

SHUTTLE CRITICAL ITEMS LIST - ORBITER

SUBSYSTEM :EPD&C - AFT-RCS

FMEA NO 05-6KA-2010 -1

REV:11/03/87

ASSEMBLY :PANEL A14
 P/N RI :ME451-0009-1001
 P/N VENDOR:
 QUANTITY :1
 :ONE
 :

	VEHICLE	102	103	104	
CRIT. FUNC:					2
CRIT. HDW:					2
EFFECTIVITY:		X	X	X	
PHASE(S):	PL	X	LO	X	OO X DO LS

PREPARED BY:
 DES D SOVEREIGN
 REL J BEEKMAN
 QE

REDUNDANCY SCREEN: A- B- C-
 APPROVED BY: APPROVED BY (NASA):
 DES D. S. A. Bunn SSM
 REL Man O. C. 11-14-87 REL [Signature]
 QE [Signature] QE [Signature]
 EPD&C SSM [Signature]
 F. S. W. C. S. 11/16/87

ITEM:

FUSE (1 AMP) - LEFT AND RIGHT AFT RCS PODS THRUSTER HEATER CONTROL, —
 MANIFOLD 5.

FUNCTION:

CONDUCTS HEATER CONTROL CIRCUIT CURRENT AND PROVIDES PROTECTION OF
 CIRCUITRY ASSOCIATED WITH MANIFOLD 5. 36V73A14F31.

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 CIRCUIT POWER TO THE ASSOCIATED PANEL SWITCH.

(B) LOSS OF POWER TO THE AFFECTED VERNIER THRUSTERS HEATERS.

(C) POSSIBLE LOSS OF INTERFACE FUNCTION IF LOW TEMPERATURE AFFECTS
 VERNIER THRUSTER OPERATION. POSSIBLE MISSION MODIFICATION OR EARLY
 MISSION TERMINATION DUE TO INABILITY TO USE VERNIER THRUSTERS. PRIMARY
 THRUSTERS WOULD BE REQUIRED, RESULTING IN HIGHER PROPELLANT CONSUMPTION
 RATES.

(D) NO EFFECT.

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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.

(B) GROUND TURNAROUND TEST

COMPONENT CHECKED OUT EVERY FLIGHT DURING GROUND TURNAROUND. THE TESTING CONSISTS OF CYCLING VALVE MANUAL SWITCHES AND/OR SENDING GENERAL PURPOSE COMPUTER (GPC) COMMANDS TO CYCLE VALVES OR HEATERS WHILE MONITORING VEHICLE INSTRUMENTATION TO DETERMINE IF COMPONENTS HAVE FAILED.

(E) OPERATIONAL USE

IF VERNIER THRUSTER CAPABILITY IS LOST DUE TO COLD VERNIER TEMPERATURES, THE PRIMARY THRUSTERS CAN BE USED FOR THE VERNIER FUNCTION. SOME MISSION OBJECTIVES MAY NOT BE MET DUE TO HIGHER PROPELLANT CONSUMPTION RATE ON PRIMARY THRUSTERS. MICROGRAVITY EXPERIMENTS WILL BE DISRUPTED DUE TO HIGHER ACCELERATION RATE OF PRIMARY THRUSTERS.