

LICENSEE EVENT REPORT

UPDATE REPORT

PREVIOUS REPORT DATE: 1/27/83

CONTROL BLOCK:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

(PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

0	1	M	D	C	C	N	2	2	0	0	-	0	0	0	0	0	0	0	0	3	4	1	1	1	1	4	5
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

7 8 9 14 15 25 26 30 57 CAT 58

CON'T

0	1	L	6	0	5	0	0	0	3	1	8	7	1	2	2	8	8	2	8	0	5	2	6	3	3	9
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

7 8 60 61 DOCKET NUMBER 68 69 EVENT DATE 74 75 REPORT DATE 80

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)

At 1620 with the reactor in Mode 5, 22 vital AC inverter failed causing 22 120VAC vital bus to deenergize. SI-652, shutdown cooling return isolation valve, went shut due to the loss of 22 120VAC vital bus, rendering both shutdown cooling loops inoperable (T.S. 3.4.1.3). At 1632, 22 120VAC vital bus was placed on the back up source, SI-652 was opened and conditions returned to normal. No operations involving the reduction of boron concentration were in progress. No similar events reported.

0	9	E	B	11	B	12	C	13	G	E	N	E	R	A	14	F	15	Z	16	8	2	0	5	5	0	3	X	1
---	---	---	---	----	---	----	---	----	---	---	---	---	---	---	----	---	----	---	----	---	---	---	---	---	---	---	---	---

7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32
LER/RO REPORT NUMBER EVENT YEAR SEQUENTIAL REPORT NO. OCCURRENCE CODE REPORT TYPE REVISION NO.
ACTION TAKEN FUTURE ACTION EFFECT ON PLANT SHUTDOWN METHOD HOURS ATTACHMENT SUBMITTED NPRD-4 FORM SUB. PRIME COMP. SUPPLIER COMPONENT MANUFACTURER
A 18 F 19 Z 20 Z 21 0 0 0 0 Y 23 N 24 A 25 E 3 5 5 26

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)

Testing and research has shown that the vital instrument bus fuses were improper. The proper fuses were installed in both units' vital buses under Facility Change 83-1001. The current limiting feature of inverters 11, 12, 21 and 22 has been removed under this change also. Replacement of all inverters to state-of-the-art design is being considered.

1	5	D	28	0	0	0	29	NA	A	31	Operator Observation	32
---	---	---	----	---	---	---	----	----	---	----	----------------------	----

7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80
FACILITY STATUS % POWER OTHER STATUS METHOD OF DISCOVERY DISCOVERY DESCRIPTION
ACTIVITY CONTENT AMOUNT OF ACTIVITY LOCATION OF RELEASE
PERSONNEL EXPOSURES NUMBER TYPE DESCRIPTION
PERSONNEL INJURIES NUMBER DESCRIPTION
LOSS OF OR DAMAGE TO FACILITY TYPE DESCRIPTION
PUBLICATION ISSUED DESCRIPTION
NAME OF PREPARER M. A. Junge/L. F. Basso
PHONE: 301-269-4969/4933
NRC USE ONLY8306210159 830526
PDR ADOCK 05000318
S PDR

BALTIMORE GAS AND ELECTRIC COMPANY

P.O. BOX 1475

BALTIMORE, MARYLAND 21203

NUCLEAR POWER DEPARTMENT
CALVERT CLIFFS NUCLEAR POWER PLANT
LUSBY, MARYLAND 20657

May 26, 1983

Mr. James M. Allan
Acting Regional Administrator
U.S. Nuclear Regulatory Commission
Region 1
631 Park Avenue
King of Prussia, PA 19406

Docket No. 50-318
License No. DPR 69

Dear Mr. Allan:

In accordance with Technical Specification 6.9 please find the attached follow-up report for LER 82-55/3X, Rev. 1.

Should you have any questions regarding this report, we would be pleased to discuss them with you.

Very truly yours,

L B Russell
L. B. Russell
Plant Superintendent

LBR:LFB:mlk

cc: Director, Office of Management Information
and Program Control

Messrs: A. E. Lundvall, Jr.
J. A. Tiernan

TE22
1/1

LER NO. 82-55/3X, Rev. 1
DOCKET NO. 50-318
LICENSE NO. DPR 69
EVENT DATE 12/28/82
REPORT DATE 5/26/83
ATTACHMENT

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS(cont'd)

Testing and research has revealed that the improper size and type fuses were installed in the vital instrument buses. The fuses in all four vital buses of each unit have been replaced, in consideration of individual bus loading, under Facility Change 83-1001. The current limiting feature of inverters 11, 12, 21, and 22, the four inverters that supply power to the ESFAS actuation modules, has been removed under this change also.

Extensive troubleshooting of inverter #22 by the manufacturer and plant personnel was performed since the inverter had tripped off several times from other than load perturbations. No specific cause could be found to account for the tripping. Since this inverter supplies power to ESFAS actuation logic modules, an inverter trip would result in the inadvertent actuation of various safety systems. Due to the potential intermittent failure of inverter #22, the input and output power cables and associated annunciation cables between inverters #22 and #24 were interchanged under Facility Change 83-1016. Inverter #24 was chosen because it had no history of problems and the intermittent failure of #22 inverter would only affect 1 of 4 sensor channels and would not cause actuation or initiation of ESFAS functions.

Results of short circuit tests performed on a vital bus indicate that when a fault occurred on a vital load, the load fuse would not isolate the fault before the inverter's current limiter operated. In doing so, the inverter's output voltage would collapse to near 0 volts and then return to normal, thus randomly deenergizing and reenergizing ESFAS modules, causing challenges to various safety systems. Similar tests done with the new fuses installed and the current limiter removed show that a vital load fault will not affect the inverter output, thus preventing inadvertent safety system operation. Removal of the current limiters does not affect total system reliability.

To upgrade the vital AC system, the replacement of all inverters to state-of-the-art design is being considered.