

SHUTTLE CRITICAL ITEMS LIST - ORBITER

SUBSYSTEM :ELECT POWER DIST & CONT FMEA NO 05-6 -2471 -2 REV:05/03/88

ASSEMBLY :FWD LCA-1, 2, 3	CRIT.FUNC: 1R
P/N RI :MC477-Q261-0002	CRIT. HDW: 3
P/N VENDOR:	VEHICLE 102 103 104
QUANTITY :6	EFFECTIVITY: X X X
:SIX	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 <u>R. B. ...</u>	SSM <u>R.C. Stapp 5/12/88</u>
REL M HOVE	REL <u>M. ... 5-6-88</u>	REL <u>... 5/14/88</u>
QE J COURSEN	QE <u>J. ... 5/6/88</u>	QE <u>...</u>

ITEM:  
HYBRID DRIVER, TYPE I - FIRE 1 AND FIRE 2 INHIBIT BUS

FUNCTION:  
CONNECTS OR DISCONNECTS PRE-FLIGHT TEST BUS POWER TO THE FIRE 1 OR FIRE 2 INHIBIT BUS IN A LOAD CONTROLLER ASSEMBLY UPON COMMAND FROM THE GROUND MULTIPLEXER/DEMUTIPLEXER (MDM LF1). 81V76A16ARI J1(16, 17), 82V76A17ARI J1(16, 17), 83V76A18ARI J1(16, 17)

FAILURE MODE:  
INADVERTENT OUTPUT, FAILS "ON", FAILS TO TURN "OFF"

CAUSE(S):  
PIECE PART FAILURE, MECHANICAL SHOCK, VIBRATION, THERMAL STRESS, CONTAMINATION, 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. PRE-FLIGHT TEST BUSES ARE NORMALLY NOT POWERED DURING FLIGHT.

(E) POSSIBLE LOSS OF CREW/VEHICLE AFTER THREE FAILURES DUE TO AN INADVERTENTLY POWERED INHIBIT BUS WHICH MAY RESULT IN LOSS OF CRITICAL FUNCTIONS (MAIN LANDING GEAR AND NOSE GEAR BACKUP UPLOCK RELEASE, NOSE GEAR EXTEND POWER ASSIST AND KU-BAND ANTENNA JETTISON). REQUIRES THE FOLLOWING SCENARIO:

- (1) FAILED "ON" HYBRID DRIVER TO INHIBIT BUS.
- (2,3) INADVERTENTLY POWERED PRE-FLIGHT TEST BUS (REQUIRES TWO FAILURES).

FAILS "B" SCREEN SINCE PRE-FLIGHT TEST BUSES AND INHIBIT BUSES HAVE NO PROVISIONS FOR MONITORING THEIR STATUS IN FLIGHT.

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SYSTEM :ELECT POWER DIST & CONT FMEA NO 05-6 -2471 -2. REV:05/03/88

DISPOSITION & RATIONALE:

(A)DESIGN (B)TEST (C)INSPECTION (D)FAILURE HISTORY (E)OPERATIONAL USE:

(A,B,C,D) DISPOSITION AND RATIONALE

REFER TO APPENDIX B, ITEM NO. 1 - HYBRID DRIVER

1) GROUND TURNAROUND TEST

VERIFY PYRO INITIATOR INHIBIT FUNCTION. TEST IS PERFORMED FOR ALL VEHICLE FLOWS.

2) OPERATIONAL USE

NONE