

SHUTTLE CRITICAL ITEMS LIST - ORBITER

SUBSYSTEM : EPD&C - MAIN PROP. FMEA NO 05-6J -2065 -1 REV:06/16/88
 ASSEMBLY : APT LCA-2 ABORT: RTLS, TAL.
 P/N RI : MC477-0263-0002 CRIT. FUNC: 3
 P/N VENDOR: CRIT. HDW: 3
 QUANTITY : 2 VEHICLE 102 103 104
 : TWO EFFECTIVITY: X X X
 : PHASE(S): PL LO X OO DO LS

REDUNDANCY SCREEN: A- B- C-
 PREPARED BY: APPROVED BY: APPROVED BY (NASA):
 DES J. Brown DES J. Brown EPDC SSM General
 REL F. Defensor REL J. Kumura 6/27/88 MPS SSM General
 QE D.M. Masai QE J. Brown 6/27/88 EPDC REA General
 MPS REA General QE General

ITEM:

CONTROLLER, HYBRID DRIVER (HDC), TYPE III, LH2 HELIUM MANIFOLD REPRESSURIZATION VALVE SOLENOID (LV42, 43).

FUNCTION:

CONDUCTS MAIN BUS B POWER TO LH2 HELIUM MANIFOLD REPRESSURIZATION VALVE SOLENOID. 55V76A122J3(82), (84).

FAILURE MODE:

LOSS OF OUTPUT, FAILS TO CONDUCT, FAILS TO TURN "ON".

CAUSE(S):

PIECE PART FAILURE, CONTAMINATION, VIBRATION, MECHANICAL SHOCK, PROCESSING ANOMALY, THERMAL STRESS.

EFFECT(S) ON:

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

(A) LOSS OF POWER TO ONE OF TWO SERIES LH2 HELIUM MANIFOLD REPRESSURIZATION VALVES (LV42, 43).

(B) INABILITY TO OPEN ONE OF TWO SERIES LH2 HELIUM MANIFOLD REPRESSURIZATION VALVES. LH2 MANIFOLD REPRESSURIZATION SYSTEM FUNCTION CONSIDERED NON MAMDATORY FOR NOMINAL, AOA, ATO MISSIONS.

(C,D) NO EFFECT - FIRST FAILURE.

CRITICALITY 1/1 DURING RTLS AND TAL ABORTS. FAILURE RESULTS IN LOSS OF LH2 MANIFOLD REPRESS (MANDATORY TO PRECLUDE FLAMMABLE CONCENTRATIONS IN THE LH2 PROPELLANT SYSTEM) CAUSING POSSIBLE FIRE/EXPLOSION HAZARD IN THE LH2 PROPELLANT SYSTEM.

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DISPOSITION & RATIONALE:

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

(A-D) FOR DISPOSITION AND RATIONALE:

REFER TO APPENDIX B, ITEM NO. 1 - HYBRID DRIVER CONTROLLER.

(B) GROUND TURNAROUND TEST

COMPLETE ELECTRICAL VERIFICATION, V41AAC.100D EVERY FLIGHT.

(E) OPERATIONAL USE

NO CREW ACTION CAN BE TAKEN.