

SHUTTLE CRITICAL ITEMS LIST - ORBITER

SUBSYSTEM : EPD&C - AFT-RCS

FMEA NO 05-6KA-2260 -1

REV: 11/03/87

ASSEMBLY : AFT PCA 1,2,3
 P/N RI : JANTX1N1188R
 P/N VENDOR:
 QUANTITY : 8
 : EIGHT
 :

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

PREPARED BY:
 DES D SOVEREIGN
 REL J BEEKMAN
 QE

REDUNDANCY SCREEN: A-PASS B-FAIL C-PASS
 APPROVED BY:
 DES R. Beeman
 REL Michael C. Howe 11-14-87
 QE 1/11/88

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

EPD&C 5541. [Signature]
 7-2-88

ITEM:

BLOCKING DIODE (35 AMP) STUD MOUNT - LEFT AND RIGHT AFT RCS REACTION JET DRIVER 1 AND 2 (MANIFOLD 1 THROUGH 4) DRIVER POWER CIRCUIT.

FUNCTION:

PROVIDES ISOLATION BETWEEN POWER INPUT CIRCUITS FEEDING THE ASSOCIATED REACTION JET DRIVER AFT 1 OR 2 (MANIFOLD 1 THROUGH 4) RCS DRIVER POWER CIRCUITS.

- | | | | | |
|------------------|---|---------------------|------------------|------------------|
| OV-102 | - | 54V76A131A2CR1,2. | 54V76A131A3CR1. | 55V76A132A2CR1. |
| 55V76A132A3CR1. | | 56V76A133A2CR1,2. | 56V76A133A3CR1. | |
| OV-103 & SUBS | - | 54V76A131A2CR31,32. | 54V76A131A3CR33. | 55V76A132A2CR31. |
| 55V76A132A3CR32. | | 56V76A133A2CR1,2. | 56V76A133A3CR1. | |

FAILURE MODE:

OPEN, FAILS TO CONDUCT, HIGH RESISTANCE, SHORT TO GROUND.

CAUSE(S):

THERMAL STRESS, MECHANICAL SHOCK, VIBRATION.

EFFECT(S) ON:

- (A) SUBSYSTEM (B) INTERFACES (C) MISSION (D) CREW/VEHICLE
- (A) LOSS OF CIRCUIT OUTPUT.
- (B) REDUNDANT POWER LOST TO REACTION JET DRIVER. NO EFFECT - REDUNDANT POWER PERMITS COMPLETION OF FUNCTION.
- (C,D) NO EFFECT.
- (E) FUNCTIONAL CRITICALITY EFFECT - POSSIBLE LOSS OF CREW/VEHICLE DUE TO LOSS OF EXTERNAL TANK SEPARATION OR ENTRY FUNCTIONS FOLLOWING LOSS OF MORE THAN ONE MANIFOLD. REQUIRES 2 OTHER FAILURES (2 REACTION JET DRIVER BUS POWER LOSSES) BEFORE 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 F, ITEM NO. 1 -
DIODE, POWER - STUD MOUNTED.

(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. IF ASSOCIATED THRUSTERS FAIL OFF, USE REDUNDANT THRUSTERS TO MAINTAIN VEHICLE CONTROL.