

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)

Washington Nuclear Plant - Unit 2

DOCKET NUMBER (2)

0 5 0 0 0 3 9 7 1 OF 0 3

PAGE (3)

TITLE (4)

Qualification of ITT Hydramotor Valve Operators

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	9	1	0	8	5	8	5	0	5	0	0	0	0	0	0
0	9	1	0	8	5	8	5	0	5	0	0	0	0	0	0

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

OPERATING MODE (9)	20.402(b)	20.405(a)(1)(i)	20.405(a)(1)(ii)	20.405(a)(1)(iii)	20.405(a)(1)(iv)	20.405(a)(1)(v)	20.405(e)	50.36(a)(1)	50.36(c)(2)	50.73(a)(2)(i)	50.73(a)(2)(ii)	50.73(a)(2)(iii)	50.73(a)(2)(iv)	50.73(a)(2)(v)	50.73(a)(2)(vi)	50.73(a)(2)(vii)	50.73(a)(2)(viii)(A)	50.73(a)(2)(viii)(B)	50.73(a)(2)(ix)	73.71(b)	73.71(e)	OTHER (Specify in Abstract below and in Text, NRC Form 368A)	
POWER LEVEL (10)																							Voluntary

LICENSEE CONTACT FOR THIS LER (12)

NAME

W. S. Davison, Compliance Engineer

TELEPHONE NUMBER

AREA CODE

5101931771-1251011

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13) Ext. 2726

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 7/29/85 a design review of vendor supplied qualification data for ITT Hydramotor Valve Actuators installed on drywell/wetwell penetrations for the Hydrogen Recombiner System indicated the qualified life to be 76 days in a Post LOCA environment. The valve actuators (CAC-EHO-FCV/1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B) are required to be operational for 6 months Post LOCA. Verification testing and analysis of qualification data was completed and evaluated resulting in the determination on 9/10/85 that the actuator seals had exceeded their qualified life by 14 months. An operability determination was made for the Hydrogen Recombiner System. Division 1 was found to be operable due to recent seal replacement. Division 2 was secured and in the process of having its actuator seals replaced.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

APPROVED OMB NO. 3150-0104

EXPIRES: 8/31/88

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TEXT: If more space is required, use additional NRC Form 386A (1) (17)

Plant Conditions

- a) Power Level - 71%
- b) Reactor Mode - 1

Event

On 9/10/85 an analysis was completed as part of an upgrade program to satisfy 10CFR50.49(1) for the Hydrogen Recombiner Flow Control Valves CAC-FCV/1A, 1B, 2A, 2B, 3A, 3B, 4A and 4B. Qualification data using vendor supplied qualification data from 1980 testing was originally used to establish qualification to NUREG 0588 Cat. II Criteria. The upgrade program was a joint utility effort completed in June 1984 and received by the Supply System June 19, 1984. This new data established that the subject valves were qualifiable to the upgraded qualification criteria for a limited life and accident exposure. The vendor also recommended an improved seal design (Viton) to extend the qualified life and accident qualification. The original NUREG 0588, Cat. II qualification was thought to be sufficient so final review of the upgraded qualification data was deferred.

Subsequent review of the NUREG 0588, Cat. II data as part of the upgrade program review uncovered the fact that the new vendor information resulted in a shorter qualified life. The primary cause of this reduction in qualified life was internal temperature rise caused by an oil pump motor which accelerates the thermal degradation of the actuator's internal seals. Vendor generic data stated a 55°F temperature rise above ambient. If this temperature rise occurred in the WNP-2 application the qualification data predicted failure approximately 76 days into a WNP-2 LOCA event. A verification test was performed on CAC-FCV-4B to determine the temperature rise above ambient to be 48°F. This results in the actuator being qualified for the WNP-2 accident exposure (6 months) and an inservice qualified life of 7 months.

The actuators had seen a service life of 21 months at the time of this discovery resulting in service beyond its qualified life of 14 months. During this period surveillance testing had been performed with no indication of improper functional operation. However, based on the new vendor test data and plant verification testing, a determination was made on 9/10/85 that the actuators with original seals could not be relied upon to be able to perform its intended function if exposed to the postulated LOCA condition in secondary containment.

Immediate Corrective Action

- o On 9/10/85 both hydrogen recombiner systems were evaluated for operability requirements based on the above data. DIV - 1 recombiner valves recently had Viton seal upgrade kits installed in the supply and return line actuators and therefore was not impacted by the results. DIV - 2 recombiner was secured and in the process of having Viton seal upgrade kits installed. It was determined that DIV - 2 recombiner valves would have to remain inoperable until all the supply & return line actuators seals were replaced.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

APPROVED OMB NO. 3150-0104

EXPIRES: 8/31/88

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TEXT (if more space is required, use additional NRC Form 306A's) (17)

Immediate Corrective Action (Continued)

- o In addition and subsequent to the above evaluation, local and regional NRC representatives were notified of the qualified life problem.

Further Corrective Action

- o A review of the remaining ITT Hydramotor Valve Actuator qualification data was completed. This review determined that no additional actuator seals had exceeded the qualified life.
- o As a conservative action, Viton seal upgrade kits will be installed in the remaining ITT Hydramotors in use at WNP-2.
- o An evaluation of the required 6 month Post-LOCA operability requirement will be performed.
- o The Supply System will continue the ongoing evaluation of the need for Hydrogen Recombiners due to WNP-2's use of an inerted containment.

Similar Events

None

Safety Significance

Even though the valves were functional at the time of the event, based on the above information, after 7 months of service life the Hydrogen Recombiner System would not have performed it's safety function Post LOCA and therefore was technically inoperable. The plant presently has 21 months of service life, with the recombiners technically inoperable for the last 14 months. Seven of the eight actuators would have been accessible during Post-LOCA conditions and could have been positioned open locally from the fail closed position by use of the installed manual operators. The present design specifies manual actuation of one recombiner train within 3 hours Post LOCA. This would allow adequate time for an operator to be dispatched to properly position the valves.

There was no threat to the safety of the public or the plant and its personnel as a result of this event.

EIIS Information

Test Reference
Containment Atmosphere
Control System

EIIS Reference	
System	Component
BB	FCV

Washington Public Power Supply System

3000 George Washington Way P.O. Box 968 Richland, Washington 99352-0968 (509)372-5000

October 9, 1985

Docket No. 50-397

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

Subject: NUCLEAR PLANT NO. 2
LICENSEE EVENT REPORT NO. 85-055

Dear Sir:

Transmitted herewith is Licensee Event Report No. 85-055 for WNP-2 Plant. This report is submitted in response to the report requirements of 10 CFR 50.73 and discusses the item of reportability, corrective action taken and action taken to preclude recurrence.

This is the follow-up report to the verbal courtesy report given at 1350 hours on September 10, 1985.

Very truly yours,

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

CMP/MDK:db

Enclosure:
Licensee Event Report No. 85-055

cc: Mr. John B. Martin, NRC - Region V
Mr. A. D. Toth, NRC - Site (M/D 901A)
Ms. Dottie Sherman, ANI
INPO Records Center - Atlanta, GA
Mr. C. R. Bryant, BPA (M/D 399)

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