

SHUTTLE CRITICAL ITEMS LIST - ORBITER

SUBSYSTEM : EPD&C - OMS

FMEA NO 05-6L -2031 -2

REV:10/30/87

ASSEMBLY : PANEL 014
 P/N RI : ME452-0102-7201
 P/N VENDOR:
 QUANTITY : 4
 : FOUR
 : (ONE PER HEATER GROUP)

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

CRIT. FUNC: 2R
 CRIT. HDW: 3

PREPARED BY:
 DES D SOVEREIGN
 REL F DEFENSOR
 QE J COURSEN

REDUNDANCY SCREEN:
 APPROVED BY:
 DES D.S. R. Bunn
 REL W. M. ... 11/16/87
 QE Tom ... 11/17/87

A-PASS B-FAIL C-PASS
 APPROVED BY (NASA):
 SSM John ...
 REL ...
 QE ...
 EPD&C SSM (D&C) for W.C. Stagg

ITEM:
 SWITCH, TOGGLE, 2 POLES, 2 POSITIONS (AUTO AND OFF), LEFT AND RIGHT
 RCS/OMS GROUP 1 AND GROUP 2 HEATERS.

FUNCTION:
 PROVIDES THE CREW THE CAPABILITY TO REMOTELY CONTROL AND SELECT THE LEFT
 AND RIGHT RCS/OMS POD GROUP 1 AND GROUP 2 HEATERS. 36V73A14S1, S2, S4,
 S5.

FAILURE MODE:
 INADVERTENTLY TRANSFERS TO "AUTO" POSITION, PREMATURE TRANSFER TO "AUTO"
 POSITION (ONE CONTACT SET).

CAUSE(S):
 CONTAMINATION, MECHANICAL SHOCK, VIBRATION, PIECE PART STRUCTURAL
 FAILURE.

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

- (A) ASSOCIATED HEATER CONTROL CIRCUIT IS ENERGIZED.
- (B) FAILURE HAS NO EFFECT SINCE FUNCTION WILL NOT BE COMPLETED
 PREMATURELY (SECOND INPUT FROM OTHER CONTACT SET OF SWITCH IS REQUIRED).
- (C,D) FIRST FAILURE HAS NO EFFECT.
- (E) POSSIBLE LOSS OF MISSION DUE TO PREMATURE COMPLETION OF FUNCTION.
 REQUIRES THREE OTHER FAILURES (OTHER CONTACT SET OF SAME SWITCH FAILS
 CLOSED, CONTROL THERMAL SWITCH FAILS CLOSED, REDUNDANT HEATER GROUP FAILS
 ON) BEFORE THE EFFECT IS MANIFESTED. NEXT PLS DEORBIT REQUIRED IF POD
 THERMAL LIMITS ARE VIOLATED. THE SWITCH IS A DOUBLE POLE SWITCH AND ONLY
 ONE POLE OF SWITCH IS READ BY THE SWITCH SCAN (V43S7510E).

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DISPOSITION & RATIONALE:

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

(A) FOR DISPOSITION AND RATIONALE

REFER TO APPENDIX A, ITEM NO. 1 - TOGGLE SWITCH.

(B) GROUND TURNAROUND TEST

V43CAO.070 - REDUNDANT CIRCUIT VERIFICATION (PERIODIC) - ORB/POD;
PERFORMED FOR FIRST FLIGHT AND AT 5 FLIGHT INTERVALS OR FOR LRU RETEST
PER FIGURE V43Z00.000 OR FOR ORBITER DISRUPTED COPPER PATHS. FUNCTIONAL
CHECKOUT OF HEATER CONTROL CIRCUITS PER FIGURE V43CAO.070-6.

V43CAO.075 - ELECTRICAL INTERFACE VERIFICATION ORB/POD; PERFORMED ON A
CONTINGENCY BASIS (POD REMOVAL AND REPLACEMENT). COPPER PATH
VERIFICATION OF HEATER CONTROL CIRCUIT INTERFACES.

(E) OPERATIONAL USE

DO NOT USE REDUNDANT HEATER CIRCUIT IF DETECTED.