

**FAILURE MODES EFFECTS ANALYSIS (FMEA) – CIL HARDWARE
NUMBER: 05-8N-2015 -X**

SUBSYSTEM NAME: EPD&C - AUXILIARY POWER UNIT (04-2)

REVISION: 1 08/30/93

PART DATA

	PART NAME	PART NUMBER
	VENDOR NAME	VENDOR NUMBER
LRU	: PANEL R2	V070-730277
SRU	: CIRCUIT BREAKER	MC454-0026-2030

EXTENDED DESCRIPTION OF PART UNDER ANALYSIS:
CIRCUIT BREAKER (3 AMP) - AUXILIARY POWER UNIT (APU) FUEL TANK 1, 2, AND 3
ISOLATION VALVE CONTROL

REFERENCE DESIGNATORS: 32V73A2CB1
32V73A2CB2
32V73A2CB3
32V73A2CB4
32V73A2CB5
32V73A2CB6

QUANTITY OF LIKE ITEMS: 6
SIX

FUNCTION:
PROVIDES OVERLOAD PROTECTION IN THE CONTROL/LOGIC REDUNDANT CIRCUITS
FOR THE APU FUEL TANK 1, 2, AND 3 ISOLATION VALVES.

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PRINT DATE: 08/19/96

FAILURE MODES EFFECTS ANALYSIS FMEA - NON-CIL FAILURE MODE

NUMBER: 05-6N-2015-02

REVISION#: 2 08/01/96

SUBSYSTEM NAME: EPD&C - AUXILIARY POWER UNIT (04-2)

LRU: PANEL R2

ITEM NAME: CIRCUIT BREAKER

CRITICALITY OF THIS

FAILURE MODE: 1R3

FAILURE MODE:

FAILS CLOSED (FAILS TO OPEN - MECHANICALLY)

MISSION PHASE: OO ON-ORBIT

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

CAUSE:STRUCTURAL FAILURE, CONTAMINATION, VIBRATION, MECHANICAL SHOCK,
PROCESSING ANOMALY

CRITICALITY 1/1 DURING INTACT ABORT ONLY? NO

REDUNDANCY SCREEN	A) PASS
	B) N/A
	C) PASS

PASS/FAIL RATIONALE:

A)

B)
ITEM IS STANDBY REDUNDANT.

C)

- FAILURE EFFECTS -**(A) SUBSYSTEM:**

NO EFFECT - FIRST FAILURE. CIRCUIT BREAKER IS NORMALLY CLOSED.

(B) INTERFACING SUBSYSTEM(S):

NO EFFECT - FIRST FAILURE

**FAILURE MODES EFFECTS ANALYSIS (FMEA) - NON-CIL FAILURE MODE
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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 AND VEHICLE FOR FUEL LEAK DOWNSTREAM OF ISOLATION VALVE COMBINED WITH THIS FAILURE AND THREE OTHER FAILURES (ONE CONTACT SET OF APU FUEL ISOLATION SWITCH FAILED CLOSED, DIODE SHORTS, HDC- 3 FAILS "ON") DUE TO CONTINUOUS ENERGIZING OF THE ISOLATION VALVE WHICH PREVENTS ISOLATION OF FUEL LEAK.

-DISPOSITION RATIONALE-

(A) DESIGN:
REFER TO APPENDIX D, ITEM NO. 1 - CIRCUIT BREAKER

(B) TEST:
REFER TO APPENDIX D, ITEM NO. 1 - CIRCUIT BREAKER

GROUND TURNAROUND TEST FUEL ISOLATION VALVE CIRCUIT CHECKS WITHOUT BUS DROPS PERFORMED EVERY OMDP.

(C) INSPECTION:
REFER TO APPENDIX D, ITEM NO. 1 - CIRCUIT BREAKER

(D) FAILURE HISTORY:
REFER TO APPENDIX D, ITEM NO. 1 - CIRCUIT BREAKER

(E) OPERATIONAL USE:
NONE

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- APPROVALS -

EDITORIALLY APPROVED : RI
EDITORIALLY APPROVED : JSC
TECHNICAL APPROVAL : VIA JSC

: *Wayne L. Brown 8/08/96*
: *Sam Leacy 8-29-96*
: 96-CIL-010