

SHUTTLE CRITICAL ITEMS LIST - ORBITER

SUBSYSTEM : EPO&C - WASTE MGMT FMEA NO 05-6VE-2406 -2 REV: 01/29/88

ASSEMBLY : PNL ML31C
 P/N RI : RWR80S1211FR CRIT. FUNC: 1R
 P/N VENDOR: CRIT. HDW: 3
 QUANTITY : 2 VEHICLE 102 103 104
 EFFECTIVITY: X X X
 PHASE(S): PL LO OO X DO LS

PREPARED BY: JWB J BROWN APPROVED BY: RVB REDUNDANCY SCREEN: A-FAIL B-FAIL C-PASS
 DES: M HOVE M HOVE APPROVED BY (NASA):
 REL: J COURSEN J COURSEN REL: Helketter 2-4-88 SSM
 QE: JWB QE: SSA ERIC GAGLIARDI for wastage REL: Daniel D. Polansky 2/4/88

ITEM:
 RESISTOR, CURRENT LIMIT 1.2K OHM VACUUM VENT ISOLATION VALVE INDICATOR
 POWER CIRCUIT. 80V73A127A8 R3 AND R4.

FUNCTION:
 PROVIDES CURRENT LIMITING BETWEEN MAIN BUS A AND B CIRCUIT BREAKERS AND
 THE VALVE POSITION INDICATOR CIRCUITRY.

FAILURE MODE:
 SHORTED END-TO-END

CAUSE(S):
 STRUCTURAL FAILURE, CONTAMINATION, ELECTRICAL STRESS, THERMAL STRESS,
 PROCESSING ANOMALY

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

- (A) LOSS OF OVERCURRENT PROTECTION FOR ASSOCIATED BUS POWER.
- (B,C,D) NO EFFECT. ALL DOWNSTREAM CIRCUITS WILL CONTINUE TO OPERATE
- (E) POSSIBLE LOSS OF CREW/VEHICLE BASED UPON THE FOLLOWING SCENARIO:
 - (1) CURRENT LIMIT RESISTOR SHORTS END-TO-END
 - (2) EVENT INDICATOR SHORTS TO GROUND
 - (3) THE SECOND CURRENT LIMIT RESISTOR SHORTS END-TO-END OR REDUNDANT CB FAILS OPEN
 - (4) VACUUM VENT LINE RUPTURES WITH THE VACUUM VENT ISOLATION VALVE OPEN.

THESE FAILURES RESULTS IN BOTH POWER SOURCES OPENING SO THAT THE VACUUM
 VENT VALVE CANNOT BE CLOSED ALLOWING A DECOMPRESSION OF THE CREW CABIN.
 REDUNDANCY SCREENS A & B FAIL BECAUSE THERE ARE NO TEST MEANS OR ONBOARD
 INDICATIONS TO IDENTIFY THE RESISTOR SHORT.

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DISPOSITION & RATIONALE:

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

(A-D) DISPOSITION AND RATIONALE

REFER TO APPENDIX E, ITEM NO. 3 - RESISTOR, WIRE WOUND.

(B) GROUND TURNAROUND TEST

NONE.

(E) OPERATIONAL USE

NO CREW ACTION REQUIRED FOR FIRST FAILURE.