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PRINT DATE: 04/21/95

FAILURE MODES EFFECTS ANALYSIS (FMEA) - NONCRITICAL HARDWARE

NUMBER: 05-6G-2057-M1 -X

SUBSYSTEM NAME: EPD&C - HYDRAULICS (02-8)

REVISION: 2 10/07/91

	PART NAME VENDOR NAME	PART NUMBER VENDOR NUMBER
LRU	: AFT LCA 1	MC450-0057-0001
SRU	: DIODE	JANTXV1N5551

PART DATA

EXTENDED DESCRIPTION OF PART UNDER ANALYSIS:

DIODE, ISOLATION (3 AMP) - HYDRAULIC SYSTEM BRAKE ISOLATION VALVE

REFERENCE DESIGNATORS: 54V76A121CR(J11-Q)

QUANTITY OF LIKE ITEMS: 1

ONE

FUNCTION:

CONDUCTS VEHICLE ORIENTED SIGNALS TO THE ASSOCIATED HYDRAULIC SYSTEM BRAKE ISOLATION VALVE NO. 1 OPEN SOLENOID COIL AND ISOLATES THE VEHICLE CIRCUIT WHEN THE SOLENOID SIGNAL IS BEING SUPPLIED FROM GSE SOURCES.

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FAILURE MODES EFFECTS ANALYSIS (FMEA) - NONCRITICAL FAILURE MODE
 NUMBER: 05-6G-2067-M1 - 01

REVISION# 3 04/13/95

SUBSYSTEM NAME: EPD&C - HYDRAULICS (02-6)

LRU: AFT LCA 1

ITEM NAME: DIODE

CRITICALITY OF THIS

FAILURE MODE: 1R3

FAILURE MODE:

OPEN, FAILS TO CONDUCT

MISSION PHASE:

DO DE-ORBIT

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

CAUSE:

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

CRITICALITY 1/1 DURING INTACT ABORT ONLY? NO

REDUNDANCY SCREEN

- A) PASS
- B) PASS
- C) PASS

PASS/FAIL RATIONALE:

A)

B)

C)

- FAILURE EFFECTS -

(A) SUBSYSTEM:

LOSS OF FUNCTION

(B) INTERFACING SUBSYSTEM(S):

LOSS OF INTERFACE FUNCTION - LOSS OF VOLTAGE TO THE ISOLATION VALVE
 "OPENING" SOLENOID PRECLUDES THE USE OF HYDRAULIC SYSTEM 1 FOR BRAKING.

(G) MISSION:

NONE

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

FIRST FAILURE - NO EFFECT

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(E) FUNCTIONAL CRITICALITY EFFECTS:

POSSIBLE LOSS OF CREW/VEHICLE AFTER THREE FAILURES - 1) THIS FAILURE, 2) LOSS OF OUTPUT OF "OPEN" DRIVER OF REDUNDANT SYSTEM RESULTS IN LOSS OF ABILITY TO OPEN ONE OF THE TWO REMAINING HYDRAULIC SYSTEM BRAKE ISOLATION VALVES, AND 3) LOSS OF ABILITY TO OPEN THE THIRD BRAKE ISOLATION VALVE RESULTING IN LOSS OF ALL BRAKING CAPABILITY.

- APPROVALS -

PRODUCT ASSURANCE ENGR : M. PHUNG
DESIGN ENGINEERING : G.J. SCHWARTZ

M. Phung 04/21/95
G.J. Schwartz 4-21-95