

FAILURE MODES EFFECTS ANALYSIS (FMEA) -- NON-CIL HARDWARE
NUMBER:05-6QA-BFUS2 -X

SUBSYSTEM NAME: EPD&C - MEDS

REVISION: 0 01/19/95

PART DATA

	PART NAME	PART NUMBER
	VENDOR NAME	VENDOR NUMBER
LRU	: PANEL C2A2	VO70-730280
LRU	: PANEL R12A2	VO70-730335
SRU	: FUSE	ME451-0018-0100

EXTENDED DESCRIPTION OF PART UNDER ANALYSIS:
 FUSE, 1 AMP, "CRT" POWER

REFERENCE DESIGNATORS: 35V73A2A2F1
 35V73A2A2F2
 35V73A2A2F3
 32V73A12A2F1

QUANTITY OF LIKE ITEMS: 4
 FOUR

FUNCTION:
 PROVIDE CIRCUIT OVERLOAD PROTECTION BETWEEN THE CONTROL BUS POWER (CA2, BC2, CA1, OR AB1) AND THE SWITCH CIRCUITRY THAT CONTROLS MAIN BUS POWER TO THE INTEGRATED DISPLAY PROCESSOR (IDP) AND "CRT" MULTIFUNCTION DISPLAY UNIT (MDU).

REFERENCE DOCUMENTS: VS70-730182D
 SSD90D0009B, CP#1
 MC409-0185D, AMENDMENT E01
 SSD92D0643D, CP#2

FAILURE MODES EFFECTS ANALYSIS FMEA – NON-CIL FAILURE MODE

NUMBER: 05-6QA-BFUS2-01

REVISION#: 1 04/26/98

SUBSYSTEM NAME: EPD&C - MEDS

LRU: PANEL C2A2, R12A2

ITEM NAME: FUSE

CRITICALITY OF THIS

FAILURE MODE: 1R3

FUNCTIONAL CRITICALITY/**REQUIRED FAULT TOLERANCE/ACHIEVED FAULT TOLERANCE: 1R/2/2****FAILURE MODE:**

OPEN

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:STRUCTURAL FAILURE, CONTAMINATION, VIBRATION, MECHANICAL SHOCK,
PROCESSING ANOMALY, THERMAL STRESS**CRITICALITY 1/1 DURING INTACT ABORT ONLY? NO****CRITICALITY 1R2 DURING INTACT ABORT ONLY (AVIONICS ONLY)? NO**

REDUNDANCY SCREEN

A) PASS
B) PASS
C) PASS

PASS/FAIL RATIONALE:

A)

B)

C)

METHOD OF FAULT DETECTION:

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VISUAL; NO POWER WILL BE PROVIDED TO ASSOCIATED IDP/MDU; APPLICABLE SWITCH SCAN WILL HAVE NO READING. ASSOCIATED GPC WILL ANNUNCIATE ERROR MESSAGE IF COMMUNICATION BETWEEN IDP AND GPC IS LOST.

MASTER MEAS. LIST NUMBERS: V73S2001E
V73S2011E
V73S2021E
V73S2051E

CORRECTING ACTION: AUTOMATED

CORRECTING ACTION DESCRIPTION:

CREW CAN UTILIZE REMAINING IDP'S AND MDU'S. IF MANUAL CONFIGURATION IS SELECTED, THE MDU DISPLAYS AN ERROR MESSAGE INDICATING PORT FAILURE AFTER THREE POLL-LISTENING ATTEMPTS AND CONTINUE TO LISTEN FOR THE VALID COMMANDS OVER THE SAME PORT UNTIL COMMANDED BY THE CREW TO SWITCH PORT. IF AUTOMATIC CONFIGURATION IS SELECTED, THE MDU SWITCHES TO OTHER PORT AUTOMATICALLY IN AN ATTEMPT TO COMMUNICATE WITH AN ALTERNATE IDP AFTER THREE UNSUCCESSFUL POLL-LISTENING ATTEMPTS. IF COMMUNICATION WITH AN ALTERNATE IDP IS SUCCESSFUL, AN ERROR MESSAGE WILL BE PROVIDED TO THE CREW OF THE FAILURE ENCOUNTERED ON THE ORIGINAL PORT. IF COMMUNICATION WITH ALTERNATE PORT IS NOT SUCCESSFUL AN ERROR MESSAGE FOR THAT PORT WILL BE GENERATED AND THE MDU WILL TOGGLE BETWEEN PORTS UNTIL SUCCESSFUL COMMUNICATION OR CORRECTIVE ACTION IS TAKEN.

REMARKS/RECOMMENDATIONS:
NONE.

- FAILURE EFFECTS -

(A) SUBSYSTEM:

LOSS OF CAPABILITY TO PROVIDE POWER TO THE ASSOCIATED MDU AND IDP

(B) INTERFACING SUBSYSTEM(S):

NO EFFECT FIRST FAILURE

(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 AFTER THIRD FAILURE (LOSS OF ALL FORWARD
"CRT" POWER FUSES) DUE TO INABILITY TO MONITOR OR RESPOND TO SYSTEM
FAILURES AND/OR LAND THE VEHICLE SAFELY.

NOTE: HEAD UP DISPLAY IS NOT A USABLE SOURCE OF INFORMATION PRIOR TO MAJOR
MODE 305.

- TIME FRAME -

TIME FROM FAILURE TO CRITICAL EFFECT: MINUTES

TIME FROM FAILURE OCCURRENCE TO DETECTION: IMMEDIATE

TIME FROM DETECTION TO COMPLETED CORRECTING ACTION: SECONDS

IS TIME REQUIRED TO IMPLEMENT CORRECTING ACTION LESS THAN TIME TO EFFECT?
YES

RATIONALE FOR TIME TO CORRECTING ACTION VS TIME TO EFFECT:
N/A (CORRECTIVE ACTION CAN BE COMPLETED BEFORE CRITICAL EFFECT)

HAZARD REPORT NUMBER(S):

HAZARD(S) DESCRIPTION:

- APPROVALS -

SS&PAE ENGR	: N. D. NGUYEN	<i>N. D. Nguyen</i>
MEDS SYSTEM	: M. B. WARNER	<i>M. B. Warner</i>
MEDS HARDWARE	: R. M. SITAPARA	<i>Ramnik Sitapara 4/29/98</i>