

SHUTTLE CRITICAL ITEMS LIST - ORBITER

SECTION
ATTACHMENT
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SUBSYSTEM : EPD&C - AUXILIARY PWR FMEA NO 05-6N-2065-IM-2

REV: 02/19

ASSEMBLY : AFT LCA 1,2,3
P/N RI : JANTXV1N5551
P/N VENDOR:
QUANTITY : 18
: EIGHTEEN
:

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

CRIT. FUNC:
CRIT. HDW:

PREPARED BY: DES T NGUYEN REL T KIMURA QE W R HIGGINS

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

APPROVED BY: DES *[Signature]* 2-14-92

APPROVED BY (NASA): SSM *[Signature]* 2-14-92

REL *[Signature]* 2-14-92

QE *[Signature]* 2-14-92

ITEM:

DIODE, ISOLATION (3 AMP) - IMPROVED AUXILIARY POWER UNIT (IAPU) HEATERS GENERATOR/FUEL PUMP 1, 2, AND 3 POWER CIRCUIT

FUNCTION:

~~PREVENT THE DIFFERENT SWITCH COMMANDS FROM BEING TIED TOGETHER.~~ PREVENT⁵ THE DIFFERENT SWITCH COMMANDS FROM BEING TIED TOGETHER.

- 54V76A121 (J3-2), (J3-3), (J3-17), (J3-18), (J3-35), (J3-37);
- 55V76A122 (J3-2), (J3-3), (J3-17), (J3-18), (J3-35), (J3-37);
- 56V76A123 (J3-2), (J3-3), (J3-17), (J3-18), (J3-35), (J3-37)

FAILURE MODE:

SHORT (END TO END)

CAUSE(S):

STRUCTURAL FAILURE (MECHANICAL STRESS, VIBRATION), CONTAMINATION ELECTRICAL STRESS, THERMAL STRESS, PROCESSING ANOMALY

EFFECT(S) ON:

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

(A) DEGRADATION OF REDUNDANCY AGAINST LOSS OF CONTROL BUS ISOLATION.

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

(E) POSSIBLE LOSS OF CREW/VEHICLE AFTER THREE OTHER FAILURES (TWO CONTACT SETS OF SWITCH FAIL SHORT, THERMOSTAT CONTACTS FAIL CLOSED, OVERTEMPERATURE THERMOSTAT CONTACTS FAIL CLOSED) ENERGIZING HEAT CONTINUOUSLY RESULTING IN FUEL DECOMPOSITION AND LINE RUPTURE.

FIRST FAILURE NOT DETECTABLE IN FLIGHT SINCE THE SHORT FAILURE MODE OF THE DIODE DOES NOT AFFECT THE FUNCTIONAL OPERATION OF THE SYSTEM UNLESS THERE ARE ADDITIONAL ASSOCIATED FAILURES.

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SUBSYSTEM : EPD&C - AUXILIARY PWR FMEA NO 05-6N-2065-IM-2 REV: 02/18/

DISPOSITION & RATIONALE:

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

(A-D) DISPOSITION AND RATIONALE

REFER TO APPENDIX F, ITEM NO. 4 - DIODE

(B) TEST

GROUND TURNAROUND TEST - APU 1/2/3 FUEL PUMP AND GAS GENERATOR HEAT
CIRCUIT TESTS PERFORMED DURING ORBITER MAINTENANCE DOWN PERIOD (OMDP).

(E) OPERATIONAL USE

NONE