

SHUTTLE CRITICAL ITEMS LIST - ORBITER

SUBSYSTEM :EPD&C - AFT-RCS FMEA NO 05-6KA-2007 -1 REV:11/03/87

ASSEMBLY :PANEL 014, 015, 016 CRIT. FUNC: 1R  
P/N RI :ME451-0009-1001 CRIT. HDW: 3  
P/N VENDOR: VEHICLE 102 103 104  
QUANTITY :3 EFFECTIVITY: X X X  
:EIGHT PHASE(S): PL LO X OO X DO X LS  
:

REDUNDANCY SCREEN: A-PASS B-FAIL C-PASS  
PREPARED BY: DES D SOVEREIGN APPROVED BY: DES D. S. R. Brown APPROVED BY (NASA): SSM [Signature]  
REL J BECKMAN REL Milagros C. Hernandez 11-14-87 REL [Signature]  
QE QE [Signature] QE [Signature]  
EPD&C 3544 [Signature]  
2000.11.14.87

ITEM:

FUSE (1 AMP) - LEFT AND RIGHT AFT RCS REACTION JET DRIVER 1 AND 2  
(MANIFOLDS 1 THROUGH 5) POWER SUPPLY LOGIC.

FUNCTION:

CONDUCTS CIRCUIT CURRENT AND PROVIDES OVERCURRENT PROTECTION FOR THE  
REACTION JET DRIVERS 1 AND 2, (MANIFOLDS 1 THROUGH 5) POWER SUPPLY AND  
LOGIC SWITCH COMMAND CIRCUIT.  
33V73A14F1,2,5,6. 33V73A15F4,5. 33V73A16F1,2.

FAILURE MODE:

OPEN, INADVERTENTLY OPENS.

CAUSE(S):

CONTAMINATION, CHEMICALLY DEGRADED MATERIAL, STRUCTURAL FAILURE.

EFFECT(S) ON:

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

(A) LOSS OF REDUNDANCY.

(B) RESULTS IN LOSS OF THE AFFECTED MANIFOLD OPERATION WHEN REINITIATING  
THE FUNCTION, SINCE AFTER THE REMOTE POWER CONTROLLER TURN-ON IS ONCE  
ESTABLISHED, IT IS "MAINTAINED ON" FROM THE DRIVER POWER OUTPUT  
CIRCUITRY.

(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  
2 OTHER FAILURES (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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DISPOSITION & RATIONALE:

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

(A-D) FOR DISPOSITION AND RATIONALE REFER TO APPENDIX D, ITEM NO. 2 - FUSE, AXIAL LEAD CARTRIDGE.

(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

LEAVE ASSOCIATED DRIVER POWER SWITCH ON FOR DURATION OF FLIGHT.