FAILURE MODES EFFECTS ANALYSIS (FMEA) -- CIL HARDWARE
NUMBER: 05-6Q-2103A -X

SUBSYSTEM NAME: EPD&C - DISPLAYS & CONTROLS
REVISION: 1 01/06/98

PART DATA

	PART NAME VENDOR NAME	PART NUMBER VENDOR NUMBER
LRU	: PANEL O14	V070-730394
LRU	: PANEL O15	V070-730395
SRU	: CIRCUIT BREAKER	MC454-0026-2075

EXTENDED DESCRIPTION OF PART UNDER ANALYSIS:
CIRCUIT BREAKER, 7.5A - POWER CIRCUIT, COMMANDER'S DISPLAY DRIVER UNIT.

REFERENCE DESIGNATORS: 33V73A14CB30
33V73A15CB29

QUANTITY OF LIKE ITEMS: 2
TWO PER DISPLAY DRIVER UNIT

FUNCTION:
PRE-MEDS:
PROVIDES CIRCUIT OVERLOAD PROTECTION FOR MN BUSES A AND B. ALSO DISTRIBUTES DC POWER TO DISPLAY DRIVER UNIT 1 WHICH PROVIDES CONTROL SIGNALS TO THE ADI, HSI, AVVI AND AMI AND PROVIDES SUPPLY VOLTAGE TO THE ADI, RPTA, SBTC, RHC, THC, AND BFC AT THE COMMANDER STATION.

MEDS CONFIGURATION:
PROVIDES CIRCUIT OVERLOAD PROTECTION FOR MN BUSES A & B. ALSO DISTRIBUTES DC POWER TO DRIVER DISPLAY UNIT 1 WHICH PROVIDES SUPPLY VOLTAGE TO THE RPTA, SBTC, RHC, THC, AND BFC AT THE COMMANDER STATION.

- APPROVALS -

SS&PAE MANAGER	: P. STENGER-NGUYEN	: P. Stenger-Nguyen
SS&PAE	: T. AI	:
DESIGN ENGINEERING	: T. NGUYEN	: T. Nguyen 1-12-98
MEDS SYSTEM	: M. B. WARNER	: M. B. Warner 1-9-98
MEDS HARDWARE	: R. SITAPARA	: Ramnik S Sitapara 1-8-98

FAILURE MODES EFFECTS ANALYSIS (FMEA) --CIL HARDWARE
NUMBER: 05-6Q-2103A-X

JSC MOD : Gerald J. Gruber 4-10-98

FAILURE MODES EFFECTS ANALYSIS FMEA -- CIL FAILURE MODE
NUMBER: 05-6Q-2103A- 01

REVISION#: 1 09/07/97
SUBSYSTEM NAME: EPD&C - DISPLAYS & CONTROLS
LRU: PANEL O14
ITEM NAME: CIRCUIT BREAKER
CRITICALITY OF THIS FAILURE MODE: 1R3

FAILURE MODE:
FAILS OPEN

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:
CONTAMINATION, INTERNAL STRUCTURAL FAILURE, VIBRATION, THERMAL AND MECHANICAL SHOCK

CRITICALITY 1/1 DURING INTACT ABORT ONLY? NO

REDUNDANCY SCREEN
A) PASS
B) FAIL
C) PASS

PASS/FAIL RATIONALE:
A)

B)
FAILURE NOT DETECTABLE IN FLIGHT DUE TO PARALLEL REDUNDANCY OF THE POWER SOURCES

C)

- FAILURE EFFECTS -

(A) SUBSYSTEM:

PRINT DATE: 09/07/97

FAILURE MODES EFFECTS ANALYSIS (FMEA) -- CIL FAILURE MODE
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LOSS OF CAPABILITY TO CONDUCT POWER.

(B) INTERFACING SUBSYSTEM(S):
LOSS OF REDUNDANT POWER TO AFFECTED DDU.

(C) MISSION:
FIRST FAILURE - NO EFFECT.

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

(E) FUNCTIONAL CRITICALITY EFFECTS:
THE FIRST FAILURE HAS NO EFFECT. THE FAILURE OF THE SECOND CIRCUIT BREAKER WILL CAUSE LOSS OF ALL POWER TO THE COMMANDER'S DDU AND LOSS OF POWER TO ALL THE COMMANDER'S CONTROLLERS. THE FLIGHT CONTROL FUNCTION WILL BE TRANSFERRED TO THE PILOT'S STATION. THE SUBSEQUENT FAILURE OF POWER TO THE PILOT'S STATION DDU WOULD CAUSE LOSS OF ALL POWER TO THOSE CONTROLLERS LEAVING ONLY THE AUTOMATIC FLIGHT CONTROL MODE AVAILABLE TO THE CREW.

-DISPOSITION RATIONALE-

(A) DESIGN:
REFER TO APPENDIX D, ITEM #1, CIRCUIT BREAKER.

(B) TEST:
REFER TO APPENDIX D, ITEM #1, CIRCUIT BREAKER.

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

(C) INSPECTION:
REFER TO APPENDIX D, ITEM #1, CIRCUIT BREAKER.

(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 DATA BASE.

(E) OPERATIONAL USE:
AFTER FAILURE OF THE SECOND CIRCUIT BREAKER FOR THE COMMANDER'S DDU, THE FLIGHT CONTROL FUNCTION WILL BE TRANSFERRED TO THE PILOT STATION.

- APPROVALS -

EDITORIALLY APPROVED	: BNA	: J. Katsura 9/7/97
EDITORIALLY APPROVED	: JSC	: A. Geary 10-6-97
TECHNICAL APPROVAL	: VIA APPROVAL FORM	: 96-CIL-024_05-6Q