

SHUTTLE CRITICAL ITEMS LIST - ORBITER

SUBSYSTEM : EPD&C - MAIN PROP.

FMEA NO 05-6J -2171 -2 REV: 06/14/88
 ABORT: RTLS, TAL,
 AOA, ATO.

ASSEMBLY : D & C PANEL C3A1
 P/N RI : ME452-0060-XXXX
 LEFT -4186
 CENTER -4184
 RIGHT -4185

CRIT. FUNC: 1R
 CRIT. HDW: 2

P/N VENDOR:
 QUANTITY : 3
 : THREE
 :

VEHICLE	102	103	104
EFFECTIVITY:	X	X	X
PHASE(S):	PL	LO X CO	DO LS

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

PREPARED BY:
 DES *JWB* J BROWN
 REL *JDF* DEFENSOR
 QE *Don D MASAI*

APPROVED BY:
 DES *A. Beeman*
 REL *J. Kinnison 6/27/88*
 QE *J. Brown 6/27/88*

APPROVED BY (NASA):
 EPDC SSM *[Signature]*
 MPS SSM *[Signature]*
 EPDC REL *[Signature]*
 MPS REL *[Signature]*
 QE *[Signature]*

ITEM:

PUSHBUTTON SWITCH, (TWO POLES), MAIN ENGINE SHUTDOWN CIRCUIT.

FUNCTION:

PROVIDES MANUAL MAIN ENGINE SHUTDOWN CAPABILITY. 35V73A3A1S12, 13, 14.

FAILURE MODE:

FAILS CLOSED, CONTACT-TO-CONTACT SHORT (BOTH POLES).

CAUSE(S):

PIECE PART STRUCTURAL FAILURE, CONTAMINATION, VIBRATION, MECHANICAL SHOCK, PROCESSING ANOMALY.

EFFECT(S) ON:

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

- (A) INADVERTENT COMMANDS TO SWITCH REDUNDANCY MANAGEMENT (RM).
- (B) INADVERTENT SHUTDOWN OF ONE MAIN ENGINE.
- (C) POSSIBLE LOSS OF MISSION.
- (D) NO EFFECT - FIRST FAILURE.

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- (E) 1R/2, 1 SUCCESS PATH AFTER FIRST FAILURE. TIME FRAME - ASCENT.
1) SWITCH FAILS CLOSED, RESULTING IN INADVERTENT SHUTDOWN OF ONE MAIN ENGINE.
2) SECOND MAIN ENGINE FAILS.

POSSIBLE LOSS OF CREW/VEHICLE IF FAILURES OCCUR PRIOR TO ATTAINING SINGLE ENGINE INTACT ABORT CAPABILITY.

ABORT 1/1 IF FAILURE OCCURS PRIOR TO ATTAINING SINGLE ENGINE COMPLETION CAPABILITY.

DISPOSITION & RATIONALE:

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

(A-D) FOR DISPOSITION AND RATIONALE
REFER TO APPENDIX A, ITEM NO. 3 - PUSHBUTTON SWITCH.

(B) GROUND TURNAROUND TEST
SSME SHUTDOWN SWITCH VERIFICATION V41AFO.270 EVERY FLIGHT.

(E) OPERATIONAL USE
NO CREW ACTION CAN BE TAKEN.

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