

SHUTTLE CRITICAL ITEMS LIST - ORBITER

SUBSYSTEM :ELECT POWER DIST & CONT FMEA NO 05-6 -2510 -1 REV:05/03/88

ASSEMBLY :MEC, HAYS-4, 5	CRIT.FUNC: 1R
P/N RI :MC450-0018-0008	CRIT. HDW: 2
P/N VENDOR:	VEHICLE 102 103 104
QUANTITY :12	EFFECTIVITY: X X X
:12-6 EACH MEC	PHASE(S): PL LO X.OO DO LS
:	

PREPARED BY:	REDUNDANCY SCREEN: A-PASS B-FAIL C-PASS	APPROVED BY:	APPROVED BY (NASA):
DES R PHILLIPS		DES <i>[Signature]</i>	SSM <i>[Signature]</i> 5/12/88
REL M HOVE		REL <i>[Signature]</i> 5-6-88	REL <i>[Signature]</i> 5/12/88
QE J COURSEN		QE <i>[Signature]</i> 5/6/88	QE <i>[Signature]</i>

ITEM:

CONTROLLER, PYRO INITIATOR (PIC) - RIGHT/LEFT ET/ORB UMBILICAL ATTACH RELEASE #1, #2 AND #3

FUNCTION:

PROVIDES A SINGLE CHANNEL PYRO-FIRING CIRCUIT, AN INITIATOR RESISTANCE TEST CIRCUIT, AND A PYRO-FIRING LOAD TEST CIRCUIT FOR THE CONTROL AND CHECKOUT OF THE RIGHT/LEFT EXTERNAL TANK/ORBITER UMBILICAL ATTACH RELEASE #1, #2 AND #3 FUNCTIONS. 54V76A13PIC1-6; 55V76A14PIC1-6

FAILURE MODE:

LOSS OF OUTPUT

CAUSE(S):

PIECE PART FAILURE, CONTAMINATION, VIBRATION, THERMAL STRESS, MECHANICAL SHOCK, PROCESSING ANOMALY

EFFECT(S) ON:

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

(A) LOSS OF CAPABILITY FOR AFFECTED PIC TO PERFORM ITS ASSIGNED FUNCTION.

(B) LOSS OF REDUNDANCY FOR ET/ORB RIGHT OR LEFT UMBILICAL ATTACH RELEASE.

(C,D) FIRST FAILURE - NO EFFECT.

(E) LOSS OF CREW/VEHICLE AFTER SECOND FAILURE (LOSS OF REDUNDANT PIC OR INITIATOR) DUE TO INABILITY TO PERFORM ET/ORB RIGHT/LEFT UMBILICAL ATTACH RELEASE. "B" SCREEN FAILS BECAUSE PIC OUTPUT FUNCTION IS NOT INSTRUMENTED.

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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 H, ITEM NO. 1 - PYRO INITIATOR CONTROLLER

(A) GROUND TURNAROUND TEST

VERIFY MEC 1 AND MEC 2 POWER REDUNDANCY FOR EACH MEC WITH THE LOSS OF TWO OF THREE POWER INPUTS. VERIFY THAT THE PRE-FLIGHT MEC BITE RESPONDS TO COMMANDS, THE ARM COMMANDS CHARGE THE PIC'S, AND THE GO / NO GO LOAD TESTS ARE SATISFIED. TEST IS PERFORMED FOR ALL FLIGHTS.

(E) OPERATIONAL USE

NONE