FAILURE MODES EFFECTS ANALYSIS (FMEA) – NON-CIL HARDWARE
NUMBER: M5-6SS-B017-X

SUBSYSTEM NAME: E - Ddocking SYSTEM
REVISION: 0 DEC, 1996

		PART NAME VENDOR NAME	PART NUMBER VENDOR NUMBER
LRU	:	ENERGIA POWER PANEL RSC-E	MC621-0087-0009 SLIYU 468312.001
SRU	:	CIRCUIT BREAKER	Az2-3 (8>3.619.242. TU)

PART DATA

EXTENDED DESCRIPTION OF PART UNDER ANALYSIS:
PNL A8A3, CIRCUIT BREAKER (5.1 AMP TRIPPING CURRENT) - APDS "+A, +B, +C" CONTROL PANEL POWER.

REFERENCE DESIGNATORS: 36V73A8A3F3
36V73A8A3F7
36V73A8A3F11

QUANTITY OF LIKE ITEMS: 3
(THREE)

FUNCTION:
PROVIDE OVERLOAD PROTECTION, CONTROL AND DISTRIBUTION FOR THE CONTROL PANEL POWER BUSES (+A, +B, +C)

PRINT DATE: 11.02.97

FAILURE MODES EFFECTS ANALYSIS (FMEA) – NON-CIL FAILURE MODE
NUMBER: M5-6SS-B017- 02

REVISION# 0 FEBDEC, 1997

SUBSYSTEM NAME: E - DOCKING SYSTEM
LRU: MC621-0087-0009
ITEM NAME: CIRCUIT BREAKER

CRITICALITY OF THIS FAILURE MODE: 1R3

FAILURE MODE:
FAILS CLOSED, FAILS TO OPEN, INADVERTENTLY CLOSES, SHORTS CONTACT TO CONTACT

MISSION PHASE:
OO ON-ORBIT

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

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) N/A
C) PASS

PASS/FAIL RATIONALE:
A)

B)
N/A - AT LEAST TWO REMAINING PATHS ARE DETECTABLE IN FLIGHT.

C)

METHOD OF FAULT DETECTION:
VISUAL

MASTER MEAS. LIST NUMBERS: NONE

CORRECTING ACTION:
NONE.

- FAILURE EFFECTS -

(A) SUBSYSTEM:
INADVERTENT CONTROL PANEL POWER ON COMMAND FOR ONE OF THREE CONTROL PANEL BUSES (+A, +B, +C)

FAILURE MODES EFFECTS ANALYSIS (FMEA) – NON-CIL FAILURE MODE
NUMBER: M5-6SS-B017- 02

(B) INTERFACING SUBSYSTEM(S):
LOSS OF CAPABILITY TO REMOVE POWER FOR ONE OF THREE CONTROL PANEL BUSES.

(C) MISSION:
FIRST FAILURE - NO EFFECT.

(D) CREW, VEHICLE, AND ELEMENT(S):
NO EFFECT.

(E) FUNCTIONAL CRITICALITY EFFECTS:
SHUTTLE OR PMA1 MECHANISM CONTROL: POSSIBLE LOSS OF CREW OR VEHICLE AFTER EIGHT FAILURES.
1, 2) TWO APDS CONTROL PANEL POWER (A8A3) CIRCUIT BREAKERS FAIL CLOSED. 3, 4) TWO APDS POWER (A7A3) CIRCUIT BREAKERS FAIL CLOSED. 5) ONE OF TWO ASSOCIATED "UNDOCKING" SWITCHES FAILS CLOSED. 6) ONE OF TWO ASSOCIATED "POWER ON" SWITCHES FAILS CLOSED. 7) ONE OF TWO ASSOCIATED "APDS CIRC PROT OFF" SWITCHES FAILS CLOSED. 8) ONE PSU MAIN POWER RPC FAILS ON RESULTING IN ALL HOOKS INADVERTENTLY OPENING. POSSIBLE LOSS OF HABITABLE ENVIRONMENT.

DESIGN CRITICALITY (PRIOR TO OPERATIONAL DOWNGRADE, DESCRIBED IN F):

(F) RATIONALE FOR CRITICALITY CATEGORY DOWNGRADE:
N/A

- TIME FRAME -

TIME FROM FAILURE TO CRITICAL EFFECT: DAYS

TIME FROM FAILURE OCCURRENCE TO DETECTION: HOURS

TIME FROM DETECTION TO COMPLETED CORRECTIVE ACTION: N/A

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

RATIONALE FOR TIME TO CORRECTING ACTION VS TIME TO EFFECT: N/A

HAZARDS REPORT NUMBER(S): ORBI 511

HAZARD DESCRIPTION:
LOSS OF PRESSURE IN HABITABLE VOLUME

- APPROVALS -

PRODUCT ASSURANCE ENGR : M. NIKOLAYEVA :
DESIGN ENGINEER : B. VAKULIN :