

SELECTED CRITICAL ITEMS LIST - JITTER

S050260M  
ATTACHMENT  
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SUBSYSTEM :ELECT POWER DIST & CONT FMEA NO 05-6N -2068 -1 REV:01/07/91

ASSEMBLY :AFT LCA 1,2,3  
P/N RI :JANTXVIN5551  
P/N VENDOR:  
QUANTITY :6  
:SIX  
:

CRIT.FUNC: 1R  
CRIT. HDW: 2  
VEHICLE 102 103 104  
EFFECTIVITY: X X X  
PHASE(S): PL LO OO X DO LS

REDUNDANCY SCREEN: A-PASS B-PASS C-PASS  
PREPARED BY: APPROVED BY: APPROVED BY (NASA):  
DES T NGUYEN TP DES J.M. [Signature] 1-21-91 SSM [Signature] 2-13-91  
REL T KIMURA TK REL [Signature] 1-21-91 REL [Signature] 1-21-91  
QE W R HIGGINS WH QE [Signature] 1-23-91 QE [Signature] 1-23-91  
EPDC Rel [Signature] 1-23-91  
EPDC SSM [Signature] 2-5-91

ITEM:  
DIODE, ISOLATION (3 AMP) - AUXILIARY POWER UNIT (APU) HEATERS, GAS GENERATOR/FUEL PUMP 1, 2, AND 3 POWER CIRCUITS

FUNCTION:  
PROVIDES THERMOSTAT ISOLATION IN THE APU 1, 2, AND 3 FUEL PUMP/LINE/VALVE HEATERS.  
54V76A121 (J7-29), (J7-55)  
55V76A122 (J7-29), (J7-55)  
56V76A123 (J7-29), (J7-55)

FAILURE MODE:  
OPEN, FAILS TO CONDUCT

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 EFFECT:  
(A) LOSS OF CAPABILITY TO CONDUCT CONTROL POWER FROM THE THERMOSTAT CIRCUIT TO THE GROUND DRIVER IN THE AFFECTED HEATER CIRCUIT.  
(B) LOSS OF ONE OF TWO LINE/PUMP/VALVE HEATERS TO ONE APU.  
(C,D) NO EFFECT - FIRST FAILURE  
(E) POSSIBLE LOSS OF CREW/VEHICLE AFTER SECOND FAILURE (HDC OF REDUNDANT HEATER CIRCUIT FAILS TO CONDUCT) WHICH RESULTS IN LOSS OF FUEL PUMP/LINE/VALVE HEATERS TO THE SAME APU CAUSING FUEL (HYDRAZINE) FREEZING AND LINE RUPTURE UPON THAWING.

SHUTTLE CRITICAL ITEMS LIST - ORBITER

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SUBSYSTEM :ELECT POWER DIST & CONT FMEA NO 05-6 -2068 -1 REV:01/07/91

DISPOSITION & RATIONALE:

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

(A,B,C,D) DISPOSITION AND RATIONALE

REFER TO APPENDIX F, ITEM NO. 4 - DIODE

(B) TEST

AFU 1/2/3 HEATER TEST BY COCKPIT COMMAND PERFORMED IN FLIGHT EVERY FLOW OR AFTER CIG RETEST. ADDITIONALLY, BOTH 'A' & 'B' GAS GENERATOR/FUEL PUMP HEATER SYSTEMS ARE VERIFIED TO BE FUNCTIONING NOMINALLY PRIOR TO LAUNCH AND AFTER AFT COMPARTMENT CLOSEOUT.

(E) OPERATIONAL USE

FIRST FAILURE - SELECT ALTERNATE HEATER.

D.W.Y  
2-13-91