

SHUTTLE CRITICAL ITEMS LIST - ORBITER

SUBSYSTEM : EPD&C - ARPCS FMEA NO 05-6UC-601 -2 REV:03/21/88

ASSEMBLY : PNL L2A1 CRIT. FUNC: 1R
 P/N RI : ME452-0102-7205 CRIT. HDW: 2
 P/N VENDOR: VEHICLE 102 103 104
 QUANTITY : 2 (TWO), EFFECTIVITY: X X X
 : ONE PER VALVE PHASE(S): PL LO X OO X DO X LS
 :

REDUNDANCY SCREEN: A-PASS B-FAIL C-PASS
 PREPARED BY: APPROVED BY: APPROVED BY (NASA):
 DES J BROWN DES BSM
 REL M HOVE REL *[Signature]* 3-22-88 REL *[Signature]*
 QE J COURSEN QE *[Signature]*
 EPD&C REL *[Signature]*
 CPIC SSM *[Signature]* 6/22/88

ITEM:
 SWITCH, MOMENTARY (2 POLE, 3 POSITION). 31V73A2A1S1, & S2.

FUNCTION:
 PROVIDES CONTROL (ON/OFF AND POLARITY SELECTION) CAPABILITY FOR OPENING AND CLOSING THE CABIN POSITIVE PRESSURE RELIEF ISOLATION VALVE.

FAILURE MODE:
 1) FAILS IN THE "OPEN" POSITION; 2) WITH RELIEF ISOLATION VALVE OPEN-FAILS IN INTERMEDIATE POSITION, FAILS OPEN, SHORT-TO-CASE (GROUND).

CAUSE(S):
 PIECE PART STRUCTURAL FAILURE, CONTAMINATION, MECHANICAL SHOCK, VIBRATION, PROCESSING ANOMALY

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

(A) ONE CABIN RELIEF ISOLATION VALVE IS FAILED IN THE OPEN POSITION.

(B,C,D) FIRST FAILURE - NO EFFECT.

(E) WITH ONE OF THE CABIN RELIEF ISOLATION VALVES FAILED OPEN AND FAILURE OF THE ASSOCIATED CABIN RELIEF VALVE (OPEN) RESULTS IN LOSS OF CABIN PRESSURE AND POSSIBLE LOSS OF CREW/VEHICLE.

SCREEN "B" FAILS SINCE ISOLATION VALVE IS NORMALLY OPEN DURING ENTIRE MISSION - VALVE POSITION IS MONITORED BUT SWITCH IS NOT. FAILURE OF THE SWITCH IS NOT DETECTABLE IN THIS MODE.

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

(A,B,C,D) DISPOSITION AND RATIONALE,
 REFER TO APPENDIX A ITEM NO. 1 - TOGGLE SWITCH.

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(B) GROUND TURNAROUND TEST

OPERATION OF THE CABIN PRESSURE RELIEF ISOLATION VALVE IS CHECKED PRIOR TO EVERY FLIGHT.

(E) OPERATIONAL USE

-CREW RESPONSE
-NONE

-TRAINING
-NONE

-OPERATIONAL CONSIDERATION

-FAILURE IS UNDETECTABLE BY EITHER CREW OR GROUND CONTROLLERS WITHOUT SUBSEQUENT OR PREVIOUS FAILURE.

05-6UC-8