

SHUTTLE CRITICAL ITEMS LIST - ORBITER

SYSTEM : EPD&C - MAIN PROP. FMEA NO 05-6J -2267 -1 REV:11/19/87

ASSEMBLY : AV BAY 4 DIODE BOX CRIT. FUNC: 1R  
P/N RI : JANTXV1N5551 CRIT. HDW: 2  
P/N VENDOR: VEHICLE 102 103 104  
QUANTITY : 1 EFFECTIVITY: X X X  
: ONE PHASE(S): PL LO X OO X DO LS  
: 1 PER LH2 INBOARD FILL/DRAIN VALVE

REDUNDANCY SCREEN: A-PASS B-PASS C-PASS

PREPARED BY: APPROVED BY: APPROVED BY (NASA):  
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ITEM: DIODE, BLOCKING (3 AMP), LH2 INBOARD FILL/DRAIN VALVE, OPEN MANUAL SWITCH COMMAND.

FUNCTION: ISOLATES GROUND OPEN COMMAND FROM MANUAL SWITCH GROUND, CONDUCTS MANUAL SWITCH OPEN COMMAND TO ONE OF TWO OPEN SOLENOID SERIES HDCs AND PROVIDES INHIBIT TO CLOSE SOLENOID HDC FOR CONTROL OF LH2 INBOARD FILL/DRAIN VALVE. 54V76A208A2CR19.

FAILURE MODE: OPEN, FAILS OPEN, FAILS TO CONDUCT

CAUSE(S): PIECE PART STRUCTURAL FAILURE, CONTAMINATION, MECHANICAL SHOCK, VIBRATION, THERMAL STRESS.

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

(A) LOSS OF MANUAL SWITCH COMMAND.

(B) LOSS OF MANUAL CAPABILITY TO OPEN LH2 INBOARD FILL/DRAIN VALVE.  
NOTE - SEQUENCING DURING VACUUM INERT IS BY MANUAL SWITCH COMMAND.

(C,D) FIRST FAILURE - NO EFFECT. POSSIBLE LOSS OF CREW AND VEHICLE AFTER SECOND FAILURE (LH2 FEEDLINE RELIEF SYSTEM FAILS TO RELIEVE) RESULTING IN INABILITY TO RELIEVE LH2 REMAINING IN MANIFOLD. OVERPRESSURIZATION AND RUPTURE OF FEEDLINE MANIFOLD. AFT COMPARTMENT OVERPRESSURIZATION AND FIRE/EXPLOSIVE HAZARD. POSSIBLE LOSS OF CRITICAL ADJACENT COMPONENTS DUE TO CRYO EXPOSURE.

05-6J-440

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SUBSYSTEM :EPD&C - MAIN PROP. FMEA NO 05-6J -2267 -1 REV:11/19/8

DISPOSITION & RATIONALE:

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

(A-D) FOR DISPOSITION AND RATIONALE:

REFER TO APPENDIX F, ITEM NO. 4 - DIODE

(B) GROUND TURNAROUND TEST

COPPER PATH VERIFICATION V4LAB0.121F EVERY FLIGHT

(E) OPERATIONAL USE

DURING OPS 1, CREW CAN OPEN RTLS DUMP VALVES IF TIME PERMITS.

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