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November 26, 1999
L-99-173

Beaver Valley Power Station, Unit No. 2
Docket No. 50-412 License No. NPF-73
LER 99-010-00

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 99-010-00, 10 CFR 50.73(a)(2)(i), "Inoperable Containment Seismic Monitor."

K. L. Ostrowski
Division Vice President
Nuclear Operations and
Plant Manager

Attachment

IE22

PDR ADOCK 05000412

cc: Mr. H. J. Miller, Regional Administrator
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NRC FORM 366 U.S. NUCLEAR REGULATORY COMMISSION
(6-1998)

LICENSEE EVENT REPORT (LER)

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

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
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TITLE (4)
Inoperable Containment Seismic Monitor

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
									N/A	
10	26	99	99	010	00	11	26	99	FACILITY NAME	DOCKET NUMBER

OPERATING MODE (9)	2	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §:(Check one or more) (11)							
			20.2201(b)		20.2203(a)(2)(v)	X	50.73(a)(2)(i)		50.73(a)(2)(viii)
POWER LEVEL (10)	0 %		20.2203(a)(1)		20.2203(a)(3)(i)		50.73(a)(2)(ii)		50.73(a)(2)(x)
			20.2203(a)(2)(i)		20.2203(a)(3)(ii)		50.73(a)(2)(iii)		73.71
			20.2203(a)(2)(ii)		20.2203(a)(4)		50.73(a)(2)(iv)	X	OTHER Special Rpt
			20.2203(a)(2)(iii)		50.36(c)(1)		50.73(a)(2)(v)		
			20.2203(a)(2)(iv)		50.36(c)(2)		50.73(a)(2)(vii)		

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER (Include Area Code)
M. S. Ackerman, Manager Safety & Licensing	(412) 393-5203

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX

SUPPLEMENTAL REPORT EXPECTED (14)				EXPECTED	MONTH	DAY	YEAR
	YES (If yes, complete EXPECTED SUBMISSION DATE).	X	NO	N/A			

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

During a containment entry on 10/26/99 following a forced outage of Beaver Valley Power Station (BVPS) Unit No. 2, the containment seismic monitor 2ERS-RRA-1 was found with its error light flashing. A review of the instrument's recorder information determined that 55 events had been recorded and the recorder had run out of memory on 04/02/99. This instrument provides no external indication of its status. This instrument is self contained and requires entry into containment to view the instrument status and alarms. Per BVPS Unit 2 Technical Specification 3.3.3.3, Action Statement "a" states that the inoperable seismic instrument should be restored within 30 days. Action Statement "b" states "With one or more seismic monitoring instruments inoperable for more than 30 days, prepare and submit a Special Report in accordance with 10CFR50.4 within the next 10 days outlining the cause of the malfunction and the plans for restoring the instrument to operable status." The Special Report was not submitted within the time frame as required by the Technical Specification 3.3.3.3, because the condition was not discovered until after the time frame had elapsed.

The cause of this condition involves a problem with equipment sensitivity. Five other similar seismic instruments at BVPS Unit 2 were not influenced by the conditions associated with the affected seismic accelerograph and remained functional. These instruments provide monitoring and recording of the magnitude of any seismic activity which is used to subsequently analyze the effects of a seismic event. The seismic instruments that remained operable were sufficient to perform this function had a seismic event occurred. In addition, no seismic events exceeding the 0.01g setpoint were experienced at BVPS Unit 2 during this period in 1999.

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

PLANT AND SYSTEM IDENTIFICATION

Westinghouse-Pressurized Water Reactor System
Seismic Instrumentation (Vibration Monitoring) {IV}

CONDITIONS PRIOR TO OCCURRENCE

Unit 2: Mode 5 at 0 % power.

There were no systems, structures, or components that were inoperable that contributed to the event.

DESCRIPTION OF EVENT

During a containment entry on October 26, 1999 following a forced outage of Beaver Valley Power Station (BVPS) Unit No. 2, the containment seismic monitor 2ERS-RRA-1, was found with its error light flashing. A review of the instrument's recorder information determined that 55 events had been recorded causing the recorder to run out of memory on April 2, 1999. This instrument provides no indication, alarm or status outside of containment. This instrument is self contained and provides only local indication, thus requiring entry into containment to view the instrument status. Additionally, the technical specification does not require the device to have remote indication.

The containment entry on October 26 was conducted to insure the proper operation of this seismic monitor. During the Fifth BVPS Unit 2 refueling outage (2R05) in April 1995, this seismic instrument had its monitor's electronics relocated within containment to address issues with its radiation environment. In addition, the sensor was relocated from the steam generator cubicle floor to a support within the steam generator cubicle. Just prior to the seventh refueling outage (2R07), this instrument's recording equipment failed and was replaced during 2R07 due to the recording equipment's obsolescence (See BVPS Unit 2 Special Report L-98-157 dated July 29, 1998). During 2R07 an issue arose over the trigger setpoint required by the Technical Specifications for this instrument's recorder (See BVPS Unit 2 LER 99-004) and its setpoint was reduced. In addition, this instrument's sensor was replaced during 2R07 due to problems encountered during its calibration.

Post modification testing after the design change in 2R07 indicated that the vibrations being seen by the seismic monitor were virtually zero (with the Unit shutdown). However, some combination of (1)the new lower trigger setpoint for initiating recording, (2)the new sensor and/or (3)the new

DESCRIPTION OF EVENT (Continued)

recorder electronics in combination with the sensor located on a steam generator support apparently resulted in enough sensed vibratory motion when the plant was operating sufficient to initiate the seismic instrument's recorder. When the Unit returned to power operation after 2R07, some vibration peaks exceeded the instrument's 0.008g trigger value to start recording even though the majority of the recorded peaks by the seismic instrument were less than the 0.01g setpoint specified in the Technical Specifications. This instrument had not initiated any recordings during past Unit operation before 2R07. However, in this particular instance, the seismic instrument recorder ran out of memory after recording 55 events.

Subsequent review of the recorder's data showed that the recorder became unable to record further seismic information on April 2, 1999. Thus, this seismic instrument became inoperable on this date. Because it is a self contained unit located inside the containment building, plant personnel were not aware of this condition. Per BVPS Unit 2 Technical Specification 3.3.3.3, Action Statement "a" states that the inoperable seismic instrument should be restored within 30 days. Action Statement "b" states "With one or more seismic monitoring instruments inoperable for more than 30 days, prepare and submit a Special Report in accordance with 10CFR50.4 within the next 10 days outlining the cause of the malfunction and the plans for restoring the instrument to operable status." The Special Report was not submitted within the time frame as required by the Technical Specification 3.3.3.3, because the condition was not discovered until after the time frame had elapsed.

2ERS-RRA-1 was declared inoperable when the deficient condition was identified on October 26, 1999. A temporary modification was implemented on October 28, 1999 to raise the setpoint of the seismic instrument to avoid the vibration levels expected during normal power operation. However, this setpoint is outside the current Technical Specification requirements. In order to restore this monitor to functional status it will remain declared inoperable due to noncompliance with current Technical Specification requirements. A license amendment request (LAR) has previously been submitted to the NRC requesting that the Seismic Monitoring Instrumentation requirements be removed from the Technical Specifications and be relocated to Licensee controlled documents in accordance with NRC Generic Letter 95-10. Following approval of LAR 2A-143, the setpoint for seismic monitor 2ERS-RRA-1 and its design requirements will be reconciled with the Licensing Requirements Manual via the 10CFR50.59 process.

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

CAUSE OF THE EVENT

The cause of this condition involves a problem with equipment sensitivity. The containment seismic instrument 2ERS-RRA-1 had previously experienced operation problems. These concerns were to be corrected by a design change implemented during the last BVPS Unit 2 refueling outage (2R07). However, the vibration level that was experienced by the containment seismic monitor when the plant was operating was not expected based on past vibration levels during operations. The vibration level at the seismic instrument sensor when power operation resumed initiated the seismic recorder numerous times causing the instrument to run out of memory, preventing any further capability to record information.

REPORTABILITY

Subsequent review of the recorder's data showed that the recorder became unable to record further seismic information on April 2, 1999. Thus, this seismic instrument became inoperable on this date. Because it is a self contained unit located inside the containment building, plant personnel were not aware of this condition. Per BVPS Unit 2 Technical Specification 3.3.3.3, Action Statement "a" states that the inoperable seismic instrument should be restored within 30 days. Action Statement "b" states "With one or more seismic monitoring instruments inoperable for more than 30 days, prepare and submit a Special Report in accordance with 10CFR50.4 within the next 10 days outlining the cause of the malfunction and the plans for restoring the instrument to operable status." The Special Report was not submitted within the time frame as required by the Technical Specification 3.3.3.3, because the condition was not discovered until after the time frame had elapsed. This is a condition prohibited by the plant's Technical Specifications (Technical Specification 3.3.3.3 Action Statement "b") and is reportable pursuant to 10CFR50.73(a)(2)(i)(B).

This report also constitutes the Special Report required by BVPS Unit 2 Technical Specification 3.3.3.3 Action Statement "b".

SAFETY IMPLICATIONS

Technical Specification 3.3.3.3 requires six triaxial time-history accelerographs be operable. This report addresses the inoperability of the one triaxial time-history accelerograph in the steam generator cubicle in the containment building. The other five seismic instruments at BVPS Unit 2 were not influenced by the conditions associated with the affected seismic accelerograph and remained functional. This includes the two

SAFETY IMPLICATIONS

other accelerographs inside containment and the three accelerographs which provide input to the control room. These instruments provide no automatic plant function or actions. These instruments only provide a monitoring and recording of the seismic activity magnitude during a seismic event, to be used to subsequently analyze the effects of a seismic event. The seismic instruments that remained operable were sufficient to perform this function had a seismic event occurred between April 2 and October 26, 1999. In addition, no seismic events exceeding the 0.01g setpoint were experienced at BVPS Unit 2 during this period in 1999. However, BVPS Unit 1 seismic instruments, located nearby, remained operable and would have detected the event had it occurred.

CORRECTIVE ACTIONS

1. A temporary modification was implemented on the BVPS Unit 2 seismic monitor 2ERS-RRA-1 on October 28, 1999, to raise the setpoint to a higher value, which will maintain the instrument as functional during current operation. This instrument will remain declared inoperable since the new setpoint established by the temporary modification does not meet current BVPS Unit 2 Technical Specification 3.3.3.3 requirements. Returning the setpoint to the Technical Specification required setpoint would only lead to the instrument again running out of memory and becoming non-functional.

2. License Amendment Request (LAR) 2A-143 was submitted to the NRC on May 2, 1999 (L-99-092) requesting that the seismic instrument requirements be removed from Technical Specification 3.3.3.3 and moved to the Licensee controlled Licensing Requirements Manual. Following approval of LAR 2A-143, the setpoint for seismic monitor 2ERS-RRA-1 and its design requirements will be reconciled with the Licensing Requirements Manual via the 10CFR50.59 process.

3. The two additional similar seismic monitors(2ERS-RRA-2 and 2ERS-RRA-3) located in the auxiliary building were checked to ensure that they were functioning properly. This was completed by November 6, 1999.

Through the corrective action program, additional actions will be evaluated to assess seismic instruments which have no control room indication.

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PREVIOUS SIMILAR EVENTS

A review of previous Beaver Valley Power Station Unit 1 and Unit 2 LERs within the last three years identified one LER which involved Seismic Instruments:

LER 2-99-004, "Inadequate Basis for Seismic Instrument Setpoints and Calibration Led to Technical Specification Noncompliance."

Letter number L-99-078 dated May 3, 1999, Beaver Valley Power Station, Unit No,.1 Docket No. 50-334, License No. DPR-66 Special Report