

BAILEY SSLM REPORT

A. SUMMARY OF FAILURES BY MONTH DURING REPORT PERIOD

OCTOBER 1990

- 1) 10/02/90 1CC653 SLOT 8-6-15 O-2399 N-0600
INPUT BUFFER #8 FAILED. CONFIRMED FAILURE
W.O. 901001308
PROBLEM: 1C-P-209, C RACS PUMP TRIPPED ON LOW FLOW.

TOTAL MONTHLY FAILURES = 1

NOVEMBER 1990

- 1) 11/04/90 1AC652 SLOT 9-6-14 O-1241 N-0617
INPUT BUFFER #5 FAILED. CONFIRMED FAILURE
WO 901104088
PROBLEM: NO OPEN INDICATION FOR 1BEHV-F005A-E21. CORE
SPRAY LOOP A CONTAINMENT ISOLATION.
- 2) 11/08/90 1CC653 SLOT 8-7-6 O-2403 N-1379
INPUT BUFFER #1 FAILED CONFIRMED FAILURE
W.O. 901019077
PROBLEM: DUAL INDICATION ON 1CGHV-1962A, 2ND STAGE AIR
EJECTOR A SUCTION.
- 3) 11/11/90 1CC653 SLOT 5-4-2 O-1558 N-1232
INPUT BUFFER #1 FAILED CONFIRMED FAILURE
W.O. 901110095
PROBLEM: 1C-P-137, C SEC COND PUMP, DUAL START/STOP
INDICATION WITH PUMP OOS.
- 4) 11/12/90 1BC653 SLOT 4-7-12 O-1088 N-1269
INPUT BUFFER #1 FAILED. CONFIRMED FAILURE
W.O. 901105143
PROBLEM: 1AFHV-1502B1, 6B FW HTR STARTUP VENT, DUAL
INDICATION.
- 5) 11/13/90 1BC653 SLOT 12-5-9 O-1694 N-0603
OUTPUT BUFFERS #2,4,6 FAILED CONFIRMED FAILURE
W.O. 900927151
PROBLEM: 1F2V-212, DRYWELL COOLER FAN INDICATED BOTH
STOP AND START HI WHEN FAN WAS RUNNING.
- 6) 11/21/90 1BC652 SLOT 8-9-5 O-0212 N-1362
INPUT BUFFER #5 FAILED CONFIRMED FAILURE
W.O. 900208293
PROBLEM: 1BDHV-4405 WOULD NOT SHOW OPEN. ACTUAL MODULE
FAILURE WOULD HAVE AFFECTED 1FCHV-F060-E51, RCIC VACUUM
PUMP DISCHARGE VALVE. THE LATTER VALVE WOULD HAVE ALWAYS
HAD AN OPEN INDICATION.

- 7) 11/27/90 1AC652 SLOT 8-9-7 O-2410 N-1125
INPUT BUFFER #6 FAILED CONFIRMED FAILURE
W.O. 901127093
PROBLEM: 1FDHV-F001-E41, HPCI TURBINE STEAM SUPPLY
VALVE, HAD FLASHING OVLD/PWR FAIL INDICATION WHICH WOULD
NOT ACKNOWLEDGE.

TOTAL MONTHLY FAILURES = 7

DECEMBER 1990

- 1) 12/05/90 1CC653 SLOT 8-6-8 O-1274 N-0358
INPUT BUFFER #8 FAILED CONFIRMED FAILURE
W.O. 901119107
PROBLEM: 1C-S-100, C RFPT TURNING GEAR, WOULD NOT START
WHEN REQUESTED FROM THE CONTROL ROOM.

TOTAL MONTHLY FAILURES = 1

TOTAL QUARTERLY FAILURES = 9 SSLM'S

B. FAILURE RATE DATA

- 1) 25 CONFIRMED FAILURES FROM 01/01/90 THRU 12/31/90.
- 2) 2278 SSLM POPULATION
- 3) ANNUAL FAILURE RATE PERCENTAGE:
 - a. $25 \div 2278 = 0.0109 \times 100 = 1.10 \%$
- 4) MEAN TIME BETWEEN FAILURES DETERMINATION:

MTBF FROM 01/01/90 THRU 12/31/90.

 - a. 12 MONTH SERVICE HOURS = 8760 HOURS
 - b. TOTAL MODULE SERVICE HOURS
 $8760 \times 2278 = 19.95 \times 10^6$
 $19.95 \times 10^6 \div 25 \text{ FAILURES} = 798,211 \text{ HOURS}$
 - c. $25 \div 19.95 \times 10^6 = 1.25 \text{ FAILURES PER MILLION HOURS FAILURE RATE.}$

C. COMPARISON STANDARD

- 1) THE IEEE 500 STANDARD EXPECTED FAILURE RATE OF SOLID STATE COMPUTATION DEVICES IS EQUAL TO 1.19 FAILURES PER MILLION HOURS FAILURE RATE.

- 2) THE HCGS BAILEY 862 SSLM FAILURE RATE FROM JAN 1990 THRU DEC 1990 IS EQUAL TO 1.25 FAILURES PER MILLION HOURS FAILURE RATE.

D. ANALYSIS

- 1) HCGS BAILEY 862 SSLM FAILURE RATE APPEARS TO HAVE STABILIZED IAW IEEE 500 STANDARD.
- 2) NO CONFIRMED FAILURE RESULTED IN INOPERABILITY OF ANY SAFETY RELATED FUNCTION. ALL FAILURES RELATED TO SAFETY RELATED FUNCTIONS WERE INDICATION PROBLEMS ONLY. THOSE VALVES AFFECTED OPERATED AS PER DESIGN.

E. RECOMMENDATIONS

- 1) NONE