

SHUTTLE CRITICAL ITEMS LIST - ORBITER

SUBSYSTEM : EPD&C - AFT-RCS

FMEA NO 05-6KA-2094 -1

REV: 11/03/87

ASSEMBLY : AFT PCA 1,2,3  
 P/N RI : RWR80S1211FR  
 P/N VENDOR:  
 QUANTITY : 8  
 : EIGHT  
 :

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

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

PREPARED BY:  
 DES D SOVEREIGN  
 REL J BEEKMAN  
 QE

APPROVED BY:  
 DES *[Signature]*  
 REL *[Signature]*  
 QE *[Signature]*

APPROVED BY (NASA):  
 SSM *[Signature]*  
 REL *[Signature]*  
 QE *[Signature]*

*[Handwritten notes and signatures]*

ITEM:

CURRENT LIMIT RESISTOR (1.2 KILO OHM, 2 WATT) - LEFT AND RIGHT AFT 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 AFT 1 OR 2 (MANIFOLD 1 THROUGH 5) POWER SUPPLY AND LOGIC REMOTE POWER CONTROLLER CONTROL CIRCUIT.

OV-102 - 54V76A131A1R1,2,3. 55V76A132A1R1,2. 56V76A133A1R1,2,3.  
 OV-103 & SUBS - 54V76A131A1R1,16. 54V76A131A2R28. 55V76A132A2R29,30.  
 56V76A133A1R1,2,3.

FAILURE MODE:

OPEN, ELEMENT OPENS, HIGH RESISTANCE.

CAUSE(S):

STRUCTURAL FAILURE, VIBRATION, MECHANICAL SHOCK.

EFFECT(S) ON:

- (A) SUBSYSTEM (B) INTERFACES (C) MISSION (D) CREW/VEHICLE
- (A) LOSS OF REDUNDANT STIMULI TO ASSOCIATED REMOTE POWER CONTROLLER
- (B) INTERFACE - NO EFFECT FIRST FAILURE. LOGIC POWER SWITCH PROVIDES REDUNDANT STIMULI TO CONTROL REMOTE POWER CONTROLLER.
- (C,D) NO EFFECT.
- (E) FUNCTIONAL CRITICALITY EFFECT - POSSIBLE LOSS OF CREW/VEHICLE DUE TO LOSS OF CAPABILITY TO PERFORM EXTERNAL TANK SEPARATION AND ENTRY MANEUVERS AFTER LOSS OF ALL POWER TO THE REACTION JET DRIVERS. REQUIRES 3 OTHER FAILURES ( OPEN DIODE, 2 REACTION JET DRIVER BUS FUSES FAIL. OPEN) BEFORE EFFECT IS MANIFESTED. FIRST FAILURE OF STRING NOT DETECTABLE IN FLIGHT DUE TO LACK OF MONITORING MEASUREMENTS.

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SUBSYSTEM : EPD&C - APT-RCS

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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 -  
WIRE WOUND RESISTOR.

(B) GROUND TURNAROUND TEST

COMPONENT CHECKED OUT EVERY FLIGHT DURING GROUND TURNAROUND VIA THE GUIDANCE, NAVIGATION, AND CONTROL'S (GN&C) OPERATIONAL 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.