes an automatic starting of the standby gas treatment (SGT) system [BH].

De-energizing one-half of the RPS logic does not cause a reactor scram or main steam [SB] isolation because the design of the logic requires that both halves of the logic must be de-energized to cause a scram or main steam isolation.

Annunciators [IB] provided operating personnel with the necessary information to quickly diagnose the trip of the RPS MG and to restore power to the de-energized circuits from an alternate source within one minute.

The tripped logic circuits were reset, the isolated systems discussed above were restored to normal, and standby gas treatment was restored to standby within 20 minutes.

Following repair of the RPS MG by replacing a failed relay, loads were transferred from the alternate power source to the MG at 1704 hours on April 18, 1988, approximately 12 hours after failure of the relay.

Cause of Event

RPS MG A tripped when the MG drive motor protective relay for motor over current or high temperature de-energized due to an open circuit in the relay coil. The MG drive motor did not actually experience an abnormally high current or temperature condition.

The relay coil failure is considered to be a random or age-related failure. The relay coil is normally energized and had been in service for approximately 13 years. A computer search of the Nuclear Plant Reliability Data (NPRD) system did not indicate frequent or unusual problems associated with relays of the same manufacture and type as the failed relay.

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

Analysis of Event

The components and logic circuits powered by the RPS MG [EF] functioned as designed. RPS [JC] logic and main steam [SB] isolation valve logic did not actuate to cause a reactor scram or isolation of the main steam lines because the logic circuits are designed and arranged in such a manner as to be tolerant of faults such as RPS MG trip.

Isolation of reactor water cleanup [CE], primary containment [NH] drains, reactor water sample, reactor building [NG] ventilation [VA] systems, and initiation of standby gas treatment [BH] do not have any immediate effect on plant operation.

The RPS MG is non-safety-related. The safety-related components and logic circuits powered from the non-safety-related source are protected from over-voltage, under-voltage, and under-frequency by safety-related electrical protection assemblies between the power source and loads. The use of the alternate power supply, which is considered in the design of the plant, does not effect the operation of the Reactor Protection System [JC] or any of the other components that would normally be supplied power from RPS MG A because the alternate source of power is also provided with electrical protective devices that are identical to those in the MG power output circuit.

Corrective Action

Short-Term:

- Transferred power from the tripped RPS MG to the alternate power source.
- Reset tripped logic circuits.
- Restored isolated systems and standby gas treatment to normal.
- Replaced the failed relay and restored loads to the RPS MG.

Long-Term:

- No long-term corrective action is considered necessary.

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

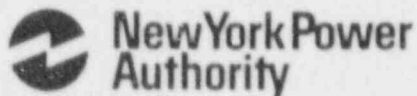
Additional Information

Failed identification:

- Relay Manufacturer: General Electric
- Relay Model Number: CR120AU1102AC
- Manufacturer NPRD Code: G080

Previous similar events: No similar events have been caused by relay failures.

James A. FitzPatrick
Nuclear Power Plant
P.O. Box 41
Lycoming, New York 13093
315 342 3840



Radford J. Converse
Resident Manager

May 10, 1988
JAAP-88-0442

United States Nuclear Regulatory Commission
Document Control Desk
Washington, D.C. 20555

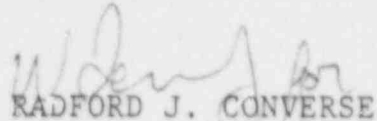
REFERENCE: DOCKET NO. 50-333
LICENSEE EVENT REPORT: 88-003-00

Dear Sir:

Enclosed please find referenced Licensee Event Report in accordance with 10 CFR 50.73.

If there are any questions concerning this report, please contact Mr. W. Verne Childs at (315) 349-6305.

Very truly yours,


RADFORD J. CONVERSE

RJC:WVC:lar

cc: USNRC, Region I (1)
INPO Records Center, Atlanta, GA (1)
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