Duquesne Light

Nuclear Group
P.O. Box 4
Shippingport, PA 15077-0004

Telephone (412) 393-6000

June 19, 1989
ND3MNO:1918

Beaver Valley P[illegible]er Station, Unit No. 2
Docket No. 50-[illegible]12, License No. NPF-73
LER 89-017-00

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 89-017-00, 10 CFR 50.73.a.2.i.A, "Technical Specification Required Shutdown (Hot Standby to Hot Shutdown)".

T. P. Noonan
General Manager
Nuclear Operations

cj

Attachment

IE22
1/1

cc: Mr. William T. Russell
Regional Administrator
United States Nuclear Regulatory Commission
Region 1
475 Allendale Road
King of Prussia, PA 19406

C. A. Roteck, Ohio Edison

Mr. Peter Tam, BVPS Licensing Project Manager
United States Nuclear Regulatory Commission
Washington, DC 20555
J. Beall, Nuclear Regulatory Commission,
BVPS Senior Resident Inspector

CAPCO Nuclear Projects Coordinator
Toledo Edison

INPO Records Center
Suite 1500
1100 Circle 75 Parkway
Atlanta, GA 30339

G. E. Muckle, Factory Mutual Engineering, Pittsburgh

Mr. J. N. Steinmetz, Operating Plant Projects Manager
Mid Atlantic Area
Westinghouse Electric Corporation
Energy Systems Service Division
Box 355
Pittsburgh, PA 15230

American Nuclear Insurers
c/o Dottie Sherman, ANI Library
The Exchange Suite 245
270 Farmington Avenue
Farmington, CT 06032

Mr. Richard Janati
Department of Environmental Resources
P. O. Box 2063
16th Floor, Fulton Building
Harrisburg, PA 17120

Director, Safety Evaluation & Control
Virginia Electric & Power Co.
P.O. Box 26666
One James River Plaza
Richmond, VA 23261

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 4

TITLE (4)
Technical Specification Required Shutdown (Hot Standby to Hot 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)
									N/A	0 5 0 0 0
0 5	1 7	8 9	8 9	0 1 7	0 0	0 6	1 9	8 9	N/A	0 5 0 0 0

OPERATING MODE (9)	3	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)			
POWER LEVEL (10)	0 0 0	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, General Manager of 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 NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	
A	A B	X X X X	X X X X	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 5/17/89 at 1550 hours a plant cooldown from Hot Standby (Operating Mode 3) to Hot Shutdown (Operating Mode 4) was commenced as required by plant Technical Specifications 3.3.3.8 "Accident Monitoring Instrumentation", due to inoperable Reactor Vessel Level Indication System (RVLIS). The plant was progressing toward start-up following the first Refueling Outage. Initially an instrument isolation valve (2RCS-648) associated with a RVLIS differential pressure transmitter was suspected as being the cause of abnormal reactor level indications. At 2335 hours on 5/17/89, Hot Shutdown was entered. Following an investigation, the valve was found to be in operable condition. After an extensive investigation of the problem it was suspected that a low pressure seal o-ring had become lodged between an incore nuclear instrument flux thimble and thimble guide tube which is connected to RVLIS as the Reactor Vessel lower tap. Following entry into Cold Shutdown, [illegible] personnel retrieved the o-ring at the Incore Instrument Seal [illegible]e. Following successful post-maintenance testing RVLIS was [illegible]ared operable and plant start-up activities were resumed. Th[illegible]e were no safety implications due to this event. The plant was placed in a Hot Shutdown condition in accordance with Beaver Valley Technical Specifications.

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	8 9	0 1 7	0 0	0 2 OF 0 4

TEXT (If more space is required, use additional NRC Form 3'66A's) (17)

Description of Event

On 5/17/89, the Unit was in Hot Standby (Operating Mode 3) and was progressing toward start-up following the first Refueling Outage. Abnormal Reactor Vessel Level Indication System (RVLIS) indications were experienced on the wide (dynamic) range channels of both RVLIS trains. The plant entered a Technical Specification action requirement to repair RVLIS within 48 hours or be in Hot Shutdown within the next 12 hours. Initially an instrument isolation valve (2RCS-648), located at the Incore Nuclear Instrument Flux Thimble Seal Table, was suspected of being left shut. The valve was inspected and found to be open. Troubleshooting continued with no resolution and at 1550 hours on 5/17/89, a cooldown was initiated as required by Technical Specifications. At 2300 hours on 5/17/89, the Nuclear Regulatory Commission was notified via the Emergency Notification System that Hot Shutdown (Operating Mode 4) was being entered due to the Limiting Condition for Operation of Technical Specification 3.3.3.8, and at 2335, hours Hot Shutdown was entered. A freeze seal was performed upstream of the instrument isolation valve (2RCS-648). The valve was disassembled and inspected and found to be operable. Following continued investigation, the I&C Department suspected that an o-ring used for the refueling low pressure seal of the flux thimble at the seal table possibly had become lodged between the thimble and the guide tube and was causing the abnormal readings. The plant was placed in Cold Shutdown (Operating Mode 5) and the Reactor Coolant System was drained to below the level of the seal table to enable the o-ring to be retrieved. RVLIS was declared operable on 5/24/89 at 2048 hours, following successful post- maintenance testing.

CAUSE OF EVENT

The contributing factors to this event are procedure inadequacies, Unit 1 / Unit 2 differences, and personnel error.

The procedure used to install and remove the refueling low pressure seals was not specific and did not provide sign-off lines for the installation and removal of o-rings and other low pressure seal parts. I&C personnel did not ensure that all low pressure seal parts were removed and accounted for during disassembly. In addition, the proper size o-rings were not specified.

At Unit 1, several flux thimble guide tubes are three-quarters inches in diameter and the rest are five-eighths inches. At Unit 2, all guide tubes are three-quarters inches in diameter. When the o-rings are used on the smaller diameter guide tubes they rest on top of the guide tube. When used on the larger diameter guide tubes the potential exists for the o-ring to slide between the thimble and the guide tube. It has been concluded that the o-ring either slid between the guide tube and thimble or was inadvertently pushed in during thimble reinsertion. Although Unit 1 has several of the larger diameter guide tubes, the same o-rings have been used previously with no problems occurring. The I&C personnel installing the o-rings recognized that the o-rings available for the seals were not large enough to fit properly; however, they have been previously used successfully and the consequences of installing them on the larger guide tubes was not known.

Corrective Action

The following corrective actions have been or will be completed to prevent recurrence of the event:

1. Both the Unit 1 and Unit 2 I&C procedures used for low pressure seal installation and removal will be revised to provide specific sign-off lines for installation and removal of all low pressure seal parts required for each flux thimble.

2. I&C personnel were counseled on the importance of attention to detail.

3. Quality Control coverage will be increased throughout the procedures.

4. Due to the o-ring sizing problem, other potential captivation problems, and guide tube fitting considerations, a new low pressure seal design is being evaluated.

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	8 9	— 0 1 7	— 0 0	0 4 OF 0 4

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

Safety Evaluation

There were no safety concerns due to this event. The plant was placed in a Hot Shutdown (Operating Mode 3) condition in accordance with Beaver Valley Unit 2 Technical Specifications 3.3.3.8 "Accident Monitoring Instrumentation".

Reportability

The Nuclear Regulatory Commission was notified on 5/17/89 at 2300 hours, in accordance with 10 CFR 50.72.b.1.i.A that Hot Shutdown (Operating Mode 4) was being entered in accordance with the Limiting Condition for Operation, of Technical Specifications 3.3.3.8. This report is being submitted in accordance with 10 CFR 50.73 a.2.i.A.

Previous Occurrences

There have been no previous reported incidents of this type for Beaver Valley Power Station, Unit 2.