FAILURE MODES EFFECTS ANALYSIS (FMEA) – CRITICAL HARDWARE
NUMBER: 05-6N-2035-X

SUBSYSTEM NAME: EPD&C - AUXILIARY POWER UNIT
REVISION: 1 08/30/93

		PART NAME VENDOR NAME	PART NUMBER VENDOR NUMBER
LRU	:	PANEL R2	V070-730277
SRU	:	SWITCH, TOGGLE	ME452-0102-7253

PART DATA

EXTENDED DESCRIPTION OF PART UNDER ANALYSIS:
SWITCH, TOGGLE, 2 POLE 3 POSITION - AUXILIARY POWER UNIT (APU) START INJECTOR COOL CONTROL CIRCUIT

REFERENCE DESIGNATORS: 32V73A2S16
32V73A2S17
32V73A2S18

QUANTITY OF LIKE ITEMS: 3
THREE

FUNCTION:
PROVIDES START/RUN, INJECTOR COOL COMMAND TO APU CONTROLLER.

FAILURE MODES EFFECTS ANALYSIS (FMEA) – CRITICAL FAILURE MODE
NUMBER: 05-6N-2035-02

REVISION# 1 **08/30/93**

SUBSYSTEM NAME: EPD&C - AUXILIARY POWER UNIT
LRU: PANEL R2 **CRITICALITY OF THIS**
ITEM NAME: SWITCH, TOGGLE **FAILURE MODE:** 1/1

FAILURE MODE:
FAILS CLOSED, CONTACT-TO-CONTACT SHORT, POLE-TO-POLE SHORT

MISSION PHASE:

LO	LIFT-OFF
OO	ON-ORBIT
LS	LANDING SAFING

VEHICLE/PAYLOAD/KIT EFFECTIVITY:
102 COLUMBIA
103 DISCOVERY
104 ATLANTIS
105 ENDEAVOUR

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

CRITICALITY 1/1 DURING INTACT ABORT ONLY? NO

REDUNDANCY SCREEN
A) N/A
B) N/A
C) N/A

PASS/FAIL RATIONALE:
A)

B)

C)

- FAILURE EFFECTS -

(A) SUBSYSTEM:
START/RUN COMMAND INADVERTENTLY GIVEN - UNSAFE TO START APU IF GAS GENERATOR (GG) TEMPERATURE IN EXCESS OF 390 DEGREE F.

(B) INTERFACING SUBSYSTEM(S):
START/RUN COMMAND INADVERTENTLY GIVEN - UNSAFE TO START APU IF GAS GENERATOR (GG) TEMPERATURE IN EXCESS OF 390 DEGREE F.

(C) MISSION:
POSSIBLE LOSS OF CREW/VEHICLE IF INADVERTENT APU HOT RESTART OCCURS BEFORE SUFFICIENT GG COOLING IS PROVIDED. THIS SWITCH HAS CRITICALITY 1 UNTIL THE "APU FUEL ISO VALVE" SWITCH IS TURNED OFF.

FAILURE MODES EFFECTS ANALYSIS (FMEA) -- CRITICAL FAILURE MODE NUMBER: 05-6N-2035-02

(D) CREW, VEHICLE, AND ELEMENT(S):
POSSIBLE LOSS CREW/VEHICLE IF INADVERTENT APU HOT RESTART OCCURS BEFORE SUFFICIENT GG COOLING IS PROVIDED. THIS SWITCH HAS CRITICALITY 1 UNTIL THE "APU FUEL ISO VALVE" SWITCH IS TURNED OFF.

(E) FUNCTIONAL CRITICALITY EFFECTS:

-DISPOSITION RATIONALE-

(A) DESIGN:
REFER TO APPENDIX A, ITEM NO. 1 - TOGGLE SWITCH

(B) TEST:
REFER TO APPENDIX A, ITEM NO. 1 - TOGGLE SWITCH

GROUND TURNAROUND TEST - APU 1/2/3 CONTROLLER TEST THROUGH GROUND CONNECTION PERFORMED EVERY FLOW OR AFTER LRU RETEST OF APU ASSEMBLY, AFTER LRU RETEST OF CONTROLLER ASSEMBLY OR AFTER CIG RETEST.

(C) INSPECTION:
REFER TO APPENDIX A, ITEM NO. 1 - TOGGLE SWITCH

(D) FAILURE HISTORY:
REFER TO APPENDIX A, ITEM NO. 1 - TOGGLE SWITCH

(E) OPERATIONAL USE:
NONE

- APPROVALS -

EDITORIALLY APPROVED : RI
EDITORIALLY APPROVED : JSC
TECHNICAL APPROVAL : VIA CR :S5270L