

# PRIORITY 1

(ACCELERATED RIDS PROCESSING)

## REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 9503310020      DOC. DATE: 95/03/25      NOTARIZED: NO      DOCKET #  
 FACIL: 50-397 WPPSS Nuclear Project, Unit 2, Washington Public Power      05000397  
 AUTH. NAME      AUTHOR AFFILIATION  
 HUGO, B.R.      Washington Public Power Supply System  
 PARRISH, J.V.      Washington Public Power Supply System  
 RECIP. NAME      RECIPIENT AFFILIATION

SUBJECT: LER 95-004-00: on 950226, malfunction in main turbine DEH control sys caused all four high pressure turbine governor valves to rapidly close. Caused by blown fuse. Suspected faulty circuit card replaced. W/950325 ltr.

DISTRIBUTION CODE: IE22T      COPIES RECEIVED: LTR 1 ENCL 1 SIZE: 4  
 TITLE: 50.73/50.9 Licensee Event Report (LER), Incident Rpt, etc.

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	AEOD/SPD/RRAB	1 1	FILE-CENTER 02	1 1
	NRR/DE/ECGB	1 1	NRR/DE/EELB	1 1
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	NRR/DOPS/OECB	1 1	NRR/DRCH/HHFB	1 1
	NRR/DRCH/HICB	1 1	NRR/DRCH/HOLB	1 1
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WASHINGTON PUBLIC POWER SUPPLY SYSTEM

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March 25, 1995  
GO2-95-058

Docket No. 50-397

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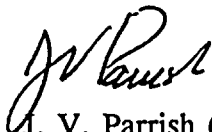
Gentlemen:

Subject: NUCLEAR PLANT WNP-2, OPERATING LICENSE NPF-21,  
LICENSEE EVENT REPORT NO. 95-004, REVISION 0

Transmitted herewith is Licensee Event Report No. 95-004 for the WNP-2 Plant. This report discusses the items of reportability, corrective action taken, and action taken to preclude recurrence.

Should you have any questions or desire additional information, please call me or D.A. Swank at (509) 377-4563.

Sincerely,



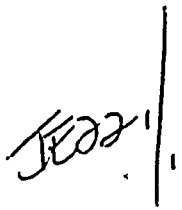
J. V. Parrish (Mail Drop 1023)  
Vice-President, Nuclear Operations

JVP/BRH  
Enclosure

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# LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) <b>Washington Nuclear Plant - Unit 2</b>	DOCKET NUMBER (2) <b>0 5 0 0 0 3 9 7</b>	PAGE (3) <b>1 OF 3</b>
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TITLE (4) **Reactor Scram Due to Main Turbine Control System Malfunction**

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)					
2	26	95	95	-	0	0	4	-	0	0	03	25	95	N/A			0 5 0 0 0		

OPERATING MODE (9) <b>1</b>		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR: (11)									
		20.402(b)		20.405(c)		<input checked="" type="checkbox"/> 50.73(a)(2)(iv)		73.71(b)			
POWER LEVEL (10) <b>1 0 0</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 386A)			
		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)(x)					

LICENSEE CONTACT FOR THIS LER (12)										TELEPHONE NUMBER	
<b>Bruce R. Hugo, Compliance Engineer</b>										AREA CODE <b>509</b>	
										<b>377-8593</b>	

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)											
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPROS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPROS	
X	J	J	P	M	C	W	1	2	0	Y	

SUPPLEMENTAL REPORT EXPECTED (14)						EXPECTED SUBMISSION DATE (15)		MONTH	DAY	YEAR
YES (if yes, complete EXPECTED SUBMISSION DATE)						X  NO				

ABSTRACT (16)

At 1739 hours on February 26, 1995, with WNP-2 in Operational Condition 1 (Power Operation) at 100% power, a malfunction in the main turbine digital electro-hydraulic (DEH) control system caused all four high pressure turbine governor valves to rapidly close. The resulting decrease in steam load caused reactor pressure and power to increase until a scram on high neutron flux occurred. All control rods inserted normally. Operators completed the scram recovery procedure and placed the reactor in a stable condition. Plant systems and components operated as expected and the recovery was uneventful.

The cause of the DEH system malfunction was a blown fuse on a circuit card that processes the governor valve position limit signal. The cause of the blown fuse is believed to have been a failure on the circuit card. The suspected faulty circuit card was replaced and the DEH system retested satisfactorily.

This event is bounded by the turbine trip transient evaluated in WNP-2's Final Safety Analysis Report and had negligible safety significance.



# LICENSED EVENT REPORT (LER) TEXT CONTINUATION

Washington Nuclear Plant - Unit 2	0	5	0	0	0	3	9	7	YEAR						SEQUENTIAL NUMBER						REVISION NUMBER					
									YEAR						SEQUENTIAL NUMBER						REVISION NUMBER					
									YEAR						SEQUENTIAL NUMBER						REVISION NUMBER					
									95	-	0	0	4	-	0	0	2	OF	3							

TEXT (17)

## Event Description:

At 1739 hours on February 26, 1995, with WNP-2 in Operational Condition 1 (Power Operation) at 100% power, a malfunction in the main turbine digital electro-hydraulic (DEH) control system [JJ], caused all four high pressure turbine governor valves [TA, V] to rapidly close. The resulting decrease in steam load caused reactor pressure to increase with a corresponding increase in reactor power. Although the turbine bypass valves [JI] opened in response to the increasing reactor pressure, their capacity is only 25% of rated steam flow. Reactor pressure and power increased until a scram on high neutron flux occurred. All control rods [AA, ROD] inserted normally.

The reactor pressure increase was terminated by the combined effects of the reduced steam production due to the scram, the operation of the turbine bypass valves, and the opening of two main steam safety/relief valves [SB, RV] in relief (pneumatically operated) mode. Reactor pressure had increased from its initial value of 1010 psig to 1071 psig.

The subsequent power reduction caused reactor level to decrease from its normal value of 36 inches to -7 inches. This is above the high and low pressure emergency core cooling systems' (ECCS) [BG, BM, BO] automatic start setpoints of -50 inches and -129 inches respectively; therefore, no automatic ECCS initiation occurred. By 1741 hours reactor water level had been restored to above 36 inches by the feedwater level control system [JB].

## Immediate Corrective Action:

Operators completed the scram recovery procedure and placed the reactor in a stable condition.

## Further Evaluation:

The reactor scram was reported at 1959 hours on February 26, 1995, via the Emergency Notification System per 10 CFR 50.72(b)(2)(ii) as an "... event or condition that results in a manual or automatic actuation of ... the Reactor Protection System ...". This LER is submitted per the similar requirement of 10 CFR 50.73(a)(2)(iv).

There were no structures, systems, or components that were inoperable at the start of the event that contributed to the event. Plant systems and components operated as expected and the recovery was uneventful.

# LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

Washington Nuclear Plant - Unit 2	05000397									
		YEAR		SEQUENTIAL NUMBER			REVISION NUMBER			
		95	-	004	-	00	3	OF	3	

TEXT (17)

## Root Cause:

The cause of the DEH system malfunction was a blown fuse [FU] on a circuit card (Westinghouse 7300 series programmable driver (NPD) card style 2839A38G02) [PMC] that processes the governor valve position limit signal. The resulting loss of circuit card power produced a position limit signal of zero percent open, causing the governor valves to close. The cause of the blown fuse is believed to have been a failure on the circuit card.

## Further Corrective Actions:

The suspected faulty circuit card was replaced and the DEH system retested satisfactorily.

A bench test of the faulty circuit card showed that the fuse drew more current than other similar cards in stock; however, the higher current was below the rating of the fuse. The faulty circuit card will be sent to the vendor for evaluation of failure mode.

## Safety Significance:

This event is bounded by analysis in WNP-2's Final Safety Analysis Report for a turbine trip from 105% power without bypass valve operation. The consequences of this analyzed transient are acceptable and are limited to discharge of normal coolant activity to the suppression pool via safety/relief valve operations. This event was less significant since it occurred from a lower initial power level and the bypass valves opened to mitigate the reactor pressure increase. Thus this event had negligible safety significance.

## Previous Similar Events:

There have been no previous failures at WNP-2 of the circuit board involved in this event.

LER 84-56 described a failure of a DEH protective logic circuit card that caused all four turbine bypass valves to close during power ascension testing. The resulting pressure transient caused a reactor scram on high reactor pressure.

LER 85-24 described a DEH logic circuit (programmable read only memory) failure that caused all four governor valves to close when the DEH digital computer [CPU] was reset during troubleshooting.