FAILURE MODES EFFECTS ANALYSIS (FMEA) – CIL HARDWARE
NUMBER: 05-6S-BRES5 -X

SUBSYSTEM NAME: EPD&C - DPS&C
REVISION: 0 12/02/87

PART DATA

	PART NAME VENDOR NAME	PART NUMBER VENDOR NUMBER
SRU	: RESISTOR	RWR80S1211FR

EXTENDED DESCRIPTION OF PART UNDER ANALYSIS:
RESISTOR, POWER, WIREWOUND, 1.2K OHMS +/- 2%, 2 WATTS, OPERATIONAL AFT (OA) MULTIPLEXER DEMULTIPLEXER (MDM).

REFERENCE DESIGNATORS: 33V73A17A13R1
33V73A17A13R2
33V73A17A7R3

QUANTITY OF LIKE ITEMS: 3
THREE

FUNCTION:
PROVIDES OVERLOAD PROTECTION FOR CONTROL BUSES POWERING OA1-3 MDM'S.

FAILURE MODES EFFECTS ANALYSIS FMEA – CIL FAILURE MODE
NUMBER: 05-6S-BRES5- 01

REVISION#: 1 04/12/96

SUBSYSTEM NAME: EPD&C - DPS&C
LRU:
ITEM NAME: RESISTOR

CRITICALITY OF THIS FAILURE MODE: 1R3

FAILURE MODE:
OPENS, OPEN FILAMENT (WINDING)

MISSION PHASE:
LO LIFT-OFF
OO ON-ORBIT
DO DE-ORBIT

VEHICLE/PAYLOAD/KIT EFFECTIVITY:
102 COLUMBIA
103 DISCOVERY
104 ATLANTIS
105 ENDEAVOUR

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

CRITICALITY 1/1 DURING INTACT ABORT ONLY? NO

REDUNDANCY SCREEN
A) PASS
B) FAIL
C) PASS

PASS/FAIL RATIONALE:
A)

B)
FAILS REDUNDANCY SCREEN B BECAUSE ONLY ONE OF THREE OF THE REDUNDANT ELEMENTS ARE INSTRUMENTED.

C)

- FAILURE EFFECTS -

(A) SUBSYSTEM:
LOSS OF ONE OF TWO REDUNDANT PATHS TO CONTROL OA MDM POWER.

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(B) INTERFACING SUBSYSTEM(S):
NO EFFECT ON FIRST FAILURE. ON SECOND FAILURE LOSS OF ABILITY TO DETECT FAILURES IN CRITICAL VEHICLE FUNCTIONS (TEMPERATURE, PRESSURE, SPEED).

(C) MISSION:
NO EFFECT FIRST FAILURE. MISSION TERMINATION DECISION MAY BE REQUIRED SINCE SECOND FAILURE RESULTS IN LOSS OF ONE OA MDM.

(D) CREW, VEHICLE, AND ELEMENT(S):
NO EFFECT FIRST FAILURE.

(E) FUNCTIONAL CRITICALITY EFFECTS:
CRITICALITY 1R3 BECAUSE OF POSSIBLE LOSS OF CREW/VEHICLE AFTER THREE FAILURES. LOSS OF TWO LIKE RESISTORS CAUSES LOSS OF ONE OA MDM IN COMBINATION WITH SUBSEQUENT FAILURE OF CRITICAL VEHICLE FUNCTIONS DUE TO INABILITY TO MONITOR CRITICAL FUNCTIONS (E.G. FUEL CELL MONITORING) AND TO TAKE APPROPRIATE CORRECTIVE ACTION. REFERENCE FMEA 05-5-B03-7-1 & 2. (LOSS OF ALL THREE RESISTORS CAUSES LOSS OF ALL 3 OA MDM'S).

-DISPOSITION RATIONALE-

(A) DESIGN:
FOR DISPOSITION AND RATIONALE, REFER TO APPENDIX E, ITEM NO. 3 - RESISTOR.

(B) TEST:
FOR DISPOSITION AND RATIONALE, REFER TO APPENDIX E, ITEM NO. 3 - RESISTOR.

GROUND TURNAROUND TEST: ALL TURNAROUND CHECKOUT TESTING IS ACCOMPLISHED IN ACCORDANCE WITH OMRSD.

(C) INSPECTION:

FOR DISPOSITION AND RATIONALE, REFER TO APPENDIX E, ITEM NO. 3 - RESISTOR.

(D) FAILURE HISTORY:

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CURRENT DATA ON TEST FAILURES, FLIGHT FAILURES, UNEXPLAINED ANOMALIES, AND OTHER FAILURES EXPERIENCED DURING GROUND PROCESSING ACTIVITY CAN BE FOUND IN THE PRACA DATABASE

FOR DISPOSITION AND RATIONALE, REFER TO APPENDIX E, ITEM NO. 3 - RESISTOR.

(E) OPERATIONAL USE:
NONE.

- APPROVALS -

EDITORIALLY APPROVED	: RI	:
EDITORIALLY APPROVED	: JSC	:
TECHNICAL APPROVAL	: VIA APPROVAL FORM	: 96-CIL-013_05-6S