

SHUTTLE CRITICAL ITEMS LIST - ORBITER

SUBSYSTEM :ELECT POWER DIST & CONT FMEA NO 05-6 -2295 -1 REV:05/03/88

ASSEMBLY :MAIN DC DISTR ASSY-1,2,3 CRIT.FUNC: 1R  
P/N RI :ME451-0016-2100 CRIT. HDW: 2  
P/N VENDOR: VEHICLE 102 103 104  
QUANTITY :3 EFFECTIVITY: X X X  
:THREE, ONE PER PHASE(S): PL LO OO X DO LS  
:ASSEMBLY-1, 2 & 3

PREPARED BY: DES R PHILLIPS REL M MOVE QE J COURSEN  
REDUNDANCY SCREEN: A-PASS B-PASS C-PASS  
APPROVED BY: DES John S. Cl... REL John S. Cl... QE J. Courson 5/16/88  
APPROVED BY (NASA): SSM D.C. Stays 5/12/88 REL D. Stays 5/15/88 QE PT

ITEM:  
FUSE, 100 AMP, HIGH CURRENT - MAIN DC BUS A (B, C) TO MID PCA 1 (2, 3)

FUNCTION:  
PROVIDES OVERLOAD PROTECTION FOR MAIN DC BUS A (B, C) LOCATED IN MAIN DC DISTRIBUTION CONTROL ASSEMBLY NO. 1 (2, 3) FROM A SUB-MAIN DC BUS LOCATED IN THE MID POWER CONTROLLER ASSEMBLY 1 (2, 3). 40V76A32F17, 40V76A33F16

FAILURE MODE:  
FAILS OPEN

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

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

- (A) LOSS OF MAIN DC BUS POWER TO THE ASSOCIATED MID PCA.
- (B) LOSS OF INTERFACE REDUNDANCY - LOSS OF LOADS SUPPLIED BY THE AFFECTED MID PCA.
- (C) POSSIBLE LOSS OF SOME MISSION OBJECTIVES DUE TO LOSS OF FUEL CELL PURGE CAPABILITY, LOSS OF RMS PRIMARY OR BACKUP POWER AND EARLY MISSION TERMINATION DUE TO LOSS OF PAYLOAD BAY DOOR CLOSURE REDUNDANCY.
- (D) FIRST FAILURE - NO EFFECT.
- (E) POSSIBLE LOSS OF CREW/VEHICLE AFTER SECOND FAILURE (LOSS OF ANOTHER FUSE) DUE TO INABILITY TO CLOSE PAYLOAD BAY DOORS WITH LOSS OF MAIN DC BUS POWER TO TWO MID PCA'S.

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SYSTEM :ELECT POWER DIST & CONT FMEA NO 05-6 -2295 -1 REV:05/03/88

DISPOSITION & RATIONALE:

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

(B,C,D) DISPOSITION AND RATIONALE:

REFER TO APPENDIX D, ITEM NO. 3 - FUSE, HIGH CURRENT.

(A) GROUND TURNAROUND TEST

VERIFY THE MAIN BUS A (B, C) CURRENT BEING PASSED THROUGH FUSES FROM THE MAIN DISTRIBUTION CONTROL ASSEMBLY TO THE FORWARD, MID, AND AFT POWER CONTROL ASSEMBLIES. TEST PERFORMED FOR ALL FLIGHTS.

(E) OPERATIONAL USE

CONSIDERATION WILL BE GIVEN TO STOWING MECHANISMS WITH LOSS OF REDUNDANCY. FOR LOSS OF REDUNDANT OPEN VENT DOOR CAPABILITY, OPEN VENT DOORS PRIOR TO ENTRY.