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PRINT DATE: 10/26/95

**FAILURE MODES EFFECTS ANALYSIS (FMEA) - NONCRITICAL HARDWARE
NUMBER: M5-6MR-0027-X**

SUBSYSTEM NAME: ORBITER DOCKING SYSTEM

REVISION: 1 SEP 30, 1995

	PART NAME VENDOR NAME	PART NUMBER VENDOR NUMBER
LRU	: MPCA-3	V070-764450
SRU	: REMOTE POWER CONTROLLER	MC450-0017-X200

PART DATA

EXTENDED DESCRIPTION OF PART UNDER ANALYSIS:
REMOTE POWER CONTROLLER, TYPE III, CLASS B, 20 AMP - PYRO POWER MAIN C +Y
LOGIC BUS SIGNAL

REFERENCE DESIGNATORS: 40V76A27RPC39

**QUANTITY OF LIKE ITEM: 1
(ONE)**

FUNCTION:
THE REMOTE POWER CONTROLLER PROVIDES POWER DISTRIBUTION AND
ACTIVATION FOR ONE OF THE TWO LOGIC BUSES IN THE PFCU.

**FAILURE MODES EFFECTS ANALYSIS (FMEA) - NONCRITICAL FAILURE MODE
NUMBER: M5-6MR-0027- 01**

REVISION# 0 SEP 30, 1995

SUBSYSTEM NAME: ORBITER DOCKING SYSTEM
LRU: MC450-0017-X200
ITEM NAME: REMOTE POWER CONTROLLER

CRITICALITY OF THIS
FAILURE MODE: 1R3

FAILURE MODE:
LOSS OF OUTPUT, FAILS TO CONDUCT, FAILS TO TURN "ON"

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) N/A
C) PASS

PASS/FAIL RATIONALE:
A)
B)
PYROTECHNIC SEPARATION CLASSIFIED AS STAND-BY REDUNDANCY.
C)

METHOD OF FAULT DETECTION:
N/A

MASTER MEAS. LIST NUMBERS: NONE

CORRECTING ACTION:
NONE.

FAILURE MODES EFFECTS ANALYSIS (FMEA) - NONCRITICAL FAILURE MODE
NUMBER: M5-6MR-0027-01

- FAILURE EFFECTS -

(A) SUBSYSTEM:

LOSS OF CAPABILITY TO ACTIVATE ONE OF THE TWO PFCU FIRE CIRCUITS.

(B) INTERFACING SUBSYSTEM(S):

DEGRADED REDUNDANCY FOR PYROTECHNIC SEPARATION CAPABILITY, LOSS OF ONE OF TWO +Y LOGIC SIGNALS TO THE PFCU.

(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 FOURTHREE FAILURES. 1) RPC FAILS. DEGRADED REDUNDANCY FOR PYROTECHNIC SEPARATION. 2) FUSE IN THE REDUNDANT CIRCUIT FAILS OPEN. LOSS OF PFCU LOGIC. LOSS OF PYROTECHNIC UNDOCKING CAPABILITY. 3) ONE OF TWELVE HOOKS FAILS TO OPEN (REF. M8-1MR-BM001-04). LOSS OF CAPABILITY TO IMPLEMENT NOMINAL SEPARATION. LOSS OF NOMINAL AND PYROTECHNIC SEPARATION CAPABILITY. PERFORM EVA TO REMOVE 96 BOLTS HOLDING DOCKING BASE TO EXTERNAL AIRLOCK. 4) FAILURE OF EVA TO REMOVE BOLTS. LOSS OF ALL UNDOCKING CAPABILITY

- 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/MINUTES

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

HAZARDS: DM20HA04(F)GDS-16.

INABILITY TO SAFELY SEPARATE ORBITER FROM DOCKING MODULE OR MIR.

- APPROVALS -

PRODUCT ASSURANCE ENGINEERING
PRODUCT ASSURANCE MANAGER

: R. BLACKWELL
: T. NGUYEN

R. Blackwell
T. Nguyen