FAILURE MODES EFFECTS ANALYSIS (FMEA) -- CIL HARDWARE
NUMBER: 05-6WD-4060 -X

SUBSYSTEM NAME: EPD&C - ATCS/FCL

REVISION: 0 12/02/97

PART DATA

	PART NAME / VENDOR NAME	PART NUMBER / VENDOR NUMBER
LRU	: PANEL L2A1	V070-730273
SRU	:RESISTOR,1.2K,1/4 W	RLR07C1201GR

EXTENDED DESCRIPTION OF PART UNDER ANALYSIS:
RESISTOR, AUTOMATIC CONTROL CIRCUIT, FREON LOOP BYPASS VALVE CONTROL SUBSYSTEM.

REFERENCE DESIGNATORS: R25
R26

QUANTITY OF LIKE ITEMS: 2
TWO

FUNCTION:
RESISTORS R25 AND R26 ARE PART OF A VOLTAGE DIVIDING NETWORK:
R25 PROVIDES SWITCH SCAN FOR THE AUTOMATIC POSITION OF AUTO/MANUAL SWITCH.
R26 PROVIDES SWITCH SCAN FOR THE MANUAL POSITION OF OF AUTO/MANUAL SWITCH

FAILURE MODES EFFECTS ANALYSIS FMEA -- CIL FAILURE MODE
NUMBER: 05-6WD-4060- 01

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SUBSYSTEM NAME: EPD&C - ATCS/FCL
LRU: PANEL L2A1
ITEM NAME: RESISTOR

CRITICALITY OF THIS FAILURE MODE: 1R3

FAILURE MODE:
FAILS OPEN, PREMATURE OPEN

MISSION PHASE:
LO LIFT-OFF
OO ON-ORBIT

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

CAUSE:
PIECE PART STRUCTURAL FAILURE, CONTAMINATION, VIBRATION, MECHANICAL SHOCK, PROCESSING ANOMALY, THERMAL STRESS.

CRITICALITY 1/1 DURING INTACT ABORT ONLY? NO

REDUNDANCY SCREEN
A) PASS
B) FAIL
C) PASS

PASS/FAIL RATIONALE:
A)

B)
CANNOT ISOLATE THE FAILED RESISTOR WITHOUT USING INTRUSIVE PROCEDURES.

C)

- FAILURE EFFECTS -

(A) SUBSYSTEM:
NONE FIRST FAILURE.

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(B) INTERFACING SUBSYSTEM(S):
RESISTORS R25 AND R26 ARE PART OF A 28V TO 5V VOLTAGE DIVIDER. A FAILED OPEN RESISTOR MIGHT DAMAGE THE ASSOCIATED CHANNEL ON THE MDM.

(C) MISSION:
POSSIBLE LOSS OF MISSION AFTER 3 FAILURES: (1) R25 (OR R26) FAILS OPEN CAUSING LOSS OF FEEDBACK FOR AUTO BYPASS FUNCTION, (2) EXTERNAL LEAK RADIATOR ARRAY PORT (OR STARBOARD), AND (3) S27 PORT (OR S28 STARBOARD) CANNOT BE SWITCHED TO BYPASS IN LESS THAN 5 SECONDS.

(D) CREW, VEHICLE, AND ELEMENT(S):
POSSIBLE LOSS OF CREW/VEHICLE AFTER AFTER 4 FAILURES: (1) FEEDBACK RESISTOR R25 (OR R26) FAILS OPEN CAUSING LOSS OF FEEDBACK FOR AUTO BYPASS FUNCTION, (2) EXTERNAL LEAK RADIATOR ARRAY PORT (OR STARBOARD), AND (3) SWITCH S27 ON PORT SIDE (OR S28 ON STARBOARD SIDE) CANNOT BE SWITCHED TO RAD BYPASS IN 5 SECONDS OR LESS, AND (4) LOSS OF REDUNDANT COOLANT LOOP.

(E) FUNCTIONAL CRITICALITY EFFECTS:
PROBABLE LOSS OF MISSION AFTER 3 FAILURES: (1) R25 (OR R26) FAILS OPEN CAUSING LOSS OF FEEDBACK FOR AUTO BYPASS FUNCTION, (2) EXTERNAL LEAK RADIATOR ARRAY PORT (OR STARBOARD), AND (3) SWITCH S27 PORT (OR S28 STARBOARD) CANNOT BE SWITCHED TO RAD BYPASS IN 5 SECONDS OR LESS. POSSIBLE LOSS OF CREW/VEHICLE AFTER AFTER 4 FAILURES: (1) R25 (OR R26) FAILS OPEN CAUSING LOSS OF FEEDBACK FOR AUTO BYPASS FUNCTION, (2) EXTERNAL LEAK RADIATOR ARRAY PORT (OR STARBOARD), AND (3) SWITCH S27 ON PORT SIDE (OR S28 ON STARBOARD SIDE) CANNOT BE SWITCHED TO RAD BYPASS IN 5 SECONDS OR LESS, AND (4) LOSS OF REDUNDANT COOLANT LOOP.

-DISPOSITION RATIONALE-

(A) DESIGN:
REFER TO APPENDIX E ITEM NO. 2, RESISTOR FIXED FILM TYPE-RLR07.

(B) TEST:
REFER TO APPENDIX E, ITEM NO. 2, RESISTOR FIXED FILE TYPE- RLR07.

(C) INSPECTION:
REFER TO APPENDIX E, ITEM NO. 2, RESISTOR, FIXED FILM TYPE - RLR07.

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(D) FAILURE HISTORY:
REFER TO APPENDIX E, ITEM NO. 2, RESISTOR, FIXED FILM TYPE - RLR07.

(E) OPERATIONAL USE:

- APPROVALS -

SS & PAE MANAGER	: D. F. MIKULA	: D.F. Mikula
SS & PAE ENGINEER	: K. E. RYAN	: KERyan TLD
EPD&C ATC	: D. SOVEREIGN	: D. Sovereign
BNA SSM	: R. L. PHAN	: R. Phan
JSC MOD	:	: [illegible]
JSC RDE		Nanette Cerny 11-24-98
USA/orbiter		Suzanne Little 1-4-9
		[illegible] 1/18/99