PRINT DATE: 09/09/92

FAILURE MODES EFFECTS ANALYSIS (FMEA) -- CRITICAL HARDWARE
NUMBER: M5-6MB-2265-G-X

SUBSYSTEM NAME: ELECTRICAL POWER GENERATION - CRYO, GENERIC
REVISION : 9 09/09/92

		PART NAME VENDOR NAME	PART NUMBER VENDOR NUMBER
LRU	:	MID PCA 1	V070-764400
LRU	:	MID PCA 2	V070-764430
SRU	:	DIODE	JANTXV1N4246

- PART DATA -

EXTENDED DESCRIPTION OF PART UNDER ANALYSIS:
DIODE, ISOLATION, 1 AMP - H2 MANIFOLD 1 AND 2 ISOLATION VALVES - OPEN POSITION

REFERENCE DESIGNATORS: 40V76A25A1CR23
: 40V76A25A1CR25
: 40V76A26A1CR23
: 40V76A26A1CR25

QUANTITY OF LIKE ITEMS: 4
FOUR, TWO PER H2 MANIFOLD VALVE CIRCUIT

FUNCTION:
PROVIDES CIRCUIT ISOLATION FROM GROUND INITIATED COMMANDS AND CONDUCTS CREW INITIATED COMMANDS CONTROLLING OPENING OF THE H2 MANIFOLD 1 AND 2 ISOLATION VALVES.

PRINT DATE: 09/09/92

FAILURE MODES EFFECTS ANALYSIS (FMEA) -- CRITICAL FAILURE MODE
NUMBER: M5-6MB-2265-G-01

REVISION# 9 09/09/92

SUBSYSTEM: ELECTRICAL POWER GENERATION - CRYO, GENERIC
LRU MID PCA 1
ITEM NAME: DIODE

CRITICALITY OF THIS FAILURE MODE: 2/2

FAILURE MODE:
OPEN, FAILS TO CONDUCT

MISSION PHASE:
OO ON-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) N/A
B) N/A
C) N/A

PASS/FAIL RATIONALE:
A)

B)

C)

U.S. Gov t

PRINT DATE: 09/09/92

FAILURE MODES EFFECTS ANALYSIS (FMEA) -- CRITICAL FAILURE MODE
NUMBER: M5-6MB-2265-G-01

- FAILURE EFFECTS -

(A) SUBSYSTEM:
LOSS OF ABILITY TO CONDUCT THE H2 MANIFOLD VALVE "OPEN" SWITCH COMMAND.

(B) INTERFACING SUBSYSTEM(S):
LOSS OF ABILITY TO MANUALLY OPEN THE H2 MANIFOLD WITH THE PANEL SWITCH.

(C) MISSION:
POSSIBLE LOSS OF MISSION DUE TO ASSOCIATED MANIFOLD VALVE FAILING CLOSED RESULTING IN ONE TANK BEING ISOLATED TO A SINGLE FUEL CELL. MISSION TERMINATED WHEN THE HYDROGEN IN THAT TANK IS CONSUMED.

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

- DISPOSITION RATIONALE -

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

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

DIODE IS FUNCTIONALLY VERIFIED IN FLIGHT. PERFORM GROUND TURNAROUND TEST WHEN VALID VERIFICATION IS UNOBTAINABLE IN FLIGHT OR AFTER LRU REPLACEMENT

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

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

(E) OPERATIONAL USE:
CREW WILL REMOVE ASSOCIATED TANK FROM PAIRED HEATER OPERATION

PRINT DATE: 09/09/92

FAILURE MODES EFFECTS ANALYSIS (FMEA) -- CRITICAL FAILURE MODE
NUMBER: M5-6MB-2265-G-01

- APPROVALS -

PRODUCT ASSURANCE MGR	T. J. EAVENSON	T. J. Eavenson 9/14/92
PRODUCT ASSURANCE ENG	T. K. KIMURA	T. K. Kimura 9/14/92
DESIGN ENG TEAM LEADER	G. M. ANDERSON	G. M. Anderson 9.15.92
DESIGN ENGINEERING	T. D. NGUYEN	9/15/92
NASA RELIABILITY		11/16/92
NASA SUBSYSTEM MANAGER		12/16/92
NASA EPD&C RELIABILITY		for S Woodard 12/14/92
NASA QUALITY ASSURANCE		KO 10/26/92
NASA EPD&C SUBSYS MGR		for EA 14 Oct 92