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May 23, 1990
ND3MNO:2080

Beaver Valley Power Station, Unit No. 2
Docket No. 50-412, License No. NPF-73
LER 90-005-00

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 90-005-00, 10 CFR 50.73.a.2.iv, "Inadvertent ESF Actuation During Quench Spray Flow Switch Calibration".

Very truly yours,

T. P. Noonan
General Manager
Nuclear Operations

cj

Attachment

IE22
1/1

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NRC Form 366
(9-83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/88

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Beaver Valley Power Station Unit 2	0 5 0 0 0 4 1 2	1 OF 0 3

TITLE (4)

Inadvertent ESF Actuation During Quench Spray Flow Switch Calibration

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	DOCKET NUMBER(S)
0 4	2 3	9 0	9 0	0 0 5	0 0	0 5	2 3	9 0	N/A	0 5 0 0 0
										0 5 0 0 0

OPERATING MODE (9)	1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)			
POWER LEVEL (10)	0 8 7	20.402(b)	20.405(c)	X 50.73(a)(2)(iv)	73.71(b)
		20.405(a)(1)(i)	50.36(c)(1)	50.73(a)(2)(v)	73.71(c)
		20.405(a)(1)(ii)	50.36(c)(2)	50.73(a)(2)(vii)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)
		20.405(a)(1)(iii)	50.73(a)(2)(i)	50.73(a)(2)(viii)(A)	
		20.405(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(viii)(B)	
		20.405(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
	AREA CODE
T.P. Noonan, General Manager Nuclear Operations	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 NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	
D	B E	I S V	T 0 2 0	N							

SUPPLEMENTAL REPORT EXPECTED (14)		EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
X YES (If yes, complete EXPECTED SUBMISSION DATE)	NO		0 8	2 3	9 0

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

On 4/24/90, operators discovered that three normally open valves in the Quench Spray Chemical Addition system were in the closed position. Review of computer logs found that one had closed earlier that day, while the other two had closed on 4/23/90. Investigation found that the valves had closed due to a error in four newly revised calibration procedures for the Quench Spray Flow Switches. Each procedure had technicians temporarily de-energize the limit switches on the valve associated with the flow switch. With the open limit switch de-energized, the valves automatically closed. Two of the procedures were performed on 4/23/90 and one was performed on 4/24/90. The fourth test had not been performed since its revision. Operations opened the affected valves, using the Control Board switches. The flow switch calibration procedures have been revised. A root cause analysis of the errors that resulted in the procedure being revised incorrectly is being performed. A supplemental report will be issued detailing the results of this analysis. There were no safety implications due to this event. In the event of a Quench Spray actuation, the valves were operable and would have been automatically positioned correctly in response to their ESF signals.

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Beaver Valley Power Station Unit 2	0 5 0 0 0 4 1 2	9 0	— 0 0 5	— 0 0	0 2 OF 0 3

TEXT (If more space is required, use additional NRC Form 366A's) (17)

Description of Event

On 4/24/90, operators discovered that Quench Spray Chemical Addition discharge valves 2QSS*SOV101A, 2QSS*SOV101B and 2QSS*SOV102A were closed. Review of computer logs showed that 2QSS*SOV102A had closed earlier that day and 2QSS*SOV101A and B had closed on 4/23/90. Investigation determined that the time of the valve closures had corresponded to the calibration of the Quench Spray flow switches associated with each valve. Operators opened the valves after discovering that each respective valve was closed and returned the system to its normal alignment.

Cause of Event

This event was due to an error in the Quench Spray flow switch calibration procedures. There are four Quench Spray Chemical Addition discharge valves, each of which receive a control logic signal from a different Quench Spray flow switch. The procedures to calibrate these flow switches had been revised during the week prior to this event. These new revisions were generated to enhance the test equipment reliability during the performance of the test on a energized circuit. The new revision had technicians lift a black lead from the flow switch and connect an Ohmmeter between the black lead and its terminal block. The Ohmmeter is then to be used to monitor switch contact status while adjusting the switches setpoint.

The problem with the revised procedure was that there were two leads on the same terminal, the black lead and an additional orange lead. The orange lead was installed above black, and so had to be momentarily lifted in order to lift the black lead. The orange lead was connected to the open limit switch for the associated Chemical Addition discharge valve and provided a "seal-in" open signal. When the orange lead was momentarily lifted, the valve automatically went closed.

Corrective Actions

1) Operators opened the affected valves and restored the system to its normal alignment.

2) The flow switch calibration procedures were revised to use a different test point to install the Ohmmeter.

3) A root cause evaluation of the errors that resulted in the procedures being revised incorrectly has been initiated. The results of this evaluation and any further corrective actions will be documented in a supplemental report.

4) The Instrument and Control procedure writers have been issued administrative guidance regarding additional actions to be performed in the procedure generation and review process to verify procedures are technically correct prior to their approval and use.

Previous Similar Events

Review of station documentation showed no previous similar events.

Safety Evaluation

There were no safety implications due to this event. In the event of a Quench Spray actuation, an Engineered Safety Features (ESF) signal would have been sent to the Chemical Addition discharge valves, causing them to open. The Chemical Addition discharge valves were operable during this event except during the short time periods when the technicians had the limit switch wiring lifted. These periods were not concurrent, so there was at most only one valve inoperable at any given time. There was therefore always at least one train of Chemical Addition available at any time. This was within Beaver Valley's Safety Analysis for High Energy Line Breaks inside Containment which require only one train of Quench Spray to be available (UFSAR Section 6.2.1.1.3, "Containment Systems Design Evaluation").