FAILURE MODES EFFECTS ANALYSIS (FMEA) – NON-CIL HARDWARE
NUMBER: 05-6WD-4020 -X

SUBSYSTEM NAME: EPD&C - ATCS/FCL

REVISION: 0 12/16/97

PART DATA

	PART NAME VENDOR NAME	PART NUMBER VENDOR NUMBER
LRU	: PANEL L2A1	V070-730273
SRU	:TOGGLE SWITCH,3P,2T,CL	ME454-0102-7853

EXTENDED DESCRIPTION OF PART UNDER ANALYSIS:
TOGGLE SWITCH (3P,2T,CL), FREON LOOP BYPASS VALVE CONTROL SUBSYSTEM.

REFERENCE DESIGNATORS: S26

QUANTITY OF LIKE ITEMS: 1
ONE

FUNCTION:
FOR BOTH STARBOARD AND PORT COOLANT LOOPS THIS SWITCH PROVIDES AC POWER TO. REDUNDANT ISOLATION VALVE MOTORS, +28V POWER TO THE HYBRID RELAYS, FEEDBACK CIRCUITS FOR AUTOMATIC RADIATOR ISOLATION FUNCTION TO BE USED, AND PROVIDES SWITCHING BETWEEN MANUAL AND AUTOMATIC MODES.

FAILURE MODES EFFECTS ANALYSIS FMEA – NON-CIL FAILURE MODE
NUMBER: 05-6WD-4020- 01

REVISION#: 0 12/02/97

SUBSYSTEM NAME: EPD&C - ATCS/FCL
LRU: PANEL L2A1
ITEM NAME: TOGGLE SWITCH,3P,2T,CL

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) N/A
C) PASS

PASS/FAIL RATIONALE:
A)

B)
NSTS 22206 PARAGRAPH 3.4.4.A.2 STATES: CB'S, SWITCHES, RELIEF VALVES, ETC. CONSIDERED STANDBY REDUNDANT THEREFORE SCREEN B IS N/A.

C)

- FAILURE EFFECTS -

(A) SUBSYSTEM:
NONE FIRST FAILURE.

FAILURE MODES EFFECTS ANALYSIS (FMEA) -- NON-CIL FAILURE MODE
NUMBER: 05-6WD-4020- 01

(B) INTERFACING SUBSYSTEM(S):
NONE FIRST FAILURE.

(C) MISSION:
PROBABLE LOSS OF MISSION AFTER 2 FAILURES: (1) S26 FAILS OPEN, AND (2) EXTERNAL LEAK ASSOCIATED RADIATOR ARRAY.

(D) CREW, VEHICLE, AND ELEMENT(S):
POSSIBLE LOSS OF CREW/VEHICLE AFTER 3 FAILURES: (1) S26 FAILS OPEN, (2) EXTERNAL LEAK IN ASSOCIATED RADIATOR ARRAY, AND (3) FAILURE OF REDUNDANT COOLANT LOOP.

(E) FUNCTIONAL CRITICALITY EFFECTS:
PROBABLE LOSS OF MISSION AFTER 2 FAILURES: (1) S26 FAILS OPEN, AND (2) EXTERNAL LEAK ASSOCIATED RADIATOR ARRAYCAUSING REDUCTION IN COOLING CAPACITY FOR VEHICLE. POSSIBLE LOSS OF CREW/VEHICLE AFTER 3 FAILURES: (1) S26 FAILS OPEN, (2) EXTERNAL LEAK ASSOCIATED RADIATOR ARRAY CAUSING REDUCTION IN COOLING CAPACITY FOR VEHICLE, AND (3) LOSS OF REDUNDANT COOLANT LOOP CAUSING LOSS OF ALL VEHICLE COOLING FOR VEHICLE.

- APPROVALS -

SS & PAE MANAGER	: D. F. MIKULA	: D. F. Mikula
SS & PAE ENGINEER	: K. E. RYAN	: K. E. Ryan
EPD&C ATC	: D. SOVEREIGN	: D. Sovereign
BNA SSM	: R. L. PHAN	: R. Phan
JSC MOD	:	:
JSC RDE		Nanette Cerna 11-24-98
USA/Orbiter		Suzanne Little 1/19/99