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 FACIL:50-397 WPPSS Nuclear Project, Unit 2, Washington Public Powe 05000397
 AUTH.NAME AUTHOR AFFILIATION
 SWANK,D.A. Washington Public Power Supply System
 BAKER,J.W. Washington Public Power Supply System
 RECIP.NAME RECIPIENT AFFILIATION

SUBJECT: LER 92-013-01:on 920318,annunciator for RHR B/C VLV open
 permissive found lit & RHR pressure switch found isolated
 during startup.Cause not determined.Pressure switch returned
 to svc & annunicator & permissive cleared.W/920514 ltr.

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 TITLE: 50.73/50.9 Licensee Event Report (LER), Incident Rpt, etc.

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| | NRC PDR | | 1 | 1 | | NSIC MURPHY,G.A | | 1 | 1 |
| | NSIC POORE,W. | | 1 | 1 | | NUDOCS FULL TXT | | 1 | 1 |

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WASHINGTON PUBLIC POWER SUPPLY SYSTEM

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

May 14, 1992
G02-92-122

Docket No. 50-397

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

**SUBJECT: NUCLEAR PLANT WNP-2, OPERATING LICENSE NPF-21
LICENSEE EVENT REPORT NO. 92-013-01**

Transmitted herewith is Licensee Event Report No. 92-013-01 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.

Sincerely,



J. W. Baker
WNP-2 Plant Manager (Mail Drop 927M)

Enclosure

cc: Mr. John B. Martin, NRC - Region V
Mr. C. Sorensen, NRC Resident Inspector (Mail Drop 901A, 2 Copies)
INPO Records Center - Atlanta, GA
Mr. D. L. Williams, BPA (Mail Drop 399)

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11

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)

Washington Nuclear Plant - Unit 2

DOCKET NUMBER (2)

0 5 0 0 0 3 9 7

PAGE (3)

1 OF 5

TITLE (4)

Residual Heat Removal Pressure Switch Found Isolated During Startup

| 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 NUMBERS(S) | | | | | | | | | | | | | | | | | | |
| 0 | 3 | 1 | 8 | 9 | 2 | 9 | 2 | -- | 0 | 1 | 3 | -- | 0 | 1 | 0 | 5 | 1 | 4 | 9 | 2 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 |

OPERATING MODE (9) 2 THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)

| | | | | | | | |
|------------------|---|---|---|-------------------|------------------|----------------------|--|
| POWER LEVEL (10) | 0 | 0 | 0 | 20.402(b) | 20.405(c) | 50.73(a)(2)(iv) | 77.71(b) |
| | | | | 20.405(a)(1)(i) | 50.36(c)(1) | 50.73(a)(2)(v) | 73.73(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 |
|----------------------------------|---------------------------------|
| D. A. Swank, Compliance Engineer | AREA CODE 5 0 9 3 7 7 - 4 4 5 1 |

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

| CAUSE | SYSTEM | COMPONENT | MANUFACTURER | REPORTABLE TO NRPDS | CAUSE | SYSTEM | COMPONENT | MANUFACTURER | REPORTABLE TO NRPDS |
|-------|--------|-----------|--------------|---------------------|-------|--------|-----------|--------------|---------------------|
| | | | | | | | | | |
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SUPPLEMENTAL REPORT EXPECTED (14)

EXPECTED SUBMISSION DATE (15)

MONTH DAY YEAR

☐ YES (If yes, complete EXPECTED SUBMISSION DATE) ☒ NO

ABSTRACT (16)

On March 18, 1992, with main steam pressure at 913 psig, a Control Room Operator found annunciator "RHR B/C INJECTION VLV OPEN PERMISSIVE" lit. This permissive and the associated annunciator should have cleared, due to a reset of the associated pressure switch, shortly after main steam pressure exceeded 470 psig. Pressure switch MS-PS-413D was found isolated. The pressure switch was returned to service and the annunciator and permissive cleared. This pressure switch provides a permissive to allow opening injection valve RHR-V-42C. The pressure switch also prevents opening the injection valve when main steam pressure is above 470 psig. Technical Specification 4.3.3 requires that this permissive have a trip setpoint of greater than or equal to 470 psig on decreasing main steam pressure.

The permissive logic to allow opening of RHR-V-42C was satisfied during this event since MS-PS-413D was isolated in the tripped condition. Valve RHR-V-42C could have been opened with main steam pressure greater than 470 psig, but check valve RHR-V-41C provides redundant RHR system isolation. The pressure switch was isolated for only 16 hours after entering Operational Condition 2, and was found approximately 1.5 hours after exceeding 470 psig. This event is deemed to have had no safety significance. This event posed no threat to the health and safety of either the public or Plant personnel.

The root cause of this event is indeterminate. The Supply System will perform a Technical Assessment of valve mispositioning in an attempt to identify potential causes and corrective actions. In addition, self checking techniques instruction will be provided to the Operations and Instrumentation and Controls (I&C) personnel. The I&C Shop Practices Manual will include direction on the use of Instrument Work Sheets instead of Component Status Change Orders.

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|---|--|---|--|--|--|-----------------------|----------------------------|--------------------------|-----------------|----|---|--|
| LICENSEE EVENT REPORT (LER) TEXT CONTINUATION | | | | | | | | | | | | |
| FACILITY NAME (1) Washington Nuclear Plant - Unit 2 | | DOCKET NUMBER (2) 0 5 0 0 0 3 9 7 | | | | LER NUMBER (8) | | | PAGE (3) | | | |
| | | | | | | Year 9 2 | Number 0 1 3 | Rev. No. 0 1 | | | | |
| TITLE (4) Residual Heat Removal Pressure Switch Found Isolated During Startup | | | | | | | | | 2 | OF | 5 | |

Plant Conditions

Power Level - 0%

Plant Mode - 2 (Startup/Hot Standby)

Event Description

During a reactor startup on March 18, 1992, with main steam pressure at 913 psig, a Control Room Operator found annunciator "RHR B/C INJECTION VLV OPEN PERMISSIVE" lit. Technical Specification 4.3.3 requires that this permissive have a trip setpoint of greater than or equal to 470 psig on decreasing main steam pressure. This permissive and the associated annunciator should have cleared, due to a reset of the RHR-PS-413D trip, shortly after main steam pressure exceeded 470 psig.

Immediate Corrective Action

A Plant Instrument Technician was sent to investigate and found pressure switch MS-PS-413D, associated with the RHR "C" train, isolated from service. The Technician returned the pressure switch to service, and the annunciator and permissive cleared as required.

Further Evaluation and Corrective Action

A. Further Evaluation

Pressure switch MS-PS-413D is set to trip on decreasing main steam line pressure greater than 470 psig. This switch provides a permissive to allow opening of Residual Heat Removal (RHR) to reactor vessel injection valve RHR-V-42C when main steam pressure is less than 470 psig. This valve is used in the Low Pressure Coolant Injection (LPCI) mode of RHR operation. MS-PS-413D was found isolated. The pressure at the isolated switch was low enough that the switch was tripped, the permissive logic was satisfied, and the valve could have opened if called upon to do so. However, this means that RHR-V-42C would have opened at reactor pressures greater than 470 psig if a LPCI injection demand occurred. RHR-V-42C provides isolation of the RHR system from the reactor at reactor pressure greater than 470 psig, and remained closed throughout this event. A second isolation valve, check valve RHR-V-41C located between the reactor vessel and RHR-V-42C, also provides RHR system isolation.

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| TITLE (4) Residual Heat Removal Pressure Switch Found Isolated During Startup | | | | | | | | | 3 | OF | 5 | |

Technical Specification 3.0.4 states that the Limiting Condition for Operation must be met, without reliance on the Action requirements, prior to entry into an Operational Condition. Pressure switch MS-PS-413D was required to be operable for entry into Operational Condition 2. Entry into Operational Condition 2, from Operational Condition 4, at 0415 hours on March 18, 1992, with MS-PS-413D valved out of service was a condition prohibited by the Technical Specifications and is reportable pursuant to the requirements of 10CFR50.73(a)(2)(i)(B). MS-PS-413D is not required to be operable in Operational Condition 4. This condition was corrected at 1957 hours on March 18, 1992.

A review of past work on the pressure switch revealed that the switch was isolated twice during the forced outage that ended on March 18, 1992. On February 27, 1992, the pressure switch was calibrated using surveillance procedure PPM 7.4.3.3.1.34. The calibration includes an independent verification of proper return to service of the pressure switch by a second Instrument Technician. On March 5, 1992, excess flow check valve (EFC) testing was performed using procedure PPM 7.4.6.3.4.1G. The EFC test procedure includes isolation and de-isolation of the pressure switch. The procedure requires an independent verification of re-opening of the single valve used for isolation of the pressure switch.

The Root Cause Analysis of this event included a review of other procedures, logs, etc. in an effort to determine when the pressure switch may have been isolated or left isolated. The root cause for this instrument isolation is indeterminate. No supportable evidence was found to identify the cause of the isolation. It is possible, however, that less than adequate self checking practices of Plant personnel may have been a factor.

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

B. Further Corrective Action

A Technical Assessment of valve mispositioning events of the past few years at WNP-2 will be conducted. This Assessment will include a review of Plant work practices, procedures, etc., to attempt to gain a better understanding of this problem, potential causes, and possible solutions. A team will be assigned to perform this Assessment. This Assessment will be completed by September 30, 1992.

Training on effective methods for self checking will be provided to the Operations and Instrumentation and Controls personnel by October 31, 1992. This effort is based on similar programs that have proven effective at several other nuclear plants.

As discussed in the similar events section below, the Component Status Change Order (CSCO) process was included in the I&C Department Work Practices Guide and use of the process was discussed at shop meetings as a corrective action. However, based on an informal review of CSCO usage, it appears that utilization of CSCOs is not consistent. The CSCO is an Operations procedure. The I&C

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| LICENSEE EVENT REPORT (LER) TEXT CONTINUATION | | | | | | | |
| FACILITY NAME (1) Washington Nuclear Plant - Unit 2 | DOCKET NUMBER (2) 0 5 0 0 0 3 9 7 | LER NUMBER (8) | | | PAGE (3) | | |
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| | | 9 2 | 0 1 3 | 0 1 | 4 | OF | 5 |
| TITLE (4) Residual Heat Removal Pressure Switch Found Isolated During Startup | | | | | | | |

personnel are more familiar with Instrument Work Sheets. The I&C Shop Practices Manual will include direction for use of the Instrument Work Sheet, instead of the CSCO, when instrument valve manipulations are performed outside of a procedure requiring step by step signoffs. Necessary changes to the Shop Practices Manual, and training for the I&C Technicians, will be completed by October 30, 1992.

Safety Significance

Pressure switch MS-PS-413D was isolated in a condition that provided the permissive for valve RHR-V-42C to open if required. The opening function of the valve was therefore not affected. The valve could, however, have opened at a reactor pressure greater than 470 psig. Isolation of the RHR system from the reactor is also provided by check valve RHR-V-41C which is located between RHR-V-42C and the reactor. RHR-V-41C is leak tested at least every 18 months to ensure isolation capability, and is stroke tested in accordance with the Pump and Valve Inservice Test Program Plan requirements to further ensure operability. The leakage limit, as required by Technical Specification 3.4.3.2, is the same for both valves. Thus, the RHR system was protected from an overpressure condition.

RHR-V-42C is a normally closed valve that would open only on a LPCI initiation signal. The LPCI initiation occurs on either a low-low reactor level or high drywell pressure. These conditions are indicative of a LOCA. Pressure switch MS-PS-413D provides a permissive which keeps RHR-V-42C closed until reactor pressure has decreased to below the RHR system design pressure, 500 psig.

The permissive logic to allow opening of RHR-V-42C was satisfied during this event since MS-PS-413D was isolated in the tripped condition. The system isolation logic function for RHR-V-42C was not met, but it is redundant to system isolation provided by RHR-V-41C. RHR-V-42C remained closed and provided the required isolation throughout this event. The pressure switch was isolated for only 16 hours while the Plant was in a condition where it was required to be operable, and was isolated for approximately 1.5 hours after exceeding 470 psig. This event is deemed to have had no safety significance.

Similar Events

LERs 91-034 and 89-037 documented separate instances where a single differential pressure indicating switch was found isolated. The root cause for both of these LERs was indeterminate. Use of the CSCO process was mandated as a result of LER 91-034 and is discussed in the corrective action section of this LER.

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| TITLE (4) Residual Heat Removal Pressure Switch Found Isolated During Startup | | | | | | | | | | | 5 OF 5 | | |

EIIS Information

Text Reference

EIIS Reference

| | <u>System</u> | <u>Component</u> |
|---------------------------------------|---------------|------------------|
| MS-PS-413D | BO | 63 |
| Residual Heat Removal (RHR) | BO | -- |
| RHR-V-42C | BO | INV |
| Low Pressure Coolant Injection (LPCI) | BO | -- |
| RHR-V-41C | BO | ISV |
| Primary Containment | NH | -- |