

**FAILURE MODES EFFECTS ANALYSIS (FMEA) -- NON-CIL HARDWARE**  
**NUMBER: 05-6-2181 -X**

**SUBSYSTEM NAME: ELECTRICAL POWER DISTRIBUTION & CONTROL**

**REVISION: 1 07/26/99**

**PART DATA**

	<b>PART NAME</b>	<b>PART NUMBER</b>
	<b>VENDOR NAME</b>	<b>VENDOR NUMBER</b>
LRU	: PANEL R2	V070-730277
SRU	: DIODE	JANTX1N1204RA

**EXTENDED DESCRIPTION OF PART UNDER ANALYSIS:**

DIODE, 12A, ISOLATION - MAIN DC BUS POWER TO CONTROL BUS ISOLATION

**REFERENCE DESIGNATORS:** 32V73A2CR1  
 32V73A2CR2  
 32V73A2CR3  
 32V73A2CR4  
 32V73A2CR5  
 32V73A2CR6  
 32V73A2CR7  
 32V73A2CR8  
 32V73A2CR9

**QUANTITY OF LIKE ITEMS: 9**  
 NINE, ONE/EACH CONTROL BUS

**FUNCTION:**

PROVIDES ISOLATION OF POWER BETWEEN MAIN DC BUSES A, B AND C USED TO SUPPLY THIRD POWER SOURCE TO CONTROL BUSES AB, BC, CA-1, 2, 3 FROM CIRCUIT BREAKERS ON PANEL R15 (DISTRIBUTION PATHS TO CONTROL BUS PANELS).

**FAILURE MODES EFFECTS ANALYSIS FMEA – NON-CIL FAILURE MODE**  
**NUMBER: 05-6-2181-01**

**REVISION#: 1 07/26/99**

**SUBSYSTEM NAME: ELECTRICAL POWER DISTRIBUTION & CONTROL**  
**LRU: PANEL R2**  
**ITEM NAME: DIODE**

**CRITICALITY OF THIS FAILURE MODE: 1R3**

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

**MISSION PHASE:** LO LIFT-OFF  
 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**

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

**PASS/FAIL RATIONALE:**

A)

B)

"B" SCREEN IS "N/A" BECAUSE FAILURE OF AT LEAST TWO REMAINING PATHS IS READILY  
 DETECTABLE DURING FLIGHT (RPC AND OTHER CONTROL BUS)

C)

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**- FAILURE EFFECTS -**

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**(A) SUBSYSTEM:**  
 LOSS OF ONE OF THREE SOURCES SUPPLYING A CONTROL BUS.

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**(B) INTERFACING SUBSYSTEM(S):**

LOSS OF REDUNDANCY FOR LOADS POWERED OR CONTROLLED BY AFFECTED CONTROL BUS. TWO RPC'S SUPPLY REDUNDANT MAIN DC BUS POWER TO A CONTROL BUS. REQUIRES THREE FAILURES TO CAUSE LOSS OF A CONTROL BUS.

**(C) MISSION:**

FIRST FAILURE - NO EFFECT

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

FIRST FAILURE - NO EFFECT

**(E) FUNCTIONAL CRITICALITY EFFECTS:**

POSSIBLE LOSS OF CREW/VEHICLE AFTER FOURTH FAILURE (LOSS OF ANOTHER CONTROL BUS) DUE TO LOSS OF TWO OR MORE CONTROL BUSES (RESULTS IN LOSS OF CRITICAL FUNCTIONS).

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- APPROVALS -

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EDITORIALLY APPROVED  
TECHNICAL APPROVAL

: BNA  
: VIA APPROVAL FORM

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