SHUTTLE CRITICAL ITEMS LIST - ORBITER

SUBSYSTEM :EPD&C - SMK DET/FIRE SUPFMEA NO 05-6VF-2000 -1 REV:01/29/88

ASSEMBLY :PNL O14,15&16
P/N RI :MC454-0026-2030
P/N VENDOR:
QUANTITY :5
:FIVE PER VEHICLE
:

CRIT. FUNC: 1R
CRIT. HDW: 2

VEHICLE EFFECTIVITY:	102 X	103 X	104 X

PHASE(S): PL X LO X CO X DO X LS X

REDUNDANCY SCREEN: A-PASS B-PASS C-PASS

PREPARED BY:		APPROVED BY:		APPROVED BY (NASA):	
DES	J BROWN	DES		SSM	
REL	M HOVE	REL		REL	
QE	J COURSEN	QE		QE	

ITEM:
CIRCUIT BREAKERS (3 AMP), SMOKE DETECTOR POWER

FUNCTION:
PROVIDES POWER CONTROL AND OVERLOAD PROTECTION FOR SMOKE DETECTOR OPERATION, SENSOR RESET AND "AGENT DISCHARGE" LIGHT. FOUR CIRCUIT BREAKERS ARE ASSOCIATED WITH EIGHT SMOKE DETECTORS IN THE AVIONICS BAYS AND FLIGHT DECK. ONE CIRCUIT BREAKER IS ASSOCIATED WITH THE SMOKE DETECTOR IN THE ECLSS BAY. 33V73A14 CB7 AND CB8, 33V73A15 CB7, 33V73A16 CB6 AND CB7.

FAILURE MODE:
FAILS OPEN, FAILS TO CONDUCT, FAILS TO CLOSE

CAUSE(S):
CONTAMINATION, STRUCTURAL FAILURE, THERMAL STRESS, MECHANICAL SHOCK, VIBRATION, PROCESSING ANOMALY

EFFECT(S) ON:
(A)SUBSYSTEM (B)INTERFACES (C)MISSION (D)CREW/VEHICLE

(A) LOSS OF POWER TO ASSOCIATED SMOKE DETECTOR(S).

(B) LOSS OF SMOKE DETECTION REDUNDANCY IN AVIONICS BAY OR CABIN.

(C,D) NO EFFECT FIRST FAILURE.

(E) FUNCTIONAL CRITICALITY EFFECT - POSSIBLE LOSS OF CREW/VEHICLE. THE SECOND ASSOCIATED FAILURE (LOSS OF REDUNDANT SMOKE DETECTOR) COULD RESULT IN AN UNDETECTABLE FIRE.

DISPOSITION & RATIONALE:
(A)DESIGN (B)TEST (C)INSPECTION (D)FAILURE HISTORY (E)OPERATIONAL USE

(A-D) DISPOSITION AND RATIONALE
REFER TO APPENDIX D, ITEM NO. 1 - CIRCUIT BREAKER.

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(B) GROUND TURNAROUND TEST
SMOKE DETECTION CIRCUIT TESTS PERFORMED PRIOR TO EACH FLIGHT.

(E) OPERATIONAL USE
NONE.