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SUBJECT: LER 89-011-01:on 890502,missing Limitorque motor operator
 torque switch bypass jumpers due to plant DBD.

W/9 ltr.

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Docket No. 50-397

September 6, 1990

Document Control Desk

U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Subject: NUCLEAR PLANT NO. 2
LICENSEE EVENT REPORT NO. 89-011-01

Dear Sir:

Transmitted herewith is Supplemental Licensee Event Report No. 89-011-01 for the WNP-2 Plant. This report is submitted to correct an error discovered during final review of the associated Plant Nonconformance Report. The LER incorrectly states that the Plant Operating Committee (POC) Use-As-Is Immediate Disposition process was used. This process was begun, but not completed. The Management Review Committee (same membership as POC) determined that a Use-As-Is disposition for this situation was not required since none of the valves were required to be operable for the May 2, 1989 Plant Operating Mode (Mode 5; Refueling).

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 (M/D 927M)
WNP-2 Plant Manager

JWB:lr

Enclosure:
Licensee Event Report No. 89-011-01

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)

Cent No 475026110
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11

AUTHOR: SL Washington <i>Steven L. Washington 9/10/90</i>		FOR SIGNATURE OF: JW Baker <i>[Signature]</i>	
SECTION			
FOR APPROVAL OF	RL Koenigs	9009140172	900906
APPROVED	<i>[Signature]</i>	PDR ADDCK 05000397	
DATE	9/5/90	S	PDC

WASHINGTON PUBLIC POWER SUPPLY SYSTEM

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

Docket No. 50-397

September 6, 1990

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Washington, D.C. 20555

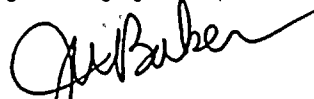
Subject: NUCLEAR PLANT NO. 2
LICENSEE EVENT REPORT NO. 89-011-01

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J. W. Baker (M/D 927M)
WNP-2 Plant Manager

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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)

LICENSEE EVENT REPORT (LER)

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 600 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.

FACILITY NAME (1)
Washington Nuclear Plant - Unit 2

DOCKET NUMBER (2)
0 5 0 0 0 3 9 7 1 OF 0 5

PAGE (3)
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)
05	02	89	89	0111	01	09	06	90		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)	50.38(c)(1)	50.73(a)(2)(v)	73.71(c)
20.405(a)(1)(ii)	50.38(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)	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)(ix)	

LICENSEE CONTACT FOR THIS LER (12)

NAME S. L. Washington, Compliance Engineer

TELEPHONE NUMBER 509 377-2080

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE) ☒ 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.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 60.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-630), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

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 1 1	—	0 1 1	0 2	OF 0 5

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

Abstract (contd.)

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.

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 (MOV's). 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.



LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 500 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.

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)		
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		8/9	-0111	-011	03	OF	05

Washington Nuclear Plant - Unit 2

050003917

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

VALVE NUMBER	VALVE DESCRIPTION	SAFETY DIRECTION	VALVE SAFETY FUNCTION
RCIC-V-46	WATER SUPPLY TO RCIC TURBINE LUBE OIL COOLER	OPEN # CLOSE*	RPV MAKEUP DURING ATWS SYSTEM BOUNDARY ISOLATION
RHR-V-6A	RHR-P-2A SUCTION ISOLATION FOR SHUTDOWN COOLING	OPEN CLOSE*	PROVIDE SUCTION PATH FOR RHR SHUTDOWN COOLING ISOLATION BETWEEN RHR LOOPS AND ALLOW MULTIPLE LOOP OPERATION
RHR-V-6B	RHR-P-2B SUCTION ISOLATION FOR SHUTDOWN COOLING	OPEN CLOSE*	PROVIDE SUCTION PATH FOR RHR SHUTDOWN COOLING ISOLATION BETWEEN RHR LOOPS AND ALLOW MULTIPLE LOOP OPERATION
RHR-V-68A	SERVICE WATER SUPPLY ISOLATION TO RHR-HX-1A	OPEN CLOSE*	SERVICE WATER COOLING WATER SUPPLY TO RHR LOOP A HEAT EXCHANGER ISOLATE A RADIATION RELEASE FROM RHR VIA SERVICE WATER
RHR-V-68B	SERVICE WATER SUPPLY ISOLATION TO RHR-HX-1B	OPEN CLOSE*	SERVICE WATER COOLING WATER SUPPLY TO RHR LOOP B HEAT EXCHANGER ISOLATE A RADIATION RELEASE FROM RHR VIA SERVICE WATER
MS-V-20	MAIN STEAMLINE DRAIN ISOLATION	OPEN CLOSE*	NONE CLOSE TO ALLOW OUTBOARD MAIN STEAMLINE LEAKAGE CONTROL SYSTEM TO FUNCTION
RHR-V-115	CROSS TIE CONNECTION FROM SERVICE WATER	OPEN* CLOSE	PROVIDE EMERGENCY SERVICE WATER INJECTION SYSTEM BOUNDARY ISOLATION
RHR-V-116	CROSS TIE CONNECTION FROM SERVICE WATER	OPEN* CLOSE	PROVIDE EMERGENCY SERVICE WATER INJECTION SYSTEM BOUNDARY ISOLATION

LICENSEE EVENT REPORT (LER)
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FACILITY NAME (1) Washington Nuclear Plant - Unit 2	DOCKET NUMBER (2) 0 5 0 0 0 3 9 7 8 9	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			

TEXT (If more space is required, use additional NRC Form 365A's) (17)

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

NEW SAFETY FUNCTION DIRECTION CONFIGURED CORRECTLY.

Immediate Corrective Action

In accordance with the Plant Problem Procedure, on May 2, 1989, the Management Review Committee (MRC) reviewed the "new" valve safety functions of the RCIC, RHR, and MS valves listed in the event description and determined that no immediate corrective actions were required since all the safety functions described in this LER are not applicable in Operational Modes 4 (Cold Shutdown) and 5 (Refueling).

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.

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

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.

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 InformationText ReferenceEIIS 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	---