FENOC
FirstEnergy Nuclear Operating Company

Beaver Valley Power Station
P.O. Box 4
Shippingport, PA 15077

Peter P. Sena III
Site Vice President

724-682-5234
Fax: 724-643-8069

June 19, 2009
L-09-167

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 2009-004-00

Attached is Licensee Event Report (LER) 2009-004-00, "Two Ultrasonic Indications Found in Reactor Coolant System Drain Pipe." This event is being reported in accordance with 10 CFR 50.73(a)(2)(ii)(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. Colin P. Keller, Manager, Regulatory Compliance at 724-682-4284.

Sincerely,

Kevin L. Ostrowski for

Peter P. Sena III

Attachment

cc: Mr. S. J. Collins, NRC Region I Administrator
Mr. D. L. Werkheiser, NRC Senior Resident Inspector
Ms. N. S. Morgan, NRR Project Manager
INPO Records Center (via electronic image)
Mr. L. E. Ryan (BRP/DEP)

IE22
NRR

NRC FORM 366 (9-2007) U.S. NUCLEAR REGULATORY COMMISSION	APPROVED BY OMB NO. 3150-0104 EXPIRES 08/31/2010
LICENSEE EVENT REPORT (LER) (See reverse for required number of digits/characters for each block)	Estimated burden per response to comply with this mandatory collection request: 50 hrs. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Records and FOIA/Privacy Service Branch (T-5 F52), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects@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 NUMBER	3. PAGE
Beaver Valley Power Station Unit Number 1	05000334	1 of 4

4. TITLE
Two Ultrasonic Indications Found in Reactor Coolant System Drain Pipe

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: None	DOCKET NUMBER
04	26	2009	2009	- 004 -	00	06	19	2009	FACILITY NAME	DOCKET NUMBER

9. OPERATING MODE: 6

10. POWER LEVEL: 0 %

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
☐ 20.2203(a)(2)(vi)	☐ 50.73(a)(2)(i)(B)	☐ 50.73(a)(2)(v)(D)	Specify in Abstract below or in NRC Form 366A

12. LICENSEE CONTACT FOR THIS LER

FACILITY NAME	TELEPHONE NUMBER (*Include Area Code*)
Colin P. Keller, 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
B	AB	P	W120	Yes					

14. SUPPLEMENTAL REPORT EXPECTED	15. EXPECTED SUBMISSION DATE	MONTH	DAY	YEAR
☒ YES (*If yes, complete EXPECTED SUBMISSION DATE*). ☐ NO		09	04	2009

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

During the Beaver Valley refueling outage, while performing planned ultrasonic examination of reactor coolant piping in accordance with Materials Reliability Project document MRP-146 "Materials Reliability Program: Management of Thermal Fatigue in Normally Stagnant Non-Isolable Reactor Coolant System Branch Lines", two relevant indications were found in a Reactor Coolant System 2-inch pipe segment which is a stainless steel drain/sample line off of the "A" hot leg on April 26, 2009. This is reportable pursuant to 10 CFR 50.73(a)(2)(ii)(A). There was no indication of through-wall leakage. This pipe segment was replaced.

A root cause cannot be established until a metallurgical examination of the piping segment is performed. A supplement will provide a final conclusion following the completion of the metallurgical examination. This event is considered to have very low risk significance.

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
		YEAR	SEQUENTIAL NUMBER	REV NO.	
Beaver Valley Power Station Unit Number 1	05000334	2009	-- 004 --	00	2 OF 4

NARRATIVE

There were no structures, components, or systems that were inoperable at the start of the event that contributed to the event. Energy Industry Identification System (EIIS) codes are identified in the text as [XX].

DESCRIPTION OF EVENT

On April 26, 2009 with Beaver Valley Power Station (BVPS) Unit No. 1 in a refueling outage, planned ultrasonic examinations were being performed on the Reactor Coolant System (RCS) [AB] piping per the recommendations of Materials Reliability Project (MRP) MRP-146, "Materials Reliability Program Management of Thermal Fatigue in Normally Stagnant Non-Isolable Reactor Coolant System Branch Lines." Two relevant indications were found in the horizontal portion of pipe segment BV-RC-41 which is a two inch drain/sample line that connects to the "A" RCS Hot Leg. An engineering evaluation of the indications conservatively concluded that these indications would not meet the American Society of Mechanical Engineers (ASME) Code because the ultrasonic technique was not qualified for sizing the flaws.

ANALYSIS OF EVENT

Two relevant indications were found in the 2-inch pipe segment which is a normally stagnant non-isolable branch line off of the Reactor Coolant System. Since these two identified material defects could not be determined as acceptable in accordance with ASME Section XI, IWB-3600, "Analytical Evaluation of Flaws" or ASME Section XI, Table IWG-3410-1, "Acceptance Standards.", this is described in NUREG-1022, Revision 2, "Event Reporting Guidelines" as reportable pursuant to 10 CFR 50.73(a)(2)(ii)(A) for a degradation of a principal safety barrier.

This event was reported as a degraded condition of a principal safety barrier pursuant to 10 CFR 50.72(b)(3)(ii)(A) at 1336 on April 26, 2009 (EN Number 45022).

There was no loss of safety function pursuant to 10 CFR 50.73(a)(2)(v) since the Reactor Coolant System integrity was not lost.

The identified indications were not through-wall and there was no evidence of leakage. The plant risk associated with the BVPS Unit 1 RCS piping indications found in 2-inch line 1RC-41 on April 26, 2009, is considered to be very low. Industry Operating Experience supports the assumption that a small leak would develop long before a rupture of the 2-inch pipe would occur. Since the small leakage would be within the capacity of one charging pump, it would result in a normal plant shutdown and cooldown, and would not be risk significant. Moreover, a bounding analysis based on the Conditional Core Damage Probability from a postulated unisolable 2-inch pipe rupture resulting in a reactor

ANALYSIS OF EVENT (Continued)

trip and safety injection signal was analyzed and determined to be of very low risk significance.

Based on the above, and the fact that there was no indication of through wall leakage, this event is considered to have very low risk significance.

CAUSE OF EVENT

A root cause cannot be established until a metallurgical examination of the piping segment is performed, however, there are several probable causes. The first is thermal fatigue cracking that resulted in two circumferentially oriented indications at the inside diameter of the pipe. A second probable cause is stress corrosion cracking (SCC). The remaining probable causes are fabrication or manufacturing issues.

A metallurgical examination of the piping segment is currently being performed. A supplement to this Licensee Event Report will be submitted to provide a final conclusion when the metallurgical examination of the subject piping segment is completed.

CORRECTIVE ACTIONS

1. The affected pipe segment was replaced which meets the ASME Section XI repair criteria.

2. The affected pipe segment was sent for metallurgical examination to validate the failure mechanism probable cause. The results of this metallurgical examination are expected to be finalized after the submittal of this Licensee Event Report (LER). A supplement to this LER will be issued to provide updated cause information following the completion of this metallurgical examination.

3. Additional corrective actions may be initiated based upon the conclusions provided from the metallurgical report, when completed.

4. An Operating Experience report will be issued following completion of the metallurgical examination of the pipe segment.

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

LICENSEE EVENT REPORT (LER)

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
		YEAR	SEQUENTIAL NUMBER	REV NO.	
Beaver Valley Power Station Unit Number 1	05000334	2009	-- 004 --	00	4 OF 4

NARRATIVE

PREVIOUS SIMILAR EVENTS

A review found no prior BVPS Unit No. 1 and BVPS Unit No. 2 Licensee Event Reports within the last three years for an event involving base metal material indications or flaws in the Reactor Coolant System piping.

CR 09-58004