

**FAILURE MODES EFFECTS ANALYSIS (FMEA) - CRITICAL HARDWARE
NUMBER: 05-6-2231-X**

SUBSYSTEM NAME: ELECTRICAL POWER DISTRIBUTION AND CONTROL

REVISION: 1 03/22/94

	PART NAME VENDOR NAME	PART NUMBER VENDOR NUMBER
LRU	: PANEL 017	VO70-730397
SRU	: SWITCH, TOGGLE	ME452-0102-7301

PART DATA

**EXTENDED DESCRIPTION OF PART UNDER ANALYSIS:
SWITCH, TOGGLE, 3PDT - MASTER EVENTS CONTROLLER POWER**

**REFERENCE DESIGNATORS: 33V73A17S5
33V73A17S6**

**QUANTITY OF LIKE ITEMS: 2
TWO, ONE PER EACH MEC 1 & 2**

**FUNCTION:
PROVIDES MANUAL SWITCHING FOR CONTROLLING MAIN DC BUS A (B, C) POWER
FEEDS TO THE MASTER EVENTS CONTROLLER (MEC). REDUNDANCY PROVIDED
THROUGH SEPARATE POLES FOR EACH OF THE THREE SOURCES, EACH OF WHICH
PROVIDES POWER TO BOTH POWER SUPPLIES WITHIN ONE MEC.**

FAILURE MODES EFFECTS ANALYSIS (FMEA) - CRITICAL FAILURE MODE
NUMBER: 05-6-2231-01

REVISION# 1 03/22/94

SUBSYSTEM NAME: ELECTRICAL POWER DISTRIBUTION AND CONTROL

LRU: PANEL 017

CRITICALITY OF THIS

ITEM NAME: SWITCH, TOGGLE

FAILURE MODE: 1R2

FAILURE MODE:

LOSS OF OUTPUT, FAILS TO CONDUCT, SHORTS TO GROUND (MULTIPLE CONTACTS - ROLLER/SPRING)

MISSION PHASE:

LO LIFT OFF

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

CAUSE:

CONTAMINATION, PIECE PART STRUCTURAL FAILURE, MECHANICAL SHOCK, VIBRATION, PROCESSING ANOMALY

CRITICALITY 1/1 DURING INTACT ABORT ONLY? NO

REDUNDANCY SCREEN

A) PASS
B) ~~FAIL~~ PASS
C) PASS

PASS/FAIL RATIONALE:

A)

B)

FAILS "B" SCREEN BECAUSE POWER TO MEC IS NOT NORMALLY MONITORED DURING LIFT-OFF. REDUNDANT MEC IS AVAILABLE TO PERFORM FUNCTIONING.

C)

- FAILURE EFFECTS -

(A) SUBSYSTEM:

LOSS OF POWER TO BOTH POWER SUPPLIES WITHIN A MEC.

(B) INTERFACING SUBSYSTEM(S):

LOSS OF REDUNDANCY FOR SRB/ET/ORB SEPARATION.

(C) MISSION:

NO EFFECT - FIRST FAILURE

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

(E) FUNCTIONAL CRITICALITY EFFECTS:
POSSIBLE LOSS OF CREW/VEHICLE ON SECOND FAILURE ^(Resulting in) ~~DUETO~~ LOSS OF SRB/ET/ORB
SEPARATION CAPABILITY. _(Loss of Switch to Redundant MEC)

-DISPOSITION RATIONALE-

(A) DESIGN:
REFER TO APPENDIX A, ITEM NO. 1 - TOGGLE SWITCH

(B) TEST:
REFER TO APPENDIX A, ITEM NO. 1 - TOGGLE SWITCH

GROUND TURNAROUND TEST
ANY TURNAROUND CHECKOUT TESTING IS ACCOMPLISHED IN ACCORDANCE WITH
OMRSD.

(C) INSPECTION:
REFER TO APPENDIX A, ITEM NO. 1 - TOGGLE SWITCH

(D) FAILURE HISTORY:
FAILURE HISTORY IS TRACKED IN THE PRACA SYSTEM.

(E) OPERATIONAL USE:
NONE

- APPROVALS -

PAE MANAGER : K. PRESTON
PRODUCT ASSURANCE ENGR : T. KIMURA
DESIGN ENGINEERING : J. GULSBY
NASA SSMA :
NASA SUBSYSTEM MANAGER :

K.L. Preston 3/29/94
T. Kimura 3/23/94
J. Gulsby 3/26/94
R. [unclear] 6-20-94
[unclear] 6-30-94