

SHUTTLE CRITICAL ITEMS LIST - ORBITER

SUBSYSTEM :ELECT POWER DIST & CONT FMEA NO 05-6 -2615 -1 REV:05/03/88

ASSEMBLY :PANEL MA73C	CRIT.FUNC: 1R
P/N RI :MC454-0032-3030	CRIT. HDW: 2
P/N VENDOR:	VEHICLE 102 103 104
QUANTITY :1	EFFECTIVITY: X X X
:ONE	PHASE(S): PL LO GO X DO X LS
:	

PREPARED BY:	REDUNDANCY SCREEN: A-PASS B-PASS C-PASS	APPROVED BY (NASA):
DES R PHILLIPS	APPROVED BY:	SSM <u>W.C. Ste...</u> 5/16/88
REL M HOVE	DES <u>R. B...</u>	REL <u>W.C. Ste...</u> 5/16/88
QE J COURSEN	REL <u>Nancy Ch...</u> 5/16/88	QE <u>W.C. Ste...</u> 5/16/88
	QE <u>L. Hansen</u> 5/16/88	

ITEM:

CIRCUIT BREAKER, 3 PHASE, 3 AMP - AC2 BUS FEED TO MID MCA 3

FUNCTION:

PROVIDES OVERCURRENT PROTECTION FOR 3 PHASE FEEDER CIRCUITS FROM AC2 BUS TO MIDBODY MOTOR CONTROL ASSEMBLY (MCA) NO. 3 FOR VENT DOOR AND PAYLOAD RETENTION LATCH MOTORS. 85V73A129CB8

FAILURE MODE:

FAILS OPEN, FAILS TO CLOSE, FAILS TO CONDUCT

CAUSE(S):

STRUCTURAL FAILURE, MECHANICAL SHOCK, THERMAL STRESS, VIBRATION, CONTAMINATION, PROCESSING ANOMALY

EFFECT(S) ON:

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

(A) LOSS OF AC VOLTAGE TO AFFECTED CIRCUIT.

(B) LOSS OF INTERFACE REDUNDANCY. NO EFFECT FOR FIRST FAILURE - THE REDUNDANT MOTOR SUPPLIED BY ANOTHER CIRCUIT BREAKER COMPLETES FUNCTION.

(C,D) FIRST FAILURE - NO EFFECT.

(E) POSSIBLE LOSS OF CREW/VEHICLE AFTER SECOND FAILURE (LOSS OF REDUNDANT MOTOR OR POWER/CONTROL CIRCUIT) DUE TO INABILITY TO OPEN VENT DOOR DURING DESCENT (RESULTS IN VEHICLE STRUCTURAL DAMAGE DUE TO PRESSURE DIFFERENTIALS) OR SAFELY RELEASE/LATCH A PAYLOAD (MAY RESULT IN A PARTIALLY RELEASED/STOWED PAYLOAD DURING ENTRY). LEFT AND RIGHT VENT DOORS ARE NOT CONSIDERED TO BE REDUNDANT TO EACH OTHER. "B" SCREEN PASSES SINCE THE FAILURE CAN BE DETECTED BY CREW MONITORING MECHANISM OPERATION TIMES.

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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. 1. - CIRCUIT BREAKER

B) GROUND TURNAROUND TEST

VERIFY CIRCUIT BREAKER CLOSED BY MONITORING MOTOR CURRENTS (ALL THREE PHASES) DURING VENT DOOR CLOSE TO OPEN AND OPEN TO CLOSE TESTS. TEST WILL BE PERFORMED FOR ALL FLIGHTS.

E) OPERATIONAL USE

FOR LOSS OF REDUNDANT VENT DOOR OPEN CAPABILITY, OPEN VENT DOORS PRIOR TO ENTRY.