

TENNESSEE VALLEY AUTHORITY

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58 Lookout Place

NOV 29 1990

U.S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, D.C. 20555

Gentlemen:

In the Matter of )  
Tennessee Valley Authority )

Docket Nos. 50-259  
50-260  
50-296

BROWNS FERRY NUCLEAR PLANT (BFN) - REVISED RESPONSE AND NOTIFICATION OF  
IMPLEMENTATION OF NRC BULLETIN 88-10 NONCONFORMING MOLDED CASE CIRCUIT  
BREAKERS (MCCBS)

Reference: TVA letter to NRC dated December 15, 1989, "Response to NRC  
Bulletin No. 88-10 and Supplement 1: Nonconforming Molded-Case  
Circuit Breakers (MCCB)"

TVA has completed its Bulletin 88-10 effort for BFN Units 1, 2, and 3 and has  
removed from installed service and stores those class 1E MCCBs without  
adequate traceability.

TVA provided two enclosures in the referenced letter that were intended to  
identify the complete list of MCCBs purchased between August 1983 to August  
1988 without traceability to the MCCB manufacturer. During the Bulletin 88-10  
effort, TVA expended additional resources on the MCCB traceability review and  
reduced the number of class 1E MCCBs 1) that were installed and required  
replacement from 38 to 16 (57% reduction) and 2) that required removal from  
stores from 113 to 44 (61% reduction). This review, however, identified  
additional MCCBs that should have been addressed by the previous enclosures,  
but were not.

For the installed class 1E MCCBs identified by the previous Enclosure 1, the  
following revisions are necessary:

- (A) Thirteen MCCBs (Item Nos. 1, 9, 24 thru 28, 36 thru 39, 54, and 62)  
have traceability to their manufacturer and do not require  
replacement.
- (B) Fifteen MCCBs (Items Nos. 2, 3, 5, 10, 11, 13, 14, 15, 43, 44, 57,  
58, and 61) were purchased prior to August 1983 or after August  
1988 and are not addressed by Bulletin 88-10. These MCCBs do not  
require replacement.
- (C) Six MCCBs for two panels (Item Nos. 59 and 60) were identified on  
the previous enclosure as not having adequate traceability.  
However, visual inspection confirmed that these panels do not have  
MCCBs.

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- (D) Five additional class 1E MCCBs without traceability and purchased between August 1983 to August 1988 were determined to be installed at BFN, but were not identified on the previous enclosures (Item Nos. 66 thru 69).

For the class 1E MCCBs that were maintained in stores as spares and identified in the previous Enclosure 2, the following revisions are necessary:

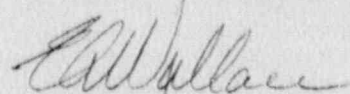
- (A) Seventy-three MCCBs (Item Nos. 6, 20 thru 29, 34, and 36) have traceability to their manufacturer and no longer require removal.
- (B) The contracts identified for twelve breakers (Items Nos. 2, 7, 12, 15, 32, 33 and 37) were determined not to provide MCCBs and therefore are not addressed by Bulletin 88-10.
- (C) Twenty-six MCCBs (Item Nos. 10, 11, 18, and 31) were purchased prior to August 1983 or after August 1988 and are not addressed by Bulletin 88-10.
- (D) Three MCCBs (Item No. 35) were not purchased for safety-related applications and are not addressed by Bulletin 88-10.
- (E) Twenty-one additional class 1E MCCBs without traceability and purchased between August 1983 to August 1988 (Item Nos. 38 thru 46) were determined to be maintained in stores as spares, but were not identified on the previous enclosures.

The previous Enclosures 1 and 2 have been revised and attached hereto indicating the results of TVA's traceability review summarized above. Additionally, the enclosures have been updated to reflect the corrective action taken to satisfy Bulletin 88-10. This submittal supercedes TVA's December 15, 1989 submittal regarding Bulletin 88-10.

If you have any questions, please telephone Patrick P. Carrier, BFN Site Licensing Manager, (205) 729-3570

Very truly yours,

TENNESSEE VALLEY AUTHORITY



E. G. Wallace, Manager  
Nuclear Licensing and  
Regulatory Affairs

Enclosures  
cc: See page 3

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ENCLOSURE 1  
Browns Ferry Nuclear Plant

Status of Installed Nonconforming Molded-Case Circuit Breakers

<u>Item</u>	<u>System # and Location</u>	<u>Qty</u>	<u>Contract</u>	<u>Mfr.</u>	<u>Model #</u>	<u>Traceability to Mfr.</u>	<u>Replace Prior to Startup of Unit</u>
1	(266) 480V Control Bay Vent Board A/Comp. R1B	1	86PNQ-360111-1	GE	THED 136020WL	Yes	N/A
2	(281) 250V Reactor MOV Board 2C/Comp. 5D	1	N1-6936	GE	TEO 124020WL	Note 1	N/A
3	(65) 480V Standby Gas Treatment Board/Comp. 2A	1	81PN8-323950	ITE	HE3-B090	Note 1	N/A
4	(256) ECCS ATU Inverter A, U3, Division I	1	86PLE-370345	GE	TEB 132015WL	No	Removed
5	(268) 480V Reactor Mov Board 1C/Comp. 1C	1	83PN8-336862	GE	TEF 136020	Note 1	N/A
6	(268) 480V Reactor Mov Board 3C/Comp. 3A	1	84PN2-355718	GE	THED 136100WL	No	Removed
7	(256) ECCS ATU Inverter A, U1 Division I	1	86PLE-370345	GE	TEB 132015WL	No	Removed
8	(256) ECCS ATU Inverter B, U1 Division I	1	86PLE-370345	GE	TEB 132015WL	No	Removed
9	(268) 480V RMOV Board 3B/Comp. 5C1	1	86PLF-839020, RD-423534	GE	THED 136100WL	Yes	N/A
10	(266) 480V Control Bay Vent Board B/Comp. 2D	1	N1-6905	GE	THED 136020WL	Note 1	N/A

ENCLOSURE 1 (Cont'd)  
Browns Ferry Nuclear Plant

Status of Installed Nonconforming Molded-Case Circuit Breakers

Item	System # and Location	Qty	Contract	Mfr.	Model #	Traceability to Mfr.	Replace Prior to Startup of Unit
11	(268) 480V RMOV Bd. 2C/Comp. R8B	1	N1-6905	GE	THED 136050WL	Note 1	N/A
12	(268) 480V RMOV Bd. 2C/Comp. R8E	1	86PLB-364804	GE	THED 136050WL	No	Removed
13	(281) 250V RMOV Board 2B/Comp. 6D	1	N1-6904-1	GE	THED 136015WL	Note 1	N/A
14	(280) 250V Battery Charger 1, Alternate AC Input Breaker	1	88NLC-81726A	GE	THJK436F000	Note 1	N/A
15	(253) Panel 9-9 Bkr. 240, U3	1	81PNB-313043	GE	TED 134020WL	Note 1	N/A
16	(253) Panel 9-9 Bkr. 304, U2	1	CR5601-670	GE	TED 124020WL	No	Removed
17	(281) 250V RMOV Board 3A/Comp. 1B1	1	88PLF-839020	GE	THED124040WL	Yes	N/A
18	(281) 250V RMOV Board 3B/Comp. 8B1	1	88PLF-839020	GE	THED124040WL	Yes	N/A
19	(281) 250V RMOV Board 3C/Comp. 3D	1	88PLF-839020	GE	THED124030WL	Yes	N/A
20	(268) 480V RMOV Board 1A/ Comp. 6E and 8E	2	86PLF-839020 RD-423534	GE	THED136020WL	Yes	N/A

ENCLOSURE 1 (Cont'd)  
Browns Ferry Nuclear Plant

Status of Installed Nonconforming Molded-Case Circuit Breakers

<u>Item</u>	<u>System # and Location</u>	<u>Qty</u>	<u>Contract</u>	<u>Mfr.</u>	<u>Model #</u>	<u>Traceability to Mfr.</u>	<u>Replace Prior to Startup of Unit</u>
21	(268) 480V RMOV Board 3A/ Comp. 6E and 8E	2	86PLF-839020 RD-423534	GE	THED136020WL	Yes	N/A
22	(268) 480V RMOV Board 3A/ Comp. R9A	1	86PLF-839020 RD-423534	GE	THED136020WL	Yes	N/A
23	(268) 480V RMOV Board 3B/ Comp. R9A and F9B1	2	86PLF-839020 RD-423534	GE	THED136020WL	Yes	N/A
24	(253) Panel 9-9, Bkr. 318, U1	1	88NLB-74685A	GE	THED124015WL	Yes	N/A
25	(253) Panel 9-9, Bkr. 316, U1	1	88NLB-74685A	GE	THED124015WL	Yes	N/A
26	(253) Panel 9-9, Bkr. 316, U2	1	88NLB-74685A	GE	THED124015WL	Yes	N/A
27	(253) Panel 9-9, Bkr. 316, U3	1	88NLB-74685A	GE	THED124015WL	Yes	N/A
28	(253) Panel 9-9, Bkr. 214, U3	1	88NLB-74685A	GE	THED124020WL	Yes	N/A
29	(281) 250V RMOV Board 1A/ Comp. 1B1	1	86PLF-839020 RD-423534	GE	THED124040WL	Yes	N/A
30	(281) 250V RMOV Board 1B/ Comp. 8B1	1	86PLF-839020 RD-423534	GE	THED124040WL	Yes	N/A
31	(281) 250 RMOV Board 1C/ Comp. 3D	1	86PLF-839020 RD-423534	GE	THED124030WL	Yes	N/A
32	(281) 250V RMOV Board 1C/ Comp. 7B	1	86PLF-839020 RD-423534	GE	THED124030WL	Yes	N/A
33	(268) 480V RMOV Board 2A/ Comp. 6E	1	86PLF-839020 RD-423534	GE	THED136020WL	Yes	N/A



ENCLOSURE 1 (Cont'd)  
 Browns Ferry Nuclear Plant

Status of Installed Nonconforming Molded-Case Circuit Breakers

Item	System # and Location	Qty	Contract	Mfr.	Model #	Traceability to Mfr.	Replace Prior to Startup of Unit
34	(268) 480V RMOV Board 2A/ Comp. 8E	1	86PLF-839020 RD-423534	GE	THED136020WL	Yes	N/A
35	(268) 480V RMOV Board 2B/ Comp. 8A1	1	86PLF-839020 RD-423534	GE	THED136040WL	Yes	N/A
36	(268) 480V RMOV Board 2A/ Comp 1B	1	88NLF-74162A	GE	THED134125WL	Yes	N/A
37	(253) I&C Bus 2A, JB7193, Rx Bldg., E1-621	1	87NLG-839272	GE	TJH6S	Yes	N/A
38	(253) I&C Bus 2B, JB7196, Rx Bldg., E1-593	1	87NLG-839272	GE	TJH6S	Yes	N/A
39	(253) Pnl. 9-9, Bkr. 323, U3	1	88NLB-74685A	GE	THED124015WL	Yes	N/A
40	(281) 250V RMOV Board 2A/Comp. 1B1	1	86PLF-839020 RD-423534	GE	THED124040WL	Yes	N/A
41	(281) 250V RMOV Board 2B/Comp. 8B1	1	86PLF-839020 RD-423534	GE	THED124040WL	Yes	N/A
42	(281) 250V RMOV Board 2C/Comp 3D and 7B	2	86PLF-839020 RD-423534	GE	THED124030WL	Yes	N/A
43	(281) 250V RMOV Board 3C/Comp 4B	1	88NLF-82670A	GE	THED124020WL	Note 1	N/A
44	(281) 250V RMOV Board 3C/Comp 7B	1	88NLF-82670A	GE	THED124030WL	Note 1	N/A

ENCLOSURE 1 (Cont'd)  
 Browns Ferry Nuclear Plant

Status of Installed Nonconforming Molded-Case Circuit Breakers

<u>Itee</u>	<u>System # and Location</u>	<u>Qty</u>	<u>Contract</u>	<u>Mfr.</u>	<u>Model #</u>	<u>Traceability to Mfr.</u>	<u>Replace Prior to Startup of Unit</u>
45	(281) 250V RMOV Board 2C/Comp 4B	1	86PLF-839020 RD-423534	GE	THED124020WL	Yes	N/A
46	(268) 480V RMOV Board 1A/Comp 6B, 7B, and 9A	3	86PLF-839020 RD-423534	GE	THED136040WL	Yes	N/A
47	(268) 480V RMOV Board 1B/Comp 18E1	1	86PLF-839020 RD-423534	GE	THED136040WL	Yes	N/A
48	(268) 480V RMOV Board 2A/Comp 11E and 13C	2	86PLF-839020 RD-423534	GE	THED136040WL	Yes	N/A
49	(268) 480V RMOV Board 2A/Comp 10F	1	86PLF-839020 RD-423534	GE	THED136030WL	Yes	N/A
50	(268) 480V RMOV Board 2B/Comp 14C2	1	86PLF-839020 RD-423534	GE	THED136040WL	Yes	N/A
51	(268) 480V RMOV Board 2B/Comp 10F	1	86PLF-839020 RD-423534	GE	THED136030WL	Yes	N/A
52	(268) 480V RMOV Board 3A/Comp 9A, 11E, and 13C	3	86PLF-839020 RD-423534	GE	THED136040WL	Yes	N/A
53	(268) 480V RMOV Board 3B/Comp 15C	1	86PLF-839020 RD-423534	GE	THED136040WL	Yes	N/A
54	(253) Panel 9-9, Bkr 218, U1	1	88NLB-74685A	GE	THED124015WL	Yes	N/A
55	(268) 480V RMOV Board 3A/Comp 10A	1	86PLF-839020 RD-423534	GE	THED136020WL	Yes	N/A
56	(268) 480V RMOV Board 3A/Comp R9B1	1	86PLF-839020 RD-423534	GE	THED136030WL	Yes	N/A
57	(253) Panel 9-9, Bkr 322, U2	1	89NLE-81722A	GE	TED124030WL	Note 1	N/A
58	(253) Panel 9-9, Bkr 309, 314, and 317, U2	3	89NLE-81722A	GE	TED124015WL	Note 1	N/A



ENCLOSURE 1 (Cont'd)  
Browns Ferry Nuclear Plant

Status of Installed Nonconforming Molded-Case Circuit Breakers

Item	System # and Location	Qty	Contract	Mfr.	Model #	Traceability to Mfr.	Replace Prior to Startup of Unit
59	Panel 9-3, U3	0	N/A	N/A		Note 2	N/A
60	Panel 9-3, U3	0	N/A	N/A		Note 2	N/A
61	(219) 480V Dsl. Aux. Board 3EA/Comp 2B2	1	89NLF-81428A	GE	THED136020WL	Note 1	N/A
62	(268) 480V RMOV Board 2B/Comp 1A	1	88NLB-380934-2	GE	THED136020WL	Yes	N/A
63	(268) 480V RMOV Board 2B/Comp 10E and 14E	2	88NLE-74152A	GE	TEC36015	No	Removed
64	(268) 480V RMOV Board 2B/Comp 15E	1	88NLE-74152A	GE	TEC36007	No	Removed
65	(268) 480V RMOV Board 2A/ Comp 13B and 14B	2	88NLE-74152A	GE	TEC36015	No	Removed

The following MCCBs were not included in the 12/15/89 response.

66	(219) 480V DSL Aux Board A/ Comp 8C2	1	86PLD-379239	GE	THED136050WL	No	Removed
67	(268) 480V RMOV Board 2A/ Comp 11E and 13C	2	88NLE-74152A	GE	TEC36015	No	Removed
68	(268) 480V RMOV Board 2B/ Comp 15D	1	88NLE-74152A	GE	TEC36007	No	Removed
69	(82) Diesel Gen. 3D	1	*85P60-364827	GE	TE0136100	No	Removed

ENCLOSURE 1 (Cont'd)  
Browns Ferry Nuclear Plant

Status of Installed Nonconforming Molded-Case Circuit Breakers

- Note 1: Item(s) are not applicable to NRC Bulletin 88-10 due to the timeframe of their purchase. Item(s) purchased prior to August 1983 or after August 1988.
- Note 2: It has been determined, by drawing review and visual inspection of the panel, that this panel has no molded-case circuit breakers.

ENCLOSURE 2  
Browns Ferry Nuclear Plant

Status of Nonconforming Molded-Case Circuit Breakers  
Warehouse Stock  
1 of 4

<u>Item</u>	<u>System # and Location</u>	<u>Mfr</u>	<u>Contract</u>	<u>Model</u>	<u>Qty</u>	<u>Traceability to Mfr.</u>	<u>Remove Prior to Startup of Unit</u>
1	85PLB-360281	GE	ARGO	TEC	3	No	Removed
2	85P69-356793	GE	GE Supply	TFJ (Non-Auto Trip)	2	Note 1	N/A
3	86PLB-367147	GE	ARGO	TFJ	1	No	Removed
4	85PN5-361154	GE	Creswell	TFK	1	No	Removed
5	84PN8-348285	GE	Electric Motor Sales	TFK	1	No	Removed
6	88NLC-81726A-001	GE	GE	THJK	2	Yes	N/A
7	86PLC-376535	GE	Master Control	MFC	3	Note 1	N/A
8	85PN8-356624-002	Square D	B&S Electric	FA260	3	No	Removed
9	86PLD-370328	GE	GE Supply	TEB	3	No	Removed
10	89NLF-81618A-001	GE	GE	THED	1	Note 2	N/A
11	89NLF-81618A-002	GE	GE	THED	2	Note 2	N/A
12	89NLD-82735A	Dunham-Bush	ARGO	BKR75	2	Note 1	N/A
13	87PLD-380652-001	GE	Creswell	TE3	3	No	Removed
14	87PLD-380652-006	GE	Creswell	TEB	1	No	Removed
15	86PLC-376535	MCS	Master Control	78066	1	Note 1	N/A
16	85PN8-356624-004	Square D	B&S Electric	FA260	1	No	Removed
17	85PN8-356624-003	Square D	B&S Electric	FA260	2	No	Removed
18	89NLF-81428A	GE	GE	THED	21	Note 2	N/A
19	87PLD-379071	GE	Electric Motor Sales	TFK	2	No	Removed
20	88NLC-81726A-002	GE	GE	TJK	3	Yes	N/A
21	88NLC-81726A-003	GE	GE	TJK	3	Yes	N/A
22	88NLF-74162A-017	GE	Nutherm	THED	1	Yes	N/A



ENCLOSURE 2  
Browns Ferry Nuclear Plant

Status of Nonconforming Molded-Case Circuit Breakers  
Warehouse Stock  
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Item	System # and Location	Mfr	Contract	Model	Qty	Traceability to Mfr.	Remove Prior to Startup of Unit
23	88NLF-74162A-018	GE	Nutherm	THCP	13	Yes	N/A
24	88NLF-74162A-019	GE	Nutherm	THED	1	Yes	N/A
25	88NLF-74162A-020	GE	Nutherm	THED	1	Yes	N/A
26	88NLF-74162A-021	GE	Nutherm	THFK	1	Yes	N/A
27	88NLF-74162A-022	GE	Nutherm	THED	3	Yes	N/A
28	88NLF-74162A-023	GE	Nutherm	THFK	1	Yes	N/A
29	87NLB-835168	GE	Nutherm	THED	30	Yes	N/A
30	84PN2-355718-003	GE	ARGO	TED	2	No	Removed
31	83PN2-336886	GE	GE Supply	TED	2	Note 2	N/A
32	83P64-332799	AIR PAC	AIR PAC	API	2	Note 1	N/A
33	87NLB-378913	GE	Phase Application	AK-5A	1	Note 1	N/A
34	88NLD-74431A	GE	Nutherm	TED	2	Yes	N/A
35	84PNL-835396	Heineman	Heineman	CB-2	3	Note 3	N/A
36	87NLG-839272	GE	Nutherm	TJH	12	Yes	N/A
37	87NLB-378913	GE	Phase Application	AK-5A	1	Note 1	N/A

The following MCCBs were not included in the 12/15/89 response.

38	85P60-360253	GE	ARGO	THED	1	No	Removed
39	85PN3-360228	GE	Electric Motor Sales	THED	2	No	Removed
40	84PN8-345073	Heineman	Technitronics	CD-2	3	No	Removed
41	87PLD-380649	Heineman	Mountain City Industrial Supply	CD-2	5	No	Removed
42	(CR575) 5686-01053 86PLB-452562	GE	GE Supply	TEB	3	No	Removed

ENCLOSURE 2  
Browns Ferry Nuclear Plant

Status of Nonconforming Molded-Case Circuit Breakers  
Warehouse Stock  
3 of 4

Item	System # and Location	Mfr	Contract	Model	Qty	Traceability to Mfr.	Remove Prior to Startup of Unit
43	86P13370345	GE	GE Supply	TEB132015	1	No	Removed
44	86PLB364804	GE	ARGO	THED136	2	No	Removed
45	86PLB364904	GE	ARGO	TED136	2	No	Removed
46	88HLB74685A	GE	Nutherm	THED136050	2	No	Removed

ENCLOSURE 2  
Browns Ferry Nuclear Plant

Status of Nonconforming Molded-Case Circuit Breakers  
Warehouse Stock

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- Note 1: Items purchased by contract are not molded-case circuit breakers and are not applicable to NRC Bulletin 88-10.
- Note 2: Items are not applicable to NRC Bulletin 88-10 due to the timeframe of their purchase. Items purchased prior to August 1983 or after August 1988.
- Note 3: Item is not safety-related and, therefore, is outside the scope of NRC Bulletin 88-10.