FAILURE MODES EFFECTS ANALYSIS (FMEA) – CIL HARDWARE
NUMBER: 05-6N-2033 -X

SUBSYSTEM NAME: EPD&C - AUXILIARY POWER UNIT (04-2)
REVISION: 1 08/30/93

PART DATA

	PART NAME **VENDOR NAME**	**PART NUMBER** **VENDOR NUMBER**
LRU	: AFT PCA 4, 5, 6	V070-765280
SRU	: DIODE	JANTXV1N4246

EXTENDED DESCRIPTION OF PART UNDER ANALYSIS:
DIODE, SWITCH SCAN ISOLATION (1 AMP) - AUXILIARY POWER UNIT (APU) CONTROLLER POWER CIRCUIT

REFERENCE DESIGNATORS:
54V76A134A2CR9
54V76A134A2CR10
55V76A135A2CR9
55V76A135A2CR10
56V76A136A2CR9
56V76A136A2CR10

QUANTITY OF LIKE ITEMS: 6
SIX

FUNCTION:
PROVIDES CONTROL BOX BUS ISOLATION BY PREVENTING THE DIFFERENT SWITCH COMMANDS FROM BEING TIED TOGETHER.

FAILURE MODES EFFECTS ANALYSIS FMEA – NON-CIL FAILURE MODE
NUMBER: 05-6N-2033- 02

REVISION#: 02 08/01/96

SUBSYSTEM NAME: EPD&C - AUXILIARY POWER UNIT (04-2)
LRU: AFT PCA 4, 5, 6 **CRITICALITY OF THIS**
ITEM NAME: DIODE **FAILURE MODE:** 1R3

FAILURE MODE:
SHORT (END-TO-END)

MISSION PHASE:

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

VEHICLE/PAYLOAD/KIT EFFECTIVITY:

102	COLUMBIA
103	DISCOVERY
104	ATLANTIS
105	ENDEAVOUR

CAUSE:
STRUCTURAL FAILURE (MECHANICAL STRESS, VIBRATION), CONTAMINATION, ELECTRICAL STRESS, THERMAL STRESS, PROCESSING ANOMALY

CRITICALITY 1/1 DURING INTACT ABORT ONLY? NO

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

PASS/FAIL RATIONALE:
A)

B)
CONTROL BUS SHORT TO GROUND IS DETECTABLE IN FLIGHT. STATUS OF REMAINING APUS IS VERIFIABLE IN FLIGHT.

C)

- FAILURE EFFECTS -

(A) SUBSYSTEM:
FIRST FAILURE - LOSS OF CONTROL BUS ISOLATION

FAILURE MODES EFFECTS ANALYSIS (FMEA) -- NON-CIL FAILURE MODE
NUMBER: 05-6N-2033- 02

(B) INTERFACING SUBSYSTEM(S):
FIRST FAILURE - LOSS OF CONTROL BUS ISOLATION

(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 TWO ADDITIONAL FAILURES (CONTROL BUS SHORTED TO GROUND RESULTING IN LOSS OF POWER TO APU CONTROLLER AND LOSS OF ONE APU, LOSS OF SECOND APU) DUE TO LOSS OF TWO OF THREE APU'S.

-DISPOSITION RATIONALE-

(A) DESIGN:
REFER TO APPENDIX F, ITEM NO. 3 - DIODE

(B) TEST:
REFER TO APPENDIX F, ITEM NO. 3 - DIODE

GROUND TURNAROUND TEST - APU 1/2/3 CONTROLLER POWER SWITCH TESTS PERFORMED EVERY OMDP OR AFTER CIG RETEST.

(C) INSPECTION:
REFER TO APPENDIX F, ITEM NO. 3 - DIODE

(D) FAILURE HISTORY:
REFER TO APPENDIX F, ITEM NO. 3 - DIODE

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(E) OPERATIONAL USE:
NONE

- APPROVALS -

EDITORIALLY APPROVED	: RI	: Laura G. Lowry 8/30/96
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TECHNICAL APPROVAL	: VIA CR	: 96-CIL-010