SHUTTLE CRITICAL ITEMS LIST - ORBITER

SUBSYSTEM :EPD&C - AUXILIARY PWR FMEA NO 05-6N -2026 -1 REV:11/21/87

ASSEMBLY :AFT LCA 1,2,3 CRIT. FUNC: 1R
P/N RI :RLR42C1201GR CRIT. HDW: 3
P/N VENDOR: VEHICLE 102 103 104
QUANTITY :12 EFFECTIVITY: X X X
:TWELVE PHASE(S): PL X LO X OO DO LS X
:

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

PREPARED BY: APPROVED BY: APPROVED BY (NASA):
DES A BAIZ DES SSM
REL T KIMURA REL REL
QE J T COURSEN QE QE
EPD&C SSM

ITEM:
RESISTOR, ISOLATION, 1.2K OHM - AUXILIARY POWER UNIT (APU) FUEL ISOLATION CONTROL CIRCUIT

FUNCTION:
TO ISOLATE TYPE 3 HYBRID DRIVER CONTROLLERS. S4V76A121 (J7-122), (J7-124), (J9-20), (J9-94); S5V76A122 (J7-122), (J7-124), (J9-11), (J9-94); S6V76A123 (J7-122), (J7-124), (J9-16), (J9-94)

FAILURE MODE:
OPEN

CAUSE(S):
STRUCTURAL FAILURE, MECHANICAL STRESS, VIBRATION, ELECTRICAL STRESS, THERMAL STRESS, PROCESSING ANOMALY

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

(A) NO EFFECT - FIRST FAILURE

(B) DEGRADATION OF REDUNDANCY. REQUIRES THREE FAILURES TO FAIL BOTH FUEL ISOLATION VALVES CLOSE AND LOSE ONE APU.

(C) NO EFFECT - FIRST FAILURE. ABORT DECISION REQUIRED AFTER THREE FAILURES.

(D) NO EFFECT - FIRST FAILURE

(E) POSSIBLE LOSS OF CREW/VEHICLE AFTER THREE OTHER FAILURES (RESISTOR IN REDUNDANT CIRCUIT OPENS, FAILURE OF REDUNDANT FUEL ISOLATION VALVE, LOSS OF SECOND APU).

FIRST FAILURE NOT DETECTABLE IN FLIGHT DUE TO PARALLEL REDUNDANCY OF HDC-3 DRIVER CONTROL CIRCUITS.

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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 E, ITEM NO. 1 - RESISTOR, FILM

(B) GROUND TURNAROUND TEST
FUEL ISOLATION VALVE CIRCUIT CHECKS WITH BUS DROPS PERFORMED FIRST AND EVERY TENTH FLOW THEREAFTER.

(E) OPERATIONAL USE
NONE