FAILURE MODES EFFECTS ANALYSIS (FMEA) – NONCRITICAL HARDWARE
NUMBER: M5-6MR-0030-X

SUBSYSTEM NAME: ORBITER DOCKING SYSTEM

REVISION: 1 SEP 30, 1995

		PART NAME VENDOR NAME	PART NUMBER VENDOR NUMBER
LRU	:	DOCKING SYSTEM POWER PANEL	V828-730150
SRU	:	CIRCUIT BREAKER	MC454-0026-2030

PART DATA

EXTENDED DESCRIPTION OF PART UNDER ANALYSIS:
CIRCUIT BREAKERS, 3 AMP - DEPRESS VENT & VENT ISOL SYS 1 MN A. DEPRESS VENT & VENT ISOL SYS 2 MN B.

REFERENCE DESIGNATORS: 36V73A7A3CB2
36V73A7A3CB3
36V73A7A3CB7
36V73A7A3CB8

QUANTITY OF LIKE ITEM: 4
(FOUR)

FUNCTION:
PROVIDE OVERLOAD PROTECTION TO THE ORBITER MN A AND MN B BUSES FROM THE DEPRESS AND VENT ISOL SYS 1 AND SYS 2 CIRCUITS.

REFERENCE DOCUMENTS:
1) ECN 104-25012A. ODS ELECTRICAL CHANGE NOTICE.
2) CKB>=468=312=001 _ J"P. SCHEMATIC DIAGRAM - ANDROGYNOUS PERIPHERAL DOCKING SYSTEM (APDS) CONTROL PANEL PU-APSS SCHEMATIC.
3) V828-733002. SCHEMATIC DIAGRAM - D&C PANEL A7A3 AFT STATION
4) VS70-953104 ODS INTEGRATED SCHEMATIC.
5) 33Y.5212.005. "P. APDS CONTROL UNIT ELECTRICAL SCHEMATIC.

PRINT DATE: 10/26/95

FAILURE MODES EFFECTS ANALYSIS (FMEA) – NONCRITICAL FAILURE MODE
NUMBER: M5-6MR-0030- 02

REVISION# 1 SEP 30, 1995

SUBSYSTEM NAME: ORBITER DOCKING SYSTEM
LRU: MC454-0026-2030
ITEM NAME: CIRCUIT BREAKER

CRITICALITY OF THIS FAILURE MODE: 1R3

FAILURE MODE:
FAILS CLOSED, FAILS TO OPEN (MECHANICALLY)

MISSION PHASE:
OO ON-ORBIT

VEHICLE/PAYLOAD/KIT EFFECTIVITY: 104 ATLANTIS

CAUSE:
A) PIECE PART FAILURE, B) CONTAMINATION, C) VIBRATION, D) MECHANICAL SHOCK, E) PROCESSING ANOMALY, F) THERMAL STRESS

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:
NONE.

MASTER MEAS. LIST NUMBERS: NONE

CORRECTING ACTION:
NONE.

REMARKS/RECOMMENDATIONS:
CIRCUIT BREAKER IS LAUNCHED IN THE OPEN CONFIGURATION.

FAILURE MODES EFFECTS ANALYSIS (FMEA) – NONCRITICAL FAILURE MODE
NUMBER: M5-6MR-B030-02

- FAILURE EFFECTS -

(A) SUBSYSTEM:
LOSS OF CAPABILITY TO ISOLATE VENT OR VENT ISOLATION VALVE CIRCUITS FROM THE PNL MAIN BUSES.

(B) INTERFACING SUBSYSTEM(S):
NO EFFECT.

(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 THREE FAILURES. 1) CIRCUIT BREAKER FAILS CLOSED INADVERTENT POWER ENABLE TO THE VENT VALVE CIRCUITS. 1) INADVERTENT VALVE OPEN COMMAND DURING DOCKED OPERATIONS. NO EFFECT. 3) THE SWITCH FOR REDUNDANT VALVE IN THE SAME POWER LEG FAILS SHORTED. RESULTING IN INADVERTENT OPENING OF THE VENT AND VENT ISOLATION VALVES. POTENTIAL LOSS OF HABITABLE VOLUME.

- TIME FRAME -

TIME FROM FAILURE TO CRITICAL EFFECT: DAYS

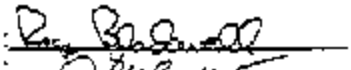
TIME FROM FAILURE OCCURRENCE TO DETECTION: MINUTES

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)~~ODS-7~~.
LOSS OF PRESSURE IN ODS/DOCKING MODULE HABITABLE VOLUME.

- APPROVALS -

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