ENCLOSURE I

NRC BULLETIN 88-10

MOLDED CASE CIRCUIT BREAKERS RESPONSE REPORT

SUPPLEMENT REPORT NO. 1

I. NRC Bulletin 88-10 Response Supplement
Molded Case Circuit Breakers (CBs)
San Onofre Nuclear Generating Station
Units 1, 2 and 3

II. SCOPE

This Report is provided in accordance with the Reporting Requirements stated in NRC Bulletin 88-10 applicable to operating licenses for San Onofre Nuclear Generating Station (SONGS) Units 1, 2 and 3. This Supplement Report describes traceability actions for Items 1 and 4 CBs that cannot be traced. The results are contained in a supplement to Section IV. No additional information is provided for Sections III, V and VI. Supplements or revisions to Appendixes A, B and C are included. Appendixes D and E have not been changed. Enclosure II provides the Justification for Continued Operation (JCO's) for San Onofre Units 1, 2, and 3.

III. No change

IV. Supplement attached

V. No change

VI. No change

IV: SUMMARY OF CBs THAT CANNOT BE TRACED

Reporting Requirement 1.b

Summarize the total number, manufacturer, model number and to the extent possible the procurement chain of those CBs that could not be traced to the CBM in Items 1 and 4 of the actions requested. For Installed CBs, also identify each system which they are/were installed. If item 4 of the actions requested has not been completed by April 1, 1989, due to the schedule for tests in item 3 of the actions requested, this information should be updated within 30 days of the completion of item 4 to address those additional CBs that could not be traced to the CBM.

Response

There were Eighty-seven spare MCCBs reported under investigation in Appendix A of the March 30, 1989 submittal. Forty-four have been determined to be traceable. Twenty-six failed trace verification and are listed in attached Supplement Appendix A . The procurement chain for these twenty-six breakers is provided in Supplement Appendix C. The remaining seventeen Westinghouse MCCBs are still under investigation. The presently known procurement chain for these seventeen breakers is also included in the supplement. Although these activities were not completed on June 1, 1989 as stated in the March 30, 1989 report, they were completed on July 31, 1989. These extra days allowed SCE to complete the bulletin requirements for all identified breakers.

Twenty-nine additional MCCBs were identified in stock subsequent to our original report. Eleven passed trace verification. Eighteen failed verification. The eighteen are included in Supplement Appendices A and C.

Revised Appendix B shows twenty-nine installed breakers that failed trace verification. Their procurement chain is provided in Supplement Appendix C.

Supplement Appendix C includes QA Reports MCCB-23 through 32 and a listing of all MCCBs by manufacturer that still have an indeterminate status for traceability verification. The present procurement chain is listed showing the vendor these breakers were purchased from and the SCE purchase order number.

We do not expect any new information on traceability to surface upon completion of our review. Nor do we believe the data on the seventeen remaining breakers will have a statistical impact on any analysis performed using the information provided in our two reports. Therefore, we will document the results of our effort using the NCR process and retain the data in our files.

SUPPLEMENT

APPENDIX A

SPARE MOLDED CASE CIRCUIT BREAKERS

SUPPLEMENT APPENDIX A
SPARE MOLDED CASE CIRCUIT BREAKERS

RECORD* ID	WNCR	MANUFACTURER	MODEL	TRACEABILITY	
				FAILED	UNDER INVESTIGATION
3	W-0020-89	WESTINGHOUSE	FB30	0	1
4	W-0020-89	WESTINGHOUSE	FB30	0	1
94	W-0022-89	WESTINGHOUSE	EB20	0	12
156	W-0077-89	WESTINGHOUSE	EF3A	1	0
^ 222	W-0029-89	WESTINGHOUSE	FB31	4	0
230	W-0104-89	GENERAL ELECTRIC	TEB1	4	0
232	W-0131-89	WESTINGHOUSE	FA20	1	0
233	W-0131-89	WESTINGHOUSE	FA20	5	0
234	W-0131-89	WESTINGHOUSE	FA21	4	0
235	W-0132-89	WESTINGHOUSE	EHB3	1	0
240	W-0132-89	WESTINGHOUSE	EHB2	1	0
245	W-0131-89	WESTINGHOUSE	FA21	1	0
250	W-0028-89	WESTINGHOUSE	FB30	3	0
253	W-0149-89	GENERAL ELECTRIC	TED1	1	0
254	W-0149-89	GENERAL ELECTRIC	TED1	1	0
256	W-0150-89	WESTINGHOUSE	EB21	1	0
260	W-0149-89	GENERAL ELECTRIC	TED1	1	0
265	W-0026-89	WESTINGHOUSE	FB30	0	1
266	W-0168-89	WESTINGHOUSE	FB30	0	2
268	W-0131-89	WESTINGHOUSE	FB30	1	0
^ 269	W-0356-89	GENERAL ELECTRIC	THJK	1	0
271	W-0027-89	WESTINGHOUSE	FB30	1	0
272	W-0357-89	AIRPAX	2091	10	0
^ 275	W-0366-89	SQUARE-D	QOB1	2	0
*** TOTAL ***				44	17

*NOTE: The Record ID indicated in this appendix is a tracking designator which enables cross reference to the detailed Edison QA Report contained in Appendix C.

^NOTE: These records pertain to MCCBs that were not reported in the origional publication of Appendix A. They have since been identified, quarantined and subjected to the requirements of NRCB 88-10.

SUPPLEMENT

APPENDIX B

INSTALLED MOLDED CASE CIRCUIT BREAKERS

REVISED APPENDIX B
INSTALLED MOLDED CASE CIRCUIT BREAKERS
FAILED TRACE VERIFICATION

*ORD ID	NCR	MNFR	QTY	MODEL	UNIT	SYSTEM
277 (2)	2-2653	SQUARE D	2	Q0B1	2	DIESEL GENERATOR
280 (6)	3-2364	SQUARE D	1	Q0B1	3	COND AIR EJECT MON
281 (7)	2-2654	SQUARE D	1	QOB1	2	DIESEL GENERATOR
283 (8)	3-2364	SQUARE D	1	QOB1	3	CONT SPRAY HT TRACE
^284 (9)	2-2653	ITE	1	EE2B	2	AUX FEEDWATER
285 (10)	2-2653	ITE	1	EF2A	2	AUX FEEDWATER
288 (12)	P-7129	WESTINGH	1	FB30	1	FUEL HANDLING
289 (13)	2-2653	SQUARE D	2	QB12	2	DIESEL GENERATOR
291 (14)	2-2653	SQUARE D	1	Q0B1	2	120V PANEL SPARE
294 (17)	3-2364	SQUARE D	1	QOB1	3	120V PANEL SPARE
296 (19)	P-7129	GEN ELEC	1	TEB1	1	VITAL BUS
301 (24)	P-7129	SIEMENS/ ALLIS	3	EH2-BO	1	DEDICATED SHUTDOWN
303 (26)	2-2653	SQUARE D	3	QOB1	2	480V SWGR SPARE
311 (34)	P-7129	WESTINGH	1	FA31	1	COMP COOLING WATER
312 (35)	2-2653	GEN ELEC	4	THJK	2	125V PANEL SPARE
314 (37)	P-7129	WESTINGH	1	FB31	1	CONT BLDG VENT
315 (38)	P-7129	WESTINGH	1	FB31	1	SECURITY
318 (40)	3-2364	ITE	1	EF2A	3	AUX FEEDWATER
329 (49)	3-2364	GEN ELEC	1	THJK	3	125VDC PANEL SPARE
330 (50)	P-7129	WESTINGH	1	E2100	1	120V PANEL
TOTAL			29			

*Note The Record ID indicated in this appendix is a tracking designator for cross reference with Supplement Appendix C. ID number in () is from March 30, 1989 report.

^ Note This breaker was replaced by Record ID 285.

SUPPLEMENT

APPENDIX C

EDISON QA REPORT FOR TRACEABILITY VERIFICATION

SUPPLEMENT APPENDIX C
****

Supplement Appendix C provides the following information:

1. A listing of the partially completed procurement chain for the 17 MCCB's that still have an indeterminate status for traceability verification. The presently known procurement chain is provided showing the vendor from whom the breakers were purchased and the SCE purchase order number. None of the installed MCCB vendors in the list are identified in NRC Notice 88-46. This listing is provided below.

2. QA Reports MCCB-23 through MCCB-32 which provide the completed procurement chain for the 26 MCCB's that failed trace verification. These reports are provided as an attachment to this supplement.

SPARE AND INSTALLED
MOLDED CASE CIRCUIT BREAKERS-
PROCUREMENT CHAIN FOR MCCBs
UNDER REVIEW

REC. ID	QTY	VENDOR	MODEL	PURCHASE ORDER #	RECEIVING DOCUMENT	MATERIAL CODE
MFR		WESTINGHOUSE				
3	1	WESTINGHOUSE	FB30	S2L00017	RIP-F-38-80	025-24726
4	1	WESTINGHOUSE	FB30	S2L00017	RIP-F-38-80	025-24726
94	12	WESTINGHOUSE	EB20	G8207361	MRR2604	024-04218
265	1	WESTINGHOUSE	FB30	8A035901	RSO-4269-86	NONE
266	2	WESTINGHOUSE	FB30	8K044010	RSO-1787-84	NONE

Report No. MCCB-23, Westinghouse Nuclear Service Division

May 18, 1989

TRACEABILITY VERIFICATION REPORT-WESTINGHOUSE MOLDED CASE CIRCUIT BREAKERS
Reference: NRC Bulletin 88-10

SUMMARY

In response to the above referenced NRC Bulletin, a QA audit was conducted on 5/11/89 by SCE QA at Westinghouse Nuclear Service Division (WNSD), Monroeville, PA. As a result of the audit, the Westinghouse Molded Case Circuit Breakers that are covered by the following SCE Purchase Orders, were found to be traceable to the Circuit Breaker Manufacturer (CBM) Warehouse.

- PO No. 6D127901, Release E712
- PO No. 6D035901, Release 0451
- PO No. 6D035901, Release H233

DISCUSSION

The audit was conducted by reviewing traceability documents that were researched and compiled by Mr. B. Barnett, WNSD QA, in accordance with SCE PO 6D029902, dated 2/16/89. The following Westinghouse MCCBs were investigated:

Record ID No.	Qty	Purchase Order	Material Code	Remarks
12	9	6D035901	024-29439	See Notes 1, 4 & 5
13	1	"	"	"
14	1	"	"	"
231	1	6D035901	024-29405	See Notes 2, 4 & 5
-	-	6D127901	-	See Notes 3, 4 & 5

NOTES ON PROCUREMENT CHAIN

1) The task to research and compile traceability documents for SCE is covered by PO No. 6D029902,issued to WNSD, dated 2/16/89 and Release G285. The following records were presented for review during this audit:

   - Engineering Work Order 871.755, Serial Nos. 1, 3, 4, 6, 7, 8, 9, 11, & 12
   - Engineering Work Order 871.755, Serial Nos. 5 & 10
   - Engineering Work Order 871.755, Serial No. 2
   - WNSD PO No. MN97417, issued to Westinghouse Warehouse W-34, Spartansburg, SC

- o Packing List issued by Warehouse W-34

Based on the review of the above documents, the MCCBs are considered traceable to the CBM Warehouse.

2) Change Order No. 1 of this PO required WNSD to provide traceability of the MCCBs to the CBM. The following documents were presented for review during this audit:

   - o Engineering Work Order 871.676, Serial No. 1
   - o Engineering Work Order 871.676, Serial No. 2
   - o Packing List issued by Warehouse W-34

   Based on the review of the above documents, the MCCBs are considered traceable to the CBM Warehouse.

3) The task to research and compile traceability records for SCE is covered by PO No. 6D029902, issued to WNSD, dated 2/16/89 and Release G285. The following records were presented for review during this audit:

   - o Engineering Work Order No. 890.094, Serial Nos. 1-5.
   - o Engineering Work Order No. 890.094, Serial No. 6
   - o WNSD PO No. MA13801, issued to WESCO
   - o WESCO's PO No. WVW 23163, issued to Warehouse W-34
   - o W-34's Packing Lists

   Based on the review of the above documents, the MCCBs are considered traceable to the CBM Warehouse.

4) It was verified that Westinghouse have informed the NRC regarding the extent of the traceability of Westinghouse MCCBs that have been dedicated at its Monroeville, PA Assembly and Test facility. During the presentation to the NRC by Houston Lighting & Power/Westinghouse on May 8, 1989, Westinghouse stated its position that traceability of the MCCBs to the Westinghouse-controlled warehouses, including Warehouse W-34, is being considered by WNSD to be "traceable to the CBM" per Bulletin 88-10. According to Westinghouse, NRC accepted this position.
5) See Telephone Notes between R. E. Berkshire, SCE and D. Keating, Houston Lighting & Power, attached.

Prepared By: B.G. Mendoza 5/19/89

Approved By: [signature] 5/19/89

Distribution

R. M. Rosenblum
T. Herring III
D. C. Stonecipher
S. S. Paranandi
H. W. Newton
R. E. Berkshire
K. L. Baldwin
E. J. Trombley
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QA File
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TELEPHONE NOTES

DISTRIBUTION

1. NRCB 88-10 LIST

BY:RICE BERKSHIRE OF:SCE

WITH:DENNIS KEATING OF:HOUSTON LGT. & PWR

DATE:5/17/89

SUBJECT: NRC BULLETIN 88-10
TRACEABILITY - WESTINGHOUSE MCCBs

ACTION REQUIRED:

NONE

DISCUSSION HIGHLIGHTS AND AGREEMENTS REACHED:

DENNIS CONFIRMED THAT HOUSTON LIGHTING AND POWER MET WITH THE NRC STAFF TO DISCUSS THE TRACEABILITY OF WESTINGHOUSE MCCBs. WESTINGHOUSE SUPPORTED HL&P AT THE MEETING. HL&P TOOK THE POSITION THAT IF A MCCB WAS TRACED TO A WESTINGHOUSE FACTORY WAREHOUSE IT WOULD BE CONSIDERED TRACEABLE. THE ONLY WEAKNESS THAT WAS PERCEIVED WAS THE RESTOCKING OF MCCBs FROM THE WESTINGHOUSE DISTRIBUTION SYSTEM. IT WAS CONCLUDED THAT THIS WAS NOT SIGNIFICANT BASED ON THE NORMAL COMMERCIAL LEVEL SCREENING DONE AS PART OF THE RESTOCKING PROCESS. THE NRC STAFF ACCEPTED THIS POSISTION. WESTINGHOUSE IS PROVIDING HL&P A LETTER STATING ON THIS APPROACH.

I ADVISED DENNIS THAT BERNIE MENDOZA HAD DONE AN AUDIT AT BOTH NSD AND THE BEAVER PLANT. HIS NSD CONTACT WAS WAITING FOR A LETTER FROM THE WESTINGHOUSE "HOME OFFICE" STATING THIS SAME POSITION. DENNIS INDICATED THAT HIS UNDERSTANDING IS THAT WESTINGHOUSE WAS CONSIDERING RELEASING AN INTERNAL LETTER OR ISSUING THE LETTER MENTIONED ABOVE. HE WAS TOLD BY WESTINGHOUSE NOT TO CONTACT THEIR FACTORIES CONCERNING TRACEABILITY, BUT TO WORK THROUGH NSD. I SHARED BERNIE'S SUCCESS STORY AT BEAVER WITH HIM.

THE NRC STAFF REQUESTED ADDITIONAL INFORMATION FROM HL&P ON TRACEABILITY OF MCCBs FROM A DISTRIBUTOR (SORENTO ?) VIA WESCO VIA WESTINGHOUSE SALES.

DENNIS ALSO HAD HEARD THAT THE STAFF WAS ISSUING A SUPPLEMENT TO THE BULLETIN, BUT DIDN'T KNOW ANY DETAILS. I ADVISED HIM THAT NUMARC WAS MEETING WITH THE STAFF ON OUR RESPONSES AND WOULD HAVE MORE INFORMATION.

Report No. MCCB-24, Westinghouse, Beaver, PA

May 18, 1989

TRACEABILITY VERIFICATION REPORT-WESTINGHOUSE MOLDED CASE CIRCUIT BREAKERS
Reference: NRC Bulletin 88-10

SUMMARY

In response to the above referenced NRC Bulletin, a QA audit was conducted on 5/12/89 by SCE QA at the Westinghouse circuit breaker manufacturing facility located in Beaver, PA. As a result of the audit, the Westinghouse Molded Case Circuit Breakers (MCCBs) covered by the following SCE Purchase Orders were verified to be traceable to the Circuit Breaker Manufacturer (CBM):

- PO No. 8D035426, issued to Westinghouse
- PO No. 8W104062, issued to Westinghouse
- PO No. 8W104155, issued to Westinghouse
- PO No. 8W104195, issued to Westinghouse
- PO No. 8N085423, issued to Associated of Los Angeles

DISCUSSION

The audit was conducted by reviewing records maintained at the Westinghouse facility and by interviewing Messrs. R. Ringer, Manager, Product Warranty, MCCBs and P. Mihalic, Manager, Quality Services, Components Division. The following Westinghouse MCCBs were investigated and found to be traceable to the CBM:

Record ID No.	Qty	Purchase Order	Material Code	Remarks
327	1	8D035426	024-29413	See Note 1 below
237	1	"	"	"
295	1	8W104062	024-29439	See Note 2 below
299	1	"	"	"
305	1	"	"	"
169	1	8W104155	024-29389	See Note 3 below
287	1	"	024-29397	"
293	1	"	"	"
279	1	"	024-29405	"
298	1	"	"	"
213	1	"	024-29413	"
302	1	"	026-61262	"
221	1	"	026-73408	"
243	2	8W104195	024-29421	See Note 4 below
304	1	"	"	"
11	1	"	024-29439	"
300	1	"	"	"
307	1	"	"	"

309	1	8W104195	024-29439	See Note 4 below
321	1	"	"	"
336	1	"	"	"
170	2	8N085423	024-29389	See Note 5 below
216	1	"	024-29413	"
218	3	"	026-73408	"
219	1	"	024-29405	"
236	1	"	024-29413	"
306	1	"	024-29397	"
308	1	"	024-20405	"
322	1	"	-	
323	1	"	024-29397	"
324	1	"	-	

NOTES ON PROCUREMENT CHAIN

1) This PO was issued to Westinghouse, El Monte, CA (Sales Office). The order was processed by the Westinghouse Beaver, PA factory under Order No. LA 34781. The Certificates of Conformance and shipping documents for this order were reviewed during this audit.

2) This PO was issued to Westinghouse, El Monte, CA (Sales Office). The order was processed by the Westinghouse Beaver, PA factory under Order No. LA 34676. The Certificates of Conformance and shipping documents for this order were reviewed during this audit.

3) This PO was issued to Westinghouse, El Monte, CA (Sales Office). The order was processed by the Westinghouse Beaver, PA factory under Order No. LA 34713. The Certificates of Conformance and shipping documents for this order were reviewed during this audit.

4) This PO was issued to Westinghouse, El Monte, CA (Sales Office). The order was processed by the Westinghouse Beaver, PA factory under Order No. LA 34717. The Certificates of Conformance and shipping documents for this order were reviewed during this audit.

5) This PO was issued to Associated of Los Angeles, who in turn issued PO No. 7855 to WESCO for the required MCCBs. WESCO, in turn issued Order No. DS6336-010843 to Westinghouse. The order was processed by the Westinghouse Beaver, PA, factory under Order No. LA 52337. The factory's shipping documents were reviewed during the audit.

FOLLOW-UP ACTION

No further follow-up action is required.

Prepared By: [signature] 5/18/89

Approved BY: [signature] 5/18/89

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Report No. MCCB-25, Warehouse Spare Circuit Breakers

May 18, 1989

TRACEABILITY VERIFICATION REPORT- MOLDED CASE CIRCUIT BREAKERS SUPPLIED BY CYBEREX, MORRISON/KNUDSEN (POWER SYSTEMS), AND NUTHERM

Reference: NRC Bulletin 88-10

SUMMARY

None of the eight (8) Molded Case Circuit Breakers (MCCBs) supplied to SONGS by Cyberex, Inc., Morrison- Knudsen Company, Inc., Power Systems Division, and Nutherm International, Inc., were found to be traceable to the Circuit Breaker Manufacturer (CBM), as defined by the above referenced Bulletin.

DETAILS

The eight (8) MCCBs covered by this report are as follows:

Warehouse Record ID No.	Qty	Purchase Order	Material Code	Supplier/Remarks
256	1	8N065418	025-85883	Cyberex/See Note 1
230	4	8A085404	025-44484	MK,Power Systems/ See Note 2
253	1	Fluor PO 441207	None	Nutherm/See Note 3
254	1	"	None	"
260	1	"	None	"

NOTES ON PROCUREMENT CHAIN

1) The SCE PO was issued to Cyberex, who in turn issued PO No. 17910, dated 9/16/85 to WESCO, Cleveland, OH. Mr. Bill Tobias of WESCO stated that they maintain records for 2 years only, therefore the records for the above order no longer exist. Traceability to the CBM was not established.

2) The SCE PO was issued to Morrison Knudsen, Power Systems Division, who in turn issued PO No. 57448, dated 5/21/86 to GE Supply, Greenville, NC. The only document GE Supply was able to provide is their Invoice, dated 12/15/86 for the MCCbs. Traceability to the CBM was not established.

3) The MCCBs were purchased for SCE by Fluor Engineers, Inc., per its PO No. 441207-6-0002-01, dated 11/1/3/85, to Nutherm International, Inc. The MCCBs were ordered by Nutherm from GE Supply, Springfield, IL. The only documents available are Nutherm's PO and GE Supply's

Invoice 149496, dated 1/16/86. Traceability to the CBM was not established.

Prepared By: [signature] 5/18/89

Approved By: [signature] 5/19/89

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QA File
CDMC

Report No. MCCB-26, Square D (Installed)

May 18, 1989

TRACEABILITY VERIFICATION REPORT-SQUARE D MOLDED CASE CIRCUIT BREAKERS SUPPLIED BY AMFAC AND SQUARE D CO.
Reference: NRC Bulletin 88-10

SUMMARY

Only six (6) of the seventeen (17) Square D Molded Case Circuit Breakers (MCCBs) supplied by Amfac, Orange Coast Electrical, and Square D that are covered by this report were verified to be traceable to the Circuit Breaker Manufacturer (CBM), as defined by the above referenced NRC Bulletin.

DETAILS

The following are the results of the traceability verification activities for the seventeen (17) MCCBs:

Warehouse Record ID	Qty	Purchase Order	Material Code	Supplier/Remarks
277	2	8D045027	026-10053	Amfac/See Note 1
281	1	"	"	"
283	1	"	"	"
289	1	"	"	"
291	1	"	"	"
294	1	"	"	"
303	3	"	"	"
280	1	8W025102	None	Orange Coast/See Note 2
278	1	S5903542	026-10061	Square D/See Note 3
292	1	8N084003	026-10087	Square D/See Note 3
320	1	"	026-10681	"
317	1	J4103542	025-51117	Square D/See Note 3
319	1	8E113064	024-10181	Square D/See Note 3
326	1	8W015038	026-10053	Square D/See Note 4

NOTES ON PROCUREMENT CHAIN

1) SCE PO 8D045027, dated 4/15/85, was issued to Amfac Electrical Supply Company. Mr. C. Myers of Amfac stated that the records for this PO are no longer available. The MCCBs are considered not traceable to the CBM.

2) SCE PO 8W025102 was issued to Orange Coast Electrical Company. Mr. C. Corneyea of Orange Coast stated that the records for this PO are no longer available. The MCCB covered by the PO is considered not traceable to the CBM.

3) The SCE Purchase Order covering this MCCB was issued to Square D Company, Peru, IN. The supplier obtained the MCCB, through an Interplant Purchase Order, from the

Square D manufacturing plant located in Cedar Rapids, IO. Copies of the Peru, IN Interplant PO and Test Certificates issued by Cedar Rapids, IO are included in SCE QA Report titled, "Traceability Investigation Report-Molded Case Circuit Breakers Supplied By Square D Company", dated 1/27/89. This breaker was determined to be traceable to the CBM.

4) The SCE PO covering this MCCB was issued to Square D Company, Peru, IN. The supplier obtained the MCCB, through an Interplant PO, from the Square D manufacturing plant located in Lincoln, Nebraska. Copies of the Peru, IN purchase document and certification from the manufacturing plant are attached. This MCCB was determined to be traceable to the CBM.

FOLLOW-UP ACTION

No further follow-up action is required.

Prepared By: [signature] 5/18/89

Approved By: [signature] 5/18/89

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QA File
CDMC

ATTACHMENT ~~P.3~~
Page 10/2

SQUARE D COMPANY
ELECTRICAL EQUIPMENT

CIRCUIT BREAKER DIVISION
LINCOLN PLANT

402-423-6721 1717 CENTERPARK ROAD P.O. BOX 80667 LINCOLN, NEBRASKA 68501

I hereby certify that on 3/20/85 the Square D Company shipped the supplies called for by Contract Number 12-02690 via UPS on . P.O. # 12-11999-72 In accordance with all applicable requirements for shipment. I further certify that the supplies are of the quality specified and are in all respects in conformance with the contract requirements, including specifications and/or drawings; preservation, packaging, packing and marking requirements.

DATE OF EXECUTION: 3/20/85

SIGNATURE: Diane Lyburn

TITLE: QC Supervisor

P.O. # 12-71514
(2) QOB120A2

19-11999-72

MCCB-26
ATTACHMENT P.2
Page 2 of 2

SPARE PARTS FOR 12-02690

PURCHASE REQUISITION & CHANGE REQUEST SHIPPER ONLY

- [x] PRODUCTIVE
- [ ] NON PRODUCTIVE
- [ ] ORDER CHANGE
- [ ] PRICE CHANGE

VENDOR: D Ced. Rapids

PART NO.: 12-71514

PURCHASE ORDER NO.: 12-11999-72

DATE WANTED: 3-15-85

ACCOUNT NO.:

REQ'N. DATE	REQUISITION BY	DELIVER TO	AMU. QTY.	EOQ QTY.	PRICE BREAK QTY.
2-11-85	LBH	851			

QUANTITY	DESCRIPTION OR NATURE OF CHANGE	PRICE
2	QOB120A1	
	SONGS 2 & 3	

NUCLEAR
QUALITY
CLASS 1E

DATE ORDERED	PURCHASED BY	APPROVED BY	EST. COST	TOTAL PRICE
			$	$

REMARKS:

K-99 SENTINEL PRINTING CO.

Report No. MCCB-27, Miscellaneous MCCBs

May 18, 1989

TRACEABILITY VERIFICATION REPORT-MOLDED CASE CIRCUIT BRERAKERS SUPPLIED BY ELECTRO COMPONENT, GENERAL ELECTRIC CO, GE SUPPLY CO., MAGTROL, SATIN AMERICAN AND WESCO

Reference: NRC Bulletin 88-10

SUMMARY

None of the eleven (11) Molded Case Circuit Breakers (MCCBs) supplied to SONGS by Electro Component, General Electric Co., GE Supply Co., Magtrol, Satin American, and WESCO were verified to be traceable to the Circuit Breaker Manufacturer (CBM), as defined by the above referenced Bulletin.

DETAILS

The eleven (11) MCCBs covered by this report are as follows:

Warehouse Record ID	Qty	Purchase Order	Material Code	Supplier/Remarks
315	2	6A126069	026-73408	Electro Component/ See Note 1 below
329	1	8D085401	024-40584	General Electric/ See Note 2 below
312	4	6A116005	024-40584	GE Supply Co/See Note 3 below
296	1	8W065016	026-76799	"
314	1	6A076021	(HFB3125)	Magtrol/ See Note 4 below
330	1	6H078059	027-00813	Satin American/See Note 5 below
311	1	V8200657	(HFA2100)	WESCO/See Note 6 below

NOTES ON PROCUREMENT CHAIN

1) The PO was issued to Electro Component. Based on the documents obtained from the supplier, the MCCBs were found to be obtained from California Breakers and/or Rosen Electrical Equipment Co. The MCCBs are considered not traceable to the CBM.
2) The PO was issued to GE, Nuclear Div., San Jose, CA. The supplier ordered the MCCB from GE Supply Co. with an instruction to ship from the GE MCCB factory located in Plainville, CT.

No documents were obtained by the supplier from GE Supply or the factory to establish traceability to the CBM.

3) The PO was issued to GE Supply Co. who obtained the MCCBs from General Electric,Plainville, Ct. The supplier was unable to obtain documentation from GE to to establish traceability of the MCCB to the CBM.
4) The PO was issued to Magtrol, who obtained the MCCB from Romac. The only documents available, invoices from Magtrol and Romac, do not establish traceability of the MCCBs to the CBM.
5) The PO was issued to Satin American. No traceability documents were provided by the supplier. The traceability to the CBM was not established.
6) The PO was issued to WESCO. No traceability documents were provided by the supplier. The traceability to the CBM was not established.

Prepared By: B G Mendoza 5/18/89

Approved By: [signature] 5/18/89

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Report No. MCCB-28, Miscellaneous ITE-GOULD MCCBs

May 18, 1989

TRACEABILITY VERIFICATION REPORT-ITE-GOULD MOLDED CASE CIRCUIT BRERAKERS SUPPLIED BY BBC BROWN BOVERI, CONSOLIDATED ELECTRIC, AND SAN DIEGO SUPPLY
Reference: NRC Bulletin 88-10

SUMMARY

None of the three (3) ITE-Gould Molded Case Circuit Breakers (MCCBs) supplied to SONGS by BBC Brown Boveri, Consolidated Electric and San Diego Supply were verified to be traceable to the Circuit Breaker Manufacturer (CBM), as defined by the above referenced Bulletin.

DETAILS

The three (3) MCCBs covered by this report are as follows:

Warehouse Record ID	Qty	Purchase Order	Material Code	Supplier/Remarks
285	1	8W045030	None (Model EF2-A030)	BBC Brown Boveri/ See Note 1 below
318	1	65900349	026-24955	Consolidated/See Note 2 below
284	1	8J045014	None (Model EF2-A020)	San Diego Supply/ See Note 3 below

NOTES ON PROCUREMENT CHAIN

1) The PO was issued to BBC Brown Boveri. This supplier was unable to provide documents required to establish traceability of the MCCB to the CBM.
2) The PO was issued to Consolidated Electric. Mr. K. Van Doran of Consolidated Electric stated that the records for this PO are no longer available. The MCCB is considered to be not traceable to the CBM.
3) The PO was issued to San Diego Supply. Mr. C. Clayton of San Diego Supply stated that the records for this PO are no longer available. The MCCB is considered to be not traceable to the CBM.

Prepared By: B. Mendoza 5/18/89

Approved By: [signature] 5/18/89

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Report No. MCCB-29, GE and Westinghouse MCCBs

June 5, 1989

TRACEABILITY VERIFICATION REPORT-GE AND WESTINGHOUSE MOLDED CASE CIRCUIT BREAKERS
Reference: NRC Bulletin 88-10

This report is being issued to document the results of the traceability verification activities for seventeen (17) GE and Westinghouse Molded Case Circuit Breakers (MCCBs), that were not addressed in Report Nos. MCCB-7, dated 2/13/89, MCCB-23, dated 5/18/89, MCCB-24, dated 5/18/89, and MCCB-27, dated 5/18/89. Three (3) of the seventeen MCCBs were verified to be traceable to the Circuit Breraker Manufacture (CBM), as defined by the above referenced Bulletin. Thirteen (13) of the seventeen (17) MCCBs were determined to be not traceable to the CBM and one (1) was determined to be traceable only to the CBM Warehouse. The acceptability of the MCCB that is traceable to the CBM Warehouse is dependent upon NRC's acceptance of the Westinghouse position that traceability to the CBM Warehouse is considered "traceable to the CBM". A copy of the Telephone Notes documenting the discussions by SCE with NUMARC on the Westinghouse position,is attached.

DISCUSSIONS

The following MCCBs are covered by this report:

Record ID No.	Qty	Purchase Order	Material Code	Remarks
215	1	8A035901	024-29405	See Note 1, below
232	1	V8200657	027-29432	See Note 2, below
233	6	"	027-29481	"
234	4	"	027-29457	"
245	1	"	"	"
268	1	"	027-29432	"
247	2	8N085403	026-69935	See Note 3, below
251	1	8N085243	024-29413	See Note 4, below

NOTES ON PROCUREMENT CHAIN

1) This MCCB was ordered by SCE from Westinghouse, Nuclear Service Division. The traceability of the MCCB to the controlled warehouse of the Circuit Breaker Manufacturer (CBM) was verified during the audit conducted at Westinghouse-NSD on 5/11/89. Westinghouse has taken the position that traceability to the controlled warehouse is considered "traceable to the CBM" as defined by NRC Bulletin 88-10. The acceptability of the MCCB is dependent upon NRC's acceptance of the Westinghouse position.

(See also Report No. MCCB-23, dated 5/18/89; this MCCB was supplied with MCCB ID 231, under the same PO)

2) These MCCBs were ordered by SCE from WESCO. As reported in MCCB-27, dated 5/18/89, WESCO was unable to provide traceability documents. These MCCBs are considered to be not traceable to the CBM.

3) These MCCBs were ordered by SCE from General Electric, San Jose, CA. Shipment from the CBM, GE, Plainville, CT was verified based on the review of invoices and shipping documents. These MCCBs are considered traceable to the CBM. (See also Report No. MCCB-7, dated 2/13/89 for other MCCBs covered by PO 8N085403.)

4) This MCCB was ordered by SCE from Associated of Los Angeles, who in turn ordered the MCCB from WESCO. The MCCB was manufactured by Westinghouse, Beaver, PA under Order No. LA 52337. (See also Report No. MCCB-24, dated 5/18/89 for other MCCBs covered by PO 8N085423)

Prepared By: _____ 6/6/89

Approved By: _____ 6-7-89

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QA File
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Report No. MCCB-30, Westinghouse Nuclear Service Division

July 3, 1989

TRACEABILITY VERIFICATION REPORT-WESTINGHOUSE MOLDED CASE CIRCUIT BREAKERS
Reference: NRC Bulletin 88-10

SUMMARY

In response to the above referenced NRC Bulletin, a QA audit to verify the traceability of Westinghouse Molded Case Circuit Breakers (MCCBs), was conducted on 6/27/89 by SCE QA at Westinghouse, Monroeville, PA (Nuclear Service Division). As a result of the audit, two (2) of the eighteen (18) Westinghouse MCCBS that are covered by the following SCE Purchase Orders, were found to be traceable to the Circuit Breaker Manufacturer (CBM). The balance of sixteen (16) MCCBs were found to be traceable to the CBM Warehouse.

o PO No. 6D127901, Release N671 - Traceable to Warehouse

o PO No. 6D127901, Release P535 - Traceable to Warehouse
o PO No. 8A035901, Release M087 - Traceable to Warehouse
o PO No. 6A116029, (No Release) - Traceable to Warehouse
o PO No. 8W094999, Release A560 - Traceable to CBM

DISCUSSION

The audit was conducted by reviewing traceability documents that were researched and compiled by WNSD Nuclear Products QA, in accordance with SCE PO 6D029902, dated 2/16/89. The following Westinghouse MCCBs were investigated:

Record ID No.	Qty	Purchase Order	Part No.	Remarks
154	2	6D127901, Rel N671	HFB3125	See Notes 1, 2 & 10
242	5	6A116029	FB3020PL	See Notes 1, 3 & 10
261	1	8A035901, Rel M087	HFB2020	See Notes 1, 4 & 10
262	3	"	HFB2030	See Notes 1, 5 & 10
263	2	"	HFB2070	See Notes 1, 6 & 10
264	2	"	HFB2100	See Notes 1, 7 & 10
310	1	8W094999, Rel A560	FB3070PL	See Notes 1 & 8
313	1	"	"	See Notes 1 & 8
331	1	6D127901, Rel P535	HFB3020	See Notes 1, 9 & 10

NOTES ON PROCUREMENT CHAIN

1) The task to research and compile traceability documents for SCE is covered by PO No. 6D029902, issued to WNSD, dated 2/16/89, and subsequent PO Releases.

2) The following records were presented for review during this audit to verify the traceability of the MCCBs:

- o Engineering Work Order 880.397, Rev. 0, 4976D04G45 Serial Nos. 880.397-1 & -2
- o Engineering Work Order 880.397, Rev 1, 497D04G45 Serial No. 880.397-3
- o WNSD PO No. MA-07393, dated 7/14/88, issued to Westinghouse Electric Supply Company (WESCO)
- o WESCO's Master Verification List, dated 8/29/88 (This document shows that the MCCBs were procured by WESCO from the Westinghouse Warehouses)

Based on the review of the above documents, the MCCBs are considered traceable to the CBM Warehouse.

3) The following documents were reviewed for these MCCBs:

- o Engineering Work Order 871.125, 178C7936G19 Serial Nos. 871.125-1 through -5
- o WNSD PO No. MN87451-M, issued to Westinghouse Warehouse W-34
- o Packing List issued by Warehouse W-34

Based on the review of the above documents, the MCCBs are considered traceable to the CBM Warehouse.

4) The following documents were reviewed for this MCCB:

- o Engineering Work Order No. 871.593, 4976D04G19 Serial No. 871.593-1
- o WNSD PO No. MN94339-M, issued to WESCO (Item #1)
- o WESCO's PO to Westinghouse Warehouse W-34
- o W-34's Packing List (direct shipment to WNSD)

Based on the review of the above documents, the MCCBs are considered traceable to the CBM Warehouse.

5) The following documents were reviewed for these MCCBs:

- o Engineering Work Order No. 871.593, 4976D04G21 Serial Nos. 871.593-1, -2 and -3
- o WNSD PO No. MN94339-M, issued to WESCO (Item #2)
- o WESCO's PO to Westinghouse Warehouse W-34
- o W-34's Packing List (direct shipment to WNSD)

Based on the review of the above documents, the MCCBs are considered traceable to the CBM Warehouse.

6) The following documents were reviewed for these MCCBs:

- Engineering Work Order No. 871.593, Rev. O, 4976D04G26, Serial Nos. 871.593-1 and -2
- WNSD PO No. MN94339-M, issued to WESCO (Item #3)
- WESCO's PO to Westinghouse Warehouse W-34
- W-34's Packing List (direct shipment to WNSD)

Based on the review of the above documents, the MCCBs are considered traceable to the CBM Warehouse.

7) The following documents were reviewed for these MCCBs:

- Engineering Work Order No. 871.593, Rev. O 4976D04G28, Serial No. 871.593-1, -2 and -3
- WNSD PO No. MN94339-M, issued to WESCO (Item #5)
- WESCO's PO to Westinghouse Warehouse W-34
- W-34's Packing List

Based on the review of the above documents, the MCCBs are considered traceable to the CBM Warehouse.

8) The following documents were reviewed for these MCCBs:

- Certificate of Compliance, Issued by W-Fayetteville, NC
- Certificate of Conformance, issued by W-Beaver, PA
- Packing List, issued by W-Beaver, PA (Manufacturer)

Based on the review of the above documents, the MCCBs are considered to be traceable to the CBM.

9) The following documents were reviewed for this MCCB:

- Engineering Work Order 880.488, Rev. 0, 4976D04G35 Serial No. 880.488-1
- WNSD's PO No. MA13319-M, dated 9/27/88, issued to WESCO
- WESCO's Master Breaker Verification List
- WESCO's leter dated 8/29/88, K. A. Gordon to T. W. O'Toole, Manager, Procurement Services)

10) Note No. 1, Report No. MCCB-29, also applies to these MCCBs. A copy of Report No. MCCB-29 is attached.

Prepared By: B Mendoza

Approved By: S Paranandi 7-12-89

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Report No. MCCB-29, GE and Westinghouse MCCBs

June 5, 1989

TRACEABILITY VERIFICATION REPORT-GE AND WESTINGHOUSE MOLDED CASE CIRCUIT BREAKERS
Reference: NRC Bulletin 88-10

This report is being issued to document the results of the traceability verification activities for seventeen (17) GE and Westinghouse Molded Case Circuit Breakers (MCCBs), that were not addressed in Report Nos. MCCB-7, dated 2/13/89, MCCB-23, dated 5/18/89, MCCB-24, dated 5/18/89, and MCCB-27, dated 5/18/89. Three (3) of the seventeen MCCBs were verified to be traceable to the Circuit Breraker Manufacture (CBM), as defined by the above referenced Bulletin. Thirteen (13) of the seventeen (17) MCCBs were determined to be not traceable to the CBM and one (1) was determined to be traceable only to the CBM Warehouse. The acceptability of the MCCB that is traceable to the CBM Warehouse is dependent upon NRC's acceptance of the Westinghouse position that traceability to the CBM Warehouse is considered "traceable to the CBM". A copy of the Telephone Notes documenting the discussions by SCE with NUMARC on the Westinghouse position,is attached.

DISCUSSIONS

The following MCCBs are covered by this report:

Record ID No.	Qty	Purchase Order	Material Code	Remarks
215	1	8A035901	024-29405	See Note 1, below
232	1	V8200657	027-29432	See Note 2, below
233	6	"	027-29481	"
234	4	"	027-29457	"
245	1	"	"	"
268	1	"	027-29432	"
247	2	8N085403	026-69935	See Note 3, below
251	1	8N085243	024-29413	See Note 4, below

NOTES ON PROCUREMENT CHAIN

1) This MCCB was ordered by SCE from Westinghouse, Nuclear Service Division. The traceability of the MCCB to the controlled warehouse of the Circuit Breaker Manufacturer (CBM) was verified during the audit conducted at Westinghouse-NSD on 5/11/89. Westinghouse has taken the position that traceability to the controlled warehouse is considered "traceable to the CBM" as defined by NRC Bulletin 88-10. The acceptability of the MCCB is dependent upon NRC's acceptance of the Westinghouse position.

Report No. MCCB-29

(See also Report No. MCCB-23, dated 5/18/89; this MCCB was supplied with MCCB ID 231, under the same PO)

2) These MCCBs were ordered by SCE from WESCO. As reported in MCCB-27, dated 5/18/89, WESCO was unable to provide traceability documents. These MCCBs are considered to be not traceable to the CBM.

3) These MCCBs were ordered by SCE from General Electric, San Jose, CA. Shipment from the CBM, GE, Plainville, CT was verified based on the review of invoices and shipping documents. These MCCBs are considered traceable to the CBM. (See also Report No. MCCB-7, dated 2/13/89 for other MCCBs covered by PO 8N085403.)

4) This MCCB was ordered by SCE from Associated of Los Angeles, who in turn ordered the MCCB from WESCO. The MCCB was manufactured by Westinghouse, Beaver, PA under Order No. LA 52337. (See also Report No. MCCB-24, dated 5/18/89 for other MCCBs covered by PO 8N085423)

Prepared By: _____ 6/6/89

Approved By: _____ 6-7-89

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QA File
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Attachment
Report No. MCCB-29

TELEPHONE NOTES

DISTRIBUTION

1. C.K.BALOG
2. A.J.BROUGH
3. T.HERRING
4. B.G.MENDOZA
5. H.W.NEWTON
6. C.E.WILLIAMS
7. D.G.STICKNEY

BY:RICE BERKSHIRE OF:SCE

WITH:RUSSEL BELL OF:NUMARC

DATE:5/23/89

SUBJECT: NRC BULLETIN 88-10
NUMARC MEETING WITH NRC STAFF

DISCUSSION HIGHLIGHTS AND AGREEMENTS REACHED:

RUSS CONFIRMED THAT NUMARC MET WITH THE NRC STAFF LAST WEEK TO DISCUSS THE DRAFT SUPPLEMENT TO BULLETIN 88-10 AND THE UTILITIES RESPONSES. THE STAFF HAD INDICATED THEIR DISAPPOINTMENT IN THE RESPONSES AS DOCUMENTED IN MEDIA REPORT (INSIDE N.R.C.-APRIL 24,1989). THE STAFF PORTRAYS THE SUPPLEMENT AS CLARIFYING THE ORIGINAL INTENT OF THE BULLETIN; HOWEVER NUMARC SEES IT AS ADDING SCOPE TO THE BULLETIN AND TOOK STRONG EXCEPTION TO THE WORDING IN IT'S PRESENT FORM. TWO KEY ITEMS ARE:

1. ANY SPARE ORIGINIAL CONSTRUCTION MCCBs LOCATED IN THE WAREHOUSE REQUIRE TRACEABILITY VERIFICATION. (We included all warehouse stock in trace verification effort.)

2. ANY SOURCES THAT WERE DETERMINED TO BE NOT TRACEABLE IN THE '83-'88 GROUP WILL NEED TRACEABILITY VERIFICATION OF ALL PREVIOUS SUPPLIED MCCBs. (Major impact on Unit 1, significiamt impact on Units 2/3)

NUMARC POINTED OUT TO THE STAFF THAT THE SYNERGISTIC EFFECT OF THESE TWO ITEMS WILL BE EXTENDING TRACE VERIFICATION TO ALL INSTALLED MCCBs. THE STAFF HAS TAKEN THIS COMMENT UNDER ADVISEMENT BUT HASN'T STATED WHICH WAY THEY WILL GO.

THE STAFF IS AGREEABLE WITH THE APPROACH THAT TRACE VERIFICATION TO A CORPORATE CONTROLLED FACILITY (CORPORATE WAREHOUSE VS. DISTRIBUTOR WAREHOUSE) WOULD SATISFY TRACEABILITY REQUIREMENT. I ADVISED RUSS OF HOUSTON LIGHTING AND POWER'S PRESENTATION, WITH ASSISTANCE FROM WESTINGHOUSE, TO THE NRC STAFF TWO WEEKS AGO ADDRESSING THIS SAME ISSUE. THE STAFF'S RESPONSE TO BOTH NUMARC AND HOUSTON IS CONSISTANT. RUSS WILL CONTACT THE HOUSTON REPRESENTATIVE AND DISCUSS THE DETAILS OF THEIR MEETING. THIS APPROACH WILL HELP SCE VERIFY MCCBs PURCHASED THROUGH WESTINGHOUSE NUCLEAR SERVICE DIVISION.

RUSS EXPECTS THAT THE NRC WILL DO SPOT INSPECTIONS ON THE RESOPONSES. THEY WILL PROBABLY FOCUS ON UTILITIES THAT HAD RESPONSES FITTING IN THE FOLLOWING CATAGORIES:

1. GLARING DIFFERENCE FROM REQUESTED RESPONSE
(EXAMPLE - TRACE SAMPLE OF WAREHOUSE MCCBs)

2. NO DETAILS PROVIDED IN RESPONSE
(EXAMPLE - FULL COMPLIANCE, ALL MCCBs TRACEABLE, BUT NO BACKUP IN SUBMITTAL)

3. DETAILS THAT SHOW LACK OF UNDERSTANDING OF

Attachment

Report No. MCCB-29

BULLETIN

IN RESPONSE TO MY QUESTION, RUSS COMMENTED THAT SCE'S RESPONSE WAS CONSIDERED A GOOD PACKAGE. OUR TEST PROCEDURE WAS THE BEST HE HAD SEEN AND OUR DESCRIPTION OF EFFORT WILL HEAD OFF QUESTIONS RAISED WITH OTHER RESPONSES.

Report No. MCCB-31, Miscellaneous Molded Case Circuit Breakers
July 5, 1989

TRACEABILITY VERIFICATION REPORT-MOLDED CASE CIRCUIT BREAKERS SUPPLIED BY AIRPAX, AMFAC, ELECTRO-COMPONENTS, GENERAL ELECTRIC, SQUARE D, AND WESTINGHOUSE
Reference: NRC Bulletin 88-10

SUMMARY

This report documents the results of activities performed by SCE QA to verify the traceability of twenty nine (29) miscellaneous Molded Case Circuit Breakers (MCCBs), in response to the above referenced NRC Bulletin.

Eleven (11) of the twenty nine (29) MCCBs were verified to be traceable to the Circuit Breaker Manufacturer. The traceability to the CBM of the remaining eighteen (18) could not be established.

DETAILS

The twenty nine (29) MCCBs covered by this report are as follows:

Warehouse Record ID	Qty	Purchase Order	Material Code	Remarks
222	4	6A126069	026-73408	Not Traceable, See Note #1 below
269	1	6D085401	024-40584	Not Traceable, See Note #2 below
270	3	64132136	023-04178	Traceable, See Note #3 below
271	1	6D035901, Rel 0451	024-29439	Not Traceable, See Note #4 below
272	10	8B112067	024-93310	Not Traceable, See Note #5 below
273	4	6W029005	026-10715	Traceable, See Note #6 below
274	4	G8203541	026-10053	Traceable, See Note #6 below
275	2	8D045027	026-10053	Not Traceable, See Note #7 below

NOTES ON PROCUREMENT CHAIN

1) The SCE Purchase Order (PO) for these MCCBs was issued to Electro-Component Distributor. Based on the review of the documents furnished by the supplier, it was determined that the MCCBs were supplied by California Breakers and/or Rosen Electrical Equipment Co. The MCCBs are considered to be not traceable to the CBM, per NRC Bulletin 88-10.

2) The SCE PO was issued to General Electric, San Jose, CA. The supplier ordered the MCCBs supplied to SCE from General Electric Supply. No documents are available from General Electric Supply to establish traceability to the General Electric manufcturing plant. The MCCBs are considered to be not traceable to the CBM.

3) The traceability of the MCCBs was verified by reviewing documents obtained from AMF, Potter & Brumfield Division, including the supplier's Certificate of Compliance and SCE's Receiving documents. The MCCBs are considered traceable to the CBM.

4) The task to research and compile traceability documents for SCE is covered by PO No. 6D029902, issued Westinghouse, Nuclear Service Division WNSD. The following records were reviewed by SCE QA, on 5/11/89:

- Engineering Work Order 871.755
- WNSD PO No. MN97417 issued to Westinghouse Warehouse W-34,
- Packing List furnished by Warehouse W-34

Based on the review of the above documents, the MCCB was considered to be traceable to the CBM Warehouse.

5) The MCCBs were purchased from Airpax. Ms. J. Phillips, Airpax, Marketing, stated that records to establish traceability of the MCCBs to Airpax are no longer maintained by Airpax.

6) The SCE PO was issued to Square D Company, Peru, IN. The MCCBs were supplied by the Square D manufacturing plant located in Cedar Rapids, IO. The MCCBs are considered to be traceable to the CBM.

7) The SCE PO was issued to Amfac Electrical Supply Company. Mr. C. Myers of Amfac stated that records for the PO are no longer available. The MCCBs are considered to be not traceable to the CBM.

Prepared By: B. G. Mendoza 7/5/89

Approved By: [signature] 7-12-89

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Report No. MCCB-32, Miscellaneous Molded Case Circuit Breakers
July 26, 1989

TRACEABILITY VERIFICATION REPORT-MOLDED CASE CIRCUIT BREAKERS SUPPLIED BY BROWN BOVERI INC. AND WESTINGHOUSE
Reference: NRC Bulletin 88-10

SUMMARY

This report documents the results of activities performed by SCE QA to verify the traceability of eight (8) Molded Case Circuit Breakers (MCCBs) supplied by Brown Boveri, Inc. and Westinghouse, in response to the above referenced NRC Bulletin.

Five (5) of the eight (8) MCCBs were verified to be traceable to the Circuit Breaker Manufacturer (CBM). The traceability to the CBM of the remaining three (3) MCCBs could not be established.

DETAILS

The eight (8) MCCBs covered by this report are as follows:

Warehouse Record ID	Qty	Purchase Order	Material Code	Remarks
257	1	8B042026	024-29439	Traceable, See Note #1 below
82	2	8A035901, Rel. A069	027-29507	Traceable, See Note #2 below
332	1	8D108043	0B0-14690	Traceable, See Note #3 below
297	1	8A035901, Rel. A029	Type HKA 3225T	Traceable, See Note #4 below
301	3	S6D00037	027-38979	Not Traceable, See Note #5 below

NOTES ON PROCUREMENT CHAIN

1) The SCE Purchase Order (PO) for this MCCB was issued to Westinghouse. The MCCB was supplied by the Westinghouse Beaver, PA plant (CBM) under Order No. LA32629. An audit at the CBM's plant by SCE QA on 5/12/89 indicated that traceability records are maintained.

2) The SCE PO was issued to Westinghouse. The MCCBs were supplied by Westinghouse, NSID, under Order No. LA39513. During an audit conducted at the supplier's facility by SCE QA on 5/11/89, the MCCBs supplied by NSID were verified to be traceable to the CBM Warehouse.

3) The SCE PO was issued to Westinghouse. The MCCB was supplied by Westinghouse, NSID, under Order No. LA39908. During an audit conducted at the supplier's facility by SCE QA on 5/11/89, the MCCBs supplied by NSID were verified to be traceable to the CBM Warehouse.

4) The task to research and compile traceability documents for SCE is covered by PO No. 6D029902, issued Westinghouse, Nuclear Service Division, WNSD. The supplier confirmed that the MCCB covered by SCE PO 8A035901, Release A029 was supplied by Westinghouse under Order No. LA34974. During an audit conducted at the supplier's facility by SCE QA on 5/11/89, the MCCBs supplied by NSID were verified to be traceable to the CBM Warehouse.

5) The SCE PO was issued to Brown Boveri, Inc. The supplier's records to establish traceability to the CBM, ITE-Siemens Allis, are not available. The MCCBs are considered not traceable to the CBM.

Prepared By: B Mendoza 7/26/89

Approved By: S Paranandi 7/26/89

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ENCLOSURE II

UNIT 1
EVALUATION JUSTIFYING CONTINUED OPERATION (JCO)
Rev. 1

TABLE OF CONTENTS

I. INTRODUCTION

This JCO is provided to address continued operation as a result of completing traceability investigations for five of the Molded Case Circuit Breakers (MCCBs), Record IDs 296, 301 and 330 identified in NCR-P-7129 for SONGS Unit 1. These investigations are summarized in SCE QA Reports MCCB-27 and MCCB-32. MCCB Record ID 288 is included because the purchase order information can not be identified.

This JCO is provided as specified in the NCR Disposition under Block 21, Item II.C, which states that within 30 days of completing traceability investigation, perform an evaluation justifying continued operation based on the use of the existing MCCBs.

II. REFERENCES

Procedures-

Test Procedure, S0123-I-4.7,
Molded Case Circuit Breakers

Test Procedure, S0123-GT-400-07
Generic Test Procedure for Molded Case Circuit Breakers

Test Procedure, S023-302-4-1-785-0
Westinghouse Molded Case Circuit Breakers

Verification Test Procedure, VTP-E-067,
Molded Case Circuit Breaker Verification Test Program

Drawings-

M-89030, Unit 1 Safety Related Electrical Set Point List (ESL), REV. A.

90036AB, Appendix R Fire Analysis Coordination Calculation

Equipment specifications-

Purchase Specification, Motor Control Centers

Purchase Specification, DC Power Bus

Breaker standards-

UL-489, Molded Case Circuit Breaker and Circuit Breaker Enclosures

NEMA-AB1, Molded Case Circuit Breakers

III. EXISTING CONDITION

A. BACKGROUND

1. On July 8, 1988, the Nuclear Regulatory Commission (NRC) issued Information Notice 88-46, to alert licensees that refurbished MCCBs may have been supplied to nuclear power plants. NRC Notice 88-46 stated that Pacific Gas and Electric had purchased MCCBs intended for non-safety related applications from a local distributor who in turn purchased the MCCBs from another supplier for drop shipment. Square D questioned the delivery and requested an inspection. Their findings indicated that the breakers showed signs of reassembly and relabeling. Square D reported that the breakers did not comply with manufacturing specifications.

   In two supplements to NRC Notice 88-46, the NRC named 14 suppliers as suspects for supplying refurbished MCCBs.

   Based on NRC Notice 88-46, SCE commenced a set of actions to identify and mitigate the supply of suspect MCCBs for station use.

2. NRC Bulletin 88-10

   The NRC issued Bulletin 88-10 on November 22, 1988, to request the addressees to provide reasonable assurances that MCCBs purchased for use in safety related applications without verifiable traceability perform their safety function.

   The NRCs expressed concern is that MCCBs purchased as new may not conform to manufacturer's specifications. Unauthorized refurbishing could jeopardize design capability and reliability. MCCBs which cannot be traced to the manufacturer must be addressed for appropriate corrective action.

   NEMA and UL have stated that fault protection capabilities are verified by destructive testing of selected breakers representing production under controlled conditions.

   In Bulletin 88-10, the NRC prescribed actions, including implementation of a test and replacement program. The NRC considers these actions as reasonable assurance that MCCBs that cannot be traced will perform their safety function. NRC Bulletin 88-10 allows for continued use of installed MCCBs that cannot be traced until these actions can be implemented during the appropriate unit refuel.

The NRC also requested that a JCO be prepared for MCCBs that cannot be traced for the duration they remain in service.

3. SCE and Industry Findings

The distribution of refurbished MCCBs has potentially reached significant proportions in the installed population within the nuclear power industry. The significance of these proportions warrants appropriate investigation and corrective action.

SCE specifications for power distribution panels and motor control center require that the vendor furnish evidence that endurance test, in accordance with NEMA AB-1-1969, have been completed on breakers of the same design.

MCCBs which are supplied outside the manufacturing controls or jurisdiction intended by these specifications, represent a potential deviation from equipment design and performance requirements.

B. EVENT AND/OR CONDITION

The event described in NRC Notice 88-46 and NRC Bulletin 88-10 does not identify a specific nonconforming condition present in SONGS operating equipment. However, the generic concerns described do represent real and likely conditions which potentially could occur. This JCO considers the known procurement chain, testing and inspection, and station applications.

IV. SCOPE OF MCCBs EVALUATED FOR CONTINUED OPERATION

The MCCBs which are addressed by this JCO are identified in NCR P-7129 for SONGS Unit 1. These MCCBs were purchased and installed during the interval August 1, 1983, through August 1, 1988, as specified in NRC Bulletin 88-10.

The investigation to establish traceability for these MCCBs have been completed and have shown that these MCCBs represent the installed population which cannot be traced to the circuit breaker manufacturer.

MCCBs REFERENCED IN NCR P-7129 WHICH PERTAIN TO THIS JCO

NCR ID	MO	BREAKER ID	SERVICE	MFG	MODEL	AMP
288	85060813001	8-1134	New Fuel Bridge Crane	West	FB	30
296	86013409000	VTB INVTR3	Vital Bus Invertor #3	GE	TEB	100
301	86040434000	152 1A403	125 VDC Control Power to DSD 4160 VAC Bus A4	Siem-Allis	EH2-B0	30
		152 1A404				
		152 1A405				
330	88072099000	Y15-1500	Utility Bus Main	West	E2100	100

The Supplier of the MCCB for Record ID 288 is indeterminate.

The MCCB for Record ID 296 was supplied from General Electric Supply Company.

The MCCB for Record ID 301 was supplied from BBC-Brown Boveri, Incorporated.

The MCCB for Record ID 330 was supplied from Satin America, who is not NRC Notice 88-46 listed, but who specializes in the distribution of surplus electrical equipment. This MCCB is an early model vintage.

V. DESIGN REQUIREMENTS AND VERIFICATION ACTIVITIES

A. STATION APPLICATION AND FUNCTION

A description of each MCCB application and their respective station application are provided as follows:

NOTE: Each MCCB listed is identified by Breaker ID except ID 296 which is part of the skid mounted equipment, in the Electrical Set Point List (ESL). Circuit breakers which are credited to provide isolation in an Appendix R scenario have been analyzed in station coordination study, 90036AB, for fire protection and safe shutdown requirements.

MCCB 8-1134 (288)

MCCB 8-1134 feeds 480 volt power to the 3 Ton New Fuel Bridge Crane. The crane's function is to manipulate New Fuel Assemblies between New Fuel Cask, New Fuel Storage Racks, receiving/inspection area, and the Fork Lift Truck that transports New Fuel Elements to the Refueling Cavity. A spurious MCCB trip would delay movement of New Fuel. However, it would not affect other safety systems.

MCCBs 152 1A403, 152 1A404 and 152 1A405 (301)

MCCBs 152 1A403, 152 1A404 and 152 1A405 feeds 125 VDC control power to Dedicated Safe Shutdown (DSD) 4160 VAC Bus A4, cubicles 1A403, 1A404 and 1A405, respectively, from the 125 VDC DSD Bus D28, breaker D2804. The load function is non-safety related, but fire protection related (NSR-FP). The DSD System is designed to be placed into operation in the event of a fire in designated fire zones affects the ability of the plant to establish Hot Shutdown, and to achieve and maintain Cold Shutdown conditions with the normal Safe Shutdown System.

The DSD 4160 VAC Bus cubicles mentioned above house the 4160 VAC circuit breakers that feeds 4160 VAC power as follows:

- Circuit breaker 1A403 - feeds 4160 VAC backup power, generated by the DSD diesel generator, to Charging Pump G-8A

- Circuit breaker 1A404 - feeds 4160 VAC backup power, generated by the DSD diesel generator, to the third Auxiliary Feedwater Pump G-10W

- Circuit breaker 1A405 - is the DSD diesel generator feeder circuit breaker. It feeds the 4160 VAC backup power to the DSD 4160 VAC Bus A4

The operation of these circuit breakers, i.e., to close when the 4160 VAC backup power is needed and to trip open to protect the electrical equipment it is feeding power to, in the event of an abnormality, is dependent upon the availability of the 125 VDC control power.

The design bases for the DSD System to satisfy 10CFR50 Appendix R requirements is for the system to be able to perform its functions as designed. A spurious MCCB trip would, therefore, impact compliance with this requirement.

MCCB VTB INVTR 3 (296)

MCCB VTB INVTR 3 is installed within vital bus invertor No. 3. It is the main input circuit breaker, feeding 125 VDC main power to the invertor, from the 125 VDC Distribution Switchgear No. 1, breaker 72-137. The MCCB is equipped with an under voltage coil which trips the MCCB if the 125 VDC power supply to the invertor is interrupted. The load function is safety related. The invertor provides conditioned 120 VAC, 60 Hz power to

various safety related control and instrument loads, which are susceptible for jeopardizing the safe operation of the plant when a power loss occurs. Therefore, a spurious MCCB trip would impact plant safety. The 120 VAC system, however, has been designed to provide a reliable source of power. To accomplish this, a back-up emergency power source has been provided for each vital bus invertor. For vital bus invertor No. 3, an automatic transfer provides the emergency back-up power from a 37.5 KVA transformer to the vital buses normally supplied from invertor No. 3.

MCCB Y15-1500 (330)

MCCB Y15-1500 is the Utility Bus Main Breaker supplied from Motor Control Center MCC-2. The Utility Bus supplies power to various safety related loads which are susceptible for causing a unit trip when a power loss occurs. Therefore, a spurious MCCB trip would impact unit reliability. The Utility Bus is upstream protected by the MCC-2 Feeder MCCB 8-1238. MCCB Y15-1500 provides protection against low duty faults at the Utility Bus which could be undetected by the MCCB 8-1238 due to the presence of the MCC - Utility Bus step-down transformer.

A simplified Main One Line Diagram illustrating the interrelationship of these MCCBs with the Electrical Power System is attached to this JCO as Exhibit 1.

B. PRESERVICE TEST AND INSPECTIONS

Preservice testing of Record ID 288 MCCB has not been documented. It is a current vintage MCCB, Westinghouse FB 30 amp Tri-Pac.

A visual inspection was conducted by Engineering and Maintenance Planning personnel of the MCCB for Record ID 288. The inspection was limited to the attributes which are visually accessible in the installed configuration. The MCCB appeared new and no evidence of tampering was noted. There is no reason to suspect that this current model breaker would be refurbished from its appearance.

Record ID 330 MCCB was preservice tested in accordance with the Station Test Procedure for Molded Case Circuit Breakers. It was subjected to a 300% over-current trip and dielectric test.

Another MCCB listed, Record ID 296, was tested after installation in accordance with the Station Circuit

Device Tests and Overall Functional Test Procedure. The MCCBs together with the involved circuitry, was tested to verify that the circuitry operated per the design.

A visual inspection was conducted by test technician and QC personnel of the MCCB for Record ID 296. The inspection was limited to the attributes which are visually accessible in the installed configuration. The MCCB appeared new and no evidence of tampering was noted. The date stamp on the breaker indicates that it was manufactured mid May 1985. The breaker was received by SCE June 24, 1985. There is no reason to suspect that this current model breaker would be refurbished in this short a time span.

MCCBs listed as Record ID 301 have not been given preservice testing by themselves but were part of the overall circuit and functional testing given to the main 4.16 KV circuit breakers. The MCCBs together with the other components comprising the control circuitry of the 4.16 KV circuit breakers were tested to verify that the control circuitry and its components operated per the design.

The test results are contained in the Maintenance Work Order packages referenced in Section IV of this JCO. These test results demonstrate satisfactory breaker performance within selected ranges of the manufacturer's design characteristics.

The tests performed are not as severe as those prescribed in NRC Bulletin 88-10. However, the tests performed did check breaker performance for most anomalies that could potentially be present due to refurbishment. Any gross disrepair would be detected by the station tests performed.

A visual inspection was conducted by test technician and QC personnel of the MCCBs for Record ID 301. The inspection was limited to the attributes which are visually accessible in the installed configuration.

Although the labels on the MCCBs (except for the label for the MCCB in cubicle 1A405 which was missing) are typewritten labels, the MCCBs for Record ID Number 301 shows firm appearances of factory intact assembly. The upper hole on each MCCBs is filled with compound (a method used by some manufacturers in lieu of a tamper-proof seal). The front side of the MCCB in cubicle 1A405 is partially covered such that not enough of the MCCB was visible. Overall, however, the MCCBs appear new and no evidence of tampering was noted. The MCCB cases showed signs of normal wear and tear.

A review of inspections and tests conducted on stored spares was checked to determine what inferences could apply based on common RSO, material codes or model numbers. There is no similar commonality for the MCCBs listed for Record IDs 296, 301 and 330.

VI. JUSTIFICATION FOR CONTINUED OPERATION

A. JUSTIFICATION

Based on the existing condition identified in Section III as it relates to the station applications described in Section V, the following justification for continued operation is provided for each MCCB:

MCCB 8-1134 (288)

Although preservice testing was not documented for Record ID 288 MCCB, it has accumulated 45 months of service in its present application without spurious trips. This breaker is of current vintage and thus less susceptible to the concerns of Bulletin 88-10. Also, the inspection results infer an MCCB with no signs of tampering. Thus the breaker is expected to function based upon the relative absence of suspect indications. However, the breaker will be opened and tagged to alleviate further circuit protection concerns. The controls to assure that 8-1134 remains out of service until tested or replaced are addressed in Section VI, JCO Duration and Temporary Controls.

MCCBs 152-1A403, 152-1A404 and 152-1A405 (301)

Although the MCCBs installed have not been given preservice testing, they have accumulated 38 months of service in their present application without spurious trips.

These MCCBs are of current vintage and thus less susceptible to the concerns of Bulletin 88-10. Also, the inspection results infer MCCBs with nil probability of tampering. Thus, the MCCBs are assured to function based on the relative absence of suspect indications.

The time that the DSD System will be activated and utilized to satisfy 10CFR50 Appendix R requirements is an event of remote probability. The system was installed after the plant has been in operation for years. During this time, none of the DSD System design bases events has ever been experienced, such that the

safe operation of the plant was placed in jeopardy.

Failure of the MCCBs could render the DSD System inoperable. It is our judgement, however, that there is a very remote probability that the DSD System design bases events would occur during the duration of this JCO. Further more, there is also a very remote probability that any of the three MCCBs would malfunction in the unlikely event that the DSD System would be called upon to perform its function.

MCCB VTR INVTR 3 (296)

This MCCB is of current vintage purchased in 1985 from a supplier who is not on the list of the NRC named suppliers as suspect for supplying refurbished MCCBs. This would make the MCCB less susceptible to the concerns of this job.

In addition, although the MCCB installed has not been bench-tested, it has undergone functional testing, together with the other devices in the circuit, to verify that the circuitry operated per the design. It is our judgement, however, that Invertor No. 3 will not be lost due to MCCB spurious trips for the duration of this JCO. The MCCB has accumulated 39 months of service in its present application without spurious trips.

In the unlikely event that the MCCB fails to interrupt a fault or an overload, its upstream feeder circuit breaker, MCCB 72-137, located in 125 VDC Bus No. 1, will isolate the fault.

Losing Invertor No. 3 will not impact the operation of the system. The system has been designed to switch-over to a back-up emergency power source. An automatic transfer will provide the emergency back-up power from a 37.5 KVA transformer to the vital buses normally supplied power from Invertor No. 3.

MCCB Y15-1500 (330)

The MCCB installed has been tested to verify it's 300% overload current trip capability complies with the manufacturer's design characteristics. This MCCB has accumulated 9 months of service in its present application without spurious trips. The overload trip test demonstrates reasonable assurance that the MCCB will function.

Furthermore, because this MCCB was subjected to high test currents for the instantaneous trip, additional

assurances were gained as to the MCCBs ability to function. Such high duty tests serve to better reveal potential disrepair inherent to refurbishment.

Electrical failure on the Utility Bus is considered an event of remote probability as compared to disturbances that could occur downstream of any of the branch circuit MCCBs. Therefore, the level of detrimental exposure to unit operation is nil when the low probability of bus failure is factored with the high degree of assurance achieved through the tests performed.

General Comments

Additionally, the following comments also apply collectively to the MCCBs addressed:

The MCCBs will remain in service only for the remaining Refuel cycle. These MCCBs are only a few of many trip devices used in Unit 1's Electrical Power Systems. It is unlikely that an event related to the affected circuits would occur for the JCO duration such that it would compromise equipment important to safety.

B. SAFETY EVALUATION

This safety evaluation is provided to determine as to whether the justification for continued operation relative to the use of the subject MCCBs does or does not involve an "unreviewed safety question". This determination will be based on the response provided for the following questions:

1. Is the probability of occurrence of an accident or malfunction of any equipment important to safety previously evaluated in the UFSAR increased?

   Response: No.

   Each MCCB has been evaluated for the described conditions as it pertains to the functional requirements specific to its station application. This evaluation assures that equipment function important to safety is maintained. This assurance is achieved based on MCCB characteristics which have been checked or because appropriate operating restrictions have been imposed where characteristics remain uncertain.

2. Are the consequences of an accident or malfunction of equipment important to safety as evaluated in the USFAR increased?

Response: No.

For the affected circuits which remain in service, the required MCCB protection is maintained. The MCCBs are still assured to function to provide train separation in case of electrical failure as assumed in the fire analysis. Otherwise, the MCCB is restricted or removed from service.

Also, based on their accumulated service life, these MCCBs are assured to be a reliable source of power without spurious trips.

3. Is the possibility of an accident or malfunction of a different type than previously evaluated in the UFSAR created??

Response: No.

The MCCBs are assured to provide the same safety function as analyzed in the UFSAR.

4. Is the margin of safety as defined in the basis for any technical specification reduced?

Response: No.

The condition described in the JCO does not result in changes to equipment characteristics. The margin of safety is not changed.

VII. JCO DURATION and TEMPORARY CONTROLS

This JCO applies for the remainder of the Unit 1 Refuel recycle.

Each of the MCCBs addressed in this JCO will be replaced with a MCCB that has been successfully tested to VTP-E-067 or with a MCCB for which traceability has been verified. The exception is MCCB Record ID 301, which is still undergoing traceability verification. If this MCCB passes traceability verification, it will not be replaced.

MCCB Record ID 288 will remain open and tagged by NCR Hold Tag with reference to NCR SO1-P-7129 until the aforementioned action is complete.

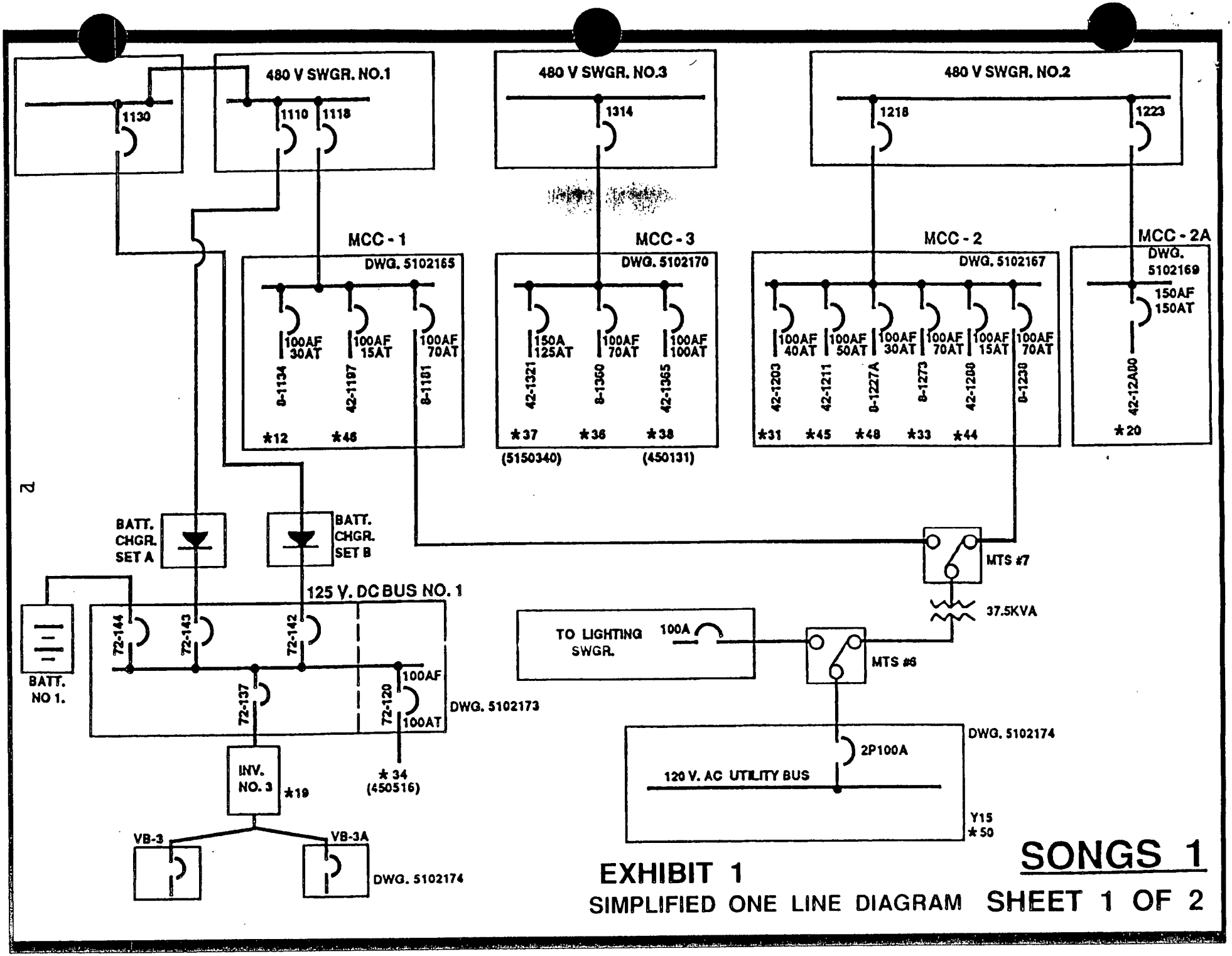

EXHIBIT 1

SIMPLIFIED ONE LINE DIAGRAM SHEET 1 OF 2

SONGS 1

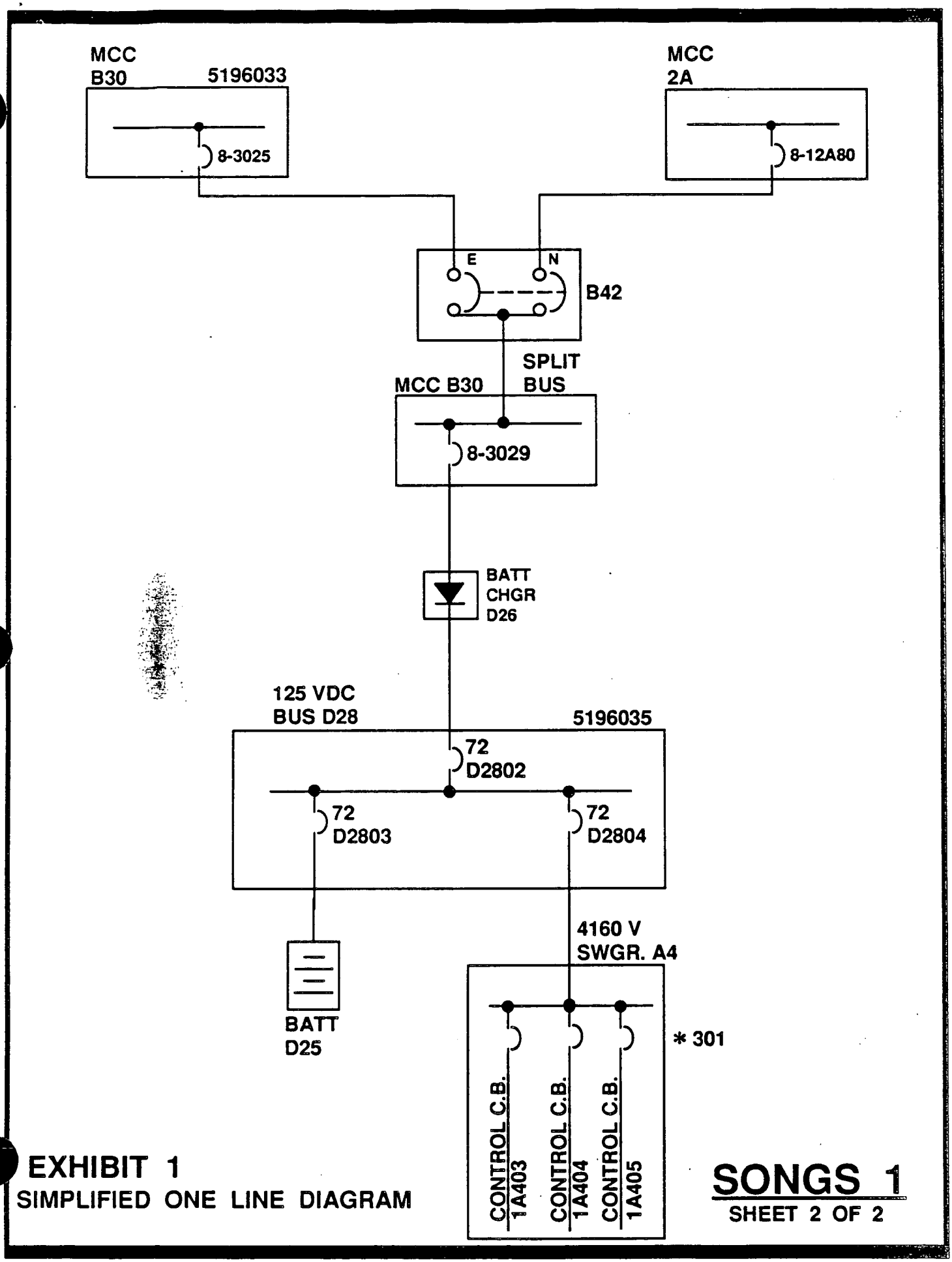

EXHIBIT 1

SIMPLIFIED ONE LINE DIAGRAM

SONGS 1

SHEET 2 OF 2

UNIT 2
EVALUATION JUSTIFYING CONTINUED OPERATION (JCO)
REV. 1

TABLE OF CONTENTS

I. INTRODUCTION

This JCO is provided to address continued operation as a result of completing traceability investigations for twelve of the Molded Case Circuit Breakers (MCCB) identified in NCR 2653 for SONGS Unit 2. These investigations are summarized in SCE QA Report MCCB -26,-27 and -28.

This JCO is provided as specified in the NCR Disposition under Block 21, Item II.C, which states that within 30 days of completing traceability investigation, perform an evaluation justifying continued operation based on the use of the existing MCCBs.

II. REFERENCES

Procedures-

Test Procedure, S0123-I-4.7,
Molded Case Circuit Breakers

Test Procedure, S0123-GT-400-07
Generic Test Procedure for Molded Case Circuit Breakers

Test Procedure, S023-302-4-1-785-0
Westinghouse Molded Case Circuit Breakers

Verification Test Procedure, VTP-E-067,
Molded Case Circuit Breaker Verification Test Program

Drawings-

90042, Unit 2/3 Safety Related Electrical Set Point List (ESL), QCII, REV. 0.

90035AE, Appendix R Fire Analysis Coordination Calculation

Equipment specifications-

Purchase Specification

S023-302-04, Motor Control Centers
S023-302-05A, 125 VDC Distribution Switchboard
S023-302-05B, 250 VDC and 125 VDC Distribution Switchboard

Purchase Specification, DC Power Bus

Breaker standards-

UL-489, Molded Case Circuit Breaker and Circuit Breaker Enclosures

NEMA-AB1, Molded Case Circuit Breakers

III. EXISTING CONDITION

A. BACKGROUND

1. On July 8, 1988, the Nuclear Regulatory Commission (NRC) issued Information Notice 88-46, to alert licensees that refurbished MCCBs may have been supplied to nuclear power plants. NRC Notice 88-46 stated that Pacific Gas and Electric had purchased MCCBs intended for non-safety related applications from a local distributor who in turn purchased the MCCBs from another supplier for drop shipment. Square D questioned the delivery and requested an inspection. Their findings indicated that the breakers showed signs of reassembly and relabeling. Square D reported that the breakers did not comply with manufacturing specifications.

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In Bulletin 88-10, the NRC prescribed actions, including implementation of a test and replacement program. The NRC considers these actions as reasonable assurance that MCCBs that cannot be traced will perform their safety function. NRC Bulletin 88-10 allows for continued use of installed MCCBs that cannot be traced until these actions can be implemented during the appropriate unit refuel. The

NRC also requested that a JCO be prepared for MCCBs that cannot be traced for the duration they remain in service.

3. SCE and Industry Findings

The distribution of refurbished MCCBs has potentially reached significant proportions in the installed population within the nuclear power industry. The significance of these proportions warrants appropriate investigation and corrective action.

SCE specifications for power distribution panels and motor control center require that the vendor furnish evidence that endurance test, in accordance with NEMA AB-1-1969, have been completed on breakers of the same design.

MCCBs which are supplied outside the manufacturing controls or jurisdiction intended by these specifications, represent a potential deviation from equipment design and performance requirements.

B. EVENT AND/OR CONDITION

The event described in NRC Notice 88-46 and NRC Bulletin 88-10 does not identify a specific nonconforming condition present in SONGS operating equipment. However, the generic concerns described do represent real and likely conditions which potentially could occur. This JCO considers the known procurement chain, testing and inspection, and station applications.

IV. SCOPE OF MCCBs EVALUATED FOR CONTINUED OPERATION

The MCCBs which are addressed by this JCO are identified in NCR SO2-2-2653 for SONGS Unit 2. These MCCBs were purchased and installed during the interval August 1, 1983, through August 1, 1988, as specified in NRC Bulletin 88-10.

The investigation to establish traceability for these MCCBs have been completed and have shown that these MCCBs represent the installed population which cannot be traced to the circuit breaker manufacturer.

MCCBs REFERENCED IN NCR SO2-2-2653 WHICH PERTAIN TO THIS JCO

NCR ID	MO	BREAKER ID	SERVICE	MNFR	MODEL	AMP
285	85050079000	CB3-E	AUX FDW S/G EO-88, ISO VALVE 2HV4730	ITE	EF2A	30
281	85022411000	2Q023 09	Spare	SQD	QOB1	20
291	85022411000	0Q033 29	Spare	SQD	QOB1	20
303	86042591000	2Q04114	Spare	SQD	QOB1	20
		2Q04120	Spare	SQD	QOB1	20
		2Q04122	Spare	SQD	QOB1	20
312	86061241000	2D106	Spare	GE	THJK	400
		2D206	Spare	GE	THJK	400
277	84081468000	2Q020 20	Spare	SQD	QOB1	20
		2Q020 23	Spare	SQD	QOB1	20
289	85081017000	2Q020 01	Spare	SQD	QOB1	20
		2Q020 24	Spare	SQD	QOB1	20

The MCCB for Record ID 285 was supplied from BBC Brown Boveri

The MCCB for Record ID 277 was supplied from Amfac Electrical Supply Company

The MCCB for Record ID 281 was supplied from Amfac Electrical Supply Company.

The MCCB for Record ID 289 was supplied from Amfac Elecrical Supply Company.

The MCCB for Record ID 291 was supplied from Amfac Electrical Supply Company.

The MCCB for Record ID 303 was supplied from Amfac Electrical Supply Company.

The MCCB for Record ID 312 was supplied from General Electric Supply Company.

V. DESIGN REQUIREMENTS AND VERIFICATION ACTIVITIES

A. STATION APPLICATION AND FUNCTION

A description of each MCCB application and their respective station application are provided as follows:

NOTE: Each MCCB listed is identified by Breaker ID in the Electrical Set Point List (ESL),except for CB3-E which is in a relay panel. Circuit breakers which are credited to provide isolation in an Appendix R scenario have been analyzed in station coordination study, 90035AE, for fire protection and safe shutdown

requirements.

MCCB CB3-E (285)

MCCB CB3-E is located in 2MS4705, the Auxiliary Relay Panel for Steam Generator E088 Auxiliary Feedwater Pump P-140 Discharge Control Valve 2HV-4705 and Auxiliary Feedwater Isolation Valve 2HV-4730.

125 VDC control and motive power comes from feeder breaker 2D105 in the 125 VDC Distribution switchboard Bus 2D1 for the Auxiliary Relay Panel for the control and operation of 2HV-4705 and 2HV-4730. CB3-E feeds 2HV-4730. The load function is safety related.

Discharge Control Valve 2HV-4705 and Isolation Valve 2HV-4730 provide controllable discharge flows from Turbine Driven Auxiliary Feedwater Pump P-140 to steam generator 2 (E088). Valves 2HV-4705 and 2HV-4730 automatically close on Main Steam Isolation Actuation (MSIS). An Emergency Feedwater Actuation Signal (EFAS) automatically opens the valves overriding the MSIS received by the valves. Valve 2HV-4705 stays open under this condition. Auxiliary feedwater flow to the steam generator is controlled by the cycling valve 2HV-4730, which opens and closes depending upon the steam generator water level.

The proper operation of valve 2HV-4730 is dependent upon the existence of the 125 VDC power. Therefore, a spurious MCCB trip would impact the operation of the valve in the event auxiliary feedwater is needed.

MCCB 2D106 and 2D206 (312)

MCCBs 2D106 AND 2D206 are in spare position. They are, however, used in reserve for connection of the spare battery charger and other temporary connections in the event that the permanently installed battery chargers feeding 125 VDC power to 125 VDC Distribution Switchboard Buss 2D1 or 2D2, respectively, become inoperable. The load function is safety related.

MCCB 2Q023 09 (281)

MCCB 2Q023 09 is in spare position. The MCCB will be opened and tagged to alleviate further circuit protection concerns.

The controls to ensure that MCCB 2Q023 09 remains out of service are addressed in Section VI, JCO Duration and Temporary Controls.

MCCB 0Q033 29 (291)

MCCB 0Q033 29 is in spare position. The MCCB will be opened and tagged to alleviate further circuit protection concerns.

The controls to ensure that MCCB 0Q033 29 remains out of service are addressed in Section VI, JCO Duration and Temporary Controls.

MCCBs 2Q041-14, 2Q041-20, 2Q041-22 (303)

MCCBs 2Q041-14, 2Q041-20, 2Q041-22 are in spare position. The MCCBs will be opened and tagged to alleviate further circuit protection concerns.

The controls to ensure that MCCBs 2Q041-14, 2Q041-20, 2Q041-22 remain out of service are addressed in Section VI, JCO Duration and Temporary Controls.

MCCBs 2Q020 01, 2Q020 20, 2Q020 23, 2Q020 24 (277, 289)

MCCBs 2Q020 01, 2Q020 20, 2Q020 23, and 2Q020 24 are in spare position. The MCCBs will be opened and tagged to alleviate further circuit protection concerns.

The controls to ensure that MCCBs 2Q020 01, 2Q020 20, 2Q020 23 and 2Q020 24 remain out of service are addressed in Section VI, JCO Duration and Temporary Controls.

A simplified Main One Line Diagram illustrating the inter-relationship of these MCCBs with the Electrical Power System is attached to this JCO Exhibit 1.

B. PRESERVICE TEST AND INSPECTIONS

The MCCBs listed, for Record IDs 285 and 312 were preservice tested prior to installation in accordance with Station Molded Case Circuit Breaker Test Procedures. The MCCBs were tested with the instantaneous settings at mid position for Record ID 285 and at over 75% position for Record ID 312, tripping the breaker as indicated in the acceptance criteria given on the face of the breaker. The MCCB was also given thermal trip and insulation resistance tests.

The test results are contained in the Maintenance Work Order package referenced in Section IV of this JCO. These test results demonstrate satisfactory breaker performance within selected ranges of the manufacturer's design characteristics.

The preservice tests performed are not as severe as those

prescribed in NRC Bulletin 88-10. However, the tests performed did check breaker performance for most anomalies that could potentially be present due to refurbishment. Any gross disrepair would be detected by the station tests performed.

A review of inspections and test conducted on Stored Spares was made to determine what inferences should apply based on common RSO and model numbers. There is no similar commonality for the MCCBs listed for Record IDs 285 and 312.

VI. JUSTIFICATION FOR CONTINUED OPERATION

A. JUSTIFICATION

Based on the existing condition identified in Section III as it relates to the station applications described in Section V, the following justification for continued operation is provided for each MCCB:

MCCB CB3-E (285)

The MCCB installed has been tested to verify its instantaneous trip (as set in the mid position) capability complies with the manufacturer's design characteristics. The MCCB passed the manufacturer's acceptance criteria.

The instantaneous trip test demonstrates reasonable assurance that the MCCB will function as assumed. Furthermore, because this MCCB was subjected to high test currents for the instantaneous trip, there is an assurance that the MCCB has the ability to function. Such high duty tests serve to better reveal potential disrepair inherent to refurbishment.

In the event, however, of a power failure caused by the malfunctioning of the MCCB, resulting in the failure of Auxiliary Feedwater Isolation Valve 2HV-4730 and Auxiliary Feedwater Pump P-140 Discharge Control Valve 2HV-4705 to perform its intended function, the safety of the plant will not be put in jeopardy. Loss of valves 2HV-4730 and 2HV-4705 have been analyzed in the UFSAR (Table 10.4-7, sheet 1 of 3, Auxiliary Feedwater System Failure Mode and Effects Analysis). Results of the FMEA show that loss of 2HV-4730 has no effect on the system due to the redundant series valves (if the failure mode is failing to close on MSIS or on removal of EFAS) or due to redundant parallel valve(if the failure mode is that the valve fails closed on EFAS).
In addition, the loss of valve 2HV-4705 has no effect on the system due to parallel flow paths from auxiliary feedwater pumps to both steam generators (if the failure

mode is that the valve fails to open on EFAS) or due to the closure of pump discharge isolation valves (if the failure mode is that the valve fails to close on MSIS or on removal of EFAS).

It is our judgement, however, that valve 2HV-4730 will not be lost due to MCCB spurious trips for the duration of this JCO. The MCCB has accumulated 48 months service in it's present application without spurious trips.

In the unlikely event that the MCCB fail to interrupt a fault or an overload, its upstream feeder circuit breaker, 2D105, located in the 125 VDC Distibution Switchboard 2D1, will isolate the fault.

Losing the entire 125 VDC Distribution Switchboard Bus 2D1, supplying the 125 VDC power to the Auxilary Relay Panel MS4705, has been analyzed in the UFSAR (Table 8.3-8, Failure Modes and Effects Analysis). The results of the analysis show that the loss of Bus 2D1 had no effect on the system since the three other 125 VDC channels will remain available.

In any event, adequate assurance of proper breaker function is provided by the instantaneous trip test results. Therefore, it can be concluded that the valve can be operated with the MCCB without detrimental exposure to the plant.

MCCBs 2D106 and 2D206 (312)

The MCCB installed has been tested to verify its thermal and instantaneous trip (as set in the over 75 percent position) capability complies with the manufacturer's design characteristics. The MCCB passed the manufacturer's acceptance criteria.

The thermal & instantaneous trip test demonstrates reasonable assurance that the MCCB will function as assumed. Furthermore, because this MCCB was subjected to high test currents for the instantaneous trip, there is an assurance that the MCCB has the ability to function. Such high duty tests serve to better reveal potential disrepair inherent to refurbishment.

Adequate assurance of proper breaker function is provided by the instantaneous trip test results. Therefore, it can be concluded that the battery charger can be operated with the MCCB without detrimental exposure to the plant.

Spare MCCBs 2Q023 09, 0Q033 29, 2Q04114, 2Q04120, 2Q04122, 2Q020 01, 2Q020 20, 2Q020 23, and 2Q020 24, (277, 281, 289, 291, 303)

These spare MCCBs will remain open and tagged in reference to NCR SO2-2-2653 for the duration of this JCO.

No further evaluation for continued operation for these MCCBs is required.

General Comments

Additionally, the following comments also apply collectively to the MCCBs addressed:

The MCCBs will remain in service only for the remaining Refuel cycle. These MCCBs are only a few of many trip devices used in Unit 2's Electrical Power Systems. It is unlikely that an event related to the affected circuits would occur for the JCO duration such that it would compromise equipment important to safety.

B. Safety Evaluation

This safety evaluation is provided to determine as to whether the justification for continued operation relative to the use of the subject MCCBs does or does not involve an "unreviewed safety question". This determination will be based on the response provided for the following questions:

1. Is the probability of occurrence of an accident or malfunction of any equipment important to safety previously evaluated in the UFSAR increased?

   Response: No

   Each MCCB has been evaluated for the described conditions as it pertains to the functional requirements specific to its station application. This evaluation assures that equipment function important to safety is maintained. This assurance is achieved based on MCCB characteristics which have been checked or because appropriate operating restrictions have been imposed where characteristics remain uncertain.

2. Are the consequences of an accident or malfunction of equipment important to safety as evaluated in the UFSAR increased?

   Response: No

   For the affected circuits which remain in service, the required MCCB protection is maintained. The MCCBs are still assured to function to provide train

separation in case of electrical failure as assumed in the fire analysis. Otherwise, the MCCB is restricted or removed from service.

Also, based on their accumulated service life, these MCCBs are assured to be a reliable source of power without spurious trips.

3. Is the possibility of an accident or malfunction of a different type than previously evaluated in the UFSAR created?

   Response: No

   The MCCBs are assured to provide the same safety function as analyzed in the UFSAR.

4. Is the margin of safety as defined in the basis for any technical specification reduced?

   Response: No

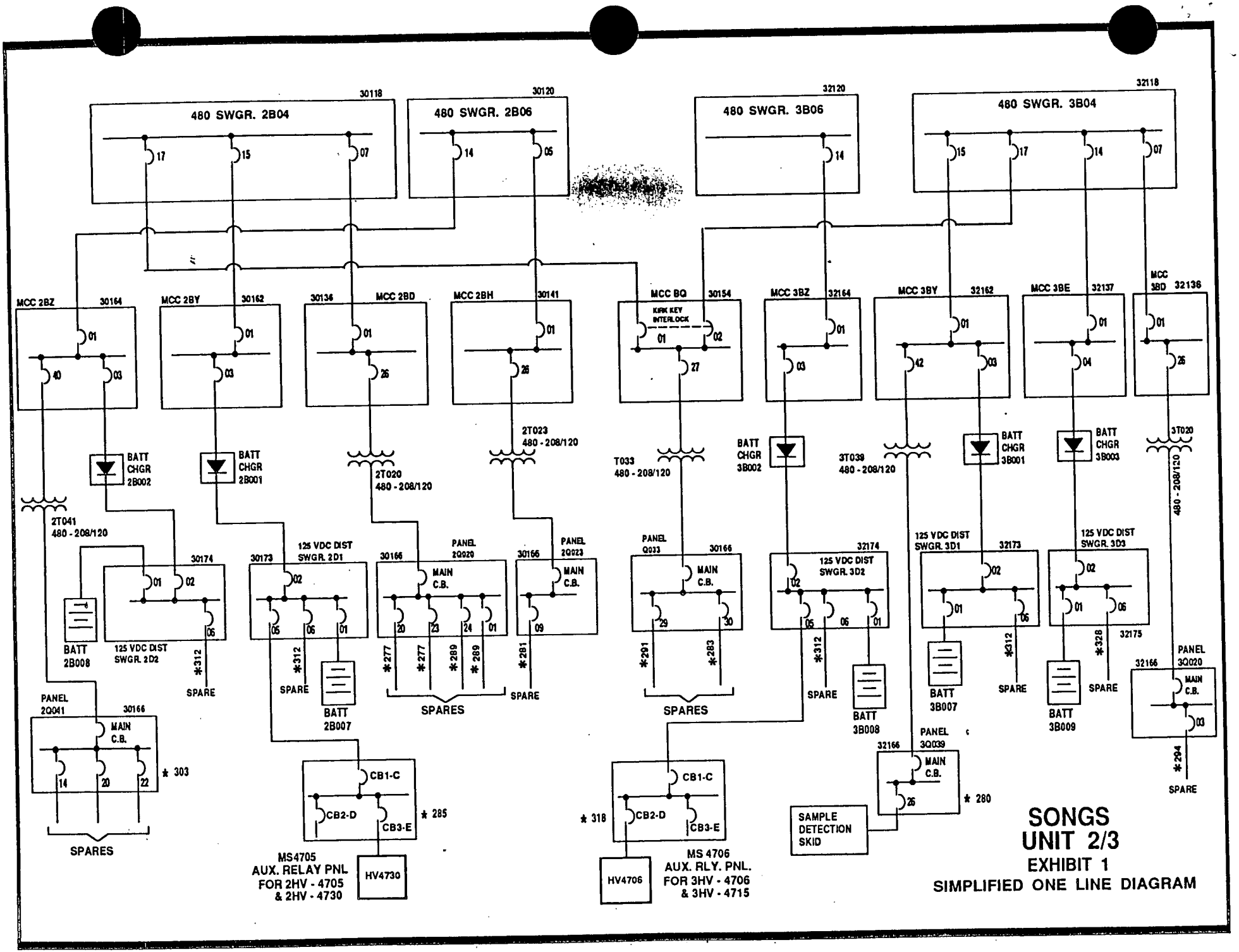
   The condition described in the JCO does not result in changes to equipment characteristics. The margin of safety is not changed.

VII. JCO DURATION AND TEMPORARY CONTROLS

This JCO applies for the remainder of the Unit 2 Refuel Cycle.

Each of the MCCBs addressed in this JCO will be replaced with a MCCB that has been successfully tested to VTP-E-067 or with a MCCB for which traceability has been verified.

Spare MCCBs 2Q023 09, 0Q033 29, 2Q04114, 2Q04120, 2Q04122, 2Q020 01, Q020 20, 2Q020 23, and 2Q020 24, will remain open and tagged by NCR HOLD TAG in reference to NCR SO2-2-2653 to prevent use.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32120
480 SWGR. 3B04
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30164
MCC 2BY
30162
MCC 2BD
30136
MCC 2BH
30141
MCC BQ
30154
KIRK KEY INTERLOCK
MCC 3BZ
32164
MCC 3BY
32162
MCC 3BE
32137
MCC 3BD
32136
BATT CHGR 2B002
BATT CHGR 2B001
BATT CHGR 3B002
BATT CHGR 3B001
BATT CHGR 3B003
2T041 480 - 208/120
2T020 480 - 208/120
2T023 480 - 208/120
T033 480 - 208/120
3T039 480 - 208/120
3T020 480 - 208/120
BATT 2B008
125 VDC DIST SWGR. 2D2
30174
125 VDC DIST SWGR. 2D1
30173
PANEL 2Q026
30166
PANEL 2Q023
30166
PANEL Q033
30166
125 VDC DIST SWGR. 3D2
32174
125 VDC DIST SWGR. 3D1
32173
125 VDC DIST SWGR. 3D3
32175
MAIN C.B.
SPARE
BATT 2B007
SPARES
BATT 3B007
BATT 3B008
BATT 3B009
PANEL 2Q041
30166
PANEL 3Q039
32166
PANEL 3Q020
32166
* 303
CB1-C
CB2-D
CB3-E
* 285
* 318
* 280
* 294
MS4705 AUX. RELAY PNL FOR 2HV - 4705 & 2HV - 4730
HV4730
MS 4706 AUX. RLY. PNL. FOR 3HV - 4706 & 3HV - 4715
HV4706
SAMPLE DETECTION SKID
SONGS UNIT 2/3
EXHIBIT 1
SIMPLIFIED ONE LINE DIAGRAM

UNIT 3
EVALUATION JUSTIFYING CONTINUED OPERATION (JCO)
Rev. 1

TABLE OF CONTENTS

I. INTRODUCTION

This JCO is provided to address continued operation as a result of completing traceability investigations for seven of the Molded Case Circuit Breakers (MCCBs) identified in NCR 3-2364 for SONGS Unit 3. These investigations are summarized in SCE QA Report MCCB -26, -27 and -28.

This JCO is provided as specified in the NCR Disposition under Block 21, Item II.C, which states that within 30 days of completing traceability investigation, perform an evaluation justifying continued operation based on the use of the existing MCCBs.

II. REFERENCES

Procedures-

Test Procedure, S0123-I-4.7,
Molded Case Circuit Breakers

Test Procedure, S0123-GT-400-07
Generic Test Procedure for Molded Case Circuit Breakers

Test Procedure, S023-302-4-1-785-0
Westinghouse Molded Case Circuit Breakers

Verification Test Procedure, VTP-E-067,
Molded Case Circuit Breaker Verification Test Program

Drawings-

90042, Unit 2/3 Safety Related Electrical Set Point List (ESL), QC II, REV. 0.

90035AE, Appendix R Fire Analysis Coordination Calculation

Equipment specifications-

Purchase Specification,
S023-302-04, Motor Control Centers
S023-302-05A, 125 VDC Distribution Switchboard
S023-305-05B, 125 VDC and 125 VDC Distribution Switchboard

Purchase Specification, DC Power Bus

Breaker standards-

UL-489, Molded Case Circuit Breaker and Circuit Breaker Enclosures

NEMA-AB1, Molded Case Circuit Breakers

III. EXISTING CONDITION

A. BACKGROUND

1. On July 8, 1988, the Nuclear Regulatory Commission (NRC) issued Information Notice 88-46, to alert licensees that refurbished MCCBs may have been supplied to nuclear power plants. NRC Notice 88-46 stated that Pacific Gas and Electric had purchased MCCBs intended for non-safety related applications from a local distributor who in turn purchased the MCCBs from another supplier for drop shipment. Square D questioned the delivery and requested an inspection. Their findings indicated that the breakers showed signs of reassembly and relabeling. Square D reported that the breakers did not comply with manufacturing specifications.

   In two supplements to NRC Notice 88-46, the NRC named 14 suppliers as suspects for supplying refurbished MCCBs.

   Based on NRC Notice 88-46, SCE commenced a set of actions to identify and mitigate the supply of suspect MCCBs for station use.

2. NRC Bulletin 88-10

   The NRC issued Bulletin 88-10 on November 22, 1988, to request the addressees to provide reasonable assurances that MCCBs purchased for use in safety related applications without verifiable traceability perform their safety function.

   The NRCs expressed concern is that MCCBs purchased as new may not conform to manufacturer's specifications. Unauthorized refurbishing could jeopardize design capability and reliability. MCCBs which cannot be traced to the manufacturer must be addressed for appropriate corrective action.

   NEMA and UL have stated that fault protection capabilities are verified by destructive testing of selected breakers representing production under controlled conditions.

   In Bulletin 88-10, the NRC prescribed actions, including implementation of a test and replacement program. The NRC considers these actions as reasonable assurance that MCCBs that cannot be traced will perform their safety function. NRC Bulletin 88-10 allows for continued use of installed MCCBs that cannot be traced until these actions can be implemented during the appropriate unit refuel.

The NRC also requested that a JCO be prepared for MCCBs that cannot be traced for the duration they remain in service.

3. SCE and Industry Findings

The distribution of refurbished MCCBs has potentially reached significant proportions in the installed population within the nuclear power industry. The significance of these proportions warrants appropriate investigation and corrective action.

SCE specifications for power distribution panels and motor control center require that the vendor furnish evidence that endurance test, in accordance with NEMA AB-1-1969, have been completed on breakers of the same design.

MCCBs which are supplied outside the manufacturing controls or jurisdiction intended by these specifications, represent a potential deviation from equipment design and performance requirements.

B. EVENT AND/OR CONDITION

The event described in NRC Notice 88-46 and NRC Bulletin 88-10 does not identify a specific nonconforming condition present in SONGS operating equipment. However, the generic concerns described do represent real and likely conditions which potentially could occur. This JCO considers the known procurement chain, testing and inspection, and station applications.

IV. SCOPE OF MCCBs EVALUATED FOR CONTINUED OPERATION

The MCCBs which are addressed by this JCO are identified in NCR S03-3-2364 for SONGS Unit 3. These MCCBs were purchased and installed during the interval August 1, 1983, through August 1, 1988, as specified in NRC Bulletin 88-10.

The investigation to establish traceability for these MCCBs have been completed and have shown that these MCCBs represent the installed population which cannot be traced to the circuit breaker manufacturer.

MCCBs REFERENCED IN NCR S03-3-2364 WHICH PERTAIN TO THIS JCO

NCR ID	MO	BREAKER ID	SERVICE	MNFR	MODEL	AMP
280	85012661000	3Q039 26	Sample Detection Skid	SQ D	QOB1	30
283	8504021000	0Q033 30	Spare	SQ D	QOB1	20
294	85121814000	3Q020 03	Spare	SQ D	QOB1	20
312	86061241000	3D106	Spare	GE	THJK	400
		3D206	Spare	GE	THJK	400
318	86090374001	CB2-D	AUX FDW S/G EO-89, P-140 DISCH. CONTROL VLV. 3HV-4706	ITE	EF2A	5
329	88061364000	3D306	Spare	GE	THJK	400

The MCCB for Record ID 280 was supplied from Orange Coast Electrical Company.

The MCCB for Record ID 283 was supplied from Amfac Electrical Supply Company.

The MCCB for Record ID 294 was supplied from Amfac Electrical Supply Company.

The MCCBs for Record ID 312 was supplied from General Electric Supply Company.

The MCCB for Record ID 318 was supplied from Consolidated Electric.

The MCCB for Record ID 329 was supplied form GE Nuclear Division

V. DESIGN REQUIREMENTS AND VERIFICATION ACTIVITIES

A. STATION APPLICATION AND FUNCTION

A description of each MCCB application and their respective station application are provided as follows:

NOTE: Each MCCB listed is identified by Breaker ID in the Electrical Set Point List (ESL), except for CB2-D which is in a relay panel. Circuit breakers which are credited to provide isolation in an Appendix R scenario have been analyzed in station coordination study, 90035AE, for fire protection and safe shutdown requirements.

MCCB 3Q039 26 (280)

MCCB 3Q039 26 feeds 120 VAC power to the Sample Detection Skid located in the penetration building, from the 208/120 VAC heater panel 3Q039. The load function is not safety related. The Sample Detection Skid consists of the High Purity Germanium Detector System designed to supplement the Post Accident Sampling System (PASS). The Sample Detection Skid provides the operator with the capability to remotely monitor and quantify the activity concentrations of gamma emitting isotopes in the Reactor Coolant and the Containment atmospheres during and after postulated accidents.

Because of this capability, the system significantly reduces operating personnel occupational radiation exposures. The need to manually draw and transport high activity chemistry samples for radioanalysis is virtually eliminated.

This circuit is upstream protected by the main feeder MCCB to heater panel 3Q039.

A spurious MCCB trip would therefore impact the operation of the Sample Detection Skid.

MCCB CB2-D (318)

MCCB CB2-D is located in 3MS4706, the Auxiliary Relay Panel for Steam Generator E089 Auxiliary Feedwater Pump P-140 Discharge Control Valve 3HV-4706 and Auxiliary Feedwater Isolation Valve 3HV-4715.

125 VDC control and motive power comes from the feeder breaker 3D205 in the 125 VDC Distribution Switchboard Bus 3D2 to the Auxiliary Relay Panel for the control and operation of 3HV-4706 and 3HV-4715. CB2-D feeds 3HV-4706. The load function is safety related.

Discharge Control Valve 3HV-4706 and Isolation Valve 3HV-4715 provide controllable discharge flows from Turbine Driven Auxiliary Feedwater Pump P-140 to Steam Generator 1 (E089). Valves 3HV-4706 and 3HV-4715 automatically close on Main Steam Isolation Actuation (MSIS). An Emergency Feedwater Actuation Signal (EFAS) automatically opens the valves overriding the MSIS received by the valves. Valve 3HV-4706 stays open under this condition. Auxiliary feedwater flow to the steam generator is controlled by the cycling valve 3HV-4715, which opens and closes depending upon the Steam Generator water level.

The proper operation of valve 3HV-4706 is dependent upon the existence of the 125 VDC power. Therefore, a spurious MCCB trip would impact the operation of the valve in the event auxiliary feedwater is needed.

MCCB 3D306 (329)

MCCB 3D306 is in spare position. It is, however, used in reserve for connection of the spare battey charger and other temporary connections in the event that the permanently installed battery charger feeding 125 VDC power to 125 VDC Distribution Switchboard Bus 3D3 become inoperable. The load function is safety related.

MCCBs 3D106 and 3D206 (312)

MCCBs 3D106 and 3D206 are in spare position. They are, however, used in reserve for connection of the spare battery charger and other temporary connections in the event that the permanently installed battery chargers feeding 125 VDC power to 125 VDC Distribution Switchboard Bus 3D1 or 3D2, respectively, become inoperable. The load function is safety related.

MCCB 0Q033 30 (283)

MCCB 0Q033 30 is in spare position. The MCCB will be opened and tagged to alleviate further circuit protection concerns.

The controls to ensure that MCCB 0Q033 30 remains out of service are addressed in Section VI, JCO Duration and Temporary Controls.

MCCB 3Q020 03 (294)

MCCB 3Q020 03 is in spare position. The MCCB will be opened and tagged to alleviate further circuit protection concerns.

The controls to ensure that MCCB 3Q020 03 remains out of service are addressed in Section VI, JCO Duration and Temporary Controls

A simplified Main One Line Diagram illustrating the inter-relationship of these MCCBs with the Electrical Power System is attached to this JCO Exhibit 1.

B. PRESERVICE TEST AND INSPECTIONS

The MCCBs listed, for Record IDs 329 and 312 were preservice tested prior to installation in accordance with Station Molded Case Circuit Breaker Test Procedures. The MCCBs were tested with the instantaneous settings at over 75% position tripping the breaker as indicated in the acceptance criteria. MCCBs 3D106, 3D206 and 3D306 were also given thermal trip and insulation resistance tests.

The test results are contained in the Maintenance Work Order package referenced in Section IV of this JCO. These test results demonstrate satisfactory breaker performance within selected ranges of the manufacturer's design characteristics.

The preservice tests performed are not as severe as those prescribed in NRC Bulletin 88-10. However, the tests performed did check breaker performance for most anomalies that could potentially be present due to refurbishment. Any gross disrepair would be detected by the station tests performed.

The MCCB listed, for Record IDs 280 and 318 were not subjected to testing. The MCCBs, however, were not supplied from any of the 14 suppliers who were suspects for supplying refurbished MCCBs.

A review of inspections and tests conducted on stored spares was checked to determine what inferences could apply based on common RSO, material codes or model numbers. There is no similar commonality for the MCCBs listed for Record IDs 280, 312, 318 and 329.

An inspection was conducted by test technician, QC and engineering personnel of the MCCB for Record ID 280. The inspection was limited to the attributes which are visually assessable in the installed configuration. The MCCB for Record ID 280 shows firm appearance of a factory intact assembly. It is a single pole circuit breaker with rivetted casing and is non-refurbishable. The MCCB looks new and no signs of tampering was observed.

An inspection was conducted by test technician and engineering personnel of the MCCB for Record ID 318. The inspection was limited to the attributes which are visually assessable in the installed configuration. The MCCB for Record ID 318 shows firm appearance of a factory intact assembly. The MCCB looks new and no signs of tampering was observed.

VI. JUSTIFICATION FOR CONTINUED OPERATION

A. JUSTIFICATION

Based on the existing condition identified in Section III as it relates to the station applications described in Section V, the following justification for continued operation is provided for each MCCB:

MCCBs 3D106 and 3D206 (312)

The MCCB installed has been tested to verify its thermal and instantaneous trip (as set in the over 75 percent position) capability complies with the manufacturer's design characteristics. The MCCB passed the manufacturer's acceptance criteria.

The thermal and instantaneous trip tests demonstrate reasonable assurance that the MCCB will function as assumed. Furthermore, because this MCCB was subjected to high test currents for the instantaneous trip, there is an assurance that the MCCB has the ability to function. Such high duty tests serve to better reveal potential disrepair inherent to refurbishment.

Adequate assurance of proper breaker function is provided by the instantaneous trip test results. Therefore, it can be concluded that the battery charger can be operated with the MCCB without detrimental exposure to the plant.

MCCB 3Q039 26 (280)

This MCCB is of a current vintage purchased in 1985 from a supplier who is not on the list of the NRC named suppliers as suspect for supplying refurbished MCCBs and thus less susceptible to the concerns of this JCO. Also, the inspection results infers an MCCB with nill probability of tampering. Because of its construction, the MCCB would be very difficult to tamper with. This MCCB 3Q039 26 is assumed to function based on the relative absence of suspect indications.

In addition, although MCCB 3Q039 26 has not been tested, it is our judgement that the Sample Detection Skid will not be loss due to MCCB spurious trips, for the duration of this JCO. The MCCB has accumulated 48 months of service in its present application without spurious trips.

In the event that the MCCB fail to interrupt a fault or an overload, its upstream circuit breaker, the main circuit breaker to panel 3Q039, will isolate the fault.

Loss of panel 3Q039 has no effect on the system since its redundant load group will remain available.

The loss of the Sample Detection Skid has been analyzed in the UFSAR (Table 9.3-16, Post Accident Sampling System, Failure Modes and Effects Analysis). The results of the analysis show that the loss of the skid has no effect on the system, since there is no process interaction. In addition, there are several alternative methods of PASS designed into the system if normal sampling techniques become inoperative. The alternative sampling may not be as accurate as the PASS analysis but the information is deemed adequate for emergency estimates.

MCCB CB2-D (318)

This MCCB is of a current vintage procured in 1983 from a supplier who is not on the list of the NRC named suppliers as suspect for supplying refurbished MCCBs. This would make the MCCB less susceptible to the concerns of this JCO. Inspection results infer an MCCB with nil probability of tampering.

In addition, although MCCB CB2-D has not been tested, it is our judgement that the valve will not be lost due to MCCB spurious trips, for the duration of this JCO. The MCCB has accumulated 48 months of service in it's present application without spurious trips.

In the event, however, of a power failure caused by the malfunctioning of the MCCB, resulting in the failure of Auxiliary Feedwater Pump P-140 Discharge Control Valve 3HV-4706 and Auxiliary Feedwater Isolation Valve 3HV-4715, to perform its intended functions, the safety of the plant will not be put in jeopardy. Loss of valves 3HV-4706 and 3HV-4715 have been analyzed in the UFSAR (Table 10.4-7, sheet 1 of 3, Auxiliary Feedwater System Failure Modes and Effects Analysis). Results of the FMEA show that loss of 3HV-4706 has no effect on the system due to the parallel flow paths from the auxiliary feedwater pumps to both steam generators(if the failure mode is that the valve fails to open on EFAS) or due to the closure of the pump discharge isolation valves (if the failure mode is that the valve fails to close on MSIS or on removal of EFAS).

Also, loss of valve 3HV-4715 has no effect on the system due to redundant series valves (if the failure mode is that the valve fails to close on MSIS or on removal of EFAS or due to redundant parallel valve (if the failure mode is that the valve fails closed on EFAS).

In the unlikely event that the MCCB fail to interrupt a fault or an overload, its upstream feeder circuit breaker, 3D205, located in the 125 VDC Distibution Switchboard 3D2, will isolate the fault.

Losing the entire 125 VDC Distribution Switchboard Bus 3D2, supplying the 125 VDC power to the Auxilary Relay panel MS4705, has been analyzed in the UFSAR (Table 8.3-8, Failure Modes and Effects Analysis). The results of the analysis show that the loss of Bus 3D2 had no effect on the system since the three other 125 VDC channels will remain available.

MCCB 3D306 (329)

The MCCB installed has been tested to verify its thermal and instantaneous trip (as set in the over 75 percent position) capability complies with the manufacturer's design characteristics. The MCCB passed the manufacturer's acceptance criteria.

The thermal and instantaneous trip test demonstrates reasonable assurance that the MCCB will function as assumed. Furthermore, because this MCCB was subjected to high test currents for the instantaneous trip, there is an assurance that the MCCB has the ability to function. Such high duty tests serve to better reveal potential disrepair inherent to refurbishment.

Adequate assurance of proper breaker function is provided by the instantaneous trip test results. Therefore, it can be concluded that the battery charger can be operated with the MCCB without detrimental exposure to the plant.

Spare MCCBs 0Q033 30, and 3Q0020 03 (283, 294)

These spare MCCBs will remain open and tagged in reference to NCR SO3-3-2364 for the duration of this JCO.

No further evaluation for continued operation for these MCCBs is required.

General Comments

Additionally, the following comments also apply collectively to the MCCBs addressed:

The MCCBs will remain in service only for the remaining Refuel cycle. These MCCBs are only a few of many trip devices used in Unit 3's Electrical

Power Systems. It is unlikely that an event related to the affected circuits would occur for the JCO duration such that it would compromise equipment important to safety.

B. Safety Evaluation

This safety evaluation is provided to determine as to whether the justification for continued operation relative to the use of the subject MCCBs does or does not involve an "unreviewed safety question". This determination will be based on the response provided for the following questions:

1. Is the probability of occurrence of an accident or malfunction of any equipment important to safety previously evaluated in the UFSAR increased?
Response: No

Each MCCB has been evaluated for the described conditions as it pertains to the functional requirements specific to its station application. This evaluation assures that equipment function important to safety is maintained. This assurance is achieved based on MCCB characteristics which have been checked or because appropriate operating restrictions have been imposed where characteristics remain uncertain.

2. Are the consequences of an accident or malfunction of equipment important to safety as evaluated in the UFSAR increased?

Response: No

For the affected circuits which remain in service, the required MCCB protection is maintained. The MCCBs are still assured to function to provide train separation in case of electrical failure as assumed in the fire analysis. Otherwise, the MCCB is restricted or removed from service.

Also, based on their accumulated service life, these MCCBs are assured to be a reliable source of power without spurious trips.

3. Is the possibility of an accident or malfunction of a different type than previously evaluated in the UFSAR created?

Response: No

The MCCBs are assured to provide the same safety function as analyzed in the UFSAR.

4. Is the margin of safety as defined in the basis for any technical specification reduced?

Response: No

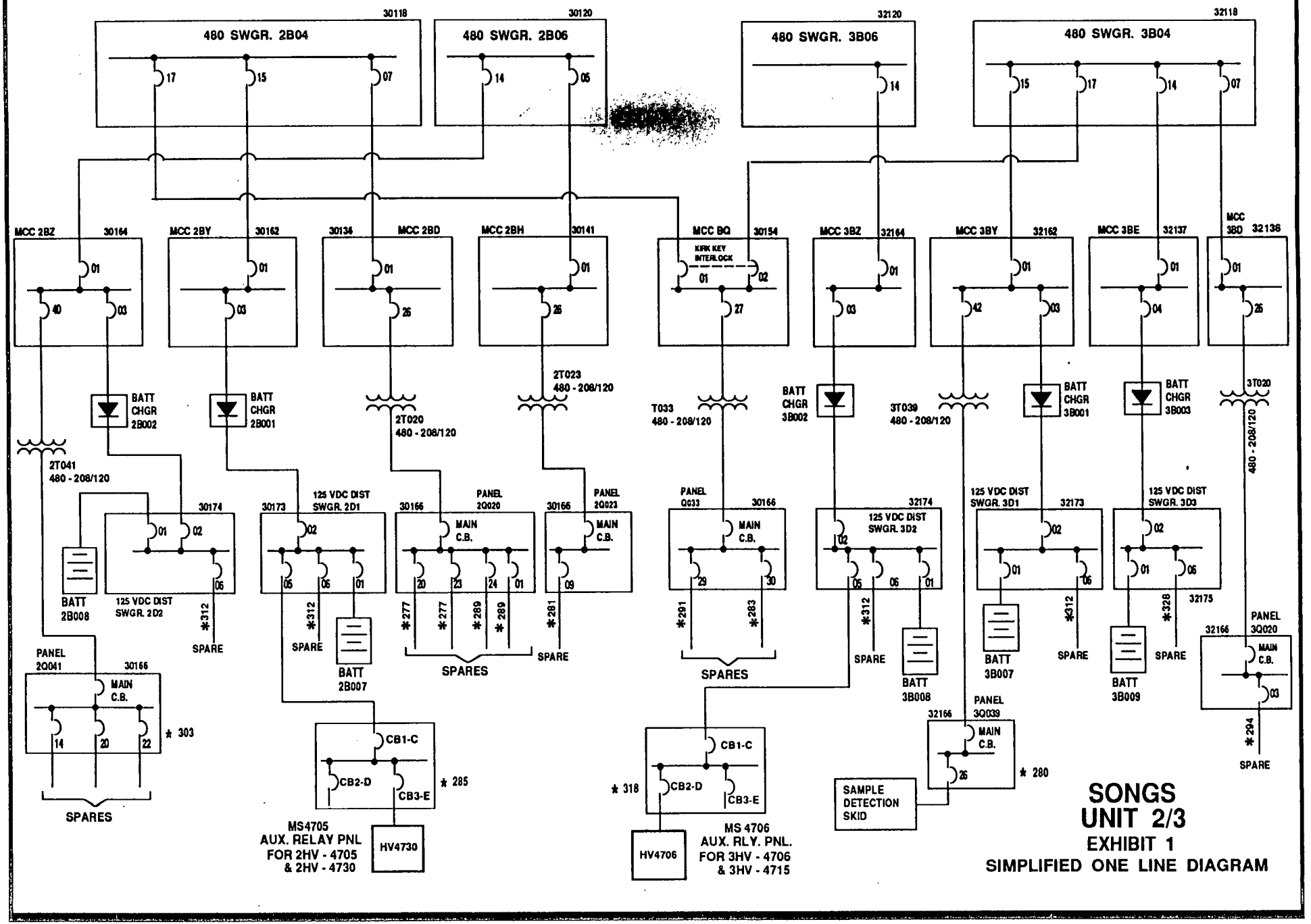
The condition described in the JCO does not result in changes to equipment characteristics. The margin of safety is not changed.

VII. JCO DURATION AND TEMPORARY CONTROLS

This JCO applies for the remainder of the Unit 3 Refuel Cycle.

Each of the MCCBs addressed in this JCO will be replaced with a MCCB that has been successfully tested to VTP-E-067 or with a MCCB for which traceability has been verified.

Spare MCCBs 0Q033 30, and 3Q020 03, will remain open and tagged by NCR Hold Tag in reference to NCR S03-3-2364 for the duration of this JCO.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125 VDC DIST SWGR. 3D3
PANEL 2Q041
PANEL 2Q020
PANEL 2Q023
PANEL Q033
PANEL 3Q039
PANEL 3Q020
MAIN C.B.
SPARE
SPARES
CB1-C
CB2-D
CB3-E
HV4730
HV4706
MS4705 AUX. RELAY PNL FOR 2HV - 4705 & 2HV - 4730
MS 4706 AUX. RLY. PNL. FOR 3HV - 4706 & 3HV - 4715
SAMPLE DETECTION SKID
SONGS UNIT 2/3
EXHIBIT 1
SIMPLIFIED ONE LINE DIAGRAM