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WASHINGTON,S. Washington Public Power Supply System
POWERS,C.M. Washington Public Power Supply System
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SUBJECT: LER 89-011-00:on 890502,missing Limitorque motor operator torque switch bypass jumpers due to design documentation.
W/8 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

Docket No. 50-397

June 1, 1989

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

Subject: NUCLEAR PLANT NO. 2
LICENSEE EVENT REPORT NO. 89-011

Dear Sir:

Transmitted herewith is Licensee Event Report No. 88-011 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,

CMPowers

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

CMP:lg

Enclosure:
Licensee Event Report No. 89-011

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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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 5

TITLE (4) Missing Limitorque Motor Operator Torque Switch Bypass Jumpers due to Plant Design Basis Documentation

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 2	8 9	8 9	0 1 1	0 0	0 6	0 1	8 9		0 5 0 0 0
										0 5 0 0 0

OPERATING MODE (9): 5

POWER LEVEL (10): 0 0 0

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)	[ ] 50.73(a)(2)(i)	[ ] 50.73(a)(2)(viii)(A)	
[ ] 20.405(a)(1)(iv)	[X] 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	
	AREA CODE	
S.L. Washington, Compliance Engineer	5 0 9	3 7 7 - 2 0 8 0

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)

[ ] 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 May 2, 1989, Plant Design Engineers determined that eight valve motors did not meet the WNP-2 commitment made in response to IE Circular Number 81-13, "Torque Switch Electrical Bypass Circuit for Safeguard Service Valve Motors." The Supply System previously submitted LER 87-024-00 which reported a similar condition, and the eight additional valve safety functions described in this LER were identified as a result of corrective action committed to in LER 87-024. One Main Steamline Drain Isolation Valve, MS-V-20, was powered by a non Class 1E supply and, as a result, would be lost during a loss of offsite power event. No immediate corrective actions were required since all the valve safety functions described in this LER are not applicable to the current Plant Operational Modes 4 (Cold Shutdown) and 5 (Refueling). All valve motor torque switch bypass circuits will be installed prior to Plant restart. The power supply for MS-V-20 will be upgraded to Class 1E prior to Plant restart.

The root cause of this event is less than adequate design basis documentation in that the Plant Architect/Engineer (Burns and Roe, Inc.) did not formalize the original Safety Function Motor Operated Valve List. In January 1989, the Supply System issued a calculation which formalized the safety valve selection criteria and the safety function of each Motor Operated Valve.

There is no safety significance associated with this event. The installation of the bypass circuits only provides added assurance that the valve will perform its safety function and has no effect on the operability of the eight valves. The loss of power to MS-V-20, while open, would cause the Outboard Main Steamline Leakage Control (MSLC) System to be inoperable, but this system is backed by the redundant Inboard MSLC System.

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Plant Conditions

a) Power Level - 0%
b) Plant Mode - 5 (Refueling)

Event Description

On May 2, 1989, Plant Design Engineers determined that eight valve motors did not meet the WNP-2 commitment made in response to IE Circular No. 81-13, "Torque Switch Electrical Bypass Circuit for Safeguard Service Valve Motors". IE Circular No. 81-13 requested Plants to install torque switch bypass circuits to prevent a possible faulted condition (torque switch failure or premature actuation) from inhibiting a valve in accomplishing its safety function.

The Supply System in LER 87-024-00 reported a condition where some Plant valve motors did not have required torque switch bypass jumpers installed. During the resulting investigation, six additional valve motors were added to the list of Safety Function Motor Operated Valves (MOVs). Corrective actions committed to in LER 87-024-00 included formalization of criteria for determining which valves should be included on the Safety Function MOV List and to re-review Plant valves to ensure all safety function valves are on the list.

The formalization of criteria and the re-review of Plant valves was completed in January, 1989, and issued formally as Calculation NE-02-88-06, Revision 0. The Safety Function MOV List is included in the calculation. Of the eight valves, six valves were already on the list, but had an additional function added. Two valves, Reactor Core Isolation Cooling Valve, RCIC-V-46, and Main Steamline Valve, MS-V-20, were new additions to the list. Following the issuance of the calculation, all valves on the list were reviewed by the Plant Engineering Electrical Design Group to determine the actual Plant wiring configuration. On May 2, 1989 the electrical review concluded that eight valve functions added to the Safety Function MOV List in January, 1989 were not currently configured with required torque switch bypass circuits. The eight valves and their safety functions are listed below.

VALVE NUMBER	VALVE DESCRIPTION	SAFETY DIRECTION	VALVE SAFETY FUNCTION
RCIC-V-46	WATER SUPPLY TO RCIC TURBINE LUBE OIL COOLER	OPEN #	RPV MAKEUP DURING ATWS
		CLOSE*	SYSTEM BOUNDARY ISOLATION
RHR-V-6A	RHR-P-2A SUCTION ISOLATION FOR SHUTDOWN COOLING	OPEN	PROVIDE SUCTION PATH FOR RHR SHUTDOWN COOLING
		CLOSE*	ISOLATION BETWEEN RHR LOOPS AND ALLOW MULTIPLE LOOP OPERATION

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

VALVE NUMBER	VALVE DESCRIPTION	SAFETY DIRECTION	VALVE SAFETY FUNCTION
RHR-V-6B	RHR-P-2B SUCTION ISOLATION FOR SHUTDOWN COOLING	OPEN	PROVIDE SUCTION PATH FOR RHR SHUTDOWN COOLING
		CLOSE*	ISOLATION BETWEEN RHR LOOPS AND ALLOW MULTIPLE LOOP OPERATION
RHR-V-68A	SERVICE WATER SUPPLY ISOLATION TO RHR-HX-1A	OPEN	SERVICE WATER COOLING WATER SUPPLY TO RHR LOOP A HEAT EXCHANGER
		CLOSE*	ISOLATE A RADIATION RELEASE FROM RHR VIA SERVICE WATER
RHR-V-68B	SERVICE WATER SUPPLY ISOLATION TO RHR-HX-1B	OPEN	SERVICE WATER COOLING WATER SUPPLY TO RHR LOOP B HEAT EXCHANGER
		CLOSE*	ISOLATE A RADIATION RELEASE FROM RHR VIA SERVICE WATER
MS-V-20	MAIN STEAMLINE DRAIN ISOLATION	OPEN	NONE
		CLOSE*	CLOSE TO ALLOW OUTBOARD MAIN STEAMLINE LEAKAGE CONTROL SYSTEM TO FUNCTION
RHR-V-115	CROSS TIE CONNECTION FROM SERVICE WATER	OPEN*	PROVIDE EMERGENCY SERVICE WATER INJECTION
		CLOSE	SYSTEM BOUNDARY ISOLATION
RHR-V-116	CROSS TIE CONNECTION FROM SERVICE WATER	OPEN*	PROVIDE EMERGENCY SERVICE WATER INJECTION
		CLOSE	SYSTEM BOUNDARY ISOLATION

* NEW SAFETY FUNCTION DIRECTIONS WHICH WERE NOT CONFIGURED TO MEET IE CIRCULAR NO. 81-13 REQUIREMENTS.

NEW SAFETY FUNCTION DIRECTION CONFIGURED CORRECTLY.

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

Immediate Corrective Action

In accordance with the Plant Problem Procedure, on May 2, 1989, a Plant Operating Committee (POC) Immediate Disposition Request for a Use-As-Is disposition was reviewed and approved based on the current Plant Operation Modes (Cold Shutdown (Mode 4) or Refueling (Mode 5)). The new valve safety functions of the RCIC, RHR, and MS valves listed in the event description are not required in Operational Modes 4 and 5.

Further Evaluation and Corrective Action

A. Further Evaluation

1. This event is being reportable per 10CFR50.73 (a)(2)(ii)(B) as a condition outside the Plant Design Basis.

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

3. The root cause of this event is the design basis was less than adequate in that the criteria for valve selection were not documented by the Plant Architect/Engineer (Burns and Roe, Inc.) when the original Safety Function MOV List was determined. It was recognized from the Plant review made in conjunction with LER 87-024 that the criteria for placing a valve on the Safety Function MOV List needed to be formalized. The formalization of criteria was a corrective action committed to in LER 87-024-00. The valve functions identified subsequent to the formalization of the selection criteria are primarily due to a broader application of the criteria used during the 1987 review. No further corrective actions are required with regard to the root cause since the valve selection criteria have been formalized and all Safety Function valves have been added to the List.

   Subsequent evaluation determined that the power supply to MS-V-20 is non Class 1E, which means that the power supply for MS-V-20 is lost in a loss of offsite power event.

B. Corrective Action

1. A Plant Modification Request (PMR) to revise the electrical design of these eight valve motor operators to meet the calculation requirements was issued and will be implemented prior to Plant Startup following the current outage.

2. A PMR to revise the MS-V-20 power supply to Class 1E was issued and will be implemented prior to Plant Startup following the current outage.

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

Safety Significance

There are no unacceptable consequences associated with this event. First, these valves were designed to operate without the torque switch bypass circuits installed. Periodically, operation of these valves is demonstrated by Plant Surveillance Testing or by operational use. The torque switch bypass circuits were installed only to provide added assurance that a faulted condition would not prevent the valve from performing its safety function.

It is necessary for Main Steamline drain isolation valve MS-V-20 to be closed for the Outboard Main Steamline Leakage Control (MSLC) System to operate. The valve is used only during Plant Startups and is closed during normal operations. The upgrading of the power supply to this valve is provided to ensure that Plant Operators can close the valve under any Plant conditions. The need for operators to close the valve is associated with a valve mispositioning event. There is no safety significance since an event of the type postulated has never occurred and the Inboard MSLC System is a redundant system.

Similar Events

As previously stated, LER 87-024-00 reported a similar condition. The valve motors in this report were identified as a result of corrective action committed to in LER 87-024-00.

EIIS Information

Text Reference	EIIS Reference System	Component
Valve Motors	--	MO
Main Steamline Drain Isolation Valve (MS-V-20)	SB	ISV
Torque Switch	--	---
Reactor Core Isolation Cooling Valve (RCIC-V-46)	BN	V
Residual Heat Removal Valve (RHR-V-6A)	BO	V
Residual Heat Removal Valve (RHR-V-6B)	BO	V
Residual Heat Removal Valve (RHR-V-68A)	BO	V
Residual Heat Removal Valve (RHR-V-68B)	BO	V
Residual Heat Removal Valve (RHR-V-115)	BO	V
Residual Heat Removal Valve (RHR-V-116)	BO	V
Main Steamline Leakage Control System	SB	---