



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

Telephone (412) 393-6000

August 15, 1991
ND3MNO:3173

Beaver Valley Power Station, Unit No. 1
Docket No. 50-334, License No. DPR-66
LER 91-021-00

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 91-021-00, 10 CFR 50.73.a.2.iv, "Manual Control Rod Insertion by Opening of Reactor Trip Breaker".

Very truly yours,

T. P. Noonan
General Manager
Nuclear Operations

DAW/sl

Attachment

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

C. A. Roteck, Ohio Edison
76 S. Main Street
Akron, OH 44308

Mr. A. DeAgazio, BVPS Licensing Project Manager
United States Nuclear Regulatory Commission
Washington, DC 20555

J. Beall, Nuclear Regulatory Commission,
BVPS Senior Resident Inspector

Larry Beck
Centerior Energy
6200 Oak Tree Blvd.
Independence, Ohio 44101-4661

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

G. E. Muckle,
Factory Mutual Engineering
680 Anderson Drive #BLD10
Pittsburgh, PA 15220-2773

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

W. Hartley
Virginia Power Company
5000 Dominion Blvd.
2SW Glenn Allen, VA 23060

J. M. Riddle
NUS Operating Service Corporation
Park West II
Cliff Mine Road
Pittsburgh, PA 15275

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Bill Wegner, Consultant
23 Woodlawn Terrace
Fredricksburg, VA 22404

LICENSEE EVENT REPORT (LER)

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 600 HRS. FORWARD COMMENT REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (F-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)

Beaver Valley Power Station Unit 1

DOCKET NUMBER (2)

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

PAGE (3)

TITLE (4)

Manual Control Rod Insertion By Opening of Reactor Trip Breakers

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)																																																										
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OPERATING MODE (9)			THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 50. (Check one or more of the following) (11)																																																																	
3			<table border="0"><tr><td>20.402(b)</td><td>20.405(e)</td><td>X</td><td>50.73(a)(2)(iv)</td><td>73.71(b)</td></tr><tr><td>POWER LEVEL (10)</td><td>0</td><td>0</td><td>0</td><td>20.406(a)(1)(i)</td><td>50.36(a)(1)</td><td></td><td>50.73(a)(2)(v)</td><td>73.71(c)</td></tr><tr><td></td><td></td><td></td><td></td><td>20.406(a)(1)(ii)</td><td>50.36(c)(2)</td><td></td><td>50.73(a)(2)(vi)</td><td>OTHER (Specify in Abstract below and in Text: NRC Form 366A)</td></tr><tr><td></td><td></td><td></td><td></td><td>20.406(a)(1)(iii)</td><td>50.73(a)(2)(i)</td><td></td><td>50.73(a)(2)(vii)(A)</td><td></td></tr><tr><td></td><td></td><td></td><td></td><td>20.406(a)(1)(iv)</td><td>50.73(a)(2)(ii)</td><td></td><td>50.73(a)(2)(viii)(B)</td><td></td></tr><tr><td></td><td></td><td></td><td></td><td>20.406(a)(1)(v)</td><td>50.73(a)(2)(iii)</td><td></td><td>50.73(a)(2)(ix)</td><td></td></tr></table>																20.402(b)	20.405(e)	X	50.73(a)(2)(iv)	73.71(b)	POWER LEVEL (10)	0	0	0	20.406(a)(1)(i)	50.36(a)(1)		50.73(a)(2)(v)	73.71(c)					20.406(a)(1)(ii)	50.36(c)(2)		50.73(a)(2)(vi)	OTHER (Specify in Abstract below and in Text: NRC Form 366A)					20.406(a)(1)(iii)	50.73(a)(2)(i)		50.73(a)(2)(vii)(A)						20.406(a)(1)(iv)	50.73(a)(2)(ii)		50.73(a)(2)(viii)(B)						20.406(a)(1)(v)	50.73(a)(2)(iii)		50.73(a)(2)(ix)	
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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 NRC	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC
X	A	A	F	U					
			W	1	2	0	N		

SUPPLEMENTAL REPORT EXPECTED (14)

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

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

On 7/18/91 the plant was critical in Mode 2 while the Testing and Plant Performance group was performing their Core Design Check Test procedure. Criticality had been achieved by the withdrawal of Control Bank D rods to 215 steps. Control Bank D rods were then moved in and out several times, per the procedure, in order to determine an Isothermal Temperature Coefficient (ITC). At 0445 hours an ITC was determined and found to be within the acceptance criteria. In order to prepare for the next portion of the test procedure, Control Bank D was to be withdrawn to 228 steps and Control Bank B was to be inserted while maintaining the reactor critical. At 0450, Control Bank D was withdrawn, adding a small amount of positive reactivity, but when Control Bank B was selected and demanded to insert the Rod Control System Urgent Alarm came in. Only group two of Control Bank B began to move. The Reactor Operator then bled approximately 50 gallons to stop the power increase. This took the reactor subcritical and brought the plant into Mode 3. The test was suspended. An investigation revealed that a fuse and its fuse indicator were blown in the IBD Power Cabinet. At 0723 all control rods were inserted by manually opening the Reactor Trip Breakers. There were no safety implications as a result of this event. The shutdown margin was verified and the control rods were able to be tripped.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 600 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), 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) Beaver Valley Power Station Unit 1	DOCKET NUMBER (2) 0 5 0 0 0 3 3 4 9 1 —	LER NUMBER (8)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		0 2 1 —	0 0	0 2 OF 0 3			

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

DESCRIPTION OF EVENT

On the morning of 7/18/91, the Testing and Plant Performance group was performing a Core Design Check Test procedure. Criticality had been achieved by withdrawing the Control Bank D rods to 215 steps. The Control Bank D rods were then moved in and out several times, per the procedure, in order to determine an Isothermal Temperature Coefficient (ITC). At 0445 hours an ITC was determined and found to be within the acceptance criteria. In order to prepare for the next portion of the test procedure, Control Bank D was to be withdrawn to 228 steps and Control Bank B was to be inserted while maintaining the reactor critical. At 0450 hours, Control Bank D was withdrawn, adding a small amount of positive reactivity, but when Control Bank B was selected and demanded to insert the Rod Control System Urgent Alarm came in. Only group two of Control Bank B began to move. The Reactor Operator then borated approximately 50 gallons to stop the power increase. This took the reactor subcritical and brought the plant into Mode 3. The test was suspended. By 0600 hours a total of 500 gallons of Boric Acid was added. At 0723 hours, in preparation for troubleshooting the rod control problem, all control rods were inserted by manually opening the Reactor Trip Breakers.

CAUSE OF THE EVENT

An immediate investigation by the Instrument and Controls group revealed that a stationary gripper fuse had blown causing the Rod Control System Urgent Alarm. Further investigation determined that the fuse had not blown due to an overcurrent condition, but had suffered a mechanical failure. The solder that holds the fuse element to the fuse end cap melted away creating an open circuit across the fuse. This fuse had just been replaced during the refueling outage. It appears that the fuse that was installed was a new fuse from stock but was an older variety.

The fuse that failed was acceptable and had been originally specified by the vendor for this application. Subsequent correspondence with the vendor indicates there is a newer variety fuse which the vendor suggests using.

CORRECTIVE ACTIONS

1. The voltage across all of the stationary gripper fuses was measured. A high voltage would be indicative of a potentially bad fuse. None were found.
2. All fuses of the older variety were removed from stock.
3. All fuses of the older variety will be removed from service when the systems are available to do so.

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		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		9 1	0 2 1	0 0	0 3	OF	0 3

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

REPORTABILITY

The Nuclear Regulatory Commission was notified of the manual reactor protection system actuation in accordance with 10CFR50.72.b.2.ii, at 0840 hours on 7/18/91. This written report is being submitted in accordance with 10 CFR 50.73.a.2.iv, as an event or condition that results in a manual or automatic actuation of any Engineered Safety Feature.

SAFETY IMPLICATIONS

There were no safety implications to the public as a result of this event. The shutdown margin was verified and all of the control rods were able to be tripped.

SIMILAR EVENTS

A review of station records showed that although there have been no previous similar reportable events, stationary gripper fuse failures have occurred on several occasions.