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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.

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**FAILURE MODES EFFECTS ANALYSIS (FMEA) - NONCRITICAL FAILURE MODE:
NUMBER: MS-6MR-0027- 02**

REVISION# 1 OCT 27, 1995

SUBSYSTEM NAME: ORBITER DOCKING SYSTEM

LRU: MC450-0017-X200

CRITICALITY OF THIS

ITEM NAME: REMOTE POWER CONTROLLER

FAILURE MODE: 1R3

FAILURE MODE:

INADVERTENT OUTPUT, FAILS TO TURN "OFF," FAILS "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 SCREENA) PASS
B) N/A/FAILS
C) PASS**PASS/FAIL RATIONALE:**

A)

B)

C) TWO REMAINING PATHS DETECTABLE. ~~FIRST FAILURE IS NOT DETECTABLE.~~

C)

METHOD OF FAULT DETECTION:

NONE.

MASTER MEAS. LIST NUMBERS:

NONE

CORRECTING ACTION:

NONE.

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**FAILURE MODES EFFECTS ANALYSIS (FMEA) - NONCRITICAL FAILURE MODE
NUMBER: M5-6MR-0027-02**

- FAILURE EFFECTS -

(A) SUBSYSTEM:

DEGRADATION OF REDUNDANCY AGAINST INADVERTENT PYROTECHNIC SEPARATION.

(B) INTERFACING SUBSYSTEM(S):

UNWANTED COMMAND - ONE OF TWO PFCU PYRO CIRCUIT PROTECT LOGIC CIRCUITS ALWAYS ENERGIZED.

(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 FIVE FAILURES. 1) RPC FAILS ON. NO EFFECT. 2) PYRO PROTECTION SWITCH FAILS CLOSED. DEGRADED REDUNDANCY AGAINST PYROTECHNIC SEPARATION. 3) ASSOCIATED RPC FAILS ON. DEGRADED REDUNDANCY AGAINST PYROTECHNIC SEPARATION. 4) PFCU LOGIC BUS "B" CIRCUIT BREAKER FAILS CLOSED (DETECTABLE.) DEGRADED REDUNDANCY AGAINST PYROTECHNIC SEPARATION. 5) ACTIVE HOOKS PYRO FIRE SWITCH MULTIPLE CONTACT FAILURE. POSSIBLE INADVERTENT SEPARATION.

- 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: DM20HA03(F)

INADVERTENT/ERRONEOUS SEPARATION OF ODS FROM DOCKING MODULE PRIOR TO DOCKING WITH MIR.

- APPROVALS -

PRODUCT ASSURANCE ENGINEERING
DESIGN ENGINEERING

R. BLACKWELL
T. NGUYEN

[Handwritten signatures]