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SUBJECT: LER 89-036-00:on 890905,inadequate APRM Tech Spec surveillance.

W/8 ltr.

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WASHINGTON PUBLIC POWER SUPPLY SYSTEM

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Docket No. 50-397

October 3, 1989

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

Subject: NUCLEAR PLANT NO. 2
LICENSEE EVENT REPORT NO. 89-036

Dear Sir:

Transmitted herewith is Licensee Event Report No. 89-036 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. 89-036

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) Inadequate Average Power Range Monitor (APRM) Technical Specification Surveillance

| 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 9 | 0 5 | 8 9 | 8 9 | 0 3 6 | 0 0 | 1 0 | 0 3 | 8 9 | | 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) | | | |
|---|---|---|---|---|---|
| POWER LEVEL (10) | 7 0 5 | 20.402(b) | 20.405(c) | 50.73(a)(2)(iv) | 73.71(b) |
| | | 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) | X 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 |
|---|---|
| C. L. Fies, Compliance Engineer | AREA CODE 5 0 9 — 3 7 7 - 2 5 0 1 EXT 2 0 3 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 |
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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 1215 hours, on September 5, 1989, the Plant Operating Committee (POC) reviewed a inconsistency documented by the Average Power Range Monitor (APRM) Plant System Engineer between the WNP-2 Plant Technical Specification (Table 3.3.1-2, Item 2b) and the implementing Plant surveillance procedures (PPMs 7.4.3.1.3.5, .6, .7, and .8). The technical specification requires that the Reactor Protection System (RPS) response time for the APRM flow biased simulated thermal power upscale function be confirmed to be less than or equal to 0.09 seconds not including the simulated thermal power time constant of 6 + 1 seconds. The WNP-2 surveillance procedures did not provide for independent measurement of these two values. The plant surveillance procedure required the measured time response to be less than or equal to 7.09 seconds. The POC concluded the Plant was not in strict compliance with the technical specification and directed that the required technical specification action be initiated to place the plant in at least startup by 1830 hours. At 1307 hours, a written request was made to the NRC for temporary relief from the technical specification requirements. This relief was granted at 1620 hours. Further review of this issue resulted in a formal request for an amendment to the technical specifications which was received on September 8, 1989. The root cause of this event was less than adequate surveillance procedures on response time testing of the APRM system.

Corrective action includes a study to review the technical specification requirements and the associated surveillance procedures for accuracy and consistency.

This event posed no threat to the health and safety of either the public or plant personnel.

Plant Conditions

Power Level - 70.5%
Plant Mode - 1 (Power Operation)

Event Description

At 1215 hours, on September 5, 1989, the Plant Operating Committee (POC) reviewed a discrepancy documented by a Problem Evaluation Request (PER) involving an inconsistency between the WNP-2 Plant Technical Specification 3.3.1 and the implementing plant surveillance procedures. This inconsistency was discovered by the Average Power Range Monitor (APRM) Plant System Engineer during the biennial review of the surveillance procedure. This specific requirement in the technical specification is contained in Table 3.3.1-2, Item 2b, which concerns the response time testing for the APRM flow biased simulated thermal power upscale function. The technical specification requires that this Reactor Protection System (RPS) response time be confirmed to be less than or equal to 0.09 seconds not including the simulated thermal power time constant of 6 $\pm$ 1 seconds. The present WNP-2 surveillance procedures, PPM 7.4.3.1.3.5, .6, .7 and .8 do not provide for independent measurement of these two values. The plant surveillance procedure required the measured time response to be less than or equal to 7.09 seconds.

At 1230 hours, the Plant Manager directed that all APRM Flow biased channels be declared inoperable and the Action Statement of Technical Specification paragraph 3.3.1 be implemented. The applicable Action Statement requires that the Plant be in at least Plant Mode 2 (startup) within 6 hours. At this time, the plant was operating at reduced power because of an inoperable feedwater pump. The Plant Operations personnel responded by reducing recirculation flow and inserting control rods reducing reactor power to 31% by 1630 hours. Just prior to that time, at 1620 hours, the NRC staff granted relief from the Technical Specification requirements. The reactor was returned to 70% power at 1840 hours.

Immediate Corrective Action

The Plant Manager directed that a request for temporary relief from the technical specification surveillance requirement (4.3.1.3, Table 3.3.1-2, Item 2.b) be submitted to the NRC. The NRC staff granted relief to allow continued operations at 1620 hours by telephone.

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

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

## Further Evaluation and Corrective Action

### A. Further Evaluation

1. This event is being reported as a "Deviation from the Plant's Technical Specifications" per the requirements of 10CFR50.73(a)(2)(i)(B).

2. There were no structures, components or systems that were inoperable prior to the start of this event which contributed to the event.

3. Further evaluation shows that the flow-biased trip is not relied upon to establish the MCPR operating limits. Only the 118% high flux (non-flow referenced) trip function is considered in these analysis. Initially, the flow referenced trip utilized APRM flux to correlate to the thermal power level. This was satisfactory for steady-state operation but was found to cause unnecessary trips during some non-steady-state conditions. As a result, a change was made in BWRs to reference the neutron flux to a variable similar to the thermal power. This was accomplished by adding to the APRM output signal a time constant representative of the fuel dynamics to obtain a signal that approximates the average heat flux. In 1976, General Electric recommended installation of this feature in those plants that did not already have it installed. A time constant of 6 seconds was selected for WNP-2. With this long time constant added to the APRM signal, the 0.09 second RPS response time value was no longer of significance. The 0.09 second RPS response time for the 118% high flux trip is significant and is confirmed by surveillance procedures.

4. A subsequent emergency Technical Specification change submittal requested the Commission to change the surveillance acceptance criterion to $6 \pm 1$ seconds. This change was granted on September 8, 1989.

5. The cause of this event was determined to be a problem caused by less than adequate surveillance procedures to carry out the intent of the technical specifications. The root cause of the event was personnel related caused by inadequate attention to detail during surveillance procedure preparation.

### B. Further Corrective Action

A previously committed effort is currently underway to review technical specification requirements and associated surveillance procedures for accuracy and consistency.

This overall review is augmented by supporting reviews being performed on this subject. For example, an internal Supply System Safety System Functional Inspection is underway on the AC Electrical Distribution System. One of the tasks of this SSFI compared the Technical Specification to the surveillance procedures for Division 1 and Division 2 items with no significant findings.

## Safety Significance

There is no safety significance associated with this failure to comply with the technical specifications as written.

The time constant, plus RPS response time (the overall value), was being measured and maintained by the surveillance test. Therefore, the system was capable of performing its safety function throughout the event period. Accordingly, this event poses no threat to the health and safety of either the public or plant personnel.

## Similar Events

LER 89-008 is a similar event in that it involved a conflict between the technical specifications and the surveillance procedure. Since this is a recent LER, the corrective action proposed is still underway and applies to both LERs.

## EIIS Information

| Text Reference | EIIS Reference | |
|---|---|---|
| | System | Component |
| Average Power Range Monitor (APRM) System | IG | -- |
| Reactor Protection System (RPS) | JC | -- |