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May 17, 1994
ND3MNO:3572

Beaver Valley Power Station, Unit No. 1
Docket No. 50-334, Licensee No. DPR-66
LER 94-003-01

United States Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555

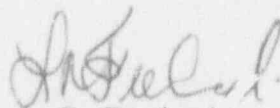
Gentlemen:

In accordance with Appendix A, Beaver Valley Technical Specifications, the following Licensee Event Report is submitted:

LER 94-003-01, 10 CFR 50.73.a.2.i.B, "Improperly Installed Flow Orifice."

This Licensee Event Report revises corrective action 3 to schedule correcting the improperly installed orifices during the next refueling outage.

Corrective action 3, as described in the original Licensee Event Report, identified correcting the improperly installed orifices upon the next entry into mode 5. A technical evaluation determined that mode 5 conditions that do not include depressurizing and draining the reactor coolant loops present an increased risk of degrading the reactor coolant pump seal packages. During the next refueling outage the reactor coolant system will be fully depressurized and the reactor coolant loops drained. This will provide the optimum conditions needed for correcting the improperly installed orifices. Therefore the station will correct the position of the flow orifices at the next refueling outage.


L. R. Freelan
General Manager
Nuclear Operations

GFZ/clp

Attachment

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PDR ADDCK 05000334
S PDR

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May 17, 1994
ND3MNO:3572
Page 2

cc: Mr. T. T. Martin, Regional Administrator
United States Nuclear Regulatory Commission
Region 1
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LICENSEE EVENT REPORT (LER)

(See reverse for required number of digits/characters for each block)

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS
INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD
COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION
AND RECORDS MANAGEMENT BRANCH (MNBB 7714), U.S. NUCLEAR
REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO
THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF
MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)

Beaver Valley Power Station Unit 1

DOCKET NUMBER (2)

05000 334

PAGE (3)

1 OF 3

TITLE (4)

Improperly Installed Flow Orifice

EVENT DATE (5)			LER NUMBER (6)			REPORT NUMBER (7)			OTHER FACILITIES INVOLVED (8)		
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER	
04	04	94	94	-- 003 --	01	05	17	94	N/A	05000	
									FACILITY NAME	DOCKET NUMBER	
										05000	
OPERATING MODE (9)		1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 20 CFR § (Check one or more) (11)								
			20.402(b)			20.405(c)			50.73(a)(2)(iv)		73.71(b)
POWER LEVEL (10)		100	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)			X 50.73(a)(2)(i)			50.73(a)(2)(viii)(A)		(Specify in abstract below and in Text NRC Form 366A)
			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

L. R. Freeland, General Manager Nuclear Operations

TELEPHONE NUMBER (include Area Code)

(412) 643-1258

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NFRDS				COMPONENT	MANUFACTURER	REPORTABLE TO NFRDS
A	CB	XXXX	XXXX	N						

SUPPLEMENTAL REPORT EXPECTED (14)

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

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

On April 4, 1994 at 1330 hrs, two flow orifices used to verify compliance with the Reactor Coolant Pump controlled leakage Technical Specification limits were found to be improperly installed. Because these orifices are sensitive to flow orientation, the actual flow could be as much as 20 % greater than indicated.

At 1729 hrs, a controlled leakage calculation was performed using this 20 % correction factor for the "B" and "C" reactor coolant pumps. Results showed that the controlled leakage was greater than the Technical Specification limit. Flows were adjusted within limits.

A review of the past year's controlled leakage calculations was performed correcting for these orifices being installed backwards. It showed that the controlled leakage technical specification limit had previously been exceeded.

Therefore, this event is being reported in accordance with 10CFR50.73a.2.i.B as a condition prohibited by Technical Specifications.

The safety implications of this event were minimal. The basis for the controlled leakage limit is to ensure that safety injection flow will not be less than that assumed in the accident analysis. Engineering analysis shows that minimum required safety injection flow required by the accident analysis would have been available.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNBB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, 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	
Beaver Valley Station Unit 1	05000				2 OF 3
	334	94	003	01	

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

DESCRIPTION OF EVENT

On April 4, 1994 at 1330 hrs, flow elements FE-CH-127 and FE-CH-124 were found installed backwards. These elements measure seal injection flow on the "B" and "C" reactor coolant pumps and are used to determine controlled leakage in accordance with Technical Specification 3.6.4.2, "Reactor Coolant System Leakage." Because actual controlled leakage was unknown, Technical Specification 3.6.4.2 action statement was invoked at this time.

At 1710 hrs, the station received verbal notification from Westinghouse Engineering that with these orifices installed backwards actual flow could be as much as 20 % greater than indicated. This correction factor was based on engineering judgement developed through experience of evaluating incorrectly installed orifices at other Westinghouse operating plants for similar applications.

At 1729 hrs, the controlled leakage calculation, Operations Surveillance Test (OST) 1.6.4, was performed using this 20 % correction factor for the "B" and "C" reactor coolant pumps. Results showed that the controlled leakage was greater than the 28 gpm Technical Specification limit. The flows were adjusted within limits and Technical Specification action statement was no longer applicable.

A review of past controlled leakage calculations was performed correcting for these orifices being installed backwards. The results showed that the controlled leakage technical specification limit of 28 gpm had previously been exceeded.

Therefore, the station had operated in a condition prohibited by Technical Specifications. Further follow-up evaluation by Westinghouse Engineering of similar events supported their initial 20 % correction.

CAUSE OF EVENT

A review of past maintenance did not identify any previous work which could have reversed the orifices.

The cause of this event was determined to be improper installation of flow orifices FE-CH-124 and 127. Because these orifices are beveled, they are sensitive to flow path direction.

CORRECTION ACTIONS

The following corrective actions have been or will be taken as a result of this event:

1. Operations personnel performed procedure OST 1.6.4, "Measurement of Controlled Leakage" correcting for the improperly installed orifices and verified compliance with controlled leakage limits by adjusting flows.
2. The System Engineers verified proper installation of all accessible flow orifices used to satisfy Technical Specification Surveillance Requirements and other testing requirements. Inaccessible orifices at current plant conditions will be inspected during Unit 1 10R and Unit 2 5R. At present one additional beveled orifice was found incorrectly installed, however Technical Specifications were not affected.
3. The improperly installed orifices will be corrected during the next refueling outage.

REPORTABILITY

This report is being submitted in accordance with 10CFR50.73 a.2.i.B because the station operated in a condition prohibited by Technical Specifications.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 30.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNBB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, 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)
	05000	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	3 OF 3
Beaver Valley Station Unit 1	334	94	003	01	

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

SAFETY IMPLICATIONS

The safety implications of this event were minimal. The basis for the controlled leakage limit is to ensure that in the event of a LOCA (Loss of Coolant Accident) safety injection flow will not be less than that assumed in the accident analysis. Engineering has analyzed this event and determined that safety injection flow would not be less than minimum required design flow as a result of this event.

PREVIOUS SIMILAR EVENTS

No similar events have been previously reported involving improperly installed flow orifices.