

SHUTTLE CRITICAL ITEMS LIST - ORBITER

SUBSYSTEM : EPD&C - SMK DET/FIRE SUP FMEA NO 05-6VF-2201 -1 REV:01/29/88

ASSEMBLY : C001 FWD LCA -1	CRIT. FUNC: 1R
P/N RI : MC477-0261-0002	CRIT. HOW: 3
P/N VENDOR:	VEHICLE 102 103 104
QUANTITY : 1	EFFECTIVITY: X X X
: ONE, FWD LCA-1	PHASE(S): PL X LO OO DO LS

PREPARED BY:	REDUNDANCY SCREEN: A-PASS B-FAIL C-PASS	APPROVED BY: (NASA)
DES <i>J.B.</i> J BROWN	DES <i>[Signature]</i>	SSM <i>[Signature]</i>
REL M HOVE	REL <i>[Signature]</i> 1-3-88	REL <i>[Signature]</i> 7/10/88
QE J COURSEN	QE <i>[Signature]</i>	QE <i>[Signature]</i> 2/11/88
		Rel <i>[Signature]</i> 2/11/88

ITEM:

CONTROLLER, HYBRID DRIVER (TYPE 1), SMOKE DETECTOR RESET POWER.

FUNCTION:

PROVIDES PRE-FLIGHT TEST BUS 1 POWER TO RESET THE SMOKE DETECTORS DURING GROUND OPERATIONS. 81V76A16 AR (TYPE I).

FAILURE MODE:

FAILS "ON", INADVERTANT OUTPUT, FAILS TO TURN "OFF".

CAUSE(S):

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

EFFECT(S) ON:

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

(A) CONTINUOUS 'RESET' SIGNAL TO ALL SMOKE DETECTORS

(B) C&W ALARM INHIBITED UNTIL POWER IS REMOVED FROM THE PRE-FLIGHT BU WHEN THE UMBILICAL IS DISCONNECTED. SOFTWARE GENERATED SMOKE ALARMS AR NOT APPECTED AND WILL PROVIDE ALARMS IN CASE OF A FIRE.

(C,D) NO EFFECT - FIRST FAILURE.

(E) FUNCTIONAL CRITICALITY EFFECT - POSSIBLE LOSS OF CREW/VEHICLE BASE UPON THE FOLLOWING SCENARIO:

- 1) RESET FAILED ON (CONTINUOUS).
- 2) LOSS OF ONE SMOKE SENSOR CONCENTRATION OUTPUT.
- 3) LOSS OF REDUNDANT SMOKE SENSOR CONCENTRATION OUTPUT.

LOSS OF ALL SMOKE DETECTION ALARMS COULD RESULT IN AN UNDETECTED FIRE SCREEN "B" FAILS BECAUSE THERE IS NO INSTRUMENTATION IN THE RESE CIRCUIT.

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SUBSYSTEM : EPD&C - SMK DET/FIRE SUPFMEA NO 05-6VF-2201 -1 REV:01/29/86

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.

(B) GROUND TURNAROUND TEST

SMOKE DETECTION CIRCUIT TESTS PERFORMED PRIOR TO EACH FLIGHT.

(E) OPERATIONAL USE

NO CREW ACTION REQUIRED.