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March 16, 1992  
ND3MNO:3268

Beaver Valley Power Station, Unit No. 1  
Docket No. 50-334, License No. DPR-66

LER 92-002-00

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 92-002-00, 10 CFR 50.73.a.2.iv, "ESF Actuation-Blowdown Isolation due to Pressure Switch Failure".

Very truly yours,

*K.L. Ostrowski for*

T. P. Noonan  
General Manager  
Nuclear Operations

DSC/sl

Attachment

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March 16, 1992

NDJMNO:3268

Page two

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March 16, 1992

ND3MNO:3268

Page three

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## LICENSEE EVENT REPORT (LER)

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 800 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE PSODS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20545, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FAV: DATE:

DOCKET NUMBER (2):

PAGE (3):

0 5 0 0 0 3 3 4 1 OF 0 4

USE &amp; ABUSE OF SYSTEM IN Isolation due to Pressure Switch Failure

LER NUMBER (6)				REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAME(S)	DOCKET NUMBER(S)
0	2	1	3	9	2	9	2	0 0 2
0	0	0	2	0	0	0	3	1 6 9 2

OPERATING MODE (9)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 2.106(a)(2) AND (3) OF THE ATOM Act (10)	
POWER LEVEL (10)	1 0 0	20.402(b)	20.405(a)
		20.405(a)(1)(i)	50.38(a)(1)
		20.405(a)(1)(ii)	50.38(a)(2)
		20.405(a)(1)(iii)	50.73(a)(2)(i)
		20.405(a)(1)(iv)	50.73(a)(2)(ii)
		20.405(a)(1)(v)	50.73(a)(2)(iii)
		20.405(a)(1)(vi)	50.73(a)(2)(iv)
		20.405(a)(1)(vii)	50.73(a)(2)(v)
		20.405(a)(1)(viii)	50.73(a)(2)(vi)
		20.405(a)(1)(ix)	50.73(a)(2)(vii)
		20.405(a)(1)(x)	50.73(a)(2)(viii)
		20.405(a)(1)(xi)	50.73(a)(2)(ix)
		20.405(a)(1)(xii)	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 NRC	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC
X	B	A	P	S					
			B	0	7	4	Y		

SUPPLEMENTAL REPORT EXPECTED (14):

YES (if you complete EXPECTED SUBMISSION DATE)	NO	EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
	X				

ABSTRACT (16) (Limit to 400 spaces; -x, approximately fifteen single-space typewritten lines) (16)

On 2/13/92, during 100% power operations, three spurious steam generator blowdown isolations occurred at 1636, 1852, 2313 hours. A fourth spurious isolation occurred at 0033 hours on 2/14/92. After each isolation, Operators verified that no containment isolation, auxiliary feedwater actuation or pipe tunnel high temperature signals had occurred. Based on this, the operators determined that the blowdown isolations were spurious and returned the system to service. Maintenance was contacted to determine the cause of these actuations. At 0121 hours, Operators manually isolated blowdown to prevent further spurious isolations. Maintenance determined that the isolations were due to failed pressure switch PS-FW-157-3. Water had accumulated in the switch, causing intermittent shorting of its blowdown isolation contacts. Maintenance replaced the switch and the system was returned to service. There were no safety implications due to this event. The blowdown system does not serve any safety function and is only used for long term secondary chemistry control.

LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: SEE HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-33), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20545, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

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

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

Description of Event

On 2/13/92, the station was operating at 100% power. At 1636 hours, a spurious blowdown isolation signal was generated, causing blowdown isolation valves TV-BD-100A,B,C and blowdown sample valves TV-SS-117A,B,C to close. Operators verified that none of the signals that automatically isolate these valves (containment isolation signal, auxiliary feedwater isolation signal or high pipe tunnel temperature) were present and that blowdown was not required to be isolated. Operators realigned the blowdown and sampling systems to service. Maintenance was notified of the actuation and requested to investigate.

A similar isolation occurred at 1852 hours. Investigation by Maintenance and Operations determined that the apparent cause of this isolation was a failure of auxiliary feedwater pressure switch PS-FW-157-3. This switch is located on the discharge piping of steam driven auxiliary feedwater pump FW-P-2. On a feedwater pump start, this switch senses the high pump discharge pressure and initiates a blowdown isolation to conserve steam generator inventory. Maintenance was directed to repair or replace the switch. While these activities were on-going, operators verified that the blowdown isolation was not required and realigned the blowdown and sampling systems.

At 2313 hours, a third isolation occurred. Operators verified that blowdown was not required to be isolated and realigned the systems. At 0030 hours on 2/14/92, a fourth isolation occurred. Operators again verified that the isolation was spurious and realigned the systems.

At 0125 hours, it was determined that this event was an ESF actuation. Operators manually isolated the blowdown system to prevent further spurious actuations.

Cause of Event

Investigation by Maintenance determined that pressure switch PS-FW-157-3 had failed. Water had entered the switch's housing, causing internal corrosion. This corrosion resulted in the switch generating intermittent, spurious blowdown isolation signals.

LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUIREMENT 500 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (5-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20545, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)	
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
Beaver Valley Power Station Unit 1	0500033492	-0102	-0103			OF 04

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

Investigation by Maintenance determined that the water had apparently entered the switch housing during the high humidity conditions that occur in that area during testing of the steam driven auxiliary feedwater pump.

The blowdown isolation signal is not an ESF or safety related signal. However, the three blowdown isolation valves, TV-BD-100A,B,C, are containment isolation valves and therefore considered to be ESF components.

Corrective Actions

- 1) The failed pressure switch, PS-FW-157-3 was replaced.
- 2) Although this switch is not required to be environmentally qualified for either HELE or LOCA concerns, an engineering evaluation has been initiated to determine if the switch requires further moisture intrusion protection.

Previous Similar Events

Review of station documents showed one previous similar event. Unit 1 LER 90-014-00 involved an inadvertent blowdown isolation that occurred when PS-FW-157-3 failed. This previous event was initiated by a cracked bourdon tube in the pressure switch and did not result from humidity induced water intrusion.

Reportability

This event is being reported in accordance with 10CFR50.73.a.2.iv as an event that resulted in the automatic actuation of an Engineered Safety Feature.

Safety Analysis

There were no safety implications due to this event. The pressure switch failed in such a manner that it caused the blowdown isolation and blowdown sampling isolation valves to close. This failure is in the conservative direction (ie. maintaining containment isolation) as these valves are required to be closed during accident conditions. Blowdown is primarily used for steam generator chemistry control. While long term



LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST. ADD THIS FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-300) 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)

POCKET NUMBER (2)

LER NUMBER (3)

PAGE (3)

Beaver Valley Power Station Unit 1

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

isolation of blowdown during operation would lead to undesirable secondary chemistry, the temporary isolation that occurred during this event did not cause any administrative chemistry operating limits to be exceeded.

Regardless of whether the switch failed in the conservative or nonconservative direction, if the steam driven auxiliary feedwater pump actuated but was unable to maintain steam generator inventory due to blowdown not isolating, the two motor driven auxiliary feedwater pumps would start due to low-low steam generator level in two steam generators. Both of these pumps have discharge pressure switches which would isolate the blowdown and blowdown sampling systems once either motor driven pump started. Additionally, other safety-related auto-isolation signals to the blowdown and blowdown sampling systems exist and were fully operational during this event. These other signals are Containment Isolation Phase A, Safeguards High Energy Line Break isolation and isolation on high blowdown radiation. In the event of an accident, these other signals were available and capable of isolating the blowdown and blowdown sampling systems.

(References: Beaver Valley Unit 1 UFSAR Section 5.3, "Containment Isolation System" and Section 10.3.8.3, "Secondary Vents and Drains Performance Analysis".)