

SHUTTLE CRITICAL ITEMS LIST - ORBITER

SUBSYSTEM :EPD&C - AFT-RCS FMEA NO 05-6KA-2086 -1 REV:11/03/87

ASSEMBLY :AFT MCA 1,2	ABORT,	CRIT. FUNC:	3
P/N RI :RLR07C512GR	RTLS,TAL	CRIT. HDW:	3
P/N VENDOR:	VEHICLE	102	103 104
QUANTITY :16	EFFECTIVITY:	X	X X
:SIXTEEN	PHASE(S):	PL X LO X OO X DO X LS X	

PREPARED BY:	D SOVEREIGN	REDUNDANCY SCREEN:	A-	B-	C-
DES	J BEEKMAN	APPROVED BY:	APPROVED BY (NASA):		
REL		DES	<i>[Signature]</i>		
QE		REL	<i>[Signature]</i>		
		QE	<i>[Signature]</i>		

ITEM:

ISOLATION RESISTOR (5.1 KILO OHM, 1/4 WATT) - LEFT AND RIGHT AFT RCS
 FUEL AND OXIDIZER TANK ISOLATION VALVES 3/4/5 A AND B
 (LOGIC/POSITION INDICATION MEASUREMENT CIRCUIT).

FUNCTION:

PROVIDES ISOLATION BETWEEN AN MULTIPLEXER-DEMUTIPLEXER (MDM) POSITION INDICATION INPUT AND THE FUEL AND OXIDIZER TANK ISOLATION VALVE 3/4/5 A AND B (LOGIC/POSITION INDICATION MEASUREMENT CIRCUIT). UNIQUE TO INTACT ABORT.

- OV-102 - 54V76A114A2R9,10,11,12,15,16,17,18.
- 55V76A115A1R1,2,3,4,11,12,13,14.
- OV-103 & SUBS - 54V76A114A1R29,30,32,33,38. 54V76A114A2R12,21,22.
- 55V76A115A1R23,24. 55V76A115A2R1,2,11,22,27,28.

FAILURE MODE:

OPEN

CAUSE(S):

STRUCTURAL FAILURE, CONTAMINATION.

EFFECT(S) ON:

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

(A) LOSS OF FUNCTION.

(B) LOSS OR DEGRADATION OF POSITION INDICATION MEASUREMENTS.

(C) NO EFFECT

(D) NO EFFECT FOR NOMINAL MISSION - CRITICALITY INCREASED TO 1/1 DURING RTLS AND TAL ABORT. POSITION INDICATION MEASUREMENT UTILIZED BY MCA OPTIMIZATION SOFTWARE IN "LANDING HEAVY" CONDITION. RESULTS IN LOSS OF 12 AFT RCS THRUSTERS BEING USED DURING THE OMS DUMP.

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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 E, ITEM NO. 2 -
FIXED FILM RESISTOR.

(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

NO ACTION POSSIBLE. NO ACTION REQUIRED FROM A NOMINAL MISSION.