SHUTTLE CRITICAL ITEMS LIST - ORBITER

SUBSYSTEM :EPD&C - AUXILIARY PWR FMEA NO 05-6N -2020 -1 REV:11/21/87

ASSEMBLY :AFT LCA 1,2,3
P/N RI :JANTXV1N5551
P/N VENDOR:
QUANTITY :12
:TWELVE
:

CRIT. FUNC: 1R
CRIT. HDW: 3

VEHICLE EFFECTIVITY:	102	103	104
	X	X	X

PHASE(S): PL X LO X OO X DO X LS X

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

PREPARED BY:		APPROVED BY:		APPROVED BY (NASA):	
DES	A BAIZ	DES		SSM	
REL	T KIMURA	REL		REL	
QE	J T COURSEN	QE		QE	

ITEM:
DIODE, BLOCKING (3 AMP) - AUXILIARY POWER UNIT (APU) FUEL ISOLATION CONTROL CIRCUIT

FUNCTION:
KEEPS OVERSPEED/UNDERSPEED CIRCUITS FROM BEING TIED TOGETHER. S4V76A121 (J8-11), (J8-13), (J8-15), (J9-43); S5V76A122 (J8-7), (J8-9), (J8-11), (J8-13); S6V76A123 (J9-6), (J9-8), (J9-26), (J9-37)

FAILURE MODE:
OPEN, FAILS TO CONDUCT

CAUSE(S):
STRUCTURAL FAILURE, MECHANICAL STRESS, VIBRATION, ELECTRICAL STRESS, THERMAL STRESS, PROCESSING ANOMALY

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

(A) NO EFFECT - FIRST FAILURE. LOSS OF REDUNDANCY

(B) NO EFFECT - FIRST FAILURE. REQUIRES THREE FAILURES TO LOSE ABILITY TO CLOSE FUEL ISOLATION VALVE.

(C,D) NO EFFECT - FIRST FAILURE

(E) POSSIBLE LOSS OF MISSION, CREW/VEHICLE AFTER THREE OTHER FAILURES (SWITCH FAILS CLOSED, INABILITY TO MECHANICALLY OPEN CIRCUIT BREAKER, FUEL LEAK) DUE TO LOSS OF ABILITY TO ISOLATE A FUEL LEAK (CLOSING ISOLATION VALVES DOES NOT PREVENT OVERSPEED).

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

SHUTTLE CRITICAL ITEMS LIST - ORBITER

SUBSYSTEM :EPD&C - AUXILIARY PWR FMEA NO 05-6N -2030 -1 REV:11/21/87

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) GROUND TURNAROUND TEST
APU 1/2/3 CONTROLLER TEST THROUGH GROUND CONNECTION TESTS PERFORMED EVERY FLOW.

(E) OPERATIONAL USE
NONE