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November 2, 1995  
ND3MNO:3724

*Beaver Valley Power Station, Unit No. 2*  
*Docket No. 50-412, Licensee No. NPF-73*  
*LER-95-007-00*

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

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

LER 95-007-00, 10 CFR 50.73.a.2.i., "Recirculation Spray System 'B' Train Header Flow Less Than Technical Specification Requirement".

L. R. Freeland  
General Manager  
Nuclear Operations

DAW/jcd

Attachment



The Nuclear Professionals

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cc: Mr. T. T. Martin, Regional Administrator  
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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: 90.0 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 2

DOCKET NUMBER (2)

05000412

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## Recirculation Spray System 'B' Train Header Flow Less Than Technical Specification Requirement

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 NAME	DOCKET NUMBER	
10	03	95	95	007	00	11	02	95	FACILITY NAME	DOCKET NUMBER	
										05000	
OPERATING MODE (9)			THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 20 CFR § (Check one or more) (11)								
1			20.402(b)			20.405(c)			50.73(a)(2)(iv)		73.71(b)
POWER LEVEL (10)			20.405(a)(1)(i)			50.36(c)(1)			50.73(a)(2)(v)		73.71(c)
100			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
			20.405(a)(1)(iv)			50.73(a)(2)(ii)			50.73(a)(2)(viii)(B)		NRC Form 366A)
			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 NPRDS				COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS
A	BE	XXXX	XXXX	N						

## SUPPLEMENTAL REPORT EXPECTED (14)

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

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

On October 3, 1995, an operator observed that the valve stem position for 2SWS-MOV105D, Recirculation Spray Heat Exchanger 2RSS-E21D Cooling Water Discharge Valve, was different from equivalent valves in redundant subsystems. Follow up investigation determined that the valve was not opening as far as expected. These motor operated valves are normally throttled. The throttled position of these valves is established via an Operating Surveillance Test (OST) that verifies there is adequate cooling flow through both trains of the Recirculation Spray system. On April 24, 1995 this test resulted in the valve stroke time being set at 18.96 seconds. An OST performed on May 4, 1995 recorded the stroke time of this valve as 8.43 seconds. This was considered acceptable as it was within the established ASME and Technical Specification limits and the operators performing the test were not aware of the April 24 as left values. The calculated flow through the "B" train of the Recirculation Spray heat exchangers with 2SWS-MOV105D set for an 8.43 second stroke is less than the Technical Specification required value, but within the Design Basis. This report is being submitted under 10CFR 50.73 (a)(2)(i), as a condition prohibited by Technical Specifications.

**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.

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Beaver Valley Power Station Unit 2		05000412		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	2 OF 3
				95	007	00	

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

**DESCRIPTION OF EVENT**

On October 3, 1995, with Unit #2 in MODE 1 at 100% power, an operator performing Service Water valve alignment verifications, observed that the valve stem position for 2SWS-MOV105D, Recirculation Spray Heat Exchanger 2RSS-E21D Cooling Water Discharge Valve, was different from equivalent valves in the redundant subsystems. The measured distance from the packing follower to the first thread on the shaft for each of the valves was as follows:

2SWS-MOV105A	3.75 inches
2SWS-MOV105B	3.50 inches
2SWS-MOV105C	4.00 inches
2SWS-MOV105D	0.50 inches

These motor operated valves are normally throttled. The throttled position of these valves is established via an operations Surveillance Test that verifies there is adequate flow through both trains of the Recirculation Spray system. The valve stroke position is set by adjusting the open limit contact #4 in the Limitorque valve operator. After the difference in valve stem height was noticed, 2SWS-MOV105D was stroked and timed to the open position. The time was 8.5 seconds. A review of ASME records show that the valve's previous stroke times were in the 15 second range. A review of MOVATS records revealed that on April 24, 1995, the open stroke time for this valve was established at 18.96 seconds via full flow testing and the limit contact adjustments were made accordingly. Following these adjustments the technicians must remove their test equipment. In order to remove this test equipment, the valve has to be backseated and de-clutched. Following the test equipment removal, the valve is then re-clutched. It is believed that the valve was not fully backseated when the de-clutching was performed, thus creating a new frame of reference for the valve stroke limits. After the test equipment was removed from the valve operator, it was noted that the computer position indication for this valve was not operating properly, necessitating further limit adjustments. After these adjustments were made, the valve's stroke time was noted to be to 8.5 seconds but this was not recorded in the procedure in use at the time. On May 4, 1995 operations performed ASME Surveillance stroke time testing of this valve and recorded the stroke time as 8.43 seconds. This was considered acceptable as it was within the limit of less than 23.8 seconds established during the previous outage full flow test, even though it was a 46% decrease from the previously recorded stroke time. The operators knew that new flow based valve position limit settings had been recently made, hence a change in stroke time was not alarming. The operators did not have the as left April 24, data (settings made by Electrical Maintenance personnel), and were not required by procedure to reference that information. Calculations were performed to determine the effect of the valve's position on system operation. The results are that the "B" train cooling flow to the "B" and "D" Recirculation Spray Heat Exchangers is calculated to be 9,783 GPM. This value is lower than the Technical Specification required value of 11,000 GPM but within the design basis of the plant. It is concluded that the plant operated in a condition prohibited by the plants Technical Specifications.

**CAUSE OF EVENT**

The cause of this event is considered to be personnel error. It is believed that the valve was not fully backseated when the de-clutching was performed thus creating a new frame of reference for the valve stroke limits. After the technician readjusted the limits in the valve operator to correct a computer position indication problem, the valve's stroke time had changed from 18.96

**LICENSEE EVENT REPORT (LER)**  
**TEXT CONTINUATION**

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

**CAUSE OF EVENT (con't)**

seconds to 8.43 seconds. The Dynamic Test Procedure requires stroke timing of the valve after equipment removal and the recording of this value. The valve was stroked and timed but the procedure data sheets provided no identified step to record this data. The computer generated trace which showed the 8.5 second stroke time was not recovered from the disk by MOVATS technicians and included in the dynamic test procedure package for review.

**REPORTABILITY**

This event is being reported as a condition prohibited by the plant's Technical specifications in accordance with 10 CFR50.73(a)(2)(i)(B) due to the "B" train recirculation Spray Heat Exchanger cooling flow being determined to be less than the Technical Specification required flow by engineering calculation.

**SAFETY IMPLICATIONS**

There were only minor safety implications as a result of this condition. Both trains of the Recirculation Sprat Heat Exchangers would have been able to fulfill their Design Basis Function. The depressurization times remained within the allowable one hour limit.

**CORRECTIVE ACTIONS**

The following corrective actions have been taken or are planned as a result of this condition:

1. 2SWS-MOV105D has been properly adjusted so that its stroke time is now 18.96 seconds.
2. A Root Cause Analysis (TAP ROOT) has been performed.
3. All motor operated valves in the ASME program had their stroke times reviewed for any unexplained significant changes. No others were found.
4. Electrical maintenance procedures will be revised to document stroke times after restoration and to mark or measure externally the position of short stroke valves.
5. Unit #1 and Unit #2 Full Flow River Water/Service Water Operations Surveillance Tests will be revised to externally mark valve stem positions or measure stem relative position.
6. Electrical Refresher Training will be conducted highlighting the consequences of mispositioning rotors.

**PREVIOUS SIMILAR EVENTS**

No previous similar events were found.