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June 11, 2015

L-15-189

10 CFR 50.73

ATTN: Document Control Desk
U. S. Nuclear Regulatory Commission
Washington, DC 20555-0001**SUBJECT:**Beaver Valley Power Station, Unit No. 1
Docket No. 50-334, License No. DPR-66
LER 2015-001-00

Enclosed is Licensee Event Report (LER) 2015-001-00, "Manual Reactor Trip and Automatic Auxiliary Feedwater Actuation due to Condensate Pump Motor Failure." This event is being reported in accordance with 10 CFR 50.73(a)(2)(iv)(A).

There are no regulatory commitments contained in this submittal. Any actions discussed in this document that represent intended or planned actions are described for the NRC's information, and are not regulatory commitments.

If there are any questions or if additional information is required, please contact Mr. William C. Cothen, Manager, Regulatory Compliance at 724-682-4284.

Sincerely,



Eric A. Larson

Enclosure – LER 2015-001-00

cc: Mr. D. H. Dorman, NRC Region I Administrator
Mr. J. A. Krafty, NRC Resident Inspector
Ms. T. A. Lamb, NRR Project Manager
INPO Records Center (via INPO Consolidated Event System)
Mr. L. J. Winker (BRP/DEP)JE22
NRR

LICENSEE EVENT REPORT (LER)
(See Page 2 for required number of digits/characters for each block)

Estimated burden per response to comply with this mandatory information collection request: 80 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the FOIA/Privacy Section (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects.resource@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202 (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

1. FACILITY NAME Beaver Valley Power Station Unit Number 1	2. DOCKET NUMBER 05000334	3. PAGE 1 OF 3
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4. TITLE
Manual Reactor Trip and Automatic Auxiliary Feedwater Actuation due to Condensate Pump Motor Failure

5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
04	15	2015	2015	001	00	06	11	2015	None	
									FACILITY NAME	DOCKET NUMBER
									None	

9. OPERATING MODE Mode 1	11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply)									
	<input type="checkbox"/> 20.2201(b)	<input type="checkbox"/> 20.2203(a)(3)(i)	<input type="checkbox"/> 50.73(a)(2)(i)(C)	<input type="checkbox"/> 50.73(a)(2)(vii)						
10. POWER LEVEL 085	<input type="checkbox"/> 20.2201(d)	<input type="checkbox"/> 20.2203(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)						
	<input type="checkbox"/> 20.2203(a)(1)	<input type="checkbox"/> 20.2203(a)(4)	<input type="checkbox"/> 50.73(a)(2)(ii)(B)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)						
	<input type="checkbox"/> 20.2203(a)(2)(i)	<input type="checkbox"/> 50.36(c)(1)(i)(A)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(ix)(A)						
	<input type="checkbox"/> 20.2203(a)(2)(ii)	<input type="checkbox"/> 50.36(c)(1)(ii)(A)	<input checked="" type="checkbox"/> 50.73(a)(2)(iv)(A)	<input type="checkbox"/> 50.73(a)(2)(x)						
	<input type="checkbox"/> 20.2203(a)(2)(iii)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(v)(A)	<input type="checkbox"/> 73.71(a)(4)						
	<input type="checkbox"/> 20.2203(a)(2)(iv)	<input type="checkbox"/> 50.46(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(v)(B)	<input type="checkbox"/> 73.71(a)(5)						
	<input type="checkbox"/> 20.2203(a)(2)(v)	<input type="checkbox"/> 50.73(a)(2)(i)(A)	<input type="checkbox"/> 50.73(a)(2)(v)(C)	<input type="checkbox"/> OTHER						
	<input type="checkbox"/> 20.2203(a)(2)(vi)	<input type="checkbox"/> 50.73(a)(2)(i)(B)	<input type="checkbox"/> 50.73(a)(2)(v)(D)	<small>Specify in Abstract below or in NRC Form 366A</small>						

12. LICENSEE CONTACT FOR THIS LER	
LICENSEE CONTACT William Cothen, Manager, Regulatory Compliance	TELEPHONE NUMBER (Include Area Code) 724-682-4284

13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT									
CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX
A	KA	MO	A180	Y					

14. SUPPLEMENTAL REPORT EXPECTED	15. EXPECTED SUBMISSION DATE	MONTH	DAY	YEAR
<input type="checkbox"/> YES (If yes, complete 15. EXPECTED SUBMISSION DATE) <input checked="" type="checkbox"/> NO				

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

At 0411 EDT on April 15, 2015 the Beaver Valley Power Station (BVPS) Unit 1 reactor was manually tripped from approximately 85 percent power following a condensate pump trip. Prior to the manual reactor trip the unit was performing an emergent power reduction after the identification of a degrading condition on the "A" condensate pump motor. All control rods fully inserted into the core. The auxiliary feedwater system actuated as designed. The unit was stabilized in Mode 3 with the normal main feedwater system in service and the auxiliary feedwater system properly secured.

The "A" condensate pump trip was caused by the failure of the inboard motor bearing due to lack of oil lubrication. The root cause evaluation determined that responses to technical questions were provided without the appropriate technical rigor or validation of assumptions regarding acceptable oil level for the pump motor.

This event was reported (EN 50985) as an event or condition that results in the actuation of the reactor protection system when the reactor is critical, 10 CFR 50.72(b)(2)(iv)(B) and specified system actuation, 10 CFR 50.72(b)(2)(iv)(A). This event is reportable pursuant to 10 CFR 50.73(a)(2)(iv)(A) as a condition that resulted in the manual actuation of the Reactor Protection System, 10 CFR 50.73(a)(2)(iv)(B)(1), and the automatic actuation of the Auxiliary Feedwater System 10 CFR 50.73(a)(2)(iv)(B)(6).

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

Estimated burden per response to comply with this mandatory information collection request: 80 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the FOIA/Privacy Section (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects.resource@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202 (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
Beaver Valley Power Station Unit Number 1	05000334	YEAR	SEQUENTIAL NUMBER	REV NO.	2 OF 3
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NARRATIVE

Energy Industry Identification System (EIIIS) codes are identified in the text as [XX].

CONDITIONS PRIOR TO OCCURRENCE

Unit 1: Mode 1, 85% power with power reduction in progress

There were no systems, structures, or components (SSCs) that were inoperable at the start of the event that contributed to the event.

DESCRIPTION OF EVENT

On April 15, 2015 at 0411 hours EDT, Beaver Valley Power Station (BVPS) Unit 1 initiated a manual reactor trip from approximately 85 percent power due to the trip of one of the two running condensate [KA] pumps [P]. At 0405 hours operators initiated an emergent power reduction following the identification of a degrading condition on the "A" condensate pump motor. At 0411 hours, a manual reactor trip was initiated when the "A" condensate pump tripped due to a motor [MO] overcurrent condition. All three auxiliary feedwater [BA] pumps [P] automatically started as designed, and were subsequently secured in accordance with station procedures. The response was as expected except for an undercompensated intermediate range instrument [JI] which prevented the source range instruments [JI] from automatically energizing. The source range instruments were manually energized by the operators. All control rods [AA] fully inserted into the core. The operators entered E-0 (Reactor Trip or Safety Injection) then transitioned to ES-0.1 (Reactor Trip Response) and stabilized the plant in Mode 3.

CAUSE OF EVENT

The cause of this event was a trip of one of the two running condensate pumps. Both condensate pumps must be running to maintain the appropriate suction pressure at the main feedwater [SJ] pumps [P] when the unit is greater than 70 percent power. Following the trip of one of the two running condensate pumps the reactor was manually tripped. The trip of the condensate pump was due to the failure of the inboard motor bearing caused by lack of oil lubrication.

The root cause evaluation determined that responses to technical questions were provided without the appropriate technical rigor or validation of assumptions regarding acceptable oil level for the pump motor. This resulted in an incorrect change in the oil level sight glass configuration and continued operation of the motor with the oil level below the vendor recommended minimum level until bearing failure.

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NARRATIVE

ANALYSIS OF EVENT

The plant risk associated with the BVPS Unit 1 manual reactor trip and auxiliary feedwater actuation system on April 15, 2015, due to the "A" Condensate Pump trip is considered to be very low. This is based on the change in average core damage frequency derived using the conditional core damage probability, and change in average large early release frequency derived using the conditional large early release probability for the event. Based on the above, the safety significance of the manual reactor trip and auxiliary feedwater actuation event on April 15, 2015, was very low.

The condensate system is not credited to mitigate the consequences of an accident described in the BVPS Updated Final Safety Analysis Report. The condensate system cannot compromise the availability of safety-related equipment.

This event was reported on 4/15/2015, at 0732 EDT, EN# 50985, as an event or condition that results in the actuation of the Reactor Protection System (RPS) when the reactor is critical, 10 CFR 50.72(b)(2)(iv)(B) and specified system actuation, 10 CFR 50.72(b)(2)(iv)(A). This event is reportable pursuant to 10 CFR 50.73(a)(2)(iv)(A) as a condition that resulted in the manual actuation of the Reactor Protection System (RPS) 10 CFR 50.73(a)(2)(iv)(B)(1), and the automatic actuation of the auxiliary feedwater system 10 CFR 50.73(a)(2)(iv)(B)(6).

CORRECTIVE ACTIONS

1. Replacement of the condensate pump motor. (Complete)
2. Perform a review to ensure that all 4KV and single point vulnerability motors have the proper formal technical requirement for bearing reservoir oil level.
3. Evaluate training for the appropriate departments on the lessons learned from this event.

Completion of the above and other corrective actions are being tracked through the BVPS Corrective Action Program.

PREVIOUS SIMILAR EVENTS

A review of the previous three years has found that there were no similar events involving a reactor trip due to the failure of a large motor.

CR-2015-05256, 05262