

**FAILURE MODES EFFECTS ANALYSIS (FMEA) -- CIL HARDWARE
NUMBER: 05-6-2619 -X**

SUBSYSTEM NAME: ELECTRICAL POWER DISTRIBUTION & CONTROL
REVISION: 0 05/03/88

PART DATA

	PART NAME	PART NUMBER
	VENDOR NAME	VENDOR NUMBER
LRU	: PANEL R13A2	V070-730338
SRU	: FUSE	ME451-0018-0100

EXTENDED DESCRIPTION OF PART UNDER ANALYSIS:
FUSE, SUBMINIATURE PLUG-IN TYPE, 1 AMP - PAYLOAD BAY MECHANICAL POWER CONTROL CIRCUIT

REFERENCE DESIGNATORS: 32V73A13A2F1
32V73A13A2F12
32V73A13A2F16
32V73A13A2F18
32V73A13A2F31
32V73A13A2F33
32V73A13A2F34
32V73A13A2F35

QUANTITY OF LIKE ITEMS: 8
EIGHT

FUNCTION:
CONDUCTS CONTROL BUS CURRENT AND PROVIDES CIRCUIT PROTECTION FOR COIL POWER TO THE ASSOCIATED ENABLING RELAYS WHICH CONNECT THE AC 3-PHASE POWER TO THE PAYLOAD BAY MECHANICAL (PLBM) 3-PHASE AC BUSES, PLBM AC BUS 1 AND PLBM AC BUS 3 FOR FREON RADIATOR DEPLOY/LATCH, REMOTE MANIPULATOR LATCH, AND KU-BAND DEPLOY/STOW MOTORS.

FAILURE MODES EFFECTS ANALYSIS FMEA -- CIL FAILURE MODE

NUMBER: 05-6-2519- 01

REVISION#: 1 07/26/99

SUBSYSTEM NAME: ELECTRICAL POWER DISTRIBUTION & CONTROL

LRU: PANEL R13A2

CRITICALITY OF THIS

ITEM NAME: FUSE

FAILURE MODE: 1R3

FAILURE MODE:

OPEN

MISSION PHASE:

LO LIFT-OFF
 OO ON-ORBIT
 DO DE-ORBIT

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

CAUSE:

STRUCTURAL FAILURE, THERMAL STRESS, VIBRATION, MECHANICAL SHOCK,
 CONTAMINATION, PROCESSING ANOMALY

CRITICALITY 1/1 DURING INTACT ABORT ONLY? NO**REDUNDANCY SCREEN**

A) PASS
 B) FAIL
 C) PASS

PASS/FAIL RATIONALE:

A)

B)

FAILS "B" SCREEN BECAUSE FAILURE IS MASKED BY REDUNDANT POWER FEEDS.

C)

- FAILURE EFFECTS -**(A) SUBSYSTEM:**

FIRST FAILURE - NO EFFECT. LOSS OF ONE OF TWO FUSES SUPPLYING SERIES RELAYS.
 SECOND FAILURE - REDUNDANT FUSE (OPEN) CAUSES LOSS OF ONE PLBM AC BUS IN
 TWO DIFFERENT MID MOTOR CONTROL ASSEMBLIES.

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(B) INTERFACING SUBSYSTEM(S):

FIRST FAILURE - NO EFFECT. SECOND FAILURE - LOSS OF ABILITY TO SUPPLY AC POWER TO ONE OF TWO MOTORS FOR FREON RADIATOR DEPLOY/STOW/LATCH/ RELEASE. NO EFFECT - ALL CRITICAL FUNCTIONS HAVE REDUNDANT MOTORS POWERED FROM A DIFFERENT AC BUS IN A DIFFERENT MID MOTOR CONTROL ASSEMBLY.

(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 THIRD FAILURE (LOSS OF REDUNDANT MOTOR OR POWER/CONTROL CIRCUIT) DUE TO THE LOSS OF CAPABILITY TO STOW THE PORT OR STARBOARD FREON RADIATOR (RESULTS IN INABILITY TO CLOSE PAYLOAD BAY DOORS WHICH CAUSES AERODYNAMIC STRUCTURAL DAMAGE DURING ENTRY) OR INABILITY TO SAFELY LATCH/RELEASE PAYLOADS.

-DISPOSITION RATIONALE-

(A) DESIGN:

REFER TO APPENDIX D, ITEM NO. 4 - FUSE, SUBMINIATURE PLUG-IN TYPE

(B) TEST:

REFER TO APPENDIX D, ITEM NO. 4 - FUSE, SUBMINIATURE PLUG-IN TYPE

GROUND TURNAROUND TEST

NONE IDENTIFIED

(C) INSPECTION:

REFER TO APPENDIX D, ITEM NO. 4 - FUSE, SUBMINIATURE PLUG-IN TYPE

(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 DATA BASE.

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(E) OPERATIONAL USE:
NONE

- APPROVALS -

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