PRINT DATE: 09/09/92

FAILURE MODES EFFECTS ANALYSIS (FMEA) -- CRITICAL HARDWARE
NUMBER: M5-6MB-2032-G-X

SUBSYSTEM NAME: ELECTRICAL POWER GENERATION - CRYO, GENERIC
REVISION : 9 09/09/92

		PART NAME VENDOR NAME	PART NUMBER VENDOR NUMBER
LRU	:	PANEL L2A1	V070-730272
SRU	:	SWITCH, TOGGLE	ME452-0102-7205

- PART DATA -

EXTENDED DESCRIPTION OF PART UNDER ANALYSIS:
SWITCH, TOGGLE, 2P3P, MOMENTARY - ECLSS 02 SYSTEM NO. 1 AND NO. 2 SUPPLY VALVES

REFERENCE DESIGNATORS: 31V73A2A1S11
: 31V73A2A1S20

QUANTITY OF LIKE ITEMS: 2
TWO, ONE PER 02 SUPPLY VALVE CIRCUIT

FUNCTION:
PROVIDES CREW WITH THE CAPABILITY TO MANUALLY "OPEN" OR "CLOSE" ECLSS 02 SUPPLY VALVES 1 AND 2.

FAILURE MODES EFFECTS ANALYSIS (FMEA) -- CRITICAL FAILURE MODE
NUMBER: M5-6MB-2032-G-03

REVISION# 9 09/09/92
SUBSYSTEM: ELECTRICAL POWER GENERATION - CRYO, GENERIC
LRU PANEL L2A1
ITEM NAME: SWITCH, TOGGLE
CRITICALITY OF THIS FAILURE MODE: 1/1

FAILURE MODE:
FAILS CLOSED, INADVERTENT OUTPUT ON VALVE "CLOSING" SIDE

MISSION PHASE:
LO LIFT-OFF
OO ON-ORBIT
DO DE-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:
LOSS OF ABILITY TO CONTROL THE ASSOCIATED ECLSS O2 SUPPLY VALVES 1 OR 2. THE AFFECTED O2 SUPPLY VALVE WILL CLOSE AND WILL NOT BE ABLE TO BE OPENED

(B) INTERFACING SUBSYSTEM(S):
SAME AS (A)

FAILURE MODES EFFECTS ANALYSIS (FMEA) -- CRITICAL FAILURE MODE
NUMBER: M5-6MB-2032-G-03

(C) MISSION:
POSSIBLE LOSS OF CREW/VEHICLE DUE TO THE FOLLOWING SCENARIO:
LOSS OF EITHER SYSTEM 1 OR SYSTEM 2 OXYGEN LOOPS RESULTING IN INSUFFICIENT OXYGEN FLOW FOR THE ASTRONAUTS' LAUNCH/ENTRY (LES) SUITS. LOSS OF THIS EMERGENCY SYSTEM (LES) MAY OCCUR IN A CABIN/CREW ATMOSPHERE WHERE HARMFUL CONTAMINANTS OR DEPRESSURIZATION MAY EXIST.

(D) CREW, VEHICLE, AND ELEMENT(S):
SAME AS (C)

- 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
SWITCH OPERATION IS VERIFIED DURING EVERY TURNAROUND.

(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 -

PRODUCT ASSURANCE MGR	T. J. EAVENSON	T. J. Eavenson 9/14/92
PRODUCT ASSURANCE ENG	T. K. KIMURA	T. K. Kimura 9/14/92
DESIGN ENG TEAM LEADER	G. M. ANDERSON	G. M. Anderson 9.15.92
DESIGN ENGINEERING	T. D. NGUYEN	T. D. Nguyen 9/15/92
NASA RELIABILITY		[illegible] 12/16/92
NASA SUBSYSTEM MANAGER		[illegible] 12/16/92
NASA EPD&C RELIABILITY		For S. Dudard 12/17/92
NASA QUALITY ASSURANCE		RO [illegible] 12/9/92
NASA EPD&C SUBSYS MGR		[illegible] 12/14/92