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December 12, 1990
ND3MNO:3073

Beaver Valley Power Station, Unit No. 2
Docket No. 50-412, License No. NP-73
LER 90-020-00

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 90-020-00, 10 CFR 50.73.a.2.iv, "Inadvertent Reactor Trip During RTD Verification Test".

Very truly yours,

T. P. Noonan
General Manager
Nuclear Operations

DC/sl

Attachment

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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 (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 2		DOCKET NUMBER (2) 0 5 0 0 0 4 1 2 1	PAGE (3) 1 OF 0 4
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TITLE (4)
Inadvertent Reactor Trip During RTD Verification Test

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		
1	1	2 9 0 9 0	0	2 0	0 0	1	2	1 2 9 0	N/A		
									DOCKET NUMBER(S) 0 5 0 0 0		

OPERATING MODE (9) 4

POWER LEVEL (10) 0 0 0

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 8 (Check one or more of the following) (11)

<input type="checkbox"/> 20.402(b)	<input checked="" type="checkbox"/> 50.73(a)(2)(iv)	<input type="checkbox"/> 73.71(b)
<input type="checkbox"/> 20.406(a)(1)(i)	<input type="checkbox"/> 50.73(a)(2)(v)	<input type="checkbox"/> 73.71(c)
<input type="checkbox"/> 20.406(a)(1)(ii)	<input type="checkbox"/> 50.73(a)(2)(vii)	<input type="checkbox"/> OTHER (Specify in Abstract below and in Text, NRC Form 366A)
<input type="checkbox"/> 20.406(a)(1)(iii)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)	
<input type="checkbox"/> 20.406(a)(1)(iv)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)	
<input type="checkbox"/> 20.406(a)(1)(v)	<input type="checkbox"/> 50.73(a)(2)(ix)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
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 NFRDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NFRDS
A	J E	X X X X	X X X X	N					

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE) NO

EXPECTED SUBMISSION DATE (15)

MONTH	DAY	YEAR

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

On 11/12/90 at 1259 hours, while the plant was in operational mode 4 (Hot Shutdown) with all rods fully inserted, the reactor trip breakers opened when personnel tripped by procedure 2 of 3 overpressure-delta-temperature (OPDT) channels. The OPDT channels were tripped as part of the Reactor Coolant System Resistive Temperature Detector (RTD) verification procedure. The reactor trip breakers were verified open before the RTD verification was initiated. However, while the verification was in progress, the reactor trip breakers were closed to support the rod control system startup procedure. When personnel performed the step in the RTD verification procedure to remove the OPDT channels from service, a reactor trip signal was initiated, causing the breakers to open. This event was due to personnel error. The reactor operator was not aware of the requirement to maintain the reactor trip breakers open for the test. This event will be reviewed by all licensed operators. There were no safety implications due to this event. All control rods were fully inserted prior to the event so the opening of the trip breakers did not induce an operational or reactivity transient.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

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TEXT (If more space is required, use additional NRC Form 386A's) (17)

Description of Event

On 11/12/90, the plant was in operational mode 4 (Hot Shutdown) with all control rods fully inserted. As part of the preparations for plant startup, operators were performing the control rod drive system startup procedure. At 1052 hours, operators manually opened the reactor trip breakers, as directed by the control rod drive system startup procedure. Operators then began starting the first of two control rod drive motor generator sets.

As the above evolutions were occurring, Testing and Plant Performance personnel requested permission to initiate the Reactor Coolant System Resistive Temperature Detector (RTD) verification procedure. As this procedure removes multiple channels of the Reactor Trip Overpressure-Delta-Temperature (OPDT) logic from service simultaneously, it cannot be performed while the trip breakers are closed and has an initial condition to verify that the breakers are open prior to the start of this test. The Nuclear Shift Supervisor (NSS) reviewed the procedure, verified that the trip breakers were open, and authorized the test to be performed. The reactor operator was notified, and acknowledged, that the RTD verification test was commencing.

Operators performing the control rod drive system startup procedure successfully started the first control rod drive motor generator set. The next part in the system startup procedure was to start the second motor generator set and parallel it to the first. However, due to system design, the two motor generators cannot be paralleled while unloaded. In order to provide a minimal load on the motor generators, the procedure directs the operators to reclose the reactor trip breakers. The reactor operator was aware that the RTD verification was in progress, but not that the trip breakers were required to be left open during the verification. He closed the trip breakers as directed by control rod drive startup procedure.

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

At 1258 hours, personnel conducting the RTD verification performed the step in their procedure that removed the OPDT channels from service by tripping their respective bistables. The procedure requires that all three OPDT channels be removed from service so that simultaneous data can be obtained from the three pairs of RTDs. When the second of three bistables was tripped, reactor protection system logic automatically initiated a reactor trip, causing the reactor trip breakers to open. All rods were already fully inserted and were not affected by this actuation. Although the control room operator received both audible and visual alarms when the first bistable was tripped, the second bistable was tripped only 35 seconds after the first, giving the operators little time to respond to their indications.

Cause of Event

This event was the result of personnel error. Although cognizant of the ongoing RTD verification, the reactor operator was not aware of the requirement to maintain the reactor trip breakers open for the duration of that verification. The NSS was aware of this requirement, but failed to notify the operator.

Corrective Actions

- 1) This event will be reviewed with all licensed operators. This review will emphasize good communication practices and the necessity of personnel in the control room watchstations to be aware of conditions required by ongoing procedures and evolutions.
- 2) A review and evaluation is being conducted to identify procedures that require the reactor trip breakers to be maintained open during their performance. Based on this evaluation, additional administrative controls of the reactor trip breakers will be considered.

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TEXT CONTINUATION

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TEXT (If more space is required, use additional NRC Form 386A's) (17)

Previous Similar Events

Review of station records showed no previous reactor trips occurring during the performance of the RTD verification procedure. One previous event (Unit 1 LER 76-030) was identified that involved an Overtemperature-Delta-Temperature (OTDT) reactor trip due to technicians working on one channel of OTDT protection while a second channel was out of service.

Additionally, the following events were identified as occurring due to simultaneous performance of station procedures:

- 1) In Unit 2 LER 87-018, a safety injection occurred when two of three steam generator pressure channels were tested simultaneously.
- 2) In Unit 2 LER 89-029, a safety injection occurred when two of three pressurizer level channels were removed from service at the same time.

Safety Evaluation

There were no safety implications due to this event. The plant was in operational mode 4 (Hot Shutdown) prior to the event with all control rods fully inserted. The inadvertent opening of the reactor trip breakers did not cause any operational or reactivity transient.