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)

2/4 Refueling Water Storage Tank Level Channels Inoperable

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 2	2 1	8 8	8 8	0 0 6	0 1	0 5	1 9	8 8	N/A	0 5 0 0 0
									N/A	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 5 8	20.402(b)	20.405(c)	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)	X 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
Thomas P. Noonan, Plant Manager	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 NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	
C	B E	L T	R 3 6 9	N							

SUPPLEMENTAL REPORT EXPECTED (14)

		EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
YES (If yes, complete EXPECTED SUBMISSION DATE)	X NO				

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

On 2/21/88, at 0850 hours, operators received Control Room indication that the "C" Refueling Water Storage Tank (RWST) level transmitter was indicating a Low-Low level. Operators immediately verified that the other transmitters were indicating normal level. Investigation determined that the transmitter's sensing lines were frozen, even though its associated heat tracing was energized. Maintenance thawed the frozen line with a portable heater. As a precautionary measure, a tent was erected around the level transmitters and the portable heater was placed in the tent. At 1630, the "A" transmitter again froze, indicating Low-Low level. Investigation determined that the tent/portable heater had raised the local temperature to the point where the thermostat's for the "A" and "C" transmitters had deenergized their heat tracing. At 1720, the setpoints for these thermostats were raised, re-energizing the heat trace. At 1722, before the re-energized heat tracing could be affective, the sensing lines for the "A" transmitter froze, causing the transmitter to fail low. At 1743, the "A" transmitter thawed. Engineering is investigating improvements in the heat tracing for these sensing lines. There were no safety implications due to this event, as the other two transmitters were fully operable.

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On 2/21/88, at 0850 hours, the Control Room bistable status light for the "C" Refueling Water Storage Tank (RWST) level transmitter illuminated. This meant that level transmitter [QSS-LT104C] was indicating a Low-Low level for the RWST. All other RWST level indicators (status lights, wide range indicators and narrow range indicators) were indicating normal RWST level. Investigation determined that the sensing lines for [QSS-LT104C] had frozen, causing the transmitter to fail low. This occurred even though the temporary heat tracing on this sensing line (installed as part of the immediate corrective actions for LER 88-001-00) was energized. Ambient temperature at this time was 12 degrees Fahrenheit. Using a kerosene heater, Maintenance thawed the frozen sensing lines and returned the transmitter to service by 1120 hours. In order to prevent further freezing, Maintenance erected a tent around the RWST level transmitters and heated the tent with the kerosene heater.

At 1630 hours, the sensing lines of the "C" level transmitter again froze, causing the transmitter to fail low. Investigation found the heat tracing for the "A" and "C" RWST level transmitters to be deenergized. The local ambient temperature inside the tent had increased to the point that the thermostats associated with the heat tracing for these two level transmitters, had deenergized their heat tracing. Electricians were instructed to increase the setpoints of these thermostats, in order to re-energize the heat tracing. At 1720 hours, the electricians reported that the thermostats had been adjusted and all heat tracing was energized. At 1722 hours, before the heat tracing could thaw the "C" level transmitter sensing lines, the sensing lines for the "A" RWST level transmitter, [QSS-LT104A], froze, causing this transmitter to also fail low. With two level transmitters inoperable, the station entered Technical Specification 3.0.3. The NSS immediately directed the "C" transmitter's bistable to be bypassed. This action blocked the Low-Low RWST level signal. Preparations were initiated for a controlled station shutdown. At 1743 hours, the "A" level transmitter's sensing lines thawed and the transmitter returned to service. At this time, the station exited Technical Specification 3.0.3. After verifying that the "A" transmitter was functioning properly, the bistable for the "C" transmitter was returned to normal at 1800 hours. At 1913 hours, the "C" level transmitter's sensing lines thawed and the transmitter began functioning again.

As noted above, there has been one previous similar failure of these transmitters (see LER 88-001-00). Engineering is in the process of designing permanent heat tracing for these sensing lines. This permanent heat tracing will be more reliable than the temporary heat tracing currently in place. Until this permanent heat tracing is in place, the Control Room status lights for these transmitters will provide constant indication of the operability of these transmitters.

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

There were no major safety implications due to this event. The only safety function associated with the affected transmitters is the automatic Safety Injection transfer from "Injection" to "Recirculation Phase". This occurs when any two transmitters sense a Low-Low RWST level subsequent to a Safety Injection signal. Had a safety injection occurred while any one transmitter was failed low, the "Injection Phase" would have initiated as designed, until a second transmitter indicated a Low-Low level. At this time, as per design, the Recirculation Phase would have been initiated. After the second transmitter failed low (1722 hours), the "Injection Phase" was blocked. However, after the "C" transmitter's bistable was bypassed (approximately one minute after the failure of the second transmitter), the "Injection Phase" was restored to operability. During this short time period when the Safety Injection "Injection Phase" was blocked, operator action would have been required to align the safety injection system in the event of an actual safety injection. The station's Safety Injection Response Procedure provides the operators with instructions in performing this manual alignment.

Duquesne Light

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May 19, 1988
ND3SPM:0231

Beaver Valley Power Station, Unit No. 2
Docket No. 50-412, License No. NPF-73
LER 88-006-01

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 88-006-01, 10 CFR 50.73.a.2.i.B, "Two of Four Refueling Water Storage Tank Level Channels Inoperable".

Very truly yours,

T. P. Noonan
Plant Manager

pcj

Attachment

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