NRC FORM 366 (7-77)

U. S. NUCLEAR REGULATORY COMMISSION

LICENSEE EVENT REPORT

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

0 1 | P A B V S 1 (2) | 0 0 - 0 0 0 0 0 - 0 0 (3) | 4 1 1 1 1 (4) | (5)
LICENSEE CODE | LICENSE NUMBER | LICENSE TYPE | CAT

CON'T 0 1 | REPORT SOURCE L (6) | 0 5 0 0 0 3 3 4 (7) | 0 6 2 1 7 9 (8) | 0 7 0 6 7 9 (9)
DOCKET NUMBER | EVENT DATE | REPORT DATE

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)

0 2 The NSSS vendor has notified BVPS that a high energy line break inside containment
0 3 could result in a potential steam generator level bias due to the heatup of the
0 4 steam generator level measurement reference leg. This potential level bias could
0 5 result in delayed protection signals (reactor trip and auxiliary feedwater
0 6 initiation) which are based on low-low steam generator water level.
0 7
0 8

	SYSTEM CODE	CAUSE CODE	CAUSE SUBCODE	COMPONENT CODE	COMP. SUBCODE	VALVE SUBCODE
0 9	I A (11)	B (12)	A (13)	Z Z Z Z Z Z (14)	Z (15)	Z (16)

(17) LER/RO REPORT NUMBER	EVENT YEAR		SEQUENTIAL REPORT NO.		OCCURRENCE CODE	REPORT TYPE		REVISION NO.
	7 9	—	0 1 5	/	0 1	T	—	0

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

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)

1 0 An investigation is being conducted to determine what adverse condition would exist
1 1 for cases which rely on low-low steam generator level as being the primary actuating
1 2 signal. When the investigation is complete, the steam generator water level
1 3 setpoints will be corrected to account for any possible bias. If the problem is not
1 4 resolved prior to plant startup, administrative controls (continued on attached)

	FACILITY STATUS	% POWER	OTHER STATUS (30)	METHOD OF DISCOVERY	DISCOVERY DESCRIPTION (32)
1 5	G (28)	0 0 0 (29)	N/A	D (31)	Vendor notification

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

PERSONNEL EXPOSURES

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

PERSONNEL INJURIES

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

LOSS OF OR DAMAGE TO FACILITY (43)

	TYPE	DESCRIPTION
1 9	Z (42)	N/A

PUBLICITY

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

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POOR ORIGINAL

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

Attachment To LER 79-15/01T
Beaver Valley Power Station
Duquesne Light Company
Docket No. 50-334

Cause Description And Corrective Actions (continued)

will be invoked to prevent operation in a nonconservative manner.

The NSSS vendor has notified BVPS that a high energy line break inside containment could result in a potential steam generator level bias due to the heatup of the steam generator level measurement reference leg. This potential level bias could result in delayed protection signals (reactor trip and auxiliary feedwater initiation) which are based on low-low steam generator water level. The high energy line break in containment will result in an increased reference leg water column temperature which in turn results in a decrease of water column density with a consequent apparent increase in the indicated steam generator water level (i.e., apparent level exceeding actual level). In the case of a feedline rupture, this adverse environment could be present and could delay or prevent the primary signal arising from declining steam generator water level (low-low steam generator level). Back-up signals which may be available include the following: overtemperature delta T, high pressurizer pressure, containment pressure, and safety injection. For other high energy line breaks which could introduce a similar positive bias to the steam generator water level measurement, steam generator level does not provide the primary trip function and the potential bias would not interfere with needed protective system actuation. By way of example, a containment temperature of 180F could result in a 3% bias in steam generator levels. Refering to the attached figures (Figure 14.3-57 and Figure 14.3-58 from the BVPS FSAR for a Hot Leg DER) a containment pressure in excess of 1.5 psig (which in turn actuates safety injection, auxiliary feedwater and reactor trip) occurs prior to the containment atmosphere being heated up to 180F. Thus, the possibility of a greater bias of the steam generator level signal above 180F for this particular case is not relevant to protection system actuation. In correcting the steam generator water level setpoint for this bias, the reference leg bias is additive to the existing setpoint.

An investigation is being conducted to determine what adverse conditions would exist for cases which rely on low-low steam generator level as being the primary actuating signal. When the investigation is complete, the steam generator water level setpoints will be corrected to account for any possible bias. If the problem is not resolved prior to plant startup, administrative controls will be invoked to prevent operation in a nonconservative manner.

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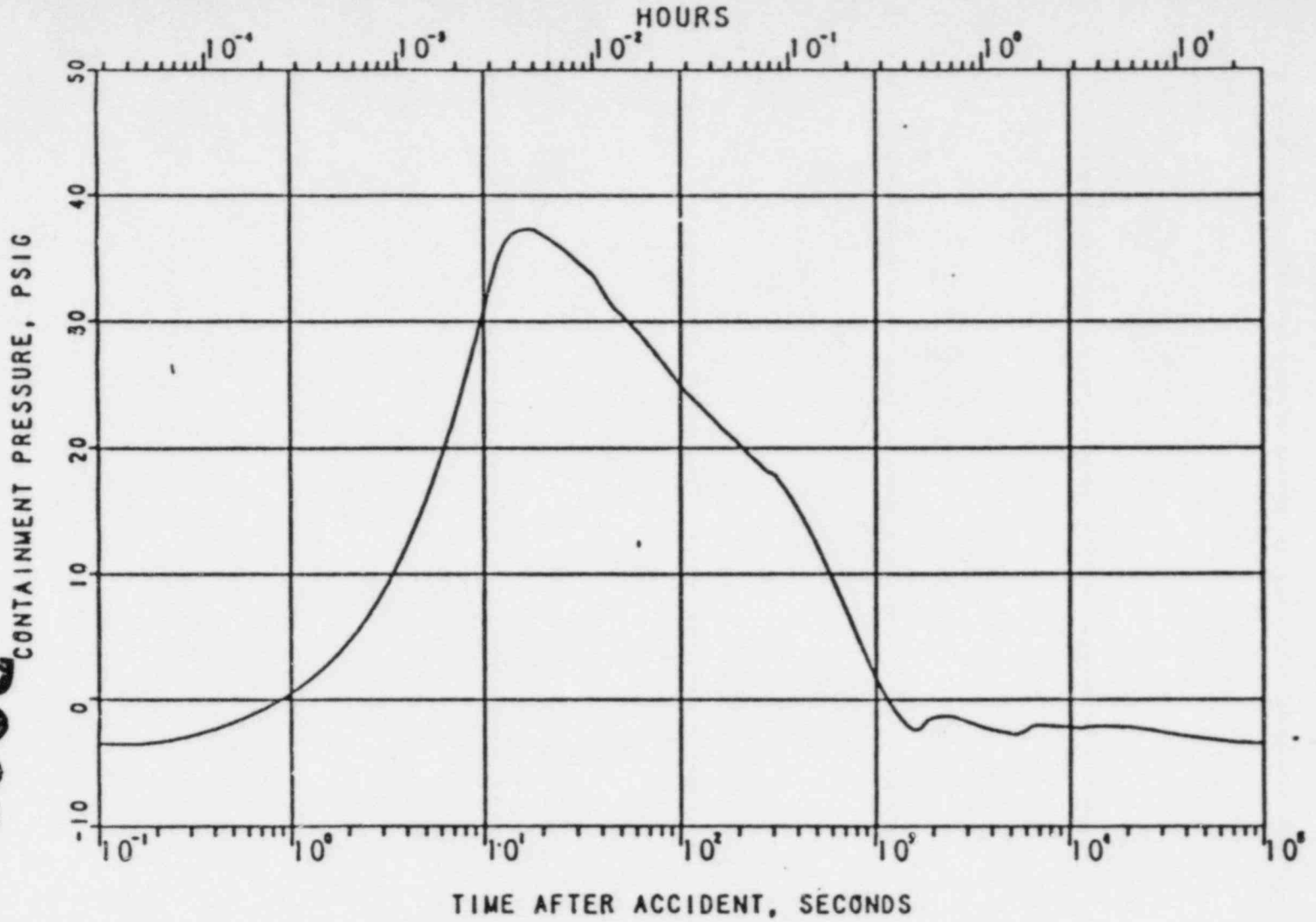

FIG. 14.3-57
CONTAINMENT PRESSURE FOR 1 DAY FOLLOWING ACCIDENT–HOT LEG DER–MINIMUM SAFEGUARDS

BEAVER VALLEY POWER STATION
FINAL SAFETY ANALYSIS REPORT

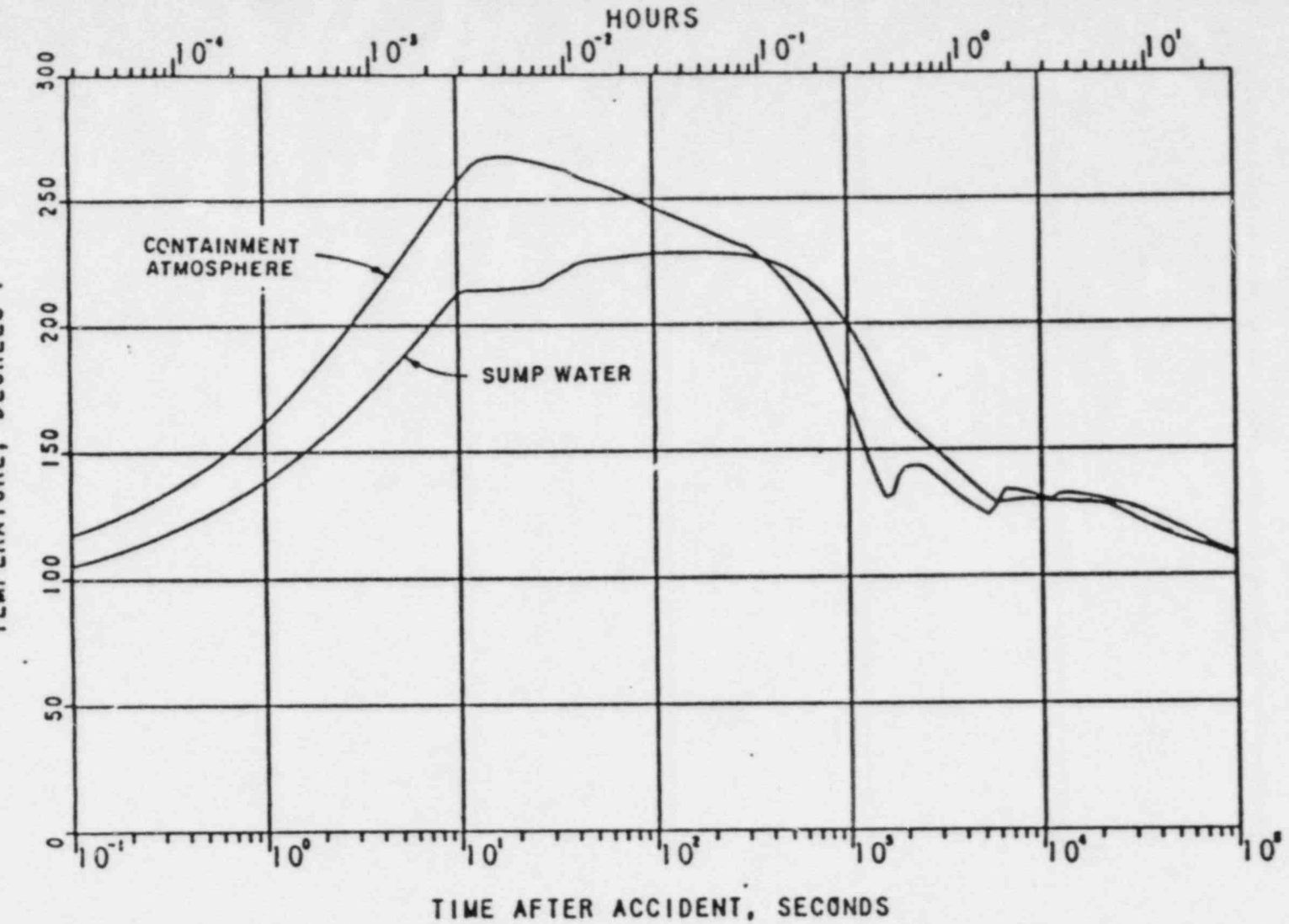

FIG. 14.3-58
TEMPERATURES FOR 1 DAY FOLLOWING ACCIDENT-HOT LEG DER-MINIMUM SAFEGUARDS
BEAVER VALLEY POWER STATION
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