

SHUTTLE CRITICAL ITEMS LIST - ORBITER

SUBSYSTEM : EPD&C - MAIN PROP. FMEA NO 05-6J -2269 -1 REV:11/19/87

ASSEMBLY : AFT LCA-1
P/N RI : JANTXV1N5551
P/N VENDOR:
QUANTITY : 1
: ONE
: 1 PER LH2 INBOARD FILL/DRAIN VALVE

VEHICLE	102	103	104
EFFECTIVITY:	X	X	X
PHASE(S):	PL	LO X OO X DO	LS

CRIT. FUNC: 1R
CRIT. HDW: 2

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

PREPARED BY:	APPROVED BY:	APPROVED BY (NASA):
DES <i>JTB</i> J BROWN	DES <i>[Signature]</i>	EPDC SSM <i>[Signature]</i>
REL <i>[Signature]</i> F DEFENSOR	REL <i>[Signature]</i> 12-7-87	MPS SSM <i>[Signature]</i>
QE D MASAI	QE <i>[Signature]</i> 12/7/87	EPDC REL <i>[Signature]</i>
		MPS REL <i>[Signature]</i>
		QE <i>[Signature]</i> 1/18/88

ITEM:
DICDE, BLOCKING (3 AMP), LH2 INBOARD FILL/DRAIN VALVE, OPEN COMMAND B SWITCH BLOCKING.

FUNCTION:
ISOLATES MDM OPEN COMMAND B FROM MANUAL SWITCH GROUND, CONDUCTS MANUAL SWITCH OPEN COMMAND TO HDC FOR CONTROL OF LH2 INBOARD FILL/DRAIN VALVE. 54V76A121CR J3(59).

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 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.

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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, V41ABO.121F EVERY FLIGHT.

(E) OPERATIONAL USE

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

05-6J-449