FAILURE MODES EFFECTS ANALYSIS (FMEA) -- NON-CIL HARDWARE
NUMBER:05-6QA-BRPC4 -X

SUBSYSTEM NAME: EPD&C - MEDS

REVISION: 0 01/19/95

PART DATA

	PART NAME VENDOR NAME	PART NUMBER VENDOR NUMBER
LRU	: FWD PCA 1	VO70-763320
LRU	: FWD PCA 2	VO70-763340
LRU	: FWD PCA 3	VO70-763360
SRU	: CONTROLLER, REMOTE POWER	MC450-0017-X050

EXTENDED DESCRIPTION OF PART UNDER ANALYSIS:
REMOTE POWER CONTROLLER (RPC), 5 AMPS

REFERENCE DESIGNATORS:
81V76A22RPC11
82V76A23RPC10
83V76A24RPC11
83V76A24RPC41

QUANTITY OF LIKE ITEMS: 4
FOUR

FUNCTION:
PROVIDES REMOTE CONTROL FOR APPLICATION OF MAIN DC BUS VOLTAGE 28 VDC TO THE "CRT" MULTIFUNCTION DISPLAY UNIT (MDU) POWER SUPPLY.

REFERENCE DOCUMENTS:
VS70-730182D
SSD90D0009B, CP#1
MC409-0185D, AMENDMENT E01
SSD92D0643D, CP#2

FAILURE MODES EFFECTS ANALYSIS FMEA – NON-CIL FAILURE MODE
NUMBER: 05-6QA-BRPC4-01

REVISION#: 1 04/26/98

SUBSYSTEM NAME: EPD&C - MEDS
LRU: FWD PCA 1, 2, 3
ITEM NAME: CONTROLLER, REMOTE POWER

CRITICALITY OF THIS FAILURE MODE: 1R3

FUNCTIONAL CRITICALITY/ REQUIRED FAULT TOLERANCE/ACHIEVED FAULT TOLERANCE:1R/2/3

FAILURE MODE:
LOSS OF OUTPUT, FAILS TO CONDUCT, FAILS TO TURN "ON"

MISSION PHASE:

PL	PRE-LAUNCH
LO	LIFT-OFF
OO	ON-ORBIT
DO	DE-ORBIT
LS	LANDING/SAFING

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

CRITICALITY 1R2 DURING INTACT ABORT ONLY (AVIONICS ONLY)? NO

REDUNDANCY SCREEN

A) PASS
B) PASS
C) PASS

PASS/FAIL RATIONALE:
A)

B)

C)

METHOD OF FAULT DETECTION:

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VISUAL; LOSS OF DISPLAY

MASTER MEAS. LIST NUMBERS: NONE

CORRECTING ACTION: MANUAL

CORRECTING ACTION DESCRIPTION:
CREW CAN UTILIZE OTHER MDU'S FOR DISPLAY OF NECESSARY DATA.

REMARKS/RECOMMENDATIONS:
NONE

- FAILURE EFFECTS -

(A) SUBSYSTEM:
POWER TO THE MDU IS INTERRUPTED.

(B) INTERFACING SUBSYSTEM(S):
NO EFFECT FIRST FAILURE

(C) MISSION:
NO EFFECT FIRST FAILURE

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

(E) FUNCTIONAL CRITICALITY EFFECTS:
POSSIBLE LOSS OF CREW/VEHICLE AFTER FOUR FAILURES BECAUSE OF INABILITY TO MONITOR OR RESPOND TO SYSTEM FAILURES:

FIRST FAILURE	SECOND FAILURE	THIRD FAILURE	FOURTH FAILURE
RPC (CDR1 MDU) FAILS TO CONDUCT	LOSS OF IDP2	LOSS OF EITHER MFD1, CRT3, OR PLT2 MDU	LOSS OF MN A

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RPC (CDR1 MDU) FAILS TO CONDUCT	LOSS OF IDP1	LOSS OF EITHER MFD2, CRT3, OR PLT2 MDU	LOSS OF MN B
FIRST FAILURE	**SECOND FAILURE**	**THIRD FAILURE**	**FOURTH FAILURE**
RPC (CDR1 MDU) FAILS TO CONDUCT	LOSS OF IDP3	LOSS OF EITHER MFD2, CRT1 OR PLT1 MDU	LOSS OF MN B
RPC (CDR2 MDU) FAILS TO CONDUCT	LOSS OF IDP3	LOSS OF EITHER MFD1, CRT2, OR PLT2 MDU	LOSS OF MN A
RPC (CDR2 MDU) FAILS TO CONDUCT	LOSS OF IDP1	LOSS OF EITHER MFD1, CRT2, OR PLT1 MDU	LOSS OF MN C
RPC (CDR2 MDU) FAILS TO CONDUCT	LOSS OF IDP2	LOSS OF EITHER CRT1, MFD2, OR PLT1 MDU	LOSS OF MN C
RPC (MFD1 MDU) FAILS TO CONDUCT	LOSS OF IDP2	LOSS OF EITHER CDR1, CRT3, OR PLT1 MDU	LOSS OF MN A
RPC (MFD1 MDU) FAILS TO CONDUCT	LOSS OF IDP3	LOSS OF EITHER CDR2, CRT2, OR PLT2 MDU	LOSS OF MN A
RPC (MFD1 MDU) FAILS TO CONDUCT	LOSS OF IDP1	LOSS OF EITHER CDR2, CRT2, OR PLT1 MDU	LOSS OF MN C
RPC (MFD2 MDU) FAILS TO CONDUCT	LOSS OF IDP3	LOSS OF EITHER CDR1, CRT1 OR PLT1 MDU	LOSS OF MN B
RPC (MFD2 MDU) FAILS TO CONDUCT	LOSS OF IDP1	LOSS OF EITHER CRT3, CDR1, OR PLT2 MDU	LOSS OF MN B
RPC (MFD2 MDU) FAILS TO CONDUCT	LOSS OF IDP2	LOSS OF EITHER CDR2, CRT1, OR PLT1 MDU	LOSS OF MN C
RPC (PLT1 MDU) FAILS TO CONDUCT	LOSS OF IDP2	LOSS OF EITHER MFD2, CRT1, OR CDR2 MDU	LOSS OF MN C
RPC (PLT1 MDU) FAILS TO CONDUCT	LOSS OF IDP3	LOSS OF EITHER MFD2, CRT1 OR CDR1 MDU	LOSS OF MN B
RPC (PLT1 MDU) FAILS TO CONDUCT	LOSS OF IDP1	LOSS OF EITHER MFD1, CRT2, OR CDR2 MDU	LOSS OF MN C
CB (PLT2 MDU) FAILS OPEN	LOSS OF IDP3	LOSS OF EITHER MFD1, CRT2, OR CDR2 MDU	LOSS OF MN A

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CB (PLT2 MDU) FAILS OPEN	LOSS OF IDP1	LOSS OF EITHER MFD2, CRT3, OR CDR1 MDU	LOSS OF MN B
FIRST FAILURE	**SECOND FAILURE**	**THIRD FAILURE**	**FOURTH FAILURE**
CB (PLT2 MDU) FAILS OPEN	LOSS OF IDP2	LOSS OF EITHER MFD1, CDR1, OR CRT3 MDU	LOSS OF MN A

POSSIBLE LOSS OF CREW/VEHICLE DUE TO INADEQUATE DISPLAYS TO PROVIDE THE CREW WITH VISIBILITY OF VEHICLE STATUS DURING CRITICAL FLIGHT PHASES. INADEQUATE DISPLAYS WILL HINDER THE CREW'S ABILITY TO RESPOND TO SYSTEM FAILURES AND/OR LAND THE VEHICLE SAFELY.

NOTE: HEAD UP DISPLAY IS NOT A USABLE SOURCE OF INFORMATION PRIOR TO MAJOR MODE 305.

- TIME FRAME -

TIME FROM FAILURE TO CRITICAL EFFECT: MINUTES

TIME FROM FAILURE OCCURRENCE TO DETECTION: IMMEDIATE

TIME FROM DETECTION TO COMPLETED CORRECTING ACTION: SECONDS

IS TIME REQUIRED TO IMPLEMENT CORRECTING ACTION LESS THAN TIME TO EFFECT?
YES

RATIONALE FOR TIME TO CORRECTING ACTION VS TIME TO EFFECT:
N/A (CORRECTIVE ACTION CAN BE COMPLETED BEFORE CRITICAL EFFECT)

HAZARD REPORT NUMBER(S):

HAZARD(S) DESCRIPTION:

- APPROVALS -

SS&PAE ENGR	: N. D. NGUYEN	: N. D. Nguyen
MEDS SYSTEM	: M. B. WARNER	: M. B. Warner
MEDS HARDWARE	: R. M. SITAPARA	: Ramon M. Sitapara 4/28/98