

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Beaver Valley Power Station, Unit 2 DOCKET NUMBER (2) 050004112 PAGE (3) 1 OF 02

TITLE (4) Reactor Trip Due to Reactor Coolant Pump Trip Caused By A Loss of 4KV Bus 2A Motor Loads

| 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) |  |  |
| 04             | 04  | 88   | 88             | 007               | 01              | 05              | 23  | 88   | N/A                           | 050000           |  |  |
| 04             | 04  | 88   | 88             | 007               | 01              | 05              | 23  | 88   | N/A                           | 050000           |  |  |

OPERATING MODE (9) 1

POWER LEVEL (10) 100

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

|  |   |   |  |
|--|---|---|--|
| <input type="checkbox"/> 20.402(b)         | <input type="checkbox"/> 20.406(c)        | <input checked="" type="checkbox"/> 50.73(a)(2)(iv) | <input type="checkbox"/> 73.71(b)                            |
| <input type="checkbox"/> 20.406(a)(1)(ii)  | <input type="checkbox"/> 50.38(e)(1)      | <input type="checkbox"/> 50.73(a)(2)(v)             | <input type="checkbox"/> 73.71(c)                            |
| <input type="checkbox"/> 20.406(a)(1)(iii) | <input type="checkbox"/> 50.38(e)(2)      | <input type="checkbox"/> 50.73(a)(2)(vii)           | OTHER (Specify in Abstract below and in Text, NRC Form 366A) |
| <input type="checkbox"/> 20.406(a)(1)(iv)  | <input type="checkbox"/> 50.73(a)(2)(i)   | <input type="checkbox"/> 50.73(a)(2)(viii)(A)       |  |
| <input type="checkbox"/> 20.406(a)(1)(v)   | <input type="checkbox"/> 50.73(a)(2)(ii)  | <input type="checkbox"/> 50.73(a)(2)(viii)(B)       |  |
| <input type="checkbox"/> 20.406(a)(1)(vi)  | <input type="checkbox"/> 50.73(a)(2)(iii) | <input type="checkbox"/> 50.73(a)(2)(ix)            |  |

LICENSEE CONTACT FOR THIS LER (12)

NAME Thomas P. Noonan, Site Plant Manager TELEPHONE NUMBER 412 643-1258

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     | E1A    | 618       | W351         | N                   |       |        |           |              |                     |

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE)  NO  X

EXPECTED SUBMISSION DATE (15)

| MONTH | DAY | YEAR |
|-------|-----|------|
|       |     |      |

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

On 4/4/88 at 0800 hours, with the Unit in POWER OPERATION at 100% reactor power, a surveillance test of the 4KV and 480VAC Normal Bus Undervoltage (UV) Protection was initiated. This testing involves using a blocking relay in the UV circuitry while testing the UV protection relays. During testing of the 2A 4KV Bus, actuation of the undervoltage relays occurred causing a loss of 2A 4KV Bus motor loads. This caused the "A" Reactor Coolant Pump to trip initiating a Reactor Trip, at 0847 hours, due to the low flow in that coolant loop. The operators stabilized the plant in Hot Standby using the Emergency Operating Procedures. The cause for the UV protection relay actuations was determined to be a malfunctioning blocking relay. The contact spacing was found to be out of adjustment causing improper operation. This relay was adjusted and calibrated using a relay calibration procedure. The Undervoltage Protection surveillance test was performed satisfactorily and the relay was returned to service. There were no safety implications to the public as a result of this incident. The undervoltage protection is designed to shed the loads on the respective bus before any damage to the loads are received due to the operation at a reduced voltage. This type of event is discussed in the Final Safety Analysis Report, Section 8.3.1.1.11.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

|  |                                 |                |                   |                 |          |    |
|--|---------------------------------|----------------|-------------------|-----------------|----------|----|
| FACILITY NAME (1)<br>Beaver Valley Power Station, Unit 2 | DOCKET NUMBER (2)<br>0500041288 | LER NUMBER (8) |                   |                 | PAGE (3) |    |
|  |                                 | YEAR           | SEQUENTIAL NUMBER | REVISION NUMBER |          |    |
|  |                                 | 88             | 007               | 01              | 02       | OF |

TEXT / If more space is required, use additional NRC Form 308A's (17)

On 4/4/88 at 0800 hours, with the Unit at 100% reactor power, Operations personnel were preparing to perform a surveillance test. This surveillance test, Operating Surveillance Test (OST) 2.36.18, involves testing of the 4KV and 480VAC Normal Bus Undervoltage Protection Circuits. The undervoltage (UV) relays are functionally tested by utilizing a blocking relay in the protection circuitry. This blocking relay prevents the output of the undervoltage relays from performing its intended function.

During the resetting of the 2A 4KV Bus UV relays after functionally testing these relays (27-VA200, 27-VA2100, and 27-VA2200), an actuation of the UV relays occurred, causing a loss of the following 2A 4KV Bus motor loads: the "A" motor for the 21A (2SWS-P21A), the 21A Heater Drain Pump (2HDH-P21A) and the 21A Reactor Coolant Pump, initiated a reactor trip on Reactor Coolant Loop Low Flow at 0847 hours. The operators stabilized the plant in HOT STANDBY (Mode 3) utilizing the Emergency Operating Procedures.

The cause for the UV relay actuations and subsequent reactor trip was determined to be the result of a malfunctioning blocking relay, Relay 1-NNSADX, (Westinghouse 125VDC MG-6 Latching Relay). Investigation by the Relay Department identified that the contact spacing between the electromagnet pole face and raised section of the armature which strikes the pole face, was found to be 0.00 inches. This spacing should normally be between 0.005 and 0.015 inches for proper operation of the relay. This relay was adjusted to the proper spacing using Relay Calibration Procedure (2RCP-01). The Operating Surveillance Test was then performed in order to verify operability of the blocking relay after adjustment. OST 2.36.18 was completed satisfactorily and Relay 1-NNSADX was returned to service on 4/6/88. Additionally, all remaining Westinghouse MG-6 relays have been identified and will be calibrated at the earliest opportune moment as plant operating conditions allow for the clearance of the relays involved. These calibrations/adjustments are expected to be completed prior to the next normally scheduled relay calibrations during the First Refueling.

Criticality was achieved at 0518 hours on 4/5/88, and full power operation was reached on 4/6/88.

There were no safety implications to the public as a result of this incident. The undervoltage protection is designed to shed the loads on the respective bus before any damage to the loads are received due to the operation at a reduced voltage. In the event that the 2AE 4KV Emergency Bus would have also been taken out due to an undervoltage relay actuation, the No. 1 Emergency Diesel Generator was OPERABLE throughout the incident and would have supplied the 2AE 4KV Emergency Bus if required. This type of event is discussed in the Final Safety Analysis Report, Section 8.3.1.1.11.



**Duquesne Light**

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May 19, 1988  
ND3SPM:0232

Beaver Valley Power Station, Unit No. 2  
Docket No. 50-412, License No. NPF-73  
LER 88-007-01

United States Nuclear Regulatory Commission  
Document Control Desk  
Washington, DC 20555

Gentlemen:

In accordance with Appendix A, Beaver Valley Technical Specifications, the following revised Licensee Event Report is submitted:

LER 88-007-01, 10 CFR 50.73.a.2.iv, "Reactor Trip Due to Reactor Coolant Pump Trip Caused By a Loss of 4KV Bus 2A Motor Loads."

This revised Licensee Event Report is being issued to correct the previously reported reactor trip signal which was in error.

Very truly yours,

T. P. Noonan  
Plant Manager

pcj

Attachment

IE22  
1/1

May 19, 1988  
ND3SPM:0232  
Page two

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