ENERGY NORTHWEST

P.O. Box 968 ■ Richland, Washington 99352-0968

October 17, 2000
GO2-00-180

Docket No. 50-397

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

Gentlemen:

Subject: **WNP-2, OPERATING LICENSE NPF-21,**
LICENSEE EVENT REPORT NO. 2000-007-00

Transmitted herewith is Licensee Event Report No. 2000-007-00 for WNP-2. This report is submitted pursuant to 10 CFR 50.73. The enclosed report discusses items of reportability and corrective action taken.

Should you have any questions or desire additional information regarding this matter, please call me or Mr. RN Sherman at (509) 377-8616.

Respectfully,

GO Smith

GO Smith
Vice President, Generation
Mail Drop 927M

Attachment

cc: EW Merschoff-NRC-RIV
JS Cushing-NRC-NRR
INPO Records Center
NRC Sr. Resident Inspector-988C (2)
DL Williams-BPA/1399
TC Poindexter-Winston & Strawn

IE22

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
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TITLE (4)

Manual Reactor Scram due to Loss of Condenser Vacuum

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV. NUMBER	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
09	18	2000	2000	007	00	10	17	2000	FACILITY NAME	DOCKET NUMBER

OPERATING MODE	1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)								
POWER LEVEL	65%		20.402(b)		20.405(c)	X	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	
			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)

NAME	TELEPHONE NUMBER (Include Area Code)
R. E. Brownlee, Licensing Engineer	(509) 377-2085

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX

SUPPLEMENTAL REPORT EXPECTED (14)		EXPECTED	MONTH	DAY	YEAR
	YES (If yes, completed EXPECTED SUBMISSION DATE).				

Abstract:

On September 18, 2000 at 1425 control room operators received an offgas condenser low-level alarm, and noticed a rapid increase in condenser offgas flow while reactor power was at 100%. In response to increasing turbine back pressure, the operators began lowering reactor power. At 1509, with reactor power at 65% and condenser vacuum at 24 inches Hg, control room operators manually scrammed the reactor as directed by plant procedures. A turbine trip occurs automatically at a condenser vacuum of 20 inches Hg.

Plant systems responded as expected following the manual reactor scram. Immediate actions included stabilizing the plant in Mode 3 then commencing a plant cooldown to Mode 4 to investigate the cause of the event. The reason for the loss of condenser vacuum was determined to be a broken turbine "slop" drain line.

A four-hour event notification phone call was made to NRC headquarters per the requirements of 10 CFR 50.72(b)(2)(ii).

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
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TEXT (If more space is required, use additional copies of NRC Form 366A) (17)

Event Description

On September 18, 2000 at 1425 control room operators received an offgas condenser low-level alarm, and noticed a rapid increase in condenser offgas [WF] flow while reactor power was at 100%. In response to increasing turbine back pressure, the operators began lowering reactor power. At 1509, with reactor power at 65% and condenser vacuum at approximately 24 inches Hg, control room operators manually scrammed the reactor as directed by plant procedures. A turbine trip occurs automatically at a condenser vacuum of 20 inches Hg.

Immediate Corrective Action

There were no immediate corrective actions.

Root Cause

An inspection of the "B" section of the main condenser [SG] revealed that one of two turbine "slop" drain lines routed through the condenser had broken off at its penetration connection on the north wall of the condenser. The "slop" drain lines are used to drain oil leakage from the turbine bearings and/or water leakage from turbine steam seal glands. The broken pipeline had effectively created two open pathways for air to enter the condenser (both sides of the pipe break). In addition, one U-bolt restraint on each drain line was found disconnected and not performing its function. Condenser sections "A" and "C" were also inspected for similar discrepancies, and the piping was found intact in both sections. However, a U-bolt restraint on one of the drain lines in condenser section "A" was also found disconnected.

The cause of the pipe failure was metal fatigue. The pipe connection at the condenser north wall was a threaded coupling. Reduced pipe wall thickness, due to exposed pipe threads of the threaded pipe coupling created a stress riser. An excessive amount of stress was induced at the pipe connection due to a substantial length of unsupported pipe (not associated with the disconnected U-bolt restraint) and the turbulent environment in the condenser. The disconnected U-bolt restraint may have been a contributing factor, accelerating failure of the pipe.

Further Corrective Action

All of the "slop" drain threaded and seal welded connections to the north wall of the condenser (six total, two in each condenser section) were re-welded to strengthen the connection points. The disconnected U-bolt restraints were reconnected.

Assessment of Safety Consequences

There were no safety consequences associated with this event. The plant was manually scrammed to preclude an unnecessary challenge to the turbine and reactor protection system. Plant systems responded to the reactor scram as designed. This event did not result in a safety system functional failure pursuant to NEI 99-02, "Regulatory Assessment Performance Indicator Guideline."

Similar Events

There have been no previous similar events at WNP-2.