

SHUTTLE CRITICAL ITEMS LIST - ORBITER

SUBSYSTEM : EPD&C - FWD-RCS

FMEA NO 05-6KF-2094 -1

REV: 11/03/87

ASSEMBLY : FWD PCA 1,2,3
 P/N RI : RWR80S1211FR
 P/N VENDOR:
 QUANTITY : 5
 : FIVE
 :

	CRIT. FUNC:	1R		
	CRIT. HDW:	3		
VEHICLE		102	103	104
EFFECTIVITY:		X	X	X
PHASE(S):	PL	LO	X	OO DO LS

PREPARED BY:
 DES D SOVEREIGN
 REL J BEEKMAN
 QE

REDUNDANCY SCREEN: A-PASS B-FAIL C-PASS
 APPROVED BY:
 DES J. R. B... APPROVED BY (NASA):
 REL M... SSM
 QE ... QE

ITEM:

CURRENT LIMIT RESISTOR (1.2 KILO OHM, 2 WATT) - FORWARD RCS REACTION JET DRIVER 1 AND 2 (MANIFOLD 1 THROUGH 5) REMOTE POWER CONTROLLER CONTROL CIRCUIT.

FUNCTION:

CONDUCTS CIRCUIT CURRENT AND PROVIDES CURRENT LIMITING TO THE ASSOCIATED REACTION JET DRIVER FORWARD (RJDF) 1 OR 2 (MANIFOLD 1 THROUGH 5) POWER SUPPLY AND LOGIC REMOTE POWER CONTROLLER (RPC) CONTROL CIRCUIT. 81V76A22A1R79,98. 82V76A23A1R87. 83V76A24A1R75,76.

FAILURE MODE:

OPEN, ELEMENT OPENS, HIGH RESISTANCE.

CAUSE(S):

CONTAMINATION.

EFFECT(S) ON:

(A) SUBSYSTEM (B) INTERFACES (C) MISSION (D) CREW/VEHICLE

(A) LOSS OF REDUNDANT STIMULI TO ASSOCIATED REMOTE POWER CONTROLLER.

(B) NO EFFECT FIRST FAILURE. LOGIC POWER SWITCH PROVIDES REDUNDANT STIMULI TO CONTROL THE REMOTE POWER CONTROLLER.

(C,D) NO EFFECT FIRST FAILURE.

(E) FUNCTIONAL CRITICALITY EFFECT - POSSIBLE LOSS OF CREW/VEHICLE DUE TO INABILITY TO PERFORM EXTERNAL TANK SEPARATION AFTER LOSS OF ALL POWER TO THE REACTION JET DRIVERS AND LOSS OF TWO OTHER THRUSTERS. REQUIRES 3 OTHER FAILURES (OPEN DIODE, 2 RJD BUS FUSES OPEN) BEFORE THE EFFECT IS MANIFESTED. FIRST FAILURE OF STRING NOT DETECTABLE IN FLIGHT DUE TO LACK OF MONITORING MEASUREMENTS.

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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 E, ITEM NO. 3 - RESISTOR, WIRE WOUND.

(B) GROUND TURNAROUND TEST

COMPONENT CHECKED OUT EVERY FLIGHT DURING GROUND TURNAROUND VIA THE GUIDANCE, NAVIGATION, AND CONTROL (GN&C) ORBITER MAINTENANCE REQUIREMENTS AND SPECIFICATIONS DOCUMENT (OMRSD) REQUIREMENTS FOR CHECKING THE PRIMARY AND VERNIER REACTION JET DRIVER POWER. THE TESTING CONSISTS OF CYCLING THRUSTER REACTION JET DRIVER LOGIC AND DRIVER SWITCHES WHILE MONITORING VEHICLE INSTRUMENTATION TO DETERMINE IF COMPONENTS HAVE FAILED.

(E) OPERATIONAL USE

NO ACTION FOR FIRST FAILURE - NOT DETECTABLE. IF ALL JETS ARE LOST PRIOR TO EXTERNAL TANK SEPARATION, A CONTINGENCY AFT-ONLY SEPARATION WILL BE PERFORMED.