SHUTTLE CRITICAL ITEMS LIST - ORBITER

SUBSYSTEM :ELECT POWER DIST & CONT FMEA NO 05-6 -2008C -1 REV:05/03/88

ASSEMBLY :M-DCA3 & APCA 6 CRIT.FUNC: 1R
P/N RI :ME451-0016-2200 CRIT. HDW: 3
P/N VENDOR:
QUANTITY :4
:FOUR
:

VEHICLE EFFECTIVITY:	102	103	104
	X	X	X

PHASE(S): PL X LO X OO DO X LS X

REDUNDANCY SCREEN: A-PASS B-FAIL C-PASS

PREPARED BY:			APPROVED BY:	APPROVED BY (NASA):
DES	R	PHILLIPS	DES	SSM
REL	M	HOVE	REL	REL
QE	J	COURSEN	QE	QE

ITEM:
FUSE, 200 AMP FUSE - MAIN DC BUS C TO AFT MAIN DC BUS C

FUNCTION:
PROTECTS MAIN DC BUS C FROM OVERLOADS IN THE FEEDER TO THE AFT DC BUS C, AND PROTECTS FEEDER FROM POSSIBLE OVERLOAD WHEN SUPPLIED BY GSE. 40V76A33F14, 15; 56V76A136F1, 2

FAILURE MODE:
OPEN

CAUSE(S):
THERMAL STRESS, STRUCTURAL FAILURE, MECHANICAL SHOCK, VIBRATION, CONTAMINATION, PROCESSING ANOMALY

EFFECT(S) ON:
(A)SUBSYSTEM (B)INTERFACES (C)MISSION (D)CREW/VEHICLE (E)FUNCTIONAL CRITICALITY EFFECT:

(A) LOSS OF MAIN DC BUS C TO AFT MAIN DC BUS C FEEDER REDUNDANCY.

(B) LOSS OF REDUNDANCY TO LOADS ON AFT MAIN DC BUS C. NO EFFECT FOR FIRST FAILURE. THE REDUNDANT AFT DC BUS C FEEDER CAN SUPPLY THE REQUIRED APCA 6 LOADS.

(C,D) NO EFFECT.

(E) POSSIBLE LOSS OF CREW/VEHICLE DUE TO LOSS OF CRITICAL EQUIPMENT NECESSARY FOR CREW/VEHICLE SAFETY (E.G., ET UMBILICAL DOOR CLOSURE) VIA THE FOLLOWING SCENARIO:

(1) LOSS OF FUSE.
(2) LOSS OF REDUNDANT AFT MAIN DC BUS C FEEDER.
(3) LOSS OF ANOTHER MAIN DC BUS.

SCREEN "B" IS FAILED BECAUSE OF THE PARALLEL CIRCUIT DESIGN.

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DISPOSITION & RATIONALE:
(A)DESIGN (B)TEST (C)INSPECTION (D)FAILURE HISTORY (E)OPERATIONAL USE:

(A,B,C,D) DISPOSITION AND RATIONALE
REFER TO APPENDIX D, ITEM NO. 3 - FUSE, HIGH CURRENT

(B) GROUND TURNAROUND TEST
VERIFY THE INTEGRITY OF THE FUSES IN REDUNDANT PATHS BETWEEN THE AFT POWER CONTROL ASSEMBLY MAIN BUSES AND THE CORRESPONDING MAIN DISTRIBUTION CONTROL ASSEMBLY MAIN BUSES. USE CLAMP-ON AMMETER WHERE NECESSARY TO VERIFY REDUNDANT PATHS. TEST WILL BE PERFORMED FOR ALL FIRST FLIGHTS, 102-FLT 8, 103-FLT 7, 104-FLT 3, AND ALL VEHICLES AT 10 FLT INTERVALS THEREAFTER.

(E) OPERATIONAL USE
NONE