SHUTTLE CRITICAL ITEMS LIST - ORBITER

SUBSYSTEM :EPD&C - ARS:COOLING FMEA NO 05-6UB-2001 -1 REV:03/21/88

ASSEMBLY :PANEL L1A2
P/N RI :ME452-0102-7301
P/N VENDOR:
QUANTITY :2 (TWO),
:ONE PER FAN

CRIT. FUNC: 1R
CRIT. HDW: 2

VEHICLE EFFECTIVITY:	102	103	104
	X	X	X

PHASE(S): FL LO X OO X DO X LS

REDUNDANCY SCREEN: A-PASS B-N/A , C-PASS

PREPARED BY:
DES J BROWN
REL M HOVE
QE J COURSEN

APPROVED BY:
DES
REL
QE

APPROVED BY (NASA):
SSM
REL
QE

ITEM:
SWITCH, TOGGLE (3 POLE, TWO POSITION) CABIN AIR FAN A & B. 31V73A1A2S17, S18.

FUNCTION:
PROVIDES MANUAL CONTROL CAPABILITY FOR APPLYING ELECTRICAL POWER TO CABIN AIR FANS.

FAILURE MODE:
FAILS OPEN, PREMATURE OPEN, SHORT-TO-CASE (GROUND), FAILS IN THE "OFF" POSITION.

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

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

(A) LOSS OF ONE OF TWO CABIN FANS.

(B) LOSS OF CABIN AIR CONDITIONING AND AVIONICS COOLING UNTIL CORRECTIVE ACTION IS TAKEN.

(C) ABORT DECISION REQUIRED FOR LOSS OF CABIN FAN.

(D) FIRST FAILURE - NO EFFECT.

(E) THIS FAILURE IN COMBINATION WITH LOSS OF REDUNDANT CABIN FAN RESULTS IN POSSIBLE LOSS OF CABIN AIR COOLED AVIONICS. LOSS OF CABIN AIR COOLED AVIONICS RESULTS IN POTENTIAL LOSS OF CREW/VEHICLE. SCREEN B IS N/A DUE TO STANDBY REDUNDANCY.

SHUTTLE CRITICAL ITEMS LIST - ORBITER

SUBSYSTEM :EPD&C - ARS:COOLING FMEA NO D5-6UB-2001 -1 REV:03/21/88

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

(A,B,C,D) DISPOSITION AND RATIONALE
REFER TO APPENDIX A, ITEM NO. 1 - TOGGLE SWITCH.

(B) GROUND TURNAROUND TEST
CABIN SWITCH OPERATION IS VERIFIED PRIOR TO EACH FLIGHT FOR EACH FAN AN OPERATION IS VERIFIED BY MONITORING SWITCH SCAN MEASUREMENTS AND CABI FAN DELTA PRESSURE MEASUREMENTS.

(E) OPERATIONAL USE

-CREW RESPONSE
-CABIN FAN PERFORMANCE DEGRADATION TROUBLESHOOTING.

-TRAINING
-CURRENT ECLSS TRAINING COVERS THE GENERIC EFFECTS OF THIS FAILURE.

-CURRENT FDF PROCEDURES ARE COMPLETE.

-OPERATIONAL CONSIDERATION
-REAL TIME DATA SYSTEM ALLOWS FOR GROUND MONITORING.
-REFERENCE FLIGHT RULES FOR MISSION TERMINATION REQUIREMENTS.