

SHUTTLE CRITICAL ITEMS LIST - ORBITER

SUBSYSTEM :ELECT POWER DIST & CONT FMEA NO 05-6 -2614 -2 REV:05/03/88

ASSEMBLY :PANEL MA73C CRIT.FUNC: 1R  
P/N RI :MC454-0032-3030 CRIT. HDW: 3  
P/N VENDOR: VEHICLE 102 103 104  
QUANTITY :2 EFFECTIVITY: X X X  
:TWO PHASE(S): PL LO OO X DO X LS  
:

REDUNDANCY SCREEN: A-PASS B-FAIL C-PASS  
PREPARED BY: APPROVED BY: APPROVED BY (NASA):  
DES R PHILLIPS DES R. Brennan SSM J.C. Steg 5/12/88  
REL M HOVE REL Michael Chilton 5-6-88 RELD Donna Woodard 5/12/88  
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ITEM:

CIRCUIT BREAKER, 3 PHASE, 3 AMP - AC1 (AC3) BUS FEED TO MID MCA 3 (2)

FUNCTION:

PROVIDES OVERCURRENT PROTECTION FOR 3 PHASE FEEDER CIRCUITS FROM AC1 (AC3) BUS TO MIDBODY MOTOR CONTROL ASSEMBLY (MCA) NO. 3 (2) FOR VENT DOOR, PAYLOAD BAY DOOR LATCH, RADIATOR DEPLOY/LATCH, REMOTE MANIPULATOR LATCH AND KU-BAND ANTENNA STOW/DEPLOY MOTORS.  
85V73A129CB3 AND CB12

FAILURE MODE:

FAILS CLOSED, FAILS TO OPEN

CAUSE(S):

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

EFFECT(S) ON:

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

(A,B,C,D) FIRST FAILURE - NO EFFECT. CIRCUIT BREAKER IS NORMALLY CLOSED.

(E) POSSIBLE LOSS OF CREW/VEHICLE DUE TO INADVERTENT PAYLOAD BAY DOOR LATCH RESULTING IN PARTIAL PAYLOAD BAY DOOR CLOSURE (RESULTS IN AERODYNAMIC STRUCTURAL DAMAGE DURING ENTRY) VIA THE FOLLOWING SCENARIO:

- (1) CIRCUIT BREAKER FAILED CLOSED.
- (2) DC LOGIC POWER SWITCH OR RPC FAILED "ON".
- (3) PAYLOAD BAY DOOR ARM SWITCH FAILS "ON".
- (4) PSYCHOTIC GPC FAILURE THAT COMMANDS A PAYLOAD BAY DOOR LATCH CLOSED WITH DOOR NOT FULLY CLOSED OR OPEN DURING ASCENT OR ENTRY.

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UBSYSTEM :ELECT POWER DIST & CONT FMEA NO 05-6 -2614 -2 REV:05/03/88

EFFECT(S) ON (CONTINUED):

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

AILS "B" SCREEN BECAUSE CIRCUIT BREAKERS NORMALLY CLOSED ALL MISSION  
PHASES.

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 STARBOARD AND PORT RADIATOR DEPLOY AND STOW MOTOR 1 AND MOTOR 2  
OPERATION INDEPENDENTLY WITH CIRCUIT BREAKERS OPEN/CLOSED TO RESTRICT  
MOTOR OPERATION TO SINGLE MOTOR. TEST IS PERFORMED FOR ALL FLIGHTS.

E) OPERATIONAL USE

NONE