

SHUTTLE CRITICAL ITEMS LIST - ORBITER

SUBSYSTEM :ELECT POWER DIST & CONT PMEA NO 05-6 -2143 -1 REV:05/03/88

ASSEMBLY :AFT PCA-1 & 2	CRIT.FUNC: 1R
P/N RI :MC455-0129-0001	CRIT. HDW: 2
P/N VENDOR:	VEHICLE 102 103 104
QUANTITY :4	EFFECTIVITY: X X X
:FOUR	PHASE(S): PL LO X OO DO LS
:	

PREPARED BY:	REDUNDANCY SCREEN: A-PASS B-PASS C-PASS	APPROVED BY:	APPROVED BY (NASA):
DES R PHILLIPS		DES <i>W. C. Flagg</i>	SSM <i>W. C. Flagg 5/16/89</i>
REL M HOVE		REL <i>Michael C. ...</i>	REL <i>Michael C. ...</i>
QE J COURSEN		QE <i>Q. Lander 5/6/88</i>	QE <i>...</i>

ITEM:

RELAY, GENERAL PURPOSE - MAIN DC POWER LEFT/RIGHT SRB BUS POWER

FUNCTION:

TRANSFERS POWER BETWEEN SEPARATE MAIN DC BUSES TO AN SRB BUS. ALLOWS REDUNDANT MAIN DC BUS POWER TO EACH SRB DC BUS. SUPPLIES ORB MAIN BUS A,B, OR C TO THE RIGHT AND LEFT SRB BUSES A AND B. 54V76A131K8, 9; 55V76A132K9, 10

FAILURE MODE:

SHORTS TO STRUCTURE (CONTACT-TO-GROUND)

CAUSE(S):

PIECE PART FAILURE, MECHANICAL SHOCK, VIBRATION, PROCESSING ANOMALY

EFFECT(S) ON:

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

(A) LOSS OF FUNCTION AND CONTROL OF POWER FROM APT ORB BUS TO SRB DC BUS A OR B.

(B) LOSS OF APPLICABLE SRB DC BUS.

(C,D) FIRST FAILURE - NO EFFECT. REMAINING SRB DC BUS PROVIDES REQUIRED FUNCTIONS.

(E) POSSIBLE LOSS OF CREW/VEHICLE ON SECOND FAILURE (LOSS OF SECOND DC BUS TO SAME SRB) DUE TO LOSS OF THRUST VECTOR CONTROL FOR ONE OF TWO SRB'S.

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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 C, ITEM NO. 2 - GENERAL PURPOSE RELAY

(B) GROUND TURNAROUND TEST

VERIFY ORB/SRB POWER INTERFACE BY ACTIVATING THE MASTER EVENT CONTROLLER SRB POWER COMMANDS AND MONITORING POWER STIMULI COMMANDS, DISCRETE EVENTS, AND OPERATIONAL BUS VOLTAGES. TEST IS PERFORMED FOR ALL FLIGHTS.

(E) OPERATIONAL USE

NONE