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February 19, 1990  
ND3MNO:3101

Beaver Valley Power Station, Unit No. 1  
Docket No. 50-334, License No. DPR-66  
LER 91-002-00

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 91-002-00, 10 CFR 50.73.a.2.i.a, "Reactor Coolant System Pressure Boundary Leakage Results in Plant Shutdown".

Very truly yours,

T. P. Noonan  
General Manager  
Nuclear Operations

JGT/sl

Attachment

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February 19, 1991

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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 (F530), 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)

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PAGE (3)

TITLE (4)

Reactor Coolant System Pressure Boundary Leakage Results in Plant Shutdown

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	1	1	8	9	1	9	1	0	0	2	0 5 0 0 0
0	1	1	8	9	1	9	1	0	0	0	0 5 0 0 0

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5. (Check one or more of the following) (11)

OPERATING MODE (9)	20.402(b)	20.405(c)	50.73(a)(2)(iv)	73.71(b)
3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
POWER LEVEL (10)	20.405(a)(1)(i)	50.38(a)(1)	50.73(a)(2)(iv)	73.71(c)
0 0 0	20.405(a)(1)(ii)	50.38(a)(2)	50.73(a)(2)(iv)	<input type="checkbox"/>
	20.405(a)(1)(iii)	<input checked="" type="checkbox"/> 50.73(a)(2)(i)	50.73(a)(2)(vii)(A)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)
	20.405(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(vii)(B)	
	20.405(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME

T.P. Noonan, General Manager Nuclear Operations

TELEPHONE NUMBER

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
X	A B P S P		X X X X	N					

SUPPLEMENTAL REPORT EXPECTED (14)

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

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

On 1/16/91, with the Unit in Power Operation at 100% reactor power, a review of the operating logs showed an increased containment sump pumpout rate and increased "unidentified" leakage (from 0.1 gpm to 0.3 gpm) on a reactor coolant system (RCS) water inventory surveillance test. During the 1/16/91 afternoon shift and the 1/17/91 midnight shift multiple containment entries were made to identify the source of the leakage. The area of leakage was reported to be near the Loop 1B Cold Leg Stop Valve. Since the installed insulation prevented positive identification of the exact location of the leak, a plant shutdown to Hot Standby was performed. An Unusual Event was declared in accordance with the Emergency Preparedness Plan Implementing Procedures due to apparent pressure boundary leakage. Following insulation removal, the leakage was confirmed to be on the piping to RC-67, the Loop 1B Cold Leg Vent Valve. This valve and piping was removed and the RCS pressure boundary penetration was plugged and capped. There were no safety implications to the public as a result of this event. No radioactive releases from containment occurred. The amount of leakage was within the capability of the normal charging system arrangement.

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 (FASO), 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)

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

DESCRIPTION OF EVENT

On 1/16/91, with the Unit in Power Operation (Operational Mode 1) at 100% reactor power, a review of the operating logs showed an increased containment sump pumpout rate over the previous three days and increased "unidentified" leakage (from 0.1 to 0.3 gpm) on a reactor coolant system (RCS) water inventory surveillance test. At 1350 hours, a containment entry was made to identify the source of the leakage. The area of leakage was reported to be near the Loop 1B Cold Leg Stop Valve. An additional containment entry was made at 0150 hours on 1/17/91 to confirm the area of leakage. A controlled plant shutdown to Hot Standby (Operating Mode 3) was commenced at 0400 hours to aid in identifying the location of the leak and to support the installation of scaffolding. After plant shutdown and scaffolding completion, insulation removal was initiated. Due to excessive steaming during attempted insulation removal, a plant cooldown to Cold Shutdown (Operational Mode 5) was commenced. An Unusual Event was declared in accordance with the Emergency Preparedness Plan (EPP) Implementing Procedures at 0225 hours on 1/18/91 due to apparent pressure boundary leakage. Cold Shutdown was entered at 0600 hours on 1/19/91. Following insulation removal, the leakage was confirmed to be pressure boundary leakage from the connection for the disc pressurization system on the Loop 1B Cold Leg Vent Valve, RC-67 (Figure 1). RC-67 was, at one time, used as a makeup source for disc pressurization, however the accumulators are now used to perform this function.

CAUSE OF EVENT

The cause for this event was degradation of the piping on RC-67. Initial analysis show that the degradation initiated in the piping at the toe of the fillet weld and propagated through the piping. The cause for the piping failure is under investigation.

CORRECTIVE ACTIONS

The following corrective actions have been or will be taken as a result of this event:

1. Containment entries were performed to identify the area of leakage.
2. A controlled plant shutdown from Power Operation (Operational Mode 1) to Cold Shutdown (Operational Mode 5) was commenced at 0400 hours on 1/17/91.

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 (F-830) 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)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)				
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TEXT (if more space is required, use additional NRC Form 366A's) (17)

3. A Temporary Modification was initiated to remove the disc pressurization system connection from the Loop 1B Cold Leg Vent Valve, RC-67, and to install a plug in the reactor coolant system penetration and a cap over the plug.
4. A root cause investigation (metallurgical analysis) will be conducted to identify the cause of the pipe failure.
5. Liquid dye penetrant testing of all other similar penetrations on the other loop stop valves was performed. No deficiencies were found.
6. A permanent repair of the connection will be evaluated based on the root cause of the failure.

PREVIOUS OCCURRENCES

Beaver Valley has previously reported one similar event involving a plant shutdown due to pressure boundary leakage:

Unit 1 LER 88-016-00 "Unit Shutdown Due to Pressure Boundary Leakage" - this event involved a failed weld on the line near an RCS seal injection drain valve.

REPORTABILITY

This event was reported to the Nuclear Regulatory Commission at 0225 hours in accordance with the Emergency Preparedness Plan and 10CFR50.72.b.1.i.A. This written report is being submitted in accordance with 10CFR50.73.a.2.i.A, as an event involving the completion of a plant shutdown required by Technical Specifications.

SAFETY IMPLICATIONS

There were no safety implications to the public as a result of this event. Although there was reactor coolant system pressure boundary leakage, this leakage was all to containment. There were no radioactive releases outside of containment. The amount of leakage was well within the capabilities of a single charging pump which was also supplying normal charging flow to maintain reactor coolant system inventory. This type of pressure boundary leakage has already been evaluated in the Updated Final Safety Analysis (UFSAR) Report, Section 14.3.1 "Loss of Reactor Coolant From Small Ruptured Pipes or From Cracks in Large Pipes Which Actuates Emergency Core Cooling System".

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&30) 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)

DOCKET NUMBER (2)

LER NUMBER (6)

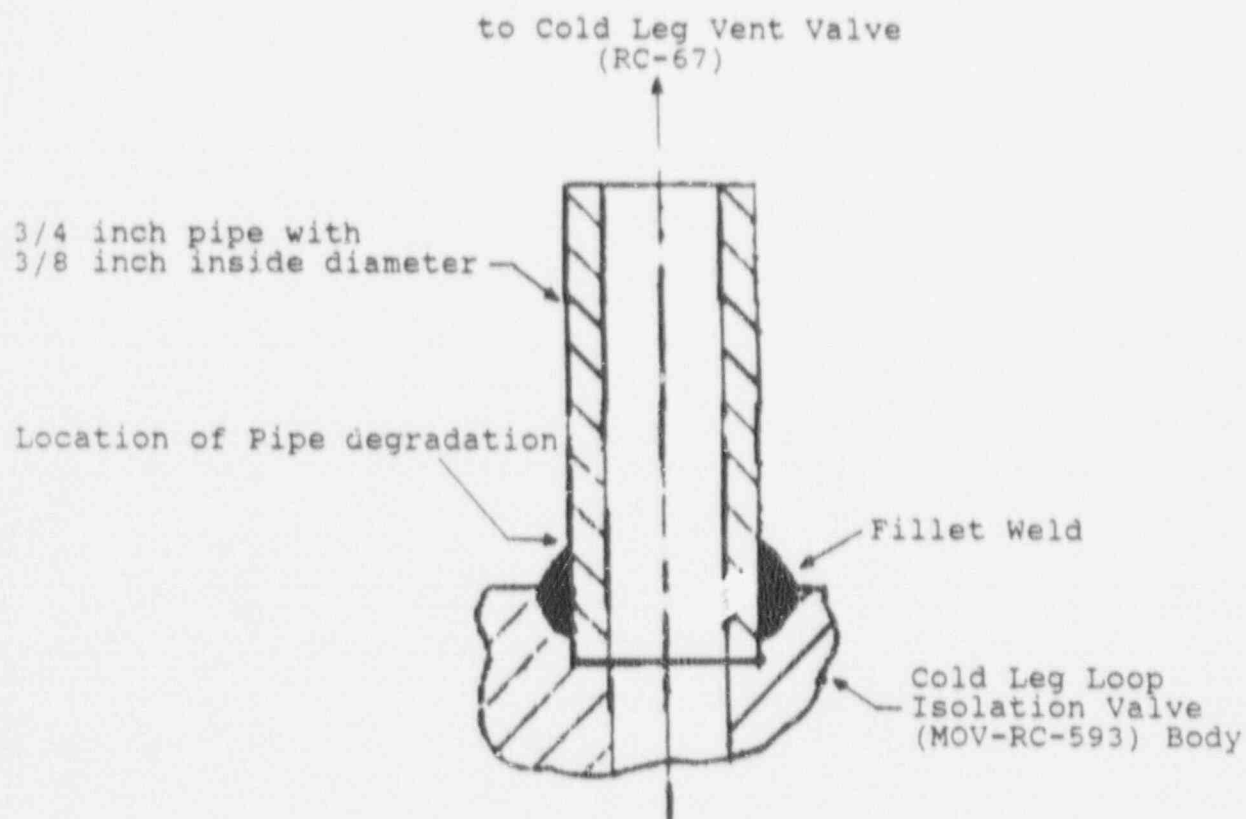
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YEAR	SEQUENTIAL NUMBER	REVISION NUMBER
91	002	00

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Figure 1