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October 8, 1990
ND3MNO:3044

Beaver Valley Power Station, Unit No. 2
Docket No. 50-412, License No. NPF-73
LER 90-011-00

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

Gentlemen:

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

LER 90-011-00, 10 CFR 50.73.a.2.iv, "ESF Actuation - Containment Purge Isolation due to High Radiation Signal".

Very truly yours,

T. P. Noonan
General Manager
Nuclear Operations

DC/sl

Attachment

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LICENSEE EVENT REPORT (LER)

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, 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) 0 5 0 0 0 4 1 2	PAGE (3) 1 OF 0 4
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TITLE (4)
ESF Actuation - Containment Purge Isolation due to High Radiation Signal

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 NAMES	
0	9	0	9	0	0	0	1	0	N/A	
0	9	0	9	0	0	0	1	0	DOCKET NUMBER(S) 0 5 0 0 0	

OPERATING MODE (9) 5	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5. (Check one or more of the following) (11)	
POWER LEVEL (10) 0 0 0	<input type="checkbox"/> 20.402(b) <input type="checkbox"/> 20.406(a)(1)(i) <input type="checkbox"/> 20.406(a)(1)(ii) <input type="checkbox"/> 20.406(a)(1)(iii) <input type="checkbox"/> 20.406(a)(1)(iv) <input type="checkbox"/> 20.406(a)(1)(v)	<input checked="" type="checkbox"/> 20.406(c) <input type="checkbox"/> 50.36(e)(1) <input type="checkbox"/> 50.36(e)(2) <input type="checkbox"/> 50.73(a)(2)(i) <input type="checkbox"/> 50.73(a)(2)(ii) <input type="checkbox"/> 50.73(a)(2)(iii) <input type="checkbox"/> 50.73(a)(2)(iii)

LICENSEE CONTACT FOR THIS LER (12)		TELEPHONE NUMBER
NAME T.P. Noonan, General Manager Nuclear Operations		AREA CODE 4 1 2 6 4 3 - 1 2 5 8

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)										
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPROS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPROS	
C	I	L	X	X	X	X	X	X	X	N

SUPPLEMENTAL REPORT EXPECTED (14)	EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
<input checked="" type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE)	<input type="checkbox"/> NO	0	7	0

ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single space typewritten lines) (16)

On 9/6/90, the containment building was being purged in preparation for refueling. At 1719 hours, containment radiation monitor HVR*RQ104B spiked high and initiated an automatic purge isolation. Subsequent sampling by radiation control technicians showed no measurable airborne activity in containment. After the initial spike, the monitor's indicated activity returned to its pre-event level. Investigation determined that the monitor had spiked high due to an electrical disturbance resulting from a lightning strike. There were no safety implications due to this event. No actual radiation increase occurred. The system actuated in a conservative direction. Isolation of containment purge in response to a high radiation signal is described in Unit 2 UFSAR Section 9.4.7.3, "Containment Purge Air System".

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 RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

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TEXT (If more space is required, use additional NRC Form 388A's) (17)

Description of Event

On 9/6/90, the containment building was being purged in preparation for refueling. The ventilation system was aligned to draw outside air through containment. Purge exhaust is directed to atmosphere via a monitored flowpath as a normal gaseous waste discharge. Sampling and analysis of containment atmosphere is conducted prior to the discharge to verify radiological conditions during the purge.

At 1719 hours, containment radiation monitor HVR*RQ104B momentarily spiked high, generating a high radiation signal. This automatically initiated a close signal to the Train B purge inlet and outlet isolation dampers. The inlet damper fully closed, but the outlet damper (HVR*MOD23B) stopped in mid-position. Operators successfully closed HVR*MOD23B via its control switch at 1720 hours.

Cause of Event

The containment radiation monitor spiked high due to an electrical disturbance resulting from a lightning strike. At 1715 hours, a lightning storm had begun at the site and was still in progress at the time of this event. At 1719 hours, simultaneously with the high radiation signal in containment, alarms were received on two channels of the Unit 2 seismic monitor and on the Unit 2 loose parts monitoring system. Also, between 1707 and 1722 hours, all wind speed and differential temperature instruments on the meteorological data tower ceased to function. The instruments are monitored by computer and their average data values are reported to the control room once per 15 minutes. The instruments were damaged by an electrical discharge.

The seismic monitor and loose parts alarms were determined to have been spurious. Each seismic channel monitored all three axes of movement, yet one alarmed seismic channel showed movement on only one axis, while the other alarmed seismic channel showed movement on only two axes. Additionally, the other Unit 2 and Unit 1 seismic channels showed no indication of seismic activity. Evaluation of the loose part alarm showed no indication of an actual loose part in the reactor coolant system or secondary plant.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 500 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-630), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555 AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

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TEXT (if more space is required, use additional NRC Form 306A's) (17)

After the spike, the containment radiation monitor's indication returned to its pre-event level. Radiation control personnel sampled containment atmosphere following this isolation actuation. They verified there were no identifiable isotopes present.

Previous Similar Events

Review of station documents showed one previous event (Unit 2 LER 89-010) where a containment purge isolation occurred due to a high radiation signal. In this previous event, elevated containment activity was due to localized air turbulence within the reactor cavity resulting from mechanical binding of fuel transfer system isolation valve IAC-102.

Corrective Actions

- 1) Operators verified that a containment purge isolation had been initiated in response to the high radiation signal. When the closure of the outlet damper did not automatically continue to completion, the operators manually isolated the containment purge flow path. The purge outlet isolation damper was inspected to determine why it had not fully closed. This inspection determined that the damper had functioned as designed and stopped movement after the high radiation signal had reset. An engineering evaluation of this damper's control circuit has been initiated to verify that the damper's operation meets all requirements of the containment purge system design. A supplemental report will be issued describing the results of this evaluation.
- 2) Operations and radiation control personnel verified the normal operation of radiation monitor HVR*RQ104B after the electrical disturbance. Sampling verified that no isotopes were present in the containment atmosphere.
- 3) The damaged wind speed and differential temperature meteorological instruments were replaced.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 60.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (F-630), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

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TEXT (If more space is required, use additional NRC Form 305A's) (17)

Safety Evaluation

There were no safety implications due to this event. The containment purge system is isolated during normal plant operation and is only used for refueling applications. No fuel movement was in progress at the time of this event. The momentary spike of the containment radiation monitor was in the conservative direction. Automatic closure of the containment purge isolation dampers in response to a high radiation alarm is discussed in Beaver Valley Unit 2 UFSAR Section 9.4.7.3.3, "Containment Purge Air System Safety Evaluation". Subsequent to this event, there were three events involving a high containment radiation alarm where purge isolation damper HVR*MOV23B successfully closed. These subsequent closures demonstrated that the damper would close in response to a sustained high radiation signal.