

SHUTTLE CRITICAL ITEMS LIST - ORBITER

SUBSYSTEM :ELECT POWER DIST & CONT FMEA NO 05-6 -2612 -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 :3	EFFECTIVITY: X X X
:THREE/ONE PER A-MCA	PHASE(S): PL LO X OO DO X LS

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

PREPARED BY:	APPROVED BY:	APPROVED BY (NASA):
DES R PHILLIPS	DES <i>W. C. B...</i>	SSM <i>J. C. ... 5/6/88</i>
REL M HOVE	REL <i>John C. ... 5/6/88</i>	REL <i>John C. ... 5/6/88</i>
QE J COURSEN	QE <i>J. J. Coursem 5/6/88</i>	QE <i>PK</i>

ITEM:

CIRCUIT BREAKER, 3 PHASE, 3 AMP - AC1, AC2, AC3 BUS FEEDS TO AFT MCA 1, 2 AND 3

FUNCTION:

PROVIDES OVERCURRENT PROTECTION FOR 3 PHASE FEEDER CIRCUITS FROM AC1, AC2, AND AC3 BUSES WHICH SUPPLY RELATED BUSES IN AFT MOTOR CONTROL ASSEMBLIES (MCA'S) 1, 2 AND 3 FOR VENT DOORS 8/9 AND EXTERNAL TANK (ET) UMBILICAL DOOR MOTORS. 85V73A129CB4, CB10, CB14

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 REDUNDANCY - LOSS OF 3 PHASE AC VOLTAGE TO AN AFFECTED CIRCUIT.

(B) LOSS OF INTERFACE REDUNDANCY. NO EFFECT FIRST FAILURE - THE REDUNDANT CIRCUIT COMPLETES FUNCTION. THE SECOND RELATED FAILURE PRECLUDES OPERATION OF AFFECTED THREE PHASE CRITICAL CIRCUITS OR LOADS.

(C,D) FIRST FAILURE - NO EFFECT.

(E) POSSIBLE LOSS OF CREW/VEHICLE DUE TO INABILITY TO CLOSE/LATCH ET UMBILICAL DOORS RESULTING IN AERODYNAMIC HEATING DAMAGE DURING ENTRY OR TO OPEN VENT DOORS 8/9 RESULTING IN POSSIBLE STRUCTURAL DAMAGE

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EFFECT(S) ON (CONTINUED):

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

DURING ENTRY FROM PRESSURE DIFFERENTIAL (RIGHT AND LEFT DOORS ARE NOT
CONSIDERED TO BE REDUNDANT TO ONE ANOTHER). "B" SCREEN PASSES SINCE
THE FAILURE CAN BE DETECTED BY CREW MONITORING MECHANISM OPERATION
TIMES.

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 GENERAL REQUIREMENTS FOR RIGHT HAND AND LEFT HAND ET UMBILICAL
DOORS. VERIFY CIRCUIT BREAKER CLOSED BY MONITORING MOTOR CURRENTS
(ALL THREE PHASES) DURING CLOSE OF RIGHT HAND AND LEFT HAND ET
UMBILICAL DOORS USING MOTOR 1 AND 2. TEST WILL BE PERFORMED FOR ALL
FLIGHTS.

E) OPERATIONAL USE

FOR LOSS OF VENT DOOR OPEN REDUNDANCY, OPEN AFFECTED VENT DOORS PRIOR
TO ENTRY.