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PRINT DATE: 03/18/98 10/19/94

**FAILURE MODES EFFECTS ANALYSIS (FMEA) - NONCRITICAL HARDWARE
NUMBER: M5-6MR-0032-X**

SUBSYSTEM NAME: ORBITER DOCKING SYSTEM

REVISION: 1 SEP 30, 1996

	PART NAME VENDOR NAME	PART NUMBER VENDOR NUMBER
LRU	: DOCKING SYSTEM POWER PANEL	V828-730150
SRU	: TOGGLE SWITCH	MC452-0102-7705

PART DATA

EXTENDED DESCRIPTION OF PART UNDER ANALYSIS:
SWITCH, TOGGLE, 2P2P, MOMENTARY ON - DEPRESS VENT & VENT ISOL SYS 1 MN A,
DEPRESS VENT & VENT ISOL SYS 2 MN B.

REFERENCE DESIGNATORS: 36V73A7A3S5
36V73A7A3S6
36V73A7A3S7
36V73A7A3S8

QUANTITY OF LIKE ITEM: 4
(FOUR)

FUNCTION:
THE SWITCHES PROVIDE MANUAL ACTIVATION OF THE DEPRESS VENT & VENT ISOL
SYS 1 MN A, AND THE DEPRESS VENT & VENT ISOL SYS 2 MN B.

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**FAILURE MODES EFFECTS ANALYSIS (FMEA) -- NONCRITICAL FAILURE MODE
NUMBER: M5-6MR-0032-02**

REVISION# 1 SEP 30, 1995

**SUBSYSTEM NAME: ORBITER DOCKING SYSTEM
LRU: MC4S2-0102-7705
ITEM NAME: TOGGLE SWITCH**

**CRITICALITY OF THIS
FAILURE MODE: 1R3**

**FAILURE MODE:
FAILS CLOSED IN THE "OPEN" POSITION, CONTACT TO CONTACT SHORT.**

**MISSION PHASE:
OO ON-ORBIT**

VEHICLE/PAYLOAD/KIT EFFECTIVITY: 104 ATLANTIS

**CAUSE:
A) PIECE PART STRUCTURAL FAILURE, B) CONTAMINATION, C) VIBRATION, D)
MECHANICAL SHOCK, E) PROCESSING ANOMALY**

CRITICALITY 1/1 DURING INTACT ABORT ONLY? NO

CRITICALITY 1R2 DURING INTACT ABORT ONLY (AVIONICS ONLY)? NO

REDUNDANCY SCREEN
A) PASS
B) PASS
C) PASS

**PASS/FAIL RATIONALE:
A)
B)
C)**

**METHOD OF FAULT DETECTION:
FAILURE WOULD BE DETECTABLE AFTER FAILURE OF THE PARALLEL POWER
SOURCE.**

MASTER MEAS. LIST NUMBERS:
V64X0141E
V64X0142E
V64X0143E
V64X0144E
V64X0145E
V64X0146E
V64X0147E
V64X0148E

**CORRECTING ACTION:
NONE**

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**FAILURE MODES EFFECTS ANALYSIS (FMEA) - NONCRITICAL FAILURE MODE
NUMBER: M5-6MR-0032-02**

- FAILURE EFFECTS -

(A) SUBSYSTEM:

LOSS OF CAPABILITY TO DE-ACTIVATE THE DEPRESSURIZATION OR ISOLATION VALVE CIRCUITS.

(B) INTERFACING SUBSYSTEM(S):

DEGRADATION OF REDUNDANCY AGAINST INADVERTENT OPENING OF THE VENT OR VENT ISOL VALVE.

(C) MISSION:

NO EFFECT.

(D) CREW, VEHICLE, AND ELEMENT(S):

FIRST FAILURE - NO EFFECT.

(E) FUNCTIONAL CRITICALITY EFFECTS:

POSSIBLE LOSS OF CREW OR VEHICLE AFTER FOUR FAILURES. 1) INADVERTENT VALVE OPEN COMMAND DURING DOCKED OPERATIONS. NO EFFECT. 2) THE SWITCH FOR REDUNDANT VALVE IN THE SAME POWER LEG FAILS SHORTED. 3) ASSOCIATED CIRCUIT BREAKER FAILS CLOSED RESULTING IN INADVERTENT OPENING OF THE VENT AND VENT ISOLATION VALVES. CLOSE FIFTH HATCH TO ISOLATE LEAK. 4) FAILURE OF FIFTH HATCH TO ISOLATE LEAK. POTENTIAL LOSS OF HABITABLE VOLUME.

- TIME FRAME -

TIME FROM FAILURE TO CRITICAL EFFECT: HOURS

TIME FROM FAILURE OCCURRENCE TO DETECTION: MINUTES

TIME FROM DETECTION TO COMPLETED CORRECTIVE ACTION: N/A

TIME REQUIRED TO IMPLEMENT CORRECTIVE ACTION LESS THAN TIME TO EFFECT?
N/A

HAZARDS: DM2SHA02(F).

LOSS OF PRESSURE IN ODS/DOCKING MODULE HABITABLE VOLUME.

- APPROVALS -

PRODUCT ASSURANCE ENGINEERING
DESIGN ENGINEERING:R. BLACKWELL :
:T. NGUYEN :