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November 20, 2012
L-12-410

10 CFR 50.73

ATTN: Document Control Desk
U. S. Nuclear Regulatory Commission
Washington, DC 20555-0001

SUBJECT:
Beaver Valley Power Station, Unit No. 2
Docket No. 50-412, License No. NPF-73
LER 2012-001-00

Enclosed is Licensee Event Report (LER) 2012-001-00, "Automatic Actuation of Standby Service Water Pump During Emergency Diesel Generator Test." 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. Darin M. Benyak, Manager, Regulatory Compliance at 724-682-4284.

Sincerely,

Paul A. Harden

Enclosure – BVPS Unit 2 LER 2012-001-00

cc: Mr. W. M. Dean, NRC Region I Administrator
Mr. D. I. Spindler, NRC Senior Resident Inspector
Mr. P. J. Bamford, NRR Project Manager
INPO Records Center (via INPO Consolidated Event System)
Mr. L. E. Ryan (BRP/DEP)

IE22
NRR

NRC FORM 366 (10-2010) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104 EXPIRES 10/31/2013

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.

LICENSEE EVENT REPORT (LER)

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

1. FACILITY NAME	2. DOCKET NUMBER	3. PAGE
Beaver Valley Power Station Unit Number 2	05000412	1 OF 4

4. TITLE

Automatic Actuation of Standby Service Water Pump During Emergency Diesel Generator Test

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
									None	
09	24	2012	2012	- 001 -	00	11	20	2012	FACILITY NAME	DOCKET NUMBER

9. OPERATING MODE

5

10. POWER LEVEL

000

11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply)

☐ 20.2201(b)	☐ 20.2203(a)(3)(i)	☐ 50.73(a)(2)(i)(C)	☐ 50.73(a)(2)(vii)
☐ 20.2201(d)	☐ 20.2203(a)(3)(ii)	☐ 50.73(a)(2)(ii)(A)	☐ 50.73(a)(2)(viii)(A)
☐ 20.2203(a)(1)	☐ 20.2203(a)(4)	☐ 50.73(a)(2)(ii)(B)	☐ 50.73(a)(2)(viii)(B)
☐ 20.2203(a)(2)(i)	☐ 50.36(c)(1)(i)(A)	☐ 50.73(a)(2)(iii)	☐ 50.73(a)(2)(ix)(A)
☐ 20.2203(a)(2)(ii)	☐ 50.36(c)(1)(ii)(A)	☒ 50.73(a)(2)(iv)(A)	☐ 50.73(a)(2)(x)
☐ 20.2203(a)(2)(iii)	☐ 50.36(c)(2)	☐ 50.73(a)(2)(v)(A)	☐ 73.71(a)(4)
☐ 20.2203(a)(2)(iv)	☐ 50.46(a)(3)(ii)	☐ 50.73(a)(2)(v)(B)	☐ 73.71(a)(5)
☐ 20.2203(a)(2)(v)	☐ 50.73(a)(2)(i)(A)	☐ 50.73(a)(2)(v)(C)	☐ OTHER Specify in Abstract below or in NRC Form 366A
☐ 20.2203(a)(2)(vi)	☐ 50.73(a)(2)(i)(B)	☐ 50.73(a)(2)(v)(D)	

12. LICENSEE CONTACT FOR THIS LER

FACILITY NAME	TELEPHONE NUMBER (*Include Area Code*)
Darin M. Benyak, Manager, Regulatory Compliance	(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

14. SUPPLEMENTAL REPORT EXPECTED

☐ YES (If yes, complete 15. EXPECTED SUBMISSION DATE) ☒ NO

15. EXPECTED SUBMISSION DATE

MONTH	DAY	YEAR

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

On September 24, 2012 at 1225 hours, Beaver Valley Power Station (BVPS) Unit 2 experienced an automatic start of "B" Standby Service Water Pump (2SWE-P21B) during the "A" Emergency Diesel Generator (EDG) Automatic Test. As part of the test, the "A" Service Water Pump (2SWS-P21A) tripped as expected on a simulated loss of offsite power. This resulted in a low pressure condition on the Service Water headers which caused an automatic start of 2SWE-P21B. 2SWS-P21A re-started about 13 seconds after tripping as expected by the test sequence. The "B" Service Water Pump (2SWS-P21B) continued to operate normally during this event. Prior to testing, operators had briefed on the possibility of a Standby Service Water Pump starting as a result of the EDG test. However, an expected actuation was not documented in the test procedure or operator logs (i.e., not a preplanned actuation).

This event is reportable pursuant to 10 CFR 50.73(a)(2)(iv)(A) as a condition that resulted in an actuation of an emergency service water system that does not normally run and that serves as an ultimate heat sink. The expected trip of 2SWS-P21A was the direct cause for the automatic actuation of the Standby Service Water System. The safety significance associated with the automatic start of "B" Standby Service Water Pump that occurred at BVPS Unit 2 on September 24, 2012 is considered to be very low.

Energy industry identification system (EIIS) codes are identified in the text using the format [XX].

CONDITIONS PRIOR TO OCCURRENCE

Unit 2: Mode 5, Cold Shutdown, at 0 percent power and less than 200 degrees Fahrenheit average Reactor Coolant temperature. The unit was shutdown for a refueling outage.

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 September 24, 2012 at 1225 hours, Beaver Valley Power Station (BVPS) Unit No. 2 experienced an automatic start of "B" Standby Service Water System (SWE) [KG] Pump (2SWE-P21B) [P] during the "A" Emergency Diesel Generator (EDG) [DG] Automatic Test (2OST-36.3). As part of the test sequence, the normally running "A" Service Water System (SWS) [BI] Pump (2SWS-P21A) [P] tripped as expected due to a simulated loss of offsite power. This resulted in a brief low pressure condition on the SWS headers which caused an automatic start of 2SWE-P21B. About 13 seconds after the simulated loss of offsite power to the "A" bus, 2SWS-P21A automatically started as expected, as the EDG started and powered the respective emergency bus. The "B" SWE Pump was shut down per plant operating procedures at approximately 1603 hours. The "B" SWS Pump (2SWS-P21B) [P] continued to operate normally during this event.

Prior to the event, operators had briefed on the possibility of an SWE Pump starting as part of the EDG Automatic Test. However, there were no notes or steps in the test procedure or operator logs indicating an expected SWE actuation or pump start.

BVPS Service Water System Technical Specifications do not apply in Mode 5, Cold Shutdown.

CAUSE OF EVENT

The trip of the BVPS Unit 2 "A" SWS Pump was the direct cause for the automatic actuation of the BVPS Unit 2 "B" SWE Pump. The trip of the BVPS Unit 2 "A" SWS Pump was due to the simulated loss of offsite power during the preplanned EDG Automatic Test. Prior to the test, operators had briefed on the possibility of an automatic actuation of the SWE system as a result of the normally running "A" SWS Pump trip. Operators and supervision deemed this acceptable and assumed that the actuation would be considered part of preplanned actions and therefore would not be reportable under 10 CFR 50.73(a)(2)(iv)(A). However, the expected actuation was not properly documented in procedures or operator logs. This does not meet the standard for preplanned actuations.

The apparent cause of this event was determined to be a weakness in operator knowledge of 10 CFR 50.73 reporting requirements, specifically, the NUREG-1022 Revision 2 definition of

preplanned as it relates to system actuations. Due to this knowledge weakness, incorrect assumptions were made concerning potential reporting requirements of SWE Pump operation during the EDG Automatic Test.

ANALYSIS OF EVENT

The SWS, which draws water from the ultimate heat sink (Ohio River), provides normal plant cooling for safety related and non-safety related equipment during both plant operation and shutdown conditions. The SWE system is designed to provide a heat sink if the Main Intake Structure [MK] (which contains the SWS pumps) becomes disabled by the postulated beyond-design-basis event of a river barge impact explosion. The SWE pumps are located within the Alternate Intake Structure, upstream of the Main Intake Structure on the Ohio River. The SWE is designed to accommodate unit shutdown from 100 percent reactor power and subsequent cooldown of the Reactor Coolant System [AB] to less than 200 degrees Fahrenheit. The SWE pumps are provided with an automatic start feature such that each SWE pump will automatically start and align to its associated SWS piping train header when a low pressure is sensed in its associated SWS header. This automatic start feature is not required to meet a design basis event, but is provided to prevent inadvertent plant trip on loss of a running SWS pump.

When the "A" SWS header pump tripped as part of the EDG Automatic Test, a low pressure condition was induced in the "A" and "B" SWS headers causing the "B" SWE pump to start. The "A" SWE pump did not start since the testing configuration restricted automatic start of the "A" SWE pump. When the pressure in the "B" SWS header reached the low-pressure set point, the "B" SWE pump automatically started. The SWS and SWE systems performed as designed for a single SWS pump trip and as described in the Updated Final Safety Analysis Report (UFSAR).

The safety significance associated with the automatic start of "B" SWE Pump that occurred at BVPS Unit 2 on September 24, 2012 is considered to be very low. All risk significant SSCs functioned as designed in response to the trip of the normally running "A" SWS pump and resultant low header pressure during the performance of the "A" EDG Automatic Test. The unit was safely shutdown for the 2R16 Refueling Outage and in Mode 5 at the time this unplanned demand event occurred, and both of the SWS headers remained available throughout the event to support their shutdown safety functions.

This event is reportable pursuant to 10 CFR 50.73(a)(2)(iv)(A) as a condition that resulted in an actuation of an emergency service water system that does not normally run and that serves as an ultimate heat sink which is a system noted in 10 CFR 50.73(a)(2)(iv)(B)(9).

CORRECTIVE ACTIONS

1. A standing night order was issued September 25, 2012 to provide operational guidance with regards to reporting requirements for SWE actuation.
2. BVPS Unit 2 EDG automatic test procedures (2OST-36.3 and 2OST-36.4) will be revised to include information regarding reporting requirements and operational guidance for SWS and SWE operation.

Completion of open actions discussed above and other corrective actions are being tracked through the BVPS corrective action program.

PREVIOUS SIMILAR EVENTS

A review found no prior BVPS Unit 1 and two prior BVPS Unit 2 Licensee Event Reports within the previous ten years involving a valid actuation of an Auxiliary River Water System pump (BVPS Unit 1) or an SWE pump (BVPS Unit 2).

BVPS Unit 2 LER 2011-003-00, "Automatic Actuation of Standby Service Water Pumps Following Unexpected Service Water Pump Trip."

BVPS Unit 2 LER 2005-002-00, "Automatic Actuation of Standby Service Water Pump Following Unexpected Service Water Pump Trip."

CR-2012-14778