

SHUTTLE CRITICAL ITEMS LIST - ORBITER

SUBSYSTEM : EPD&C - AFT-RCS FMEA NO 05-6KA-2081 -1 REV: 11/03/87

ASSEMBLY : AFT MCA 3	ABORT,	CRIT. FUNC:	3
P/N RI : RLR07C512GR	RTLS, TAL	CRIT. HDW:	3
P/N VENDOR: RLR07C123GR	VEHICLE	102	103 104
QUANTITY : 8	EFFECTIVITY:	X	X X
: FOUR SETS OF TWO	PHASE(S):	PL X	LO X OO X DO X LS X

PREPARED BY:	DES D SOVEREIGN	REL J BEEKMAN	QE	REDUNDANCY SCREEN:	A-	B-	C-
APPROVED BY:	DES <i>J. S. R. B...</i>	REL <i>Michael P. L. ... 11-14-87</i>	QE <i>...</i>	APPROVED BY (NASA):	SSM <i>...</i>	REL <i>...</i>	QE <i>...</i>

edit use functional testing for u.c. circuit

ITEM:
ISOLATION RESISTOR (5.1 KILO OHM, 1/4 WATT AND 12 KILO OHM, 1/4 WATT) - LEFT AND RIGHT AFT RCS FUEL AND OXIDIZER TANK ISOLATION VALVES 1/2 (LOGIC / POSITION INDICATION MEASUREMENT CIRCUIT).

FUNCTION:
PROVIDES ISOLATION BETWEEN AN MULTIPLEXER-DEMULTIPLEXER (MDM) POSITION INDICATION INPUT AND THE AFT LEFT AND RIGHT FUEL AND OXIDIZER TANK ISOLATION VALVE 1/2 END OF TRAVEL, LIMIT SWITCH CONTROL CIRCUITS. UNIQUE TO INTACT ABORT.

OV-102 - 56V76A116A1R6,7,10,11,17,18,21,22
OV-103 & SUBS - 56V76A116A1R10,11,14,15,22,23,26,27

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. MEASUREMENTS UTILIZED BY MCA OPTIMIZATION SOFTWARE IN "LANDING HEAVY" CONDITION. WILL ALSO RESULT IN CONTROL PROBLEMS DURING ENTRY. RESULTS IN LOSS OF 12 AFT RCS THRUSTERS BEING USED DURING THE OMS DUMP. ALL OTHER MISSION PHASES ARE CRITICALITY 3/3.

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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.