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RECIP.NAME RECIPIENT AFFILIATION

SUBJECT: LER 91-034-00:on 911123,residual heat removal sys differential pressure indicating switch found isolated.Cause indeterminate.Surveillance completed.RHR-DPIS-12B restored to svc.W/911218 ltr.

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

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WASHINGTON PUBLIC POWER SUPPLY SYSTEM

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

December 18, 1991
G02-91-230

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

Subject: NUCLEAR PLANT NO. 2
LICENSEE EVENT REPORT NO. 91-034

Dear Sir:

Transmitted herewith is Licensee Event Report No. 91-034 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,

J. W. Baker
WNP-2 Plant Manager

JWB:ac

Enclosure:
Licensee Event Report No. 91-034

cc: Mr. John B. Martin, NRC - Region V
Mr. C. Sorensen, NRC Resident Inspector (M/D 901A)
INPO Records Center - Alanta, GA
Ms. Dottie Sherman, ANI
Mr. D. L. Williams, BPA (M/D 399)
NRC Resident Inspector - walk over copy

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NRC FORM 366 (6-89) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104
EXPIRES: 4/30/92

ESTIMATED BURDEN PER RESPONSE TO COMPLY WTH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-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.

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 5

TITLE (4) Residual Heat Removal (RHR) System Differential Pressure Indicating Switch Found Isolated During Surveillance Test - Cause Indeterminate

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
1 1	2 3	9 1	9 1	— 0 3 4 —	0 0	1 2	1 8	9 1		0 5 0 0 0

OPERATING MODE (9): 1

POWER LEVEL (10): 0 6 5

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)	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
J. D. Arbuckle, Compliance Engineer	AREA CODE 5 0 9 — 3 7 7 - 4 1 4 5

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

CAUSE	SYSTEM	COMPONENT	MANUFAC-TURER	REPORTABLE TO NPRDS	CAUSE	SYSTEM	COMPONENT	MANUFAC-TURER	REPORTABLE TO NPRDS

SUPPLEMENTAL REPORT EXPECTED (14)

[ ] YES *(If yes, complete EXPECTED SUBMISSION DATE)* [X] NO

EXPECTED SUBMISSION DATE (15): MONTH | DAY | YEAR

ABSTRACT *(Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines)* (16)

On November 26, 1991 it was determined (during a reportability review) that a problem which was discovered on November 23, 1991 was reportable in accordance with the requirements of 10CFR50.73 as a condition prohibited by the Technical Specifications. On November 23, 1991 at 1858 hours, during the performance of a calibration surveillance, Plant Instrument and Control (I&C) Technicians discovered Residual Heat Removal (RHR) System Differential Pressure Indicating Switch RHR-DPIS-12B to be isolated. The function of RHR-DPIS-12B is to provide an auto-close signal to RHR-V-9 (RHR System shutdown cooling inboard isolation valve) upon receipt of a high flow indication in the shutdown cooling line. The pressure switch was required to be in service at the time of the event.

Immediate corrective action consisted of successfully completing the surveillance and restoring RHR-DPIS-12B to service at 1954 hours. The cause of this event is indeterminate. A comprehensive review of previous surveillances and work history associated with the instrument, and interviews of Plant personnel, did not reveal a reason for RHR-DPIS-12B to be isolated. Further corrective actions consist of 1) expanding the scope of a Component Status Change Request Form to include valve manipulations during instrument venting evolutions, 2) discussing the use of the Component Status Change Request during I&C Department shop meetings, and 3) issuing a letter describing this event to Operations, Maintenance and Plant Technical personnel.

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

Plant Conditions

a) Power Level - 65%
b) Plant Mode - 1 (Power Operation)

Event Description

On November 26, 1991 it was determined (during a reportability review) that a problem discovered on November 23, 1991 was reportable in accordance with the requirements of 10CFR50.73 as a condition prohibited by the Technical Specifications. On November 23, 1991 at 1858 hours, Residual Heat Removal (RHR) System Differential Pressure Indicating Switch RHR-DPIS-12B was found to be isolated. This condition was discovered by Plant Instrument and Control (I&C) Technicians during the performance of Plant Procedure (PPM) 7.4.3.2.1.63, "Residual Heat Removal System Shutdown Cooling Mode High Flow Isolation - CFT/CC." The function of RHR-DPIS-12B is to provide an auto-close signal to RHR-V-9, the RHR System shutdown cooling inboard isolation valve, upon receipt of a high flow (high differential pressure) indication in the shutdown cooling line.

During the performance of the procedure, the I&C Technicians discovered the high pressure valve, the low pressure valve and the equalizing valve to be in the closed position. This configuration rendered RHR-DPIS-12B inoperable and, therefore, incapable of providing an RHR inboard isolation signal on shutdown cooling line excess flow.

Following discovery of the isolated pressure switch, Plant I&C Technicians completed the surveillance procedure and returned RHR-DPIS-12B to service at 1924 hours.

Immediate Corrective Action

There was no additional immediate corrective action other than the Plant I&C Technicians successfully completing the RHR Shutdown Cooling Mode High Flow Isolation CFT/CC and returning RHR-DPIS-12B to service.

Further Evaluation and Corrective Action

A. Further Evaluation

1. This event is reportable in accordance with the requirements of 10CFR50.73(a)(2)(i)(B), "Any operation or condition prohibited by the plant's Technical Specifications." The Technical Specifications require RHR-DPIS-12B to be operable during Operational Modes 1, 2 and 3.

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

3. Two redundant differential pressure switches (RHR-DPIS-12A and RHR-DPIS-12B), one for each trip logic, monitor the RHR shutdown cooling suction line. Circuit logic operation is such that the output trip signal of each sensor initiates a logic trip and closure of either the inboard or outboard isolation valve in the event of an excess flow condition in the RHR suction line. Pressure switch RHR-DPIS-12A controls the outboard valve (RHR-V-8) and RHR-DPIS-12B controls the inboard valve (RHR-V-9).

4. The cause of this event is indeterminate. A comprehensive review of previous surveillances and work history associated with the instrument, and interviews of Plant personnel, did not reveal a reason for RHR-DPIS-12B to be isolated.

   The calibration surveillance procedure (PPM 7.4.3.2.1.63) was last performed on October 22, 1991 and no discrepancies were identified. The procedure is clear and specific as to the steps for returning the instrument to service, and requires that a second person independently verify proper alignment. The procedure also requires a sign-off of these steps by the I&C Technicians who perform the surveillance test. In this particular case, the procedure was appropriately signed and the I&C Technicians who performed the surveillance recalled restoring the instrument to service as required.

   Furthermore, during the time period of October 22 to November 23, 1991, no maintenance or operational activities were identified as having been performed that would have required RHR-DPIS-12B to be valved out of service. This determination was made following 1) a comprehensive review of Maintenance Work Requests, Clearance Orders, Radiation Work Permits and Control Room Logs, and 2) discussions with Plant personnel.

5. There has been one other similar event (LER 89-037) in which RHR-DPIS-12B was found to be isolated. The LER is discussed in further detail in the "Similar Events" section of this LER. A review of that event was performed in an attempt to determine if there was a common link between the cases where the pressure switch was found to be inoperable. In both instances, the events either occurred or were discovered following Plant startup from an outage. Accordingly, startup procedures were reviewed for activities that may have required RHR-DPIS-12B to be valved out of service.

   One procedure that is referenced in the startup Procedures is PPM 2.4.2, "Residual Heat Removal System."

The purpose of PPM 2.4.2 is to provide instructions for operation of the RHR System during various Plant configurations. One of the actions in this procedure is to have I&C Department personnel vent instrumentation when required by Operations. However, this procedure does not require signatures for either valve positioning or completion of the procedural steps. As a result, it was not possible to verify if RHR-DPIS-12B had been manipulated during the performance of this procedure. However, it should also be noted that instrument valve manipulations are considered to be within the "skill of the craft" for Plant I&C Technicians. Therefore, in those situations where they are requested by Operations to perform evolutions such as venting, procedural signoffs for valve manipulations have not been required.

B. Further Corrective Action

1. Plant Procedure (PPM) 1.3.1, "Conduct of Operations," will be revised to expand the use of a Component Status Change Order to include evolutions such as instrument valve manipulations for venting and line flushes when a procedure is not utilized. The Component Status Change Order is a form that is currently used to provide instructions for aligning more than two valves or circuit breakers during those situations where a procedure or checklist is not used.

2. The use of the Component Status Change Order will be 1) included in the I&C Department Work Practices Guide, and 2) discussed during I&C Department shop meetings.

3. A letter describing this event and the other similar event will be issued to Operations, Maintenance and Plant Technical personnel. The intent of this letter will be to provide an increased awareness of the situations where RHR-DPIS-12B was found to be isolated and to solicit additional suggestions on potential causes and methods to prevent recurrence.

Safety Significance

There are no unacceptable consequences associated with this event. Valve RHR-V-9 was already in the closed position at the time of the event as required when the Plant is in Operational Mode 1. Had the Plant been required to enter Cold Shutdown during the time the pressure switch was out of service, Differential Pressure Indicating Switch RHR-DPIS-12A was available to provide an auto-close signal to RHR Shutdown Cooling Outboard Isolation Valve RHR-V-8 in the event that a high flow condition had occurred in the shutdown cooling line. Furthermore, the Reactor Pressure Vessel Low Level (Level 3) isolation signal was operable and serves as a backup to the high flow (RHR-DPIS-12A/ RHR-DPIS-12B) isolation signal. In addition, an RHR System isolation would also occur from a Leak Detection System-initiated RHR Area High Temperature signal.

Accordingly, this event posed no threat to the health and safety of either the public or Plant personnel.

Similar Events

LER 89-037, "Residual Heat Removal System Differential Pressure Indicating Switch (RHR-DPIS-12B) Discovered to be Isolated and Equalized - Cause Unknown." This LER described an identical event where, during the performance of the RHR Shutdown Cooling Mode High Flow Isolation CFT/CC, Plant I&C Technicians found RHR-DPIS-12B to be isolated and equalized (both high and low pressure isolation valves were closed and the equalizing valve was open). The root cause for this event was indeterminate. A review of previous surveillances and work history associated with the instrument also did not reveal a reason for RHR-DPIS-12B to be isolated. Corrective actions consisted of 1) developing an I&C Work Practices Manual which specifically described the independent verification process, and 2) providing training on the independent verification process to Plant I&C Technicians.

EIIS Information

Text Reference	EIIS Reference	
	System	Component
Residual Heat Removal (RHR) System	BO	---
RHR-DPIS-12B	BO	PDIS
RHR-V-9	BO	ISV
RHR-V-8	BO	ISV
RHR-DPIS-12A	BO	PDIS
Reactor Pressure Vessel	NH	RPV
Leak Detection System	IJ	---