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PRINT DATE 12/24/95

FAILURE MODES EFFECTS ANALYSIS (FMEA) - CRITICAL HARDWARE  
 NUMBER: 05-6R-320702 -X

SUBSYSTEM NAME: EPD&C - INSTRUMENTATION

REVISION: 1 02/05/95

	PART NAME VENDOR NAME	PART NUMBER VENDOR NUMBER
LRU	: AFT PCA 2	V070-765220
LRU	: AFT PCA 2	V070-765320
LRU	: AFT PCA 3	V070-765240
LRU	: AFT PCA 3	V070-765330
SRU	: CONTROLLER, REMOTE POWER	MC450-0017-1050
SRU	: CONTROLLER, REMOTE POWER	MC450-0017-2050
SRU	: CONTROLLER, REMOTE POWER	MC450-0017-3050
SRU	: CONTROLLER, REMOTE POWER	MC450-0017-4050

PART DATA

EXTENDED DESCRIPTION OF PART UNDER ANALYSIS:  
 REMOTE POWER CONTROLLER, RPC, 5A

REFERENCE DESIGNATORS: 54V76A131RPC6  
 56V76A133RPC7  
 55V76132RPC34

QUANTITY OF LIKE ITEMS: 3  
 THREE

FUNCTION:  
 UPON SWITCH COMMAND: THE RPC'S PROVIDE BUS POWER TO DEDICATED SIGNAL  
 CONDITIONERS (DSC) OR1 (RPC-6, RPC-34) AND OR2 (RPC-7, RPC-34).

- APPROVALS -

PAE MANAGER : K. L. PRESTON  
 PRODUCT ASSURANCE ENGR : N. HAFEZIZADEH  
 DESIGN ENGINEERING : R. L. PHAN  
 NASA EPD&C SUBSYS MGR :  
 NASA SUBSYS MGR :  
 NASA EPD&C SSMA :  
 NASA SSMA :

*K.L. Preston 4/21/95*  
*N. Hafezizadeh*  
*R. L. Phan*  
*John P. Fialkowski 3/14/96*  
 N/A  
*John Bridges 3-16-96*  
 N/A

SHUTTLE CRITICAL ITEMS LIST - ORBITER

SUBSYSTEM : EPO&C - INSTRUMENTATION FMEA NO 05-6R -320702-1 REV:8/16/88

ASSEMBLY : APT-PCA 2,3	CRIT. FUNC: 1R
P/N RI : MC450-0017-1050	CRIT. HDW: 3
P/N VENDOR:	VEHICLE 102 103 104
QUANTITY : 3	EFFECTIVITY: X X X
: THREE	PHASE(S): PL X LO X OO X DO X LS X

PREPARED BY:	REDUNDANCY SCREEN:	A-PASS B-FAIL C-PASS
DES W S MCKEE	APPROVED BY:	APPROVED BY (NASA):
REL R GREGORIAN	DES <i>J. Chausson</i>	SSM <i>7/16/88</i>
QE E GUTIERREZ	REL <i>8-31-88</i>	REL <i>9/1/88</i>
	QE <i>5-2-88</i>	QE <i>9/8/88</i>

ITEM:  
REMOTE POWER CONTROLLER RPC, 5A.

FUNCTION:  
UPON SWITCH COMMAND : THE RPC'S PROVIDE BUS POWER TO DEDICATED SIGNAL CONDITIONERS (DSC) OR1 (RPC-6, RPC-34) AND OR2 (RPC-7, RPC-34).  
REFERENCE DESIGNATORS: 54V76A131RPC6, 54V76A133RPC7, 55V76132RPC14.

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

CAUSE(S):  
PIECE PART FAILURE, CONTAMINATION, VIBRATION, MECHANICAL SHOCK PROCESSING ANOMALY, THERMAL STRESS.

EFFECT(S) ON:  
(A) SUBSYSTEM (B) INTERFACES (C) MISSION (D) CREW/VEHICLE

(A) LOSS OF ONE OF TWO REDUNDANT POWER PATHS TO SIGNAL CONDITIONERS OR1 OR OR2.

(B,C) FIRST FAILURE : NO EFFECT.

(D) FIRST FAILURE : NO EFFECT  
SECOND FAILURE : LOSS OF LIKE RPC IN REDUNDANT PATH TO DSC OR1 OR OR2, CAUSES LOSS OF ASSOCIATED DSC MEASUREMENTS.  
THIRD FAILURE : LOSS OF DSC MEASUREMENT MAY CONCEAL A SUBSYSTEM FAILURE THAT MAY CAUSE LOSS OF CREW/VEHICLE.

FAILS SCREEN "B" BECAUSE THE FIRST RPC FAILURE IS UNDETECTABLE.

SHUTTLE CRITICAL ITEMS LIST - ORBITER

SUBSYSTEM :EPD&C - INSTRUMENTATION FMIA NO 05-6R -320702-1 REV:8/16/83

DISPOSITION & RATIONALE:

(A)DESIGN (B)TEST (C)INSPECTION (D)FAILURE HISTORY (E)OPERATIONAL USE

(A-D) DISPOSITION AND RATIONALE

REFER TO APPENDIX B, ITEM NO. 2 - REMOTE POWER CONTROLLER.

(B) GROUND TURNAROUND TEST

POWER REDUNDANCY TEST ON ALL DSC'S ARE PERFORMED DURING GROUND  
TURNAROUND.

(E) OPERATIONAL USE

NONE