

PAGE: 1

PRINT DATE 09/07/94

FAILURE MODES EFFECTS ANALYSIS (FMEA) -- NONCRITICAL HARDWARE  
NUMBER: 05-SWA-2259HB-X

SUBSYSTEM NAME: EPD&C-WATER SPRAY BOILER

REVISION: 0 07/26/94

	PART NAME VENDOR NAME	PART NUMBER VENDOR NUMBER
LRU	AFT PCA - 4, 5, 6	VO70-765280
SRU	DIODE	JANTXV1N4246

**PART DATA**

EXTENDED DESCRIPTION OF PART UNDER ANALYSIS:  
DIODE, SWITCH ISOLATION, 1 AMP, WSB CONTROLLER "B" LOGIC CIRCUIT

REFERENCE DESIGNATORS: 54V76A134A2CR6  
54V76A134A2CR8  
55V76A135A2CR6  
55V76A135A2CR8  
56V76A136A2CR6  
56V76A136A2CR8

QUANTITY OF LIKE ITEMS: 6  
SIX, TWO PER SYSTEM

FUNCTION:  
CONDUCTS LOGIC INPUTS TO WSB CONTROLLER "B", PROVIDES POWER TRANSFER  
AND CIRCUIT ISOLATION BETWEEN VEHICLE COMMANDS, CONTROLLING RPC'S IN AFT  
PCA'S 5, 6 AND 4 FOR WSB'S 1, 2 AND 3

**FAILURE MODES EFFECTS ANALYSIS (FMEA) - NONCRITICAL FAILURE MODE  
NUMBER: 05-6WA-2259HB-01**

REVISION# 0 07/26/94

SUBSYSTEM NAME: EPO&C-WATER SPRAY BOILER

LRU: AFT PCA - 4, 5, 6

ITEM NAME: DIODE

CRITICALITY OF THIS

FAILURE MODE: 1R3

**FAILURE MODE:**  
OPEN, FAILS TO CONDUCT

**MISSION PHASE:**  
PL PRE-LAUNCH  
LO LIFT-OFF  
OO ON-ORBIT  
DO DE-ORBIT  
LS LANDING/SAFING

**VEHICLE/PAYLOAD/KIT EFFECTIVITY:** 102 COLUMBIA  
103 DISCOVERY  
104 ATLANTIS  
105 ENDEAVOUR  
EFFECTIVE FOR WS8 INLET LINE ELECTRICAL  
HEATER MOD ONLY

**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 POWER TO CONTROLLER 'B'

**(B) INTERFACING SUBSYSTEM(S):**  
LOSS OF CONTROL REDUNDANCY FOR AFFECTED WS8.

FAILURE MODES EFFECTS ANALYSIS (FMEA) - NONCRITICAL FAILURE MODE  
NUMBER: 05-6WA-2259HB-01

(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 WITH 1.) THIS FAILURE AND 2.) LOSS OF  
CONTROLLER "A" AND 3.) LOSS OF A SECOND APU/HYD SYSTEM

---

- APPROVALS -

---

PRODUCT ASSURANCE ENGR C RESSIA  
DESIGN ENGINEERING G SCHWARTZ

*George Schwartz*  
*9-7-94*