

FAILURE MODES EFFECTS ANALYSIS (FMEA) – NON-CIL HARDWARE
NUMBER: 05-6Q-2307 -X

SUBSYSTEM NAME: EPD&C - DISPLAYS & CONTROLS

REVISION: 2

09/07/97

PART DATA

	PART NAME	PART NUMBER
	VENDOR NAME	VENDOR NUMBER
LRU	: FWD PCA 1	V070-763320
LRU	: FWD PCA 3	V070-763360
SRU	: CONTROLLER, REMOTE POWER	MC450-0017-1100
SRU	: CONTROLLER, REMOTE POWER	MC450-0017-2100
SRU	: CONTROLLER, REMOTE POWER	MC450-0017-3100
SRU	: CONTROLLER, REMOTE POWER	MC450-0017-4100

EXTENDED DESCRIPTION OF PART UNDER ANALYSIS:

REMOTE POWER CONTROLLER, 10A, HEAD UP DISPLAY (HUD) POWER CONTROL.

REFERENCE DESIGNATORS: 81V76A22RPC56
83V76A24RPC56

QUANTITY OF LIKE ITEMS: 2
TWO, ONE PER HUD

FUNCTION:

UPON RECEIPT OF A 28V STIMULUS FROM CONTROL SWITCH, THE RPC DISTRIBUTES MAIN BUS POWER TO HEAD UP DISPLAY AND PROVIDES OVERLOAD PROTECTION BY LIMITING AND/OR TRIPPING.

FAILURE MODES EFFECTS ANALYSIS FMEA - NON-CIL FAILURE MODE
 NUMBER: 05-6Q-2307-01

REVISION#: 1 09/07/97

SUBSYSTEM NAME: EPD&C - DISPLAYS & CONTROLS

LRU: FWD PCA 1

ITEM NAME: CONTROLLER, REMOTE POWER

CRITICALITY OF THIS
 FAILURE MODE: 1R3

FAILURE MODE:

FAILS OFF. LOSS OF OUTPUT.

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 STRUCTURAL FAILURE, MECHANICAL SHOCK, THERMAL SHOCK,
 VIBRATION.

CRITICALITY 1/1 DURING INTACT ABORT ONLY? NO

REDUNDANCY SCREEN A) PASS
 B) PASS
 C) PASS

PASS/FAIL RATIONALE:

A)

B)

C)

CORRECTING ACTION: MANUAL

CORRECTING ACTION DESCRIPTION:

CREW MAY UTILIZE REDUNDANT HUD AND OTHER DEDICATED DISPLAYS.

FAILURE MODES EFFECTS ANALYSIS (FMEA) – NON-CIL FAILURE MODE

NUMBER: 05-6Q-2307- 01

- FAILURE EFFECTS -

(A) SUBSYSTEM:

LOSS OF CAPABILITY TO CONDUCT MAIN BUS POWER.

(B) INTERFACING SUBSYSTEM(S):

LOSS OF POWER TO AFFECTED HEAD UP DISPLAY.

(C) MISSION:

FIRST FAILURE - NO EFFECT.

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

FIRST FAILURE - NO EFFECT.

(E) FUNCTIONAL CRITICALITY EFFECTS:

SUCCESS PATHS REMAINING AFTER THE FIRST FAILURE - REDUNDANT HUD AND OTHER DEDICATED DISPLAYS MAY BE USED. WHEN LOSS OF OUTPUT IS DETECTED, THE COMMANDER (OR PILOT) WILL TRANSITION TO THE DEDICATED DISPLAYS FOR CRITICAL LANDING DATA. THE LOSS OF ALL DISPLAYS COULD RESULT IN THE LOSS OF CREW AND VEHICLE DURING LANDING.

DESIGN CRITICALITY (PRIOR TO DOWNGRADE, DESCRIBED IN (F)): 1R2

(F) RATIONALE FOR CRITICALITY DOWNGRADE:

THE OTHER HUD OR DEDICATED DISPLAYS MAY BE USED FOR THIS SCENARIO SINCE IT IS THE FIRST FAILURE AND IS LOSS OF OUTPUT (I.E. EASILY RECOGNIZABLE).

- APPROVALS -

EDITORIALLY APPROVED
EDITORIALLY APPROVED
TECHNICAL APPROVAL

: BNA
: JSC
: VIA APPROVAL FORM

J. Kuntura 9/7/97
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: 96-CIL-024_05-6Q