

FAILURE MODES EFFECTS ANALYSIS (FMEA) - CIL HARDWARE
 NUMBER: 05-6S-BRPC6 -X

SUBSYSTEM NAME: EPD&C-DATA PROC, SOFTWARE, & COMPUTERS (05-5)
 REVISION: 2 04/16/96

PART DATA

	PART NAME VENDOR NAME	PART NUMBER VENDOR NUMBER
LRU	: AFT PCA 4, 5, 6	V070-785280
SRU	: CONTROLLER, REMOTE POWER	MC450-0017-2030

EXTENDED DESCRIPTION OF PART UNDER ANALYSIS:
 REMOTE POWER CONTROLLER (RPC), 3 AMP, ENGINE INTERFACE UNIT (EIU)

REFERENCE DESIGNATORS: 54V76A134RPC8
 54V76A134RPC9
 55V76A135RPC8
 55V76A135RPC9
 56V76A136RPC8
 56V76A136RPC9

QUANTITY OF LIKE ITEMS: 6
 TWO RPC'S PER EIU

FUNCTION:
 PROVIDES REMOTE CONTROL OF POWER APPLICATION TO THE EIU POWER SUPPLY.
 THE MAIN BUS VOLTAGE (28 VOLTS) IS APPLIED TO THE EIU WHEN THE RPC IS
 ENERGIZED BY THE SWITCH.

FAILURE MODES EFFECTS ANALYSIS FMEA - CIL FAILURE MODE

NUMBER: 05-6S-BRPC6-01

REVISION#: 2 04/16/96

SUBSYSTEM NAME: EPD&C-DATA PROC, SOFTWARE, & COMPUTERS (05-5)

LRU: AFT PCA 4, 5, 6

CRITICALITY OF THIS

ITEM NAME: CONTROLLER, REMOTE POWER

FAILURE MODE: 1R2

FAILURE MODE:

LOSS OF OUTPUT, FAILS TO CONDUCT, FAILS TO TURN "ON".

MISSION PHASE:

PL PRE-LAUNCH

LO LIFT-OFF

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

CAUSE:

PIECE PART FAILURE, CONTAMINATION, VIBRATION, MECHANICAL SHOCK, PROCESSING ANOMALY, THERMAL STRESS.

CRITICALITY 1/1 DURING INTACT ABORT ONLY? NO

REDUNDANCY SCREEN	A) PASS
	B) FAIL
	C) PASS

PASS/FAIL RATIONALE:

A)

B)

FAILS SCREEN "B" BECAUSE OUTPUT OF RPC'S ARE NOT INSTRUMENTED.

C)

- FAILURE EFFECTS -

(A) SUBSYSTEM:

LOSS OF ONE OF TWO POWER SOURCES TO ONE EIU. LOSS OF THE 2 RPC'S TO THE SAME EIU CAUSE LOSS OF THAT EIU.

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(B) INTERFACING SUBSYSTEM(S):

NO EFFECT FIRST FAILURE. SUBSEQUENT RPC FAILURE TO THE SAME EIU CAUSES LOSS OF COMMAND CAPABILITY TO ITS ASSOCIATED MAIN ENGINE.

(C) MISSION:

NO EFFECT FIRST FAILURE. SUBSEQUENT RPC FAILURE TO THE SAME EIU CAUSES POSSIBLE ABORT FOR LOSS OF A SINGLE EIU WHILE IN THE THRUST BUCKET.

(D) CREW, VEHICLE, AND ELEMENT(S):

NO EFFECT FIRST FAILURE.

(E) FUNCTIONAL CRITICALITY EFFECTS:

CRITICALITY 1R2 DUE TO TWO RPC FAILURES TO THE SAME EIU WHICH CAUSES LOSS OF A SINGLE EIU IN BETWEEN FINE COUNT AND COMMAND SHUT DOWN (M. DO) AND MAY CAUSE LOSS OF CREW/VEHICLE. MULTIPLE LOSS OF EIU'S MAY CAUSE LOSS OF CREW AND VEHICLE DURING ASCENT.

-DISPOSITION RATIONALE-

(A) DESIGN:

REFER TO APPENDIX B, ITEM NO. 2 - REMOTE POWER CONTROLLER (RPC).

(B) TEST:

REFER TO APPENDIX B, ITEM NO. 2 - REMOTE POWER CONTROLLER (RPC).

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

(C) INSPECTION:

REFER TO APPENDIX B, ITEM NO. 2 - REMOTE POWER CONTROLLER (RPC).

(D) FAILURE HISTORY:

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

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(E) OPERATIONAL USE:

IF LOSS OF OUTPUT OF AN EIU IS DETECTED IN TIME, THE CREW WILL MANUALLY SHUT DOWN THE ENGINE.

- APPROVALS -

EDITORIALLY APPROVED
EDITORIALLY APPROVED
TECHNICAL APPROVAL

: RI
: JSC
: VIA APPROVAL FORM

: *Baughman*
: *Tom Liberty 5-2-96*
: 96-CIL-013 05-6S