

SHUTTLE CRITICAL ITEMS LIST - ORBITER

SUBSYSTEM : EPD&C - MAIN PROP. FMEA NO 05-6J -2276 -1 REV:11/19/87
 ASSEMBLY : APT LCA-1 CRIT. FNJC: 1R
 P/N RI : JANTXVIN5551 CRIT. HDW: 2
 P/N VENDOR: VEHICLE 102 103 104
 QUANTITY : 1 EFFECTIVITY: X X X
 : ONE PHASE(S): PL X LO X OO DO LS
 : 1 PER LH2 INBOARD FILL/DRAIN VALVE

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

PREPARED BY:	APPROVED BY:	APPROVED BY (NASA):
DES <u>JLB</u> J BROWN	DES <u>[Signature]</u>	EPDC SSM <u>[Signature]</u> W.C. STEAR
REL <u>[Signature]</u> F DEFENSOR	REL <u>[Signature]</u> 14/7/87	MPS SSM <u>[Signature]</u>
QE D MASAI	QE <u>[Signature]</u> 12/9/87	EPDC REL <u>[Signature]</u> M.L. [Signature]
		MPS REL <u>[Signature]</u> 12/9/87
		QE <u>[Signature]</u> 12/9/87

ITEM:

DIODE, BLOCKING (3 AMP), LH2 INBOARD FILL/DRAIN VALVE, MDM CLOSE COMMAND.

FUNCTION:

ISOLATES MANUAL SWITCH CLOSE POSITION FROM MDM CLOSE COMMAND, CONDUCTS MDM CLOSE COMMAND TO HDC FOR CONTROL OF POWER TO CLOSE SOLENOID OF LH2 INBOARD FILL/DRAIN VALVE. 54V76A121CR J1(S0).

FAILURE MODE:

OPENS, 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 POWER TO CLOSE SOLENOID DUE TO LOSS OF MDM CLOSE COMMAND.

(B) FIRST FAILURE - NO EFFECT. BISTABLE FEATURE MAINTAINS FILL/DRAIN VALVE IN CLOSE POSITION.

(C,D) FIRST FAILURE - NO EFFECT. POSSIBLE LOSS OF CREW AND VEHICLE AFTER SECOND FAILURE (PREMATURE ACTUATION OF OPEN SOLENOID) RESULTING IN PREMATURE OPENING OF FILL/DRAIN VALVE. DISPLACED GAS MAY ENTER ONE OR MORE SSMEs. POSSIBLE SHUTDOWN OF ONE OR MORE SSMEs.

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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, V41A80.121E EVERY FLIGHT.

(E) OPERATIONAL USE

NO CREW ACTION CAN BE TAKEN.

05-6J-461