

SHUTTLE CRITICAL ITEMS LIST - ORBITER

SUBSYSTEM : EPD&C - FREON RDTR DPLY FMEA NO 05-6EG-2009 -1 REV:11/03/87

ASSEMBLY : PANEL R13A2	VEHICLE	102	099	103	104
P/N RI : ME451-0009-1001	EFFECTIVITY:	X		X	X
P/N VENDOR:	PHASE(S):	PL	LO	OO	X DO X LS
QUANTITY : 8					
: EIGHT					
:					

PREPARED BY:	J KRAGER	APPROVED BY:	REDUNDANCY SCREEN: A-PASS B-PASS C-PASS
DES	T KIMURA	DES	APPROVED BY (NASA): 11/04/87
REL	W SMITH	REL	SSM <i>[Signature]</i> 11-6-87
QE		QE	<i>[Signature]</i> 11-6-87

ITEM:
 FUSE, 1 AMP - PORT AND STARBOARD RADIATOR DEPLOYMENT/STOW ACTUATOR CONTROL CIRCUIT

FUNCTION:
 CONDUCTS CONTROL CIRCUIT CURRENT AND PROVIDES CIRCUIT PROTECTION FOR THE PORT AND STARBOARD RADIATOR DEPLOYMENT AND STOWAGE ACTUATOR DRIVE CONTROL CIRCUITRY. 32V73A13A2F2, F3, F10, F13, F14, F22, F29, F36

FAILURE MODE:
 FAIL OPEN

CAUSE(S):
 CONTAMINATION, THERMAL STRESS, MECHANICAL SHOCK, VIBRATION

EFFECT(S) ON:
 (A) SUBSYSTEM (B) INTERFACES (C) MISSION (D) CREW/VEHICLE (E) FUNCTIONAL CRITICALITY:

- (A) LOSS OF VOLTAGE TO AFFECTED CONTROL CIRCUIT
- (B) LOSS OF INTERFACE REDUNDANCY - THE AFFECTED SWITCH CONTROL CIRCUIT IS DISABLED. NO EFFECT. THE REDUNDANT CONTROL AND MOTOR STRING CAN COMPLETE THE FUNCTION BUT IN APPROXIMATELY TWICE THE TIME. FIRST FAILURE NO EFFECT. SECOND FAILURE OCCURRING IN REDUNDANT STRING PRECLUDES NORMAL RADIATOR STOWING. POSSIBLE INTERFERENCE WITH ANY LARGE PAYLOAD COULD PREVENT PAYLOAD BAY DOOR (PLBD) FROM CLOSING.
- (C,D) NO EFFECT - FIRST FAILURE
- (E) POSSIBLE VEHICLE LOSS AFTER SECOND FAILURE (FAIL OPEN OF FUSE IN REDUNDANT CIRCUIT) AND INABILITY TO STOW RADIATORS AND CLOSE PLBD.

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DISPOSITION & RATIONALE:

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

(A-D) DISPOSITION AND RATIONALE

REFER TO APPENDIX D, ITEM NO. 2 - FUSE, AXIAL LEAD CARTRIDGE

(B) GROUND TURNAROUND TEST

"DEPLOY STBD RADIATOR - MTR 1 AND 2", VERIFIES FUNCTIONAL OPERATION AND MONITORING FOR THE DEPLOYMENT OF THE STARBOARD RADIATOR, MOTORS 1 AND 2. FOR STARBOARD RADIATOR OPERATION ONLY, REMOVE MID MCA 1 AC-1 AND MID MCA 4 AC-3 POWER (OPEN CIRCUIT BREAKER) TO PREVENT INADVERTENT PORT RADIATOR MOVEMENT. "DEPLOY PORT RADIATOR - MTR 1 AND 2", VERIFIES FUNCTIONAL OPERATION AND MONITORING FOR THE DEPLOYMENT OF THE PORT RADIATOR, MOTORS 1 AND 2. FOR PORT RADIATOR OPERATION ONLY, REMOVE MID MCA 2 AC-3 AND MID MCA 3 AC-1 POWER (OPEN CIRCUIT BREAKER) TO PREVENT INADVERTENT STARBOARD RADIATOR MOVEMENT.

ALL OF THE ABOVE TESTS ARE PERFORMED PRIOR TO EACH FLIGHT FOR WHICH PLANNED RADIATOR DEPLOY/STOW FUNCTION IS REQUIRED OR AFTER LEAD REPLACEMENT.

(E) OPERATIONAL USE

EXTRAVEHICULAR ACTIVITY (EVA) CAPABILITY EXISTS TO STOW RADIATOR FOLLOWING SECOND FAILURE.