SHUTTLE CRITICAL ITEMS LIST - ORBITER

SUBSYSTEM :ELECT POWER DIST & CONT FMEA NO 05-6 -2705 -1 REV:05/03/88

ASSEMBLY :PANEL MA73C
P/N RI :RWR80S1211FR
P/N VENDOR:
QUANTITY :2
:TWO
:

CRIT.FUNC: 1R
CRIT. HDW: 2

VEHICLE	102	103	104
EFFECTIVITY:	X	X	X

PHASE(S): PL LO X OO DO X LS

REDUNDANCY SCREEN: A-PASS B-PASS C-PASS

PREPARED BY:			APPROVED BY:	APPROVED BY (NASA):
DES	R	PHILLIPS	DES	SSM
REL	M	HOVE	REL	REL
QE	J	COURSEN	QE	QE

ITEM:
RESISTOR, CURRENT LIMIT, WIRE WOUND, 1.2K OHM - MID MCA 1 AND 3 DC BUS B CONTROL CIRCUIT

FUNCTION:
PROVIDES CURRENT LIMITING/CIRCUIT PROTECTION FOR THE CONTROL CIRCUIT FOR DC BUS B RELAY LOGIC POWER INPUTS TO MIDBODY MOTOR CONTROL ASSEMBLIES #1 AND #3 FOR LEFT VENT DOOR 5 MOTOR 2 AND RIGHT VENT DOOR 4/7 MOTOR 2, RESPECTIVELY. 85V73A129A2R2 AND A2R4

FAILURE MODE:
OPEN

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

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

(A) LOSS OF ONE OF TWO MAIN DC BUS RELAY LOGIC POWER INPUTS TO THE ASSOCIATED MID MOTOR CONTROL ASSEMBLY.

(B) LOSS OF INTERFACE REDUNDANCY. NO EFFECT FOR FIRST FAILURE - THE REDUNDANT MOTOR CONTROLLED THROUGH A DIFFERENT RESISTOR COMPLETES THE FUNCTION.

(C,D) FIRST FAILURE - NO EFFECT.

(E) POSSIBLE LOSS OF CREW/VEHICLE AFTER SECOND FAILURE (LOSS OF REDUNDANT MOTOR OR POWER/CONTROL CIRCUIT) DUE TO INABILITY TO OPEN VENT DOOR DURING DESCENT (RESULTS IN VEHICLE STRUCTURAL DAMAGE DUE TO PRESSURE DIFFERENTIALS). LEFT AND RIGHT VENT DOORS ARE NOT CONSIDERED TO BE REDUNDANT TO EACH OTHER. "B" SCREEN PASSES SINCE THE FAILURE CAN BE DETECTED BY CREW MONITORING MECHANISM OPERATION TIMES OR BY LOSS OF MCA OPERATIONAL STATUS MEASUREMENTS AVAILABLE TO GROUND PERSONNEL.

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

(A,B,C,D) DISPOSITION AND RATIONALE
REFER TO APPENDIX E. ITEM NO. 3 - RESISTOR, WIRE WOUND.

(B) GROUND TURNAROUND TEST
VERIFY MCA OPERATIONAL STATUS INDICATORS ARE "ON" (ALL MOTOR CONTROL RELAYS RESET) DURING NO OPERATION OF THE AC MOTOR MECHANISMS. TEST IS PERFORMED FOR ALL FLIGHTS.

(E) OPERATIONAL USE
FOR LOSS OF REDUNDANT VENT DOOR OPEN CAPABILITY, OPEN VENT DOORS PRIOR TO ENTRY.