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) |
|---|---|---|
| Oconee Nuclear Station, Unit 2 | 0 5 0 0 0 2 7 0 | 1 OF 0 3 |

TITLE (4)

Reactor Trip on High Flux Indication

| 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 5 0 0 0 |
| 0 4 | 2 1 | 8 5 | 8 5 | – | 0 0 2 | – | 0 0 | 0 5 | 2 1 | 8 5 | | 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) | | | |
|---|---|---|---|---|---|
| | | 20.402(b) | 20.405(c) | X 50.73(a)(2)(iv) | 73.71(b) |
| POWER LEVEL (10) | 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 |
|---|---|
| | AREA CODE |
| Richard F. Haynes, Licensing | 7 0 4 3 7 3 – 7 1 2 9 |

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 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| X | J C | X T | L 1 3 0 | N | | | | | | | |
| | | | | | | | | | | | |

| 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 April 21, 1985 at 0051 hours, Oconee 2 tripped during zero power physics testing (ZPPT), when Reactor Protection System (RPS) channels A and B sensed a flux level in excess of the setpoint. A malfunction in the power range recorder, which caused a less-than-actual indication of flux, led the operators to exceed the setpoint, causing the trip. A system transient did not occur because of the low power level.

The reactor was restarted in order to continue ZPPT. Prior to proceeding with testing, checks were made on the flux trip setpoints, and the intermediate and power range recorders; all were found to be operating properly. ZPPT was resumed at 0202 hours.

The health and safety of the public were not affected.


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

Description of Occurrence:

Zero Power Physics Testing (ZPPT) was begun on April 20, 1985 following the refueling outage for Oconee 2, Cycle 8. The rod drop test was performed at 1749 hours. The reactor was then reset for performance of the approach to sensible heat portion of ZPPT, which began at 0010 hours on April 21, 1985. In this phase of the testing, a positive startup rate is maintained until a change in the reactor average temperature or the pressurizer level is observed. The change is usually noted at a level between 0.1% and 0.2% of full power, as indicated by the power range recorder.

For the approach to sensible heat portion of the testing, the power range recorder was set on the 0% to 25% scale. Operations personnel observed the recorder as the reactor power was increased, since it was intended to insert rods when a level of 0.2% full power was reached. The reactor tripped at 0051 hours when the flux level exceeded the 0.4% full power setpoint on RPS channels A and B. When the trip occurred, the power range recorder was reading only 0.1% full power, apparently due to a sticking recorder pin indicator.

The reactor was reset at 0054 hours and the appropriate notifications were made. The operation of the intermediate and power range recorders, and the RPS high flux trip setpoints, were investigated in relation to the trip. No problems were identified with any of the equipment, but the chart for the power range recorder showed that the power range indicator apparently had stuck at 0.1% full power. At 0202 hours, the reactor was critical again for a resumption of ZPPT.

Cause of Occurence:

The tripping of the Oconee 2 reactor occurred while personnel were monitoring the power range chart indication of reactor power; the chart record showed that indicated power did not rise above 0.1% full power. Digital trend data taken over the same time interval, however, showed that power exceeded 0.2% full power several seconds prior to the high flux trip at 0.4% full power. This parallel record of power vs. time demonstrates that a problem existed with the power range recorder.

The apparent sticking of the power range recorder was the cause of this incident. An investigation for the recorder found the recorder to be operating properly. However, at the low power level the recorder cannot be accurately checked since the method of calibration the recorder covers the entire 0% to 125% FP range. Leeds and Northrup model WL recorders with a dual range of 0% to 25% and 25% to 125% are used on all three ONS units for the power range recorder. A review of the ONS nuclear maintenance database indicated seven work requests since 1982 on the PR recorders at ONS for sticking problems. A review of past incident reports indicated no previous trips during ZPPT. This incident is considered a nonrecurring event.

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

Analysis of Occurrence:

There was no safety system actuation during the trip. No transient occurred because the reactor was in ZPPT. The Pressure Operated Relief Valve (PORV) and pressurizer code relief valves were not challenged. There were no radioactive releases. The RPS 0.4% Power High Flux trip operated properly.

The power range recorder is used to provide information to operators on reactor power level but is not part of the RPS. A sticking power range recorder pin results in an inaccurate information point to the Operator but does not affect the safe operation of the plant. At normal power levels, a stuck recorder pin is readily detectable because of the reactor power level and the chart speed such that a stuck pin can be freed.

Therefore, the health and safety of the public were not affected by this incident.

Corrective Action:

The immediate corrective action taken was to restart the reactor in order to continue ZPPT. Additional corrective action consisted of checking the power range and intermediate range recorders for proper operation, and ensuring that the high flux trip setpoints were correct and operable. A review of ZPPT procedures will be performed in order to identify possible improvements in the performance of the tests.

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NUCLEAR PRODUCTION

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May 21, 1985

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

Subject: Oconee Nuclear Station, Units 1, 2 and 3
Docket Nos. 50-269, -270, -287
LER 270/85-02

Gentlemen:

Pursuant to 10 CFR 50.73 Sections (a) (1) and (d), attached is Licensee Event Report 270/85-02 concerning a Unit 2 reactor trip on high flux during Zero Power Physics Testing on April 21, 1985. This report is submitted in accordance with §50.73 (a)(2)(iv). This event was considered to be of no significance with respect to the health and safety of the public.

Very truly yours,

H.B. Tucker /1SS

Hal B. Tucker

RFH:slb

Attachment

cc: Dr. J. Nelson Grace, Regional Administrator
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