NRC Form 366
(9-83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/85

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Beaver Valley Power Station, Unit 1	0 5 0 0 0 3 3 4	1 OF 0 2

TITLE (4)
Reactor Trip Due To Generator/Turbine Trip

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	2 4	8 4	8 4	- 0 0 4	- 0 0	0 6	2 2	8 4	N/A	0 5 0 0 0

OPERATING MODE (9)	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)			
1	20.402(b)	20.405(c)	X 50.73(a)(2)(iv)	73.71(b)
POWER LEVEL (10)	20.405(a)(1)(i)	50.36(c)(1)	50.73(a)(2)(v)	73.71(c)
1 0 0	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)	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
	AREA CODE
Robert J. Druga, Chief Engineer	4 1 2 — 6 4 3 - 1 1 2 6 4

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	
X	TIL	IRIG	W 1 2 0	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)

During normal full power operation, the main generator exciter voltage regulator tripped. At this time, the control room operator noticed that the generator exciter field breaker had also tripped open. The unit experienced an immediate generator trip which initiated a turbine trip and a subsequent reactor trip. All safety related loads automatically transferred to the offsite power system as designed. During this transient, three off normal events occurred. These were the auto start of the #1 Diesel Generator, the 1A and 1C cooling tower pumps tripped off of their respective 4KV busses, and the condenser steam dump valves failed to open in the TAVG mode of control even though a 60% demand signal was observed on the steam dump controller. Immediate manual operator action temporarily resolved the off normal events and the plant was subsequently stabilized in Mode 3 (Hot Standby).

The initiating cause of the event was a random end of life transistor failure in the generator exciter voltage regulator. This transistor has been replaced. The tripping of the 1A and 1C cooling tower pumps, and the autostart of the #1 Diesel Generator has been attributed to conservative relay setpoints. The applicable relays are currently under investigation by the Electrical Maintenance Group and corrective actions will be initiated as necessary. The failure of the condenser steam dump valves to operate in the TAVG mode was due to dirty contacts on the mode selector switch. These contacts have been subsequently cleaned.

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FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Beaver Valley Power Station, Unit 1	0 5 0 0 0 3 3 4	8 4	— 0 0 4	— 0 0	0 2 OF 0 2

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

At 0239 hours on 5/24/84, during normal full power operation an annunciator alarmed indicating that the main generator exciter voltage regulator had tripped. Control room operators noticed that the generator exciter field breaker had tripped open. The unit experienced an immediate generator trip which initiated a turbine trip and a subsequent reactor trip. The main transformer output breakers opened, and a transfer of loads to the offsite power system occurred. An undervoltage autostart of the #1 diesel generator was initiated as a result of the autobus transfer and the 1A and 1C cooling tower pumpers tripped from their respective 4KV busses, both postulated to have been initiated by conservative protective relay actuations. Misoperation of the steam dump controller occurred in the TAVG mode of control; as a 60% steam dump demand signal on the steam dump controller failed to open the condenser dump valves. The steam dump mode selector switch was transferred to the steam pressure mode of control which functioned properly to bring Tavg to the hot standby no load value of 547°F. The control room operator followed emergency procedures E-5 (Reactor Trip) and E-6 (Turbine and Generator Trip) and stabilized the plant in operating mode 3 (hot standby).

The initiating cause of the event was due to the random end of life failure of a transistor in the exciter voltage regulator. This transistor has since been replaced. Troubleshooting of the steam dump control circuitry has revealed that the mode selector switch contacts were not "made" in the Tavg position due to dirt accumulation. These contacts have been cleaned and the system restored to normal operation. The autostart of the #1 diesel generator, and the tripping of the 1A and 1C cooling tower pumps has been postulated to be conservative relay settings. The relay department, through the electrical maintenance group, is investigating these relay actuations and corrective actions will be taken as necessary.

There were no safety inplications as a result of this event since all designed protective features actuated in a conservative manner. Failure of the steam dumps to operate in the Tavg mode is not considered significant since accident analysis as described in the UFSAR under Section 14.1.7.2 does not consider their operation.

Duquesne Light

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

Telephone (412) 393-6000

June 22, 1984
ND1SS1:2103

Beaver Valley Power Station, Unit No. 1
Docket No. 50-334, License No. DPR-66
LER 84-004

Dr. Thomas E. Murley
Regional Administrator
United States Nuclear Regulatory Commission
Region 1
Park Avenue
King of Prussia, PA 19406

Gentlemen:

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

LER 84-004, 10 CFR 50.73 (a)(2)(IV), "Automatic Actuation of Reactor Protection System (RPS)".

Very truly yours,

R. J. Druga

Wm. S. Lacey
Station Superintendent

Attachment

IE 22

cc: Director of Management & Program Analysis
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Washington, D.C. 20555

C. A. Roteck, Ohio Edison

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