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October 23, 1990

10 CFR Part 50
Section 50.73

Director of Nuclear Reactor Regulation
U S Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

PRAIRIE ISLAND NUCLEAR GENERATING PLANT
Docket Nos. 50-282 License Nos. DPR-42
50-306 DPR-60

Auto-start of No. 22 Component Cooling Water Pump
While Switching Residual Heat Removal Pumps

The Licensee Event Report for this occurrence is attached.

This event was reported via the Emergency Notification System in accordance with 10 CFR Part 50, Section 50.72, on September 23, 1990. Please contact us if you require additional information related to this event.

Thomas M Parker
Manager
Nuclear Support Services

c: Regional Administrator - Region III, NRC
NRR Project Manager, NRC
Senior Resident Inspector, NRC
MPCA
Attn: Dr J W Ferman

Attachment

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PDR ADOCK 05000306
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LICENSEE EVENT REPORT (LER)

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 500 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (F-330), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (215D-0101), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

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|---|--|--------|--|-----------|--|-------------------|--|-------------------|--|---|-------|--------|-------|-----------|--|--------------|-----------------------|-------------------|--|--|--|-------------------------------|--|-----------|--|--|--|--|--|
| FACILITY NAME (1) Prairie Island Nuclear Generating Plant Unit 2 | | | | | | | | | | DOCKET NUMBER (2) 0 5 0 0 0 3 0 6 1 OF 0 3 | | | | | | | | | | PAGE (3) 1 | | | | | | | | | |
| TITLE (4) Auto-start of No. 22 Component Cooling Water Pump While Switching Residual Heat Removal Pumps | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EVENT DATE (5) | | | | | LER NUMBER (6) | | | | | REPORT DATE (7) | | | | | OTHER FACILITIES INVOLVED (8) | | | | | | | | | | | | | | |
| MONTH | | DAY | | YEAR | | SEQUENTIAL NUMBER | | REVISION NUMBER | | | MONTH | | DAY | | YEAR | | FACILITY NAMES | | | | | DOCKET NUMBER(S) | | | | | | | |
| | | | | | | | | | | | | | | | | | Prairie Island Unit 1 | | | | | 0 5 0 0 0 2 8 2 | | | | | | | |
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| OPERATING MODE (9) | | | | | THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 51 (Check one or more of the following) (11) | | | | | | | | | | | | | | | | | | | | | | | | |
| N | | | | | 20.402(b) | | | | | 20.406(c) | | | | | XX 50.73(a)(2)(iv) | | | | | 73.71(b) | | | | | | | | | |
| POWER LEVEL (10) | | | | | 20.403(a)(1)(ii) | | | | | 50.38(a)(1) | | | | | 50.73(a)(2)(iv) | | | | | 73.71(a) | | | | | | | | | |
| 1 0 | | | | | 20.402(a)(1)(ii) | | | | | 50.38(a)(2) | | | | | 50.73(a)(2)(vi) | | | | | OTHER (Specify in Abstract below and in Text, NRC Form 366A) | | | | | | | | | |
| | | | | | 20.403(a)(1)(iii) | | | | | 50.73(a)(2)(i) | | | | | 50.73(a)(2)(vii)(A) | | | | | | | | | | | | | | |
| | | | | | 20.403(a)(1)(iv) | | | | | 50.73(a)(2)(ii) | | | | | 50.73(a)(2)(vii)(B) | | | | | | | | | | | | | | |
| | | | | | 20.406(a)(1)(iv) | | | | | 50.73(a)(2)(iii) | | | | | 50.73(a)(2)(k) | | | | | | | | | | | | | | |
| LICENSEE CONTACT FOR THIS LER (12) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NAME | | | | | | | | | | | | | | | TELEPHONE NUMBER | | | | | | | | | | | | | | |
| Arne A Hunstad | | | | | | | | | | | | | | | AREA CODE 6 1 2 3 18 8 - 1 1 1 2 1 | | | | | | | | | | | | | | |
| 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 | | CAUSE | | SYSTEM | | COMPONENT | | | | | |
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| SUPPLEMENTAL REPORT EXPECTED (14) | | | | | | | | | | | | | | | EXPECTED SUBMISSION DATE (15) | | | | | | | | | | | | | | |
| YES (If yes, complete expected submission date) | | | | | | | | | | | | | | | XX NO | | | | | | | | | | | | | | |
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LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 500 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (F-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)

DOCKET NUMBER (2)

LER NUMBER (6)

PAGE (3)

Prairie Island Unit 2

0 5 0 0 0 3 0 6 9 0 0 0 8 0 0 0 2 OF 0 3

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

EVENT DESCRIPTION

On September 23, 1990 Unit 2 was in cold shutdown for refueling. Decay heat was being removed by use of one train of the residual heat removal system (EIIS System Code: BP). Control room operators were in the process of switching to the other Residual Heat Removal train for decay heat removal. Both component cooling water pumps (EIIS System Code: CC) (EIIS Component Code: P) were running to support the switchover. After the switchover was completed, the operator tried to stop No. 22 Component Cooling Water Pump. The operator held the control switch for No. 22 Component Cooling Water Pump in the stop position until discharge pressure had stabilized in accordance with guidance issued after the last event, Unit 1 LER 1-90-009. When the control switch (EIIS Component Code: HC) was released, at 1010, No. 22 Component Cooling Water Pump restarted automatically. This was a non-ESF actuation of ESF equipment.

CAUSE OF THE EVENT

Cause of the event was an attempt to stop No. 22 Component Cooling Water Pump while an auto-start signal was present.

ANALYSIS OF THE EVENT

Normal discharge pressure with both component cooling water pumps running is about 110 psig. When one of the two pumps is shut down, the discharge pressure sometimes momentarily drops below 65 psig, which is the low pressure actuation setpoint for the pump.

As a result of this event, the discharge pressure switch for No. 22 Component Cooling Water Pump was tested. The actuation setpoint was found to be at 65 psig and the reset at 75 psig, which is proper for this switch.

A test was conducted to repeat the conditions leading to the auto-start. It was found that with No. 22 Residual Heat Removal heat exchanger in service, and after stopping No. 22 Component Cooling Water Pump, No. 21 Component Cooling Water Pump does not supply adequate pressure to reset the low pressure actuation signal. When No. 22 Component Cooling Water Pump was shut down, pressure momentarily decreased to about 65 psig and leveled off at about 72 psig, which is below the reset setpoint of the pressure switch (EIIS Component Code: PDS). When the control switch was released, the pump restarted automatically because the low pressure auto-start signal was still present.

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FACILITY NAME (1)

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LER NUMBER (5)

PAGE (3)

Prairie Island Unit 2

0 5 0 0 0 3 0 6 9 0 — 0 0 8 — 0 0 0 3 OF 0 3

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

As a result of the previous similar event, Unit 1 LER 90-009, guidance was provided the operator that stated that the pump control switch should be held in the stop position until system pressure stabilized since it was believed at the time that pressure oscillations caused pressure switch actuation. The corrective action was not adequate to prevent this event.

During the event, all equipment operated as designed. The automatic start of the standby component cooling water pump ensured that all safety-related components requiring component cooling water were provided with adequate pressure and flow to perform their required functions; health and safety of the public were unaffected. Since this event involved the automatic start of an engineered safety feature component, it is reportable pursuant to 10 CFR 50.73(a)(2)(iv).

CORRECTIVE ACTION

System and component testing was done as outlined above. The testing showed that heat removal capacity was adequate in each equipment configuration, but in certain configurations, an auto-start of a component cooling water pump may result.

Procedures will be revised to prevent equipment configurations that can result in recurrence of this event.

FAILED COMPONENT IDENTIFICATION

None.

PREVIOUS SIMILAR EVENTS

Automatic component cooling water pump starts have been reported as Unit 1 LER's 85-007, 87-020, 89-001 and 90-009; only LER 90-009 had a similar cause.