

**FAILURE MODES EFFECTS ANALYSIS (FMEA) -- NON-CIL HARDWARE  
NUMBER: 05-6-2389 -X**

**SUBSYSTEM NAME: ELECTRICAL POWER DISTRIBUTION & CONTROL  
REVISION: 2 07/26/99**

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**PART DATA**

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	<b>PART NAME VENDOR NAME</b>	<b>PART NUMBER VENDOR NUMBER</b>
LRU	: AFT PCA 4, 5, 6	V070-765280
SRU	: CONTROLLER, REMOTE POWER	MC450-0017-1075
SRU	: CONTROLLER, REMOTE POWER	MC450-0017-2075
SRU	: CONTROLLER, REMOTE POWER	MC450-0017-3075
SRU	: CONTROLLER, REMOTE POWER	MC450-0017-4075

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**EXTENDED DESCRIPTION OF PART UNDER ANALYSIS:  
CONTROLLER, REMOTE POWER, 7.5 AMP - GSE POWER CONTRACTOR CONTROL**

**REFERENCE DESIGNATORS:** 54V76A134RPC1  
54V76A134RPC2  
55V76A135RPC1  
55V76A135RPC2  
56V76A136RPC1  
56V76A135RPC2

**QUANTITY OF LIKE ITEMS: 6  
SIX**

**FUNCTION:**  
UPON GROUND COMMAND, THE REMOTE POWER CONTROLLER CONNECTS PRE-FLIGHT TEST BUS POWER TO OPEN/CLOSE THE GSE POWER CONTACTOR.

**FAILURE MODES EFFECTS ANALYSIS FMEA – NON-CIL FAILURE MODE**  
**NUMBER: 05-6-2389- 01**

REVISION#: 1 07/26/99

**SUBSYSTEM NAME:** ELECTRICAL POWER DISTRIBUTION & CONTROL  
**LRU:** AFT PCA 4, 5, 6  
**ITEM NAME:** CONTROLLER, REMOTE POWER

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

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**FAILURE MODE:**  
 FAIL "ON", INADVERTENT OUTPUT ("ON" COMMAND)

**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

**CAUSE:**  
 VIBRATION, MECHANICAL SHOCK, CONTAMINATION, PIECE PART FAILURE, 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 IN FLIGHT.

C)

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**- FAILURE EFFECTS -**

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**(A) SUBSYSTEM:**  
 LOSS OF ABILITY TO ISOLATE ORBITER MAIN DC BUSES FROM GSE POWER FEEDERS.

**FAILURE MODES EFFECTS ANALYSIS (FMEA) – NON-CIL FAILURE MODE  
NUMBER: 05-6-2389-01**

**(B) INTERFACING SUBSYSTEM(S):**  
FIRST FAILURE - NO EFFECT

**(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 DUE TO LOSS OF ELECTRICAL POWER REQUIRED  
FOR OPERATION OF CRITICAL LOADS VIA THE FOLLOWING SCENARIO:

- (1) FAILED "ON" REMOTE POWER CONTROLLER.
- (2, 3) INADVERTENT ENERGIZING OF PRE-FLIGHT TEST BUS (REQUIRES TWO FAILURES)  
DURING FLIGHT.
- (4) SHORT TO GROUND ON THE ASSOCIATED GSE POWER FEEDER WHICH RESULTS IN  
LOSS OF ONE AFT MAIN DC BUS.
- (5) LOSS OF ANOTHER MAIN DC BUS.

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**- APPROVALS -**

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EDITORIALLY APPROVED : BNA : J. Kamura 7-26-99  
TECHNICAL APPROVAL : VIA APPROVAL FORM : 96-CIL-025\_05-6