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SUBJECT: LER 89-035:00:on 890817,reactor scram during ADS surveillance testing - personnel error.

W/8 ltr.

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A10 of 11

WASHINGTON PUBLIC POWER SUPPLY SYSTEM

*P.O. Box 968 • 3000 George Washington Way • Richland, Washington 99352*

Docket No. 50-397

September 13, 1989

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

Subject: NUCLEAR PLANT NO. 2
LICENSEE EVENT REPORT NO. 89-035

Dear Sir:

Transmitted herewith is Licensee Event Report No. 89-035 for the WNP-2 Plant. This report is submitted in response to the report requirements of 10CFR50.73 and discusses the items of reportability, corrective action taken, and action taken to preclude recurrence.

Very truly yours,

C. M. Powers (M/D 927M)
WNP-2 Plant Manager

CMP:lr

Enclosure:
Licensee Event Report No. 89-035

cc: Mr. John B. Martin, NRC - Region V
Mr. C. J. Bosted, NRC Site (M/D 901A)
INPO Records Center - Atlanta, GA
Ms. Dottie Sherman, ANI
Mr. D. L. Williams, BPA (M/D 399)

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NRC Form 366
(9-83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/88

# LICENSEE EVENT REPORT (LER)

| FACILITY NAME (1) | DOCKET NUMBER (2) | PAGE (3) |
|---|---|---|
| Washington Nuclear Plant - Unit 2 | 0 5 0 0 0 3 9 7 | 1 OF 0 4 |

TITLE (4) Reactor Scram During Automatic Depressurization System (ADS) Surveillance Testing - Personnel Error

| 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 8 | 1 7 | 8 9 | 8 9 | 0 3 5 | 0 0 | 0 9 | 1 3 | 8 9 | | 0 5 0 0 0 |
| | | | | | | | | | | 0 5 0 0 0 |

| OPERATING MODE (9) | 1 |
|---|---|
| POWER LEVEL (10) | 0 6 7 |

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) |
| | 20.405(a)(1)(i) | | 50.36(c)(1) | | 50.73(a)(2)(v) |
| | 20.405(a)(1)(ii) | | 50.36(c)(2) | | 50.73(a)(2)(vii) |
| | 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) |

| | |
|---|---|
| | 73.71(b) |
| | 73.71(c) |
| | OTHER *(Specify in Abstract below and in Text, NRC Form 366A)* |

LICENSEE CONTACT FOR THIS LER (12)

| NAME | TELEPHONE NUMBER |
|---|---|
| C. L. Fies, Compliance Engineer | AREA CODE 5 0 9 3 7 7 - 2 5 0 1 EXT 2039 |

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 |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
| | | | | | | | | | |

| 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)


At 0819 hours, on August 17, 1989, a reactor scram occurred during a surveillance being performed on a reactor level instrument associated with the Automatic Depressurization System (ADS). The scram occurred when an I&C technician prematurely opened the isolation valve from the reference instrument leg of the device being tested. This caused a pressure transient in the reference and variable instrument lines which initiated a reactor scram by the Reactor Protection System (RPS) on reactor water level low - Level 3. The root cause of this event was a personnel error and equipment design deficiency. Immediate corrective action included plant shut down to hot standby and a memo from the Plant Maintenance Manager summarizing immediate corrective actions. Further corrective action includes improved training and increased visibility for "Critical" surveillances. A design study will also be initiated to evaluate the design of the level trip system and its interfacing instrumentation. Since all safety systems operated as designed and plant operators acted promptly to place the plant in a safe shutdown condition, this event posed no threat to the health and safety of the plant personnel or the public.

| FACILITY NAME (1) | DOCKET NUMBER (2) | LER NUMBER (6) | | | PAGE (3) |
|---|---|---|---|---|---|
| | | YEAR | SEQUENTIAL NUMBER | REVISION NUMBER | |
| Washington Nuclear Plant - Unit 2 | 0 5 0 0 0 3 9 7 | 8 9 | — 0 3 5 | — 0 0 | 0 2 OF 0 4 |

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

## Plant Conditions

a) Plant Mode - 1 (Power Operation)
b) Power Level - 67%

## Event Description

At 0819 hours on August 17, 1989, the reactor protection system (RPS) initiated a reactor scram on reactor vessel water level - Low, Level 3. The scram occurred during surveillance testing of the ADS Trip System A, reactor water level low - Level 3 Channel Functional Test (CFT)/Channel Calibration (CC). This test involves the functional test of level indicating switch MS-LIS-38A. The testing had proceeded through the isolation and functional check of the instrument and the technicians were in the process of valving the instrument back into service. At this time, an I&C technician opened the isolation valve from the reference instrument leg (which was at reactor pressure) to the instrument (MS-LIS-38A) which was depressurized. This caused a pressure transient throughout the variable instrument line (N13A) and the reference instrument line (N14D). The pressure transient impacted level indicating switch MS-LIS-24B which shares both a common variable and reference leg with MS-LIS-38A. Further, the pressure transient affected MS-LIS-24A which has a common variable leg with both MS-LIS-24B and MS-LIS-38A. The pressure transient activated MS-LIS-24A and B causing a scram signal to RPS subchannels A1 and B1.

## Immediate Corrective Action

The Plant responded in accordance with design and Plant Operators placed it in the hot standby condition. An immediate corrective action memo was issued by the Plant Maintenance Manager summarizing immediate corrective actions being taken by the Maintenance Department. This included more involvement of supervision in surveillance testing.

## Further Evaluation and Corrective Action

A. Further Evaluation

1. This event is being reported as an event that resulted in automatic actuation of an engineered safety feature per the requirements of 10CFR50.73(A)(2)(iv).

2. The root causes of this event was personnel related caused by lack of attention/concentration and misunderstood verbal communication. Lack of attention/concentration was involved since the opening of the isolation valve on instrument rack P026 without the pressures equalized was not in accordance with the procedure. The valve opened was painted red to indicate it was a device which could cause a reactor scram. This had been a corrective action resulting from a previous reactor scram that had

occurred during surveillance testing. Another root cause of the event was the misunderstood verbal communication between I&C technicians. This surveillance was being performed in a contaminated area and required communication between the individual inside the area who was manipulating the equipment and the individual outside the area who had a copy of the procedure and communicated with the control room. The event occurred when the I&C technician inside the contaminated area misunderstood a conversation between the technician outside the area and the control room.

3. A contributing factor to the event was equipment design which allows a reactor scram to be initiated as a result of a single error during the performance of surveillance testing. The sharing of the variable leg by all three instruments involved, creates a situation where single errors can initiate a reactor scram.

4. There were no plant structures, components, or systems inoperable at the start of this event that contributed to the event.

B. Further Corrective Action

1. I&C supervision has developed a plan for further corrective action including:

   a. Identifying "Critical" surveillance procedures to Operations and Maintenance personnel to allow appropriate precautions to be taken during performance of the surveillance.

   b. Development of a work practice training program for I&C Technicians.

   c. Evaluation of the need for permanent additional supervision during testing activities.

   d. Evaluate the need for a dedicated team for surveillance testing.

2. An Engineering study will be performed to evaluate the design/equipment of the system to see if a practical fix can be identified to prevent reactor scrams as a result of a single error during surveillance testing.

Safety Significance

The plant operators reacted correctly to promptly bring the plant to a safe shutdown condition. All Reactor Protection System actions occurred in accordance with design requirements. Accordingly, this event posed no threat to the health and safety of the public or plant personnel.

## Similar Events

Two previous scrams occurred due to common sensing line perturbations. These are documented in LERs 85-016 and LER 85-053. The design of the system allows a single error to result in a reactor scram.

## EIIS Information

| Text Reference | EIIS Reference | |
|---|---|---|
| | System | Component |
| Automatic Depressurization System (ADS) | SB | -- |
| Reactor Protection System (RPS) | JC | -- |
| MS-LIS-38A | SB | LIS |
| MS-LIS-24B | SB | LIS |
| MS-LIS-24A | SB | LIS |