

**FAILURE MODES EFFECTS ANALYSIS (FMEA) – CIL HARDWARE
NUMBER: 05-6VF-2202 -X**

SUBSYSTEM NAME: EPD&C - LIFE SUPPORT: SMOKE & FIRE (08-2)

REVISION: 1 11/10/97

PART DATA

	PART NAME VENDOR NAME	PART NUMBER VENDOR NUMBER
LRU	: FWD LCA 1	MC450-0054-0001
LRU	: FWD LCA 1	MC450-0054-0002
LRU	: FWD LCA 2	MC450-0055-0001
LRU	: FWD LCA 2	MC450-0055-0002
LRU	: FWD LCA 3	MC450-0056-0001
LRU	: FWD LCA 3	MC450-0056-0002
SRU	: CONTROLLER, HYBRID DRIVER	MC477-0262-0002

EXTENDED DESCRIPTION OF PART UNDER ANALYSIS:

CONTROLLER, HYBRID DRIVER TYPE II FIRE SUPPRESSANT "FIRE" COMMAND

REFERENCE DESIGNATORS: 81V76A16A2U4
 82V76A17A2U4
 83V76A18A2U4

QUANTITY OF LIKE ITEMS: 3
ONE PER FIRE SUPPRESSANT CONTAINER

FUNCTION:

CONTROLS MAIN BUS POWER FOR FIRING THE FIRE SUPPRESSANT CONTAINER
PYROTECHNIC INITIATOR CONTROLLER (PIC).

FAILURE MODES EFFECTS ANALYSIS (FMEA) -CIL HARDWARE

NUMBER: 05-6VF-2202-X

- APPROVALS -

FAE MANAGER : K. L. PRESTON
PRODUCT ASSURANCE ENGR : T. K. KIMURA
DESIGN ENGINEERING : D. D. SOVEREIGN
BNA SSM : R. L. PHAN

K.L. Preston - 1-23-98
T. Kimura 1-22-98
D.D. Sovereign
R. Phan

SHUTTLE CRITICAL ITEMS LIST - ORBITER

SUBSYSTEM : EPD&C - SMK DET/FIRE SUPPMEA NO 05-6VF-2202 -1 REV: 01/29/88

ASSEMBLY : FLCA - 1,2,3	CRIT. FUNC: 1
P/N RI : MC477-0262-0002	CRIT. HDW: 1
P/N VENDOR:	VEHICLE 102 103 104
QUANTITY : 3	EFFECTIVITY: X X X
: ONE PER FIRE	PHASE(S): PL X LO X OO DO X LS
: SUPPRESSANT CONTAINER	

PREPARED BY:	REDUNDANCY SCREEN: A- B- C-	APPROVED BY (NASA):
DES <i>JWB</i> J BROWN	DES <i>[Signature]</i>	SSM <i>[Signature]</i>
REL M HOVE	REL <i>[Signature]</i> <i>1-30-88</i>	REL <i>[Signature]</i>
QE J.L. J COURSEN	QE <i>[Signature]</i>	QE <i>[Signature]</i>

ITEM:

CONTROLLER, HYBRID DRIVER TYPE II FIRE SUPPRESSANT "FIRE" COMMAND.

FUNCTION:

CONTROLS MAIN BUS POWER FOR FIRING THE FIRE SUPPRESSANT CONTAINERS PYROTECHNIC INITIATOR CONTROLLER (PIC). 81V76A16, 82V76A17, 83V76A18 AR (TYPE II).

FAILURE MODE:

FAILS ON, INADVERTANT OUTPUT.

CAUSE(S):

PIECE PART FAILURE, CONTAMINATION, MECHANICAL SHOCK, THERMAL STRESS VIBRATION, PROCESSING ANOMALY.

EFFECT(S) ON:

(A) SUBSYSTEM (B) INTERFACES (C) MISSION (D) CREW/VEHICLE

(A) CONTINUOUS FIRE COMMAND SIGNAL TO THE ASSOCIATED PIC.

(B) PIC ARMING IS INHIBITED BY FIRE COMMAND RESULTING IN LOSS OF SUPPRESSANT RELEASE CAPABILITY IN THE ASSOCIATED AVIONICS BAY.

(C,D) A FIRE IN CONJUNCTION WITH THIS FAILURE COULD RESULT IN LOSS OF VEHICLE/CREW. (PORTABLE EXTINGUISHERS CANNOT BE USED BECAUSE THE CREW IS CONFINED TO THEIR SEATS DURING LAUNCH AND DEORBIT). SINGLE-STRING EMERGENCY SYSTEM DURING LAUNCH AND DEORBIT.

DISPOSITION & RATIONALE:

(A) DESIGN (B) TEST (C) INSPECTION (D) FAILURE HISTORY (E) OPERATIONAL USE

(A-D) DISPOSITION AND RATIONALE

REFER TO APPENDIX B, ITEM NO. 1 - HYBRID DRIVER.

SHUTTLE CRITICAL ITEMS LIST - ORBITER

SUBSYSTEM :EPD&C - SMK DET/FIRE SUPPMEA NO 05-6VF-2202 -1 REV:01/29/88

(B) GROUND TURNAROUND TEST

PIC CIRCUIT TESTS PERFORMED PRIOR TO EACH FLIGHT.

(E) OPERATIONAL USE

POWER DOWN AFFECTED AVIONICS EQUIPMENT.