

SHUTTLE CRITICAL ITEMS LIST - ORBITER

SUBSYSTEM : EPD&C - ATCS/FES                      EMEA NO 05-6WE-1008 -1                      REV:06/10/8

ASSEMBLY : PANEL L1A2			CRIT. FUNC: 1R
P/N RI : ME452-0102-7201			CRIT. HDW: 3
P/N VENDOR:	VEHICLE	102	103
QUANTITY : 1 (ONE)	EFFECTIVITY:	X	X
:	PHASE(S):	PL	LO
:			OO X DO X LS

PREPARED BY:	REDUNDANCY SCREEN: A-PASS B-FAIL C-PASS	APPROVED BY:	APPROVED BY (NASA):
DES J BROWN		DES <i>[Signature]</i>	SSM <i>[Signature]</i>
REL M HOVE		REL <i>[Signature]</i>	REL <i>[Signature]</i>
QE J COURSEN		QE <i>[Signature]</i>	QE <i>[Signature]</i>

ITEM: SWITCH, TOGGLE. HIGHLOAD EVAPORATOR, FLASH EVAPORATOR SYSTEM CONTROLLER.

FUNCTION: ACTIVATES THE HIGHLOAD EVAPORATOR DURING ASCENT AND ENTRY.  
31V73A1A2S34.

FAILURE MODE: FAILS OPEN, PREMATURE OPEN, FAILS CLOSED IN THE "ENABLE" POSITION

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

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

- (A) OPEN SWITCH CONTACTS WOULD ENABLE HIGH LOAD EVAPORATOR.
- (B) SECONDARY CONTROLLER COULD NOT SELECT TOPPING EVAPORATOR.
- (C) NO EFFECT
- (D) NO EFFECT

(E) FUNCTIONAL CRITICALITY EFFECT - LOSS OF ORBITER COOLING CAN CAUSE LOSS OF CREW/VEHICLE. THREE ADDITIONAL FAILURES COULD CAUSE LOSS OF ADEQUATE ORBITER COOLING FOR SAFE RETURN AND RESULT IN LOSS OF CREW/VEHICLE - (1) FAILURE OF THE HI-LOAD EVAPORATOR. (2,3) LOSS OF TWO OF THE THREE REMAINING ORBITER COOLING SYSTEMS - TOPPING EVAPORATOR, AMMONIA BOILER SYSTEM, AND COLD-SOAKED RADIATORS - ARE REQUIRED FOR SAFE RETURN.

SCREEN B FAILS BECAUSE OPEN SWITCH ELIMINATES SWITCH SCAN.

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DISPOSITION & RATIONALE:

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

(A-D) DISPOSITION AND RATIONALE

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

(B) GROUND TURNAROUND TEST

"HI LOAD ENABLE" SWITCH VERIFIED EVERY FIVE FLIGHTS.

(E) OPERATIONAL USE

NONE REQUIRED FOR FIRST FAILURE.