

FAILURE MODES EFFECTS ANALYSIS (FMEA) -- NON-CIL HARDWARE
 NUMBER:05-50-200301 -X

SUBSYSTEM NAME: EPD&C-GUIDANCE, NAVIGATION, & CONTROL (05-1)
 REVISION: 1 01/22/98

PART DATA

	PART NAME VENDOR NAME	PART NUMBER VENDOR NUMBER
LRU	:MID PCA 3	V070-764450
LRU	:AFT PCA 1	V070-765200
LRU	:AFT PCA 1	V070-765310
SRU	:DIODE	JANTX1N1204RA

EXTENDED DESCRIPTION OF PART UNDER ANALYSIS:
 DIODE 12 AMP

REFERENCE DESIGNATORS: 40V76A27A2CR7
 40V76A27A2CR8
 54V76A131A2CR15
 54V76A131A2CR16

QUANTITY OF LIKE ITEMS: 4
 TWO PER ASSY.

FUNCTION:
 PERMITS CONDUCTION OF ELECTRICAL CURRENT AND PROVIDES MAIN BUS
 ISOLATION FROM MAIN BUS A, B, & C THROUGH RPC'S TO THE ORBITER RGA'S 1 AND 4
 POWER SUPPLY.

FAILURE MODES EFFECTS ANALYSIS FMEA - NON-CIL FAILURE MODE
 NUMBER: 05-60-200301-02

REVISION#: 2 06/20/97

SUBSYSTEM NAME: EPD&C-GUIDANCE, NAVIGATION, & CONTROL (05-1)
 LRU: MID PCA 3, AFT PCA 1
 ITEM NAME: DIODE

CRITICALITY OF THIS
 FAILURE MODE: 1R3

FAILURE MODE:
 SHORT (END TO END)

MISSION PHASE: LO LIFT-OFF
 DO DE-ORBIT

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

CAUSE:
 MECHANICAL STRESS, VIBRATION, CONTAMINATION, THERMAL STRESS, ELECTRICAL
 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)
 B SCREEN NOT APPLICABLE DUE TO REDUNDANT POWER PATHS TO THE RGA. LOSS
 OF ANY OF THE FOUR RGA'S IS READILY APPARENT DURING FLIGHT USE.

C)

CORRECTING ACTION: NONE

CORRECTING ACTION DESCRIPTION:

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- FAILURE EFFECTS -

(A) SUBSYSTEM:
LOSS OF MAIN BUS ISOLATION.

(B) INTERFACING SUBSYSTEM(S):
NO EFFECT. RGA STILL HAS POWER.

(C) MISSION:
NO EFFECT.

(D) CREW, VEHICLE, AND ELEMENT(S):
NO EFFECT FIRST FAILURE. FOR THE SECOND FAILURE (LOSS OF MAIN BUS RESULTING IN LOSS OF TWO OF FOUR RGA'S), REDUNDANCY MANAGEMENT (RM) WILL IDENTIFY AND RECONFIGURE AS REQUIRED. THE THIRD FAILURE (LOSS OF A THIRD RGA) RESULTS IN BAD SELECTED RATE FEEDBACK DATA, CAUSING LOSS OF VEHICLE.

(E) FUNCTIONAL CRITICALITY EFFECTS:
CRITICALITY 1R BECAUSE OF POSSIBLE LOSS OF CREW/VEHICLE DUE TO LOSS OF VEHICLE CONTROL CAUSED BY BAD SELECTED RGA RATE FEEDBACK DATA.

- APPROVALS -

EDITORIALLY APPROVED : RI
EDITORIALLY APPROVED : JSC
TECHNICAL APPROVAL : APPROVAL FORM

: *Robert Stell, Jr.* 6/25/97
: *at [unclear]* 9-9-97
: 96-CIL-022_05-60