NRC FORM 366
(7-77)

Update Report - Previous report date - 2/3/78

U. S. NUCLEAR REGULATORY COMMISSION

LICENSEE EVENT REPORT

CONTROL BLOCK: | | | | | | | (1) (PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

0 1	LICENSEE CODE	P A B V S 1 (2)
	LICENSE NUMBER	0 0 - 0 0 0 0 0 - 0 0 (3)
	LICENSE TYPE	4 1 1 1 1 (4)
	CAT	(5)
CON'T 0 1	REPORT SOURCE	L (6)
	DOCKET NUMBER	0 5 0 0 0 3 3 4 (7)
	EVENT DATE	0 1 0 2 7 8 (8)
	REPORT DATE	1 2 2 9 7 8 (9)

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)

0 2 At 2345 hours the output frequency of No. 4 inverter was oscillating. The No. 4
0 3 Vital Bus was transferred to the auxiliary supply but the supply breaker tripped
0 4 which de-energized No. 4 inverter which resulted in a reactor trip and safety
0 5 injection. After verifying the SI was inadvertent the safeguards equipment was
0 6 secured and the RCS stabilized
0 7
0 8

0 9	SYSTEM CODE	CAUSE CODE	CAUSE SUBCODE	COMPONENT CODE	COMP. SUBCODE	VALVE SUBCODE
	E D (11)	E (12)	A (13)	G E N E R A (14)	F (15)	Z (16)

(17) LER/RO REPORT NUMBER	EVENT YEAR		SEQUENTIAL REPORT NO.		OCCURRENCE CODE	REPORT TYPE		REVISION NO.
	7 8	—	0 0 2	/	0 3	L	—	1

ACTION TAKEN	FUTURE ACTION	EFFECT ON PLANT	SHUTDOWN METHOD	HOURS (22)	ATTACHMENT SUBMITTED	NPRD-4 FORM SUB.	PRIME COMP. SUPPLIER	COMPONENT MANUFACTURER
A (18)	Z (19)	A (20)	C (21)	0 0 4 6	Y (23)	Y (24)	A (25)	X 9 9 9 (26)

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)

1 0 The tranferring of the No. 4 vital bus between the inverter and the auxiliary
1 1 supply and the inverter resulted in high steam flow trips and a false low low
1 2 Tavg signal which caused a safety injection on Train B of the protection system
1 3
1 4

1 5	FACILITY STATUS	% POWER	OTHER STATUS (30)	METHOD OF DISCOVERY	DISCOVERY DESCRIPTION (32)
	E (28)	1 0 0 (29)	N/A	A (31)	Operational Event

1 6	ACTIVITY RELEASED	CONTENT OF RELEASE	AMOUNT OF ACTIVITY (35)	LOCATION OF RELEASE (36)
	Z (33)	Z (34)	N/A	N/A

PERSONNEL EXPOSURES

1 7	NUMBER	TYPE	DESCRIPTION (39)
	0 0 0 (37)	Z (38)	N/A

PERSONNEL INJURIES

1 8	NUMBER	DESCRIPTION (41)
	0 0 0 (40)	N/A

LOSS OF OR DAMAGE TO FACILITY (43)

1 9	TYPE	DESCRIPTION
	Z (42)	N/A

PUBLICITY

2 0	ISSUED	DESCRIPTION (45)	NRC USE ONLY
	N (44)	N/A	

7901100183

NAME OF PREPARER J. A. Werling PHONE: 412-643-1258

GPO 917-926

Attachment to LER 78-2/03L-1
Beaver Valley Power Station
Duquesne Light Company
Docket No. 50-334

At 2345 hours, the output frequency of No. 4 inverter was discovered oscillating. The No. 4 vital bus was transferred to the auxiliary supply. However, the transfer was done out of phase and the supply breaker tripped which de-energized No. 4 vital bus. When the No. 4 vital bus became de-energized, the instrumentation indicated high steam flow trips on three steam lines due to the loss of the turbine impulse pressure transmitter signal. This caused the steam and feedwater flow signals to the feedwater controller to fail low.

Approximately one minute later, the No. 4 vital bus was transferred back to the No. 4 inverter. As a result of this transfer, a voltage surge occurred on the Train B solid State Protection System (SSPS) 48V power supply which caused a false Train B low low Tavg signal which resulted in a safety injection and reactor trip.

A complete steam line isolation did not occur, however, because the SI signal from the high steam flow was erratic, alarming and clearing in approximately 3 milliseconds. This resulted in only the 1B MSIV partially closing into the steam flow due to a more voltage sensitive slave relay. The valve was closed completely by the steam flow. Since the steam line isolation signal did not lock in the solenoid valves which vent the air on the 1B MSIV operator, the rupture discs in the 1B MSIV operator ruptured when the valve was shut by the steam flow.

After verifying that the safety injection was inadvertent, the safety injection signal was reset, the safeguards equipment was secured, and the RCS stabilized.

The inverter was repaired and satisfactorily returned to service. The rupture discs on the 1B MSIV operator were replaced. Safety injections to date: 7 operational, 2 pre-operational.