

SHUTTLE CRITICAL ITEMS LIST - ORBITER

SUBSYSTEM : EPD&C - P/L RETENTION FMEA NO 05-61E -2002 -1 REV: 06/26/88

ASSEMBLY : PNL A6A1		CRIT. FUNC: 1R
P/N RI : RLR42C122GM		CRIT. HDW: 2
P/N VENDOR:-	VEHICLE	102 103 104
QUANTITY : 10	EFFECTIVITY:	X X X
: TEN	PHASE(S):	PL LO OO DO X LS
:		

	REDUNDANCY SCREEN:	A-PASS	B-PASS	C-PASS
PREPARED BY:	APPROVED BY:	APPROVED BY (NASA):		
DES C ODEGARD	DES <i>C. Odegard</i>	SSM <i>[Signature]</i>		
REL H YEW	REL <i>[Signature]</i>	REL <i>[Signature]</i>		
QE J COURSEN	QE <i>[Signature]</i>	QE <i>[Signature]</i>		

EPD&C SSM *[Signature]* 7/19/88
 EPD&C REL *[Signature]* 7/22/88

ITEM: RESISTOR, LIMIT, 1.2K OHM, LATCH/RELEASE CONTROL POWER, PAYLOAD RETENTION

FUNCTION:
 PROVIDES CURRENT LIMITING TO THE CONTROL CIRCUIT FOR THREE OF THE PAYLOAD RETENTION MECHANISM ACTUATOR DRIVE MOTORS. LOCATED BETWEEN CONTROL BUS AND RELEASE/LATCH SWITCH. 36V73A6A1A1R7 THRU A1R11 AND A2R7 THRU A2R11

FAILURE MODE:
 FAILS OPEN

CAUSE(S):
 STRUCTURAL FAILURE, MECHANICAL STRESS, VIBRATION, ELECTRICAL STRESS, THERMAL STRESS, PROCESSING ANOMALY

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

(A) FIRST FAILURE - LOSS OF CONTROL POWER TO ASSOCIATED ACTUATOR DRIVE MOTORS RESULTING IN LOSS OF REDUNDANCY. REMAINING ACTUATOR DRIVE MOTORS WILL COMPLETE MISSION, BUT AT INCREASED OPERATING TIME.

(B) FIRST FAILURE - NONE

(C) FIRST FAILURE - NO EFFECT. SECOND FAILURE (FAILURE AT REDUNDANT SYSTEM) - LOSS OF CAPABILITY TO RELEASE OR LATCH PAYLOAD RESULTS IN LOSS OF MISSION.

(D) FIRST FAILURE - NO EFFECT. SECOND FAILURE (FAILURE AT REDUNDANT SYSTEM) - IF FAILURE OCCURS DURING LATCH MID TRAVEL, THE INCOMPLETE LATCHING CYCLE (e.g., HALF CLOSED OR HALF OPEN) COULD CAUSE THE PAYLOAD TO BE LEFT UNSECURED RESULTING IN VEHICLE DAMAGE AND POSSIBLE LOSS OF CREW/VEHICLE UPON RE-ENTRY.

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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 E, ITEM NO. 1 - RESISTOR

(B) GROUND TURNAROUND TEST

VERIFY RESISTOR CONDUCTIVITY BY CHECKING OUT RELEASE/LATCH COMMAND MODE AT THE ASSOCIATED TOGGLE SWITCH WITH THE FOLLOWING POWER ON : MAIN A AND B, LOGIC POWER, AB1, BC1 AND AC BUS.

(E) OPERATIONAL USE

IF FAILURE OCCURS DURING LATCH/RELEASE PROCESS FOR LIGHTWEIGHT OR MIDDLEWEIGHT LONGERON LATCHES, AN EVA CAN BE PERFORMED TO MANUALLY DRIVE THE LATCHES.