SHUTTLE CRITICAL ITEMS LIST - ORBITER

SUBSYSTEM :EPD&C - FWD-RCS FMEA NO 05-6KF-2010 -1 REV:11/03/87

ASSEMBLY :PANEL A14
P/N RI :ME451-0018-0500
P/N VENDOR:
QUANTITY :1
:ONE
:

CRIT. FUNC: 2
CRIT. HDW: 2

VEHICLE EFFECTIVITY:	102	103	104
	X	X	X

PHASE(S): PL LO OO X DO LS

REDUNDANCY SCREEN: A- B- C-

PREPARED BY:
DES D SOVEREIGN
REL J BEEKMAN
QE

APPROVED BY:
DES
REL
QE

APPROVED BY (NASA):
SSM
REL
QE

ITEM:
SUBMINIATURE FUSE (5 AMP) - FORWARD RCS THRUSTER HEATER POWER, MANIFOLD 5.

FUNCTION:
CONDUCTS HEATER CURRENT AND PROVIDES CIRCUIT PROTECTION FOR MANIFOLD 5 THRUSTERS. 36V73A14F36.

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 THRUSTER 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. 4 - FUSE, PLUG-IN TYPE.

(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 HIGH PROPELLANT CONSUMPTION RATE ON PRIMARY THRUSTERS. MICROGRAVITY EXPERIMENTS WILL BE DISRUPTED DUE TO HIGHER PROPELLANT CONSUMPTION RATE ON PRIMARY THRUSTERS.