

FAILURE MODES EFFECTS ANALYSIS (FMEA) - CIL HARDWARE  
 NUMBER: 05-6S-BSW6 -X

SUBSYSTEM NAME: EPD&amp;C - DPS&amp;C

REVISION: 0 04/15/96

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 PART DATA
 

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PART NAME	PART NUMBER
VENDOR NAME	VENDOR NUMBER
LRU : PANEL 017	V070-730302
SRU : SWITCH, TOGGLE	ME452-0102-7201

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EXTENDED DESCRIPTION OF PART UNDER ANALYSIS:  
 SWITCH, POWER, 2P2P TOGGLE, ENGINE INTERFACE UNIT (EIU)

REFERENCE DESIGNATORS: 33V73A17S7  
 33V73A17S8  
 33V73A17S9

QUANTITY OF LIKE ITEMS: 3  
 THREE SWITCHES

FUNCTION:  
 TO PROVIDE POWER TO EIU 1, 2, & 3.

## FAILURE MODES EFFECTS ANALYSIS FMEA - CIL FAILURE MODE

NUMBER: 05-6S-BSW6-01

REVISION#: 0 04/16/96

SUBSYSTEM NAME: EPD&amp;C - DPS&amp;C

LRU: PANEL 017

ITEM NAME: SWITCH, TOGGLE

CRITICALITY OF THIS

FAILURE MODE: 1R2

## FAILURE MODE:

FAILS OPEN, PREMATURE OPEN OR SHORTS TO CASE (GROUND), PREMATURE  
TRANSFER TO OFF (ONE OR BOTH POLES).MISSION PHASE: PL PRE-LAUNCH  
LO LIFT-OFFVEHICLE/PAYLOAD/KIT EFFECTIVITY: 102 COLUMBIA  
103 DISCOVERY  
104 ATLANTIS  
105 ENDEAVOUR

## CAUSE:

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

CRITICALITY 1/1 DURING INTACT ABORT ONLY? NO

REDUNDANCY SCREEN A) PASS  
B) FAIL  
C) PASS

## PASS/FAIL RATIONALE:

A)

B)

FAILS SCREEN "B" BECAUSE ONLY ONE OF TWO OF THE REDUNDANT ELEMENTS IS  
INSTRUMENTED.

C)

- FAILURE EFFECTS -

**FAILURE MODES EFFECTS ANALYSIS (FMEA) - CIL FAILURE MODE .**  
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**(A) SUBSYSTEM:**

LOSS OF A SWITCH CAUSES LOSS OF REDUNDANT POWER TO TWO EIU'S.

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

NO EFFECT FIRST FAILURE. LOSS OF REDUNDANCY HAS NO EFFECT. LOSS OF AN EIU CAUSES LOSS OF COMMAND CAPABILITY TO THAT MAIN ENGINE.

**(C) MISSION:**

NO EFFECT FIRST FAILURE. LOSS OF A SINGLE EIU MAY CAUSE AN ABORT IF THE FAILURE OCCURS IN THE THRUST BUCKET.

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

NO EFFECT FIRST FAILURE.

**(E) FUNCTIONAL CRITICALITY EFFECTS:**

CRITICALITY 1R2 BECAUSE OF POSSIBLE LOSS OF CREW/VEHICLE AFTER SECOND FAILURE (LOSS OF REDUNDANT POWER TO EIU FROM SECOND EIU POWER SWITCH). LOSS OF ONE EIU WHICH MAY CAUSE LOSS OF VEHICLE/CREW (IF FAILURE OCCURS IN BETWEEN FINE COUNT AND SHUT DOWN). LOSS OF MULTIPLE EIU'S MAY CAUSE LOSS OF VEHICLE/CREW DURING ASCENT.

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**-DISPOSITION RATIONALE-**

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**(A) DESIGN:**

FOR DISPOSITION AND RATIONALE, REFER TO APPENDIX A, ITEM NO. 1 - TOGGLE SWITCH.

**(B) TEST:**

FOR DISPOSITION AND RATIONALE, REFER TO APPENDIX A, ITEM NO. 1 - TOGGLE SWITCH.

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

**(C) INSPECTION:**

FOR DISPOSITION AND RATIONALE, REFER TO APPENDIX A, ITEM NO. 1 - TOGGLE SWITCH.

FAILURE MODES EFFECTS ANALYSIS (FMEA) - CIL FAILURE MODE

NUMBER: 05-65-85W6-01

(D) FAILURE HISTORY:

CURRENT DATA ON TEST FAILURES, FLIGHT FAILURES, UNEXPLAINED ANOMALIES, AND OTHER FAILURES EXPERIENCED DURING GROUND PROCESSING ACTIVITY CAN BE FOUND IN THE PRACA DATABASE.

(E) OPERATIONAL USE:

IF THE FAILURE IS DETECTED IN TIME, THE CREW WILL MANUALLY SHUT DOWN THE ENGINE PRIOR TO MAIN ENGINE CUTOFF (MECO).

- APPROVALS -

EDITORIALLY APPROVED

: RI

EDITORIALLY APPROVED

: JSC

TECHNICAL APPROVAL

: VIA APPROVAL FORM

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: 86-CIL-013 05-65