IF POWERED FLT

TRANS CONTR - CCW (4 SEC)
MN BUS TIES - ON
TVC SERVO PWR 1 - AC1/MNA
TVC SERVO PWR 2 - AC2/MNB
BMAG MODE (3) - ATT 1/RATE 2
GMBL MTRS (4) - ON
ΔV THRUST A - NORMAL
DIR ULLAGE & THRUST ON PB - PUSH
SPS BURN (5 SEC) - THEN ΔV THRUST (2) - OFF
IF COASTING FLT

cb SECS ARM (2) (Pn1 8) - CLOSE
SECS LOGIC (2) - ON
SECS PYRO ARM (2) - ARM
ROT CONTR PWR DIR (2) - MNA/MNB
SC CONT - SCS
SEPARATE FROM LV AS APPLICABLE -
  IF BEFORE DOCKING, THC CCW (4 SEC)
  IF DOCKED, UMBIL NOT CONNECTED,
  CSM/LM FINAL SEP (2) - ON
  IF DOCKED, UMBIL CONNECTED, SIVB/LM SEP - ON
TRANSLATE AWAY FROM LV & MANEUVER TO BURN ATTITUDE
ΔVCG - CSM OR LM/CSM AS APPLICABLE
MN BUS TIE (2) - ON
TVC SERVO PWR 1 - AC1/MNA
TVC SERVO PWR 2 - AC2/MNB
BMAG MODE (3) - ATT1/RATE 2
GMBL MTRS (4) - ON
ΔV THRUST A - NORMAL
DIR ULLAGE & THRUST ON PB - PUSH
SPS BURN (5) SEC - THEN ΔV THRUST (2) - OFF
SUIT COMPRESSOR LITE - CLOSED SUIT LOOP

SWITCH TO OTHER COMPRESSOR ON OTHER BUS
SEE ECS 9

O2 FLOW HI + RAPID LOSS OF SURGE TK PRESS
+ CABIN PRESS <4.6 PSI

CABIN PRESS RELF vlv (2) - CLOSE
√ TUNNEL EQUALIZATION vlv - CLOSED
REPRESS PKG vlv - ON (WHEN SURGE TK PRESS <150 PSI)
√ EMERG CABIN PRESS REGS - BOTH
DON SUITS

CONTAMINATION IN CM
DON 02 MASKS

CONTAMINATION IN CLOSED SUIT LOOP

CHANGE TO OTHER SUIT COMPR
DIRECT O2 vlv - FULL OPEN THEN ADJUST FOR SUIT
TO CABIN ΔP OF 2 IN OF H2O

IF CONDITION PERSISTS

SUIT COMPR (2) - OFF
DOFF HELMETS
DIRECT O2 vlv - CLOSE
DON 02 MASKS

FIRE/SMOKE IN CM

MONITOR DC FOR HI CURRENT - REMOVE POWER
FROM ASSOCIATED INVERTER
IF CURRENT REMAINS HI - REMOVE POWER FROM
ASSOCIATED DC BUS
IF CLOSED SUIT LOOP, SWITCH SUIT COMPR TO GOOD AC BUS
IF HELMET OFF, SUIT COMPR (2) - OFF
RECONFIGURE INVERTER 3 ON LOST AC BUS
VERIFY RCS CONTROL POWER CONFIGURATION

IF HELMETS OFF
DON 02 MASKS
USE FIRE EXTINGUISHER OR H2O GUN (OPTIONAL)

IF CLOSED SUIT LOOP
USE FIRE EXTINGUISHER OR H2O GUN (OPTIONAL)
√ EMERG CABIN PRESS REGS - OFF
IF FIRE PERSISTS - DUMP CABIN
G&N CRITICAL BURNS

IF NO START OR ISS LITE + PROG LITE
IF CMC LITE, PROG ALARM 1407 OR EARLY CUTOFF

SCS TVC (2) - AUTO
SC CONT - SCS
/ ATTITUDE
SPS THRUST - DIRECT (MOMENTARY), IF REQ'd

IF ABNORMAL DYNAMICS

THC CW, control rates by MTVC
After SHUTDOWN, AUTO RCS (16) - OFF

SCS CRITICAL BURN

IF NO START OR EARLY CUTOFF

SPS THRUST - DIRECT (MOMENTARY)

IF RATE NEEDLE HARDOVER & FDAIs DIVERGE OPPOSITE

BMAG MODE (3) - RATE 1
THC - CW, use MTVC

IF ABNORMAL DYNAMICS IN AUTO MODE

THC - CW, use MTVC
BMAG MODE (3) - RATE 2

IF ABNORMAL DYNAMICS IN MTVC MODE

THC - CW
IF PROBLEM PERSISTS, SHUTDOWN
AUTO RCS (16) - OFF
SPS

IF NO CUTOFF AFTER $\Delta V$ THRUST (BOTH) - OFF

CB SPS PILOT VLVS - open

IF EMS & N40 (R3) STILL COUNTING AFTER SHUTDOWN

SC CONT - SCS
TRANS CONT PWR - OFF

CB DIR ULLAGE (2) - open
IF CONDITION PERSISTS, AUTO RCS SEL (16) - OFF
SM RCS PRPLNT (AFFECTED QUAD) - OFF

SPS PRESS LITE

CONTINUE CRITICAL BURN

IF FUEL & OX PRESS (BOTH) > 200 PSI

SPS HE v1vs (2) - OFF, THEN CONTROL MANUALLY BETWEEN 170-200 PSI

IF FUEL/OX $\Delta P$ > 20 PSI

SPS HE v1vs (2) - ON
IF CONDITION PERSISTS, SPS HE v1vs(2)-OFF(Until Pc <70)

G&C (COASTING, ENTRY)

CMC LITE

SC CONT - SCS
SEE G&N 5

ISS LITE + PROG ALARM LITE

SC CONT - SCS
SEE G&N 6
EMERGENCY POWER DOWN
CAUTION: USE BATTs ONLY WHEN MAIN BUS VOLTS < 24.5

<table>
<thead>
<tr>
<th>CONFIGURE FOR USE OF AUX BATTERY</th>
<th>DC AMPS</th>
</tr>
</thead>
<tbody>
<tr>
<td>FUEL CELL 2 MNA &amp; MNB (2) - OFF</td>
<td>4.0</td>
</tr>
<tr>
<td>cb CRYO 02 ISOL/AUX BAT - CLOSE (Pn1 226)</td>
<td></td>
</tr>
<tr>
<td>SM PWR SOURCE - AUX BAT (mom) (Pn1 278)</td>
<td></td>
</tr>
<tr>
<td>02 TANK 3 ISOL - CLOSE (/TB-bp) (Pn1 278)</td>
<td></td>
</tr>
<tr>
<td>FUEL CELL 2 MN A(B) - as desired</td>
<td></td>
</tr>
<tr>
<td>INSURE DSE IS RECORDING</td>
<td></td>
</tr>
<tr>
<td>IF UNSUITED, SUIT COMP (2) - OFF</td>
<td></td>
</tr>
<tr>
<td>FC PUMPS (3) - OFF (Until Tskin &gt; 475°F)</td>
<td>8.7 TOTAL</td>
</tr>
<tr>
<td>cb G&amp;N OPTICS MNA &amp; MNB (2) - OPEN (Pn1 5)</td>
<td>3.1</td>
</tr>
<tr>
<td>G&amp;N PWR (AC) - OFF (Pn1 5)</td>
<td>0.9</td>
</tr>
<tr>
<td>02 HTRS (3) - OFF (CTR)</td>
<td>1.4 EA</td>
</tr>
<tr>
<td>H2 HTRS (2) - OFF (CTR)</td>
<td>1.0</td>
</tr>
<tr>
<td>H2 FANS (3) - OFF (CTR)</td>
<td></td>
</tr>
<tr>
<td>C/W NORMAL - ACK</td>
<td></td>
</tr>
<tr>
<td>LM PWR - RESET - OFF</td>
<td>15.0 MAX</td>
</tr>
<tr>
<td>ECS RAD HTRS (2) - OFF</td>
<td>17.2 EA</td>
</tr>
<tr>
<td>POT H2O HTR - OFF</td>
<td>1.6 MAX</td>
</tr>
<tr>
<td>SM RCS HTRS (4) - OFF</td>
<td>3.3 MAX</td>
</tr>
<tr>
<td>HGA PWR - OFF</td>
<td>2.9</td>
</tr>
<tr>
<td>LIGHTS - Min Req'd</td>
<td>5.3 MAX</td>
</tr>
<tr>
<td>EXT LTS - OFF</td>
<td>4.6</td>
</tr>
<tr>
<td>NON ESS BUS - OFF (SPS Burn-Damage SIM CAM)</td>
<td>4 - 6</td>
</tr>
<tr>
<td>VHF RANGING - OFF</td>
<td>1.4</td>
</tr>
<tr>
<td>S BD AUX TV - OFF (CTR</td>
<td>5.3</td>
</tr>
<tr>
<td>SPS LINE HTR - OFF (CTR)</td>
<td>6.2 (A/B)</td>
</tr>
<tr>
<td>RNDZ XPNDR PWR - OFF or HEATER (Pn1 100)</td>
<td>3.0</td>
</tr>
<tr>
<td>SIG CONDR/DRIVER BIAS PWR (2) - OFF</td>
<td></td>
</tr>
<tr>
<td>SECURE ONE BMAG</td>
<td>2.6</td>
</tr>
<tr>
<td>SELECT SINGLE JET CONTROL</td>
<td></td>
</tr>
<tr>
<td>EMS FUNC - OFF</td>
<td></td>
</tr>
<tr>
<td>RHC PWR DIRECT (2) - OFF</td>
<td></td>
</tr>
<tr>
<td>THC PWR - OFF</td>
<td></td>
</tr>
<tr>
<td>CONFIGURE FOR SINGLE INVERTER OPERATION</td>
<td></td>
</tr>
<tr>
<td>TURN OTHER INVERTER OFF</td>
<td>4.0 MAX</td>
</tr>
<tr>
<td>BAT CHGR - OFF</td>
<td></td>
</tr>
<tr>
<td>NOTE MISSION TIME</td>
<td></td>
</tr>
<tr>
<td>cb TIMERS (2) - OPEN (Pn1 229)</td>
<td></td>
</tr>
<tr>
<td>AC INVERTER (9) - OFF</td>
<td></td>
</tr>
<tr>
<td>CM RCS HTRS - OFF</td>
<td></td>
</tr>
<tr>
<td>ISOLATE FAILED FC's from MAIN BUSES</td>
<td></td>
</tr>
</tbody>
</table>
### ECS Power Down

<table>
<thead>
<tr>
<th>Item</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECS GLY Pump sel - OFF (ISS LIMIT 2.5 HRS)</td>
<td>2.6</td>
</tr>
<tr>
<td>ECS RAD Flow Cont PWR - off (CTR)</td>
<td>0.7</td>
</tr>
<tr>
<td>GLY EVAP Temp In - MAN</td>
<td></td>
</tr>
<tr>
<td>ECS RAD HTRS (2) - OFF</td>
<td></td>
</tr>
<tr>
<td>GLYCOL EVAP H2O Flow - OFF</td>
<td>~0.1</td>
</tr>
<tr>
<td>GLYCOL EVAP STEAM PRESS - MAN</td>
<td>~0.2</td>
</tr>
</tbody>
</table>

### COMM Power Down

<table>
<thead>
<tr>
<th>Item</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>IF VOICE DESIRED</td>
<td></td>
</tr>
<tr>
<td>UP TLM CMD RESET - RESET then OFF</td>
<td></td>
</tr>
<tr>
<td>S-BD AUX TAPE - DN VOICE BU</td>
<td></td>
</tr>
<tr>
<td>S-BD MODE PCM - OFF</td>
<td></td>
</tr>
<tr>
<td>PCM BIT RATE - HIGH</td>
<td></td>
</tr>
<tr>
<td>S-BD PWR AMP - OFF (CTR)</td>
<td>4.0</td>
</tr>
<tr>
<td>TAPE RCDR - OFF (CTR)</td>
<td>1.6</td>
</tr>
<tr>
<td>SCE PWR - OFF (CTR)</td>
<td>0.7</td>
</tr>
<tr>
<td>cb INSTR ESS MNA &amp; MNB (2) - OPEN (Pn1 5)</td>
<td>4.9</td>
</tr>
<tr>
<td>TELCOM GRP 1 &amp; 2 (2) - OFF</td>
<td>1.6</td>
</tr>
</tbody>
</table>

### CMC/IMU Power Down

<table>
<thead>
<tr>
<th>Item</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMPLETE ALIGNMENT TRANSFER</td>
<td></td>
</tr>
<tr>
<td>CMC MODE - FREE</td>
<td></td>
</tr>
<tr>
<td>PROVIDES CMC MIN IMP</td>
<td></td>
</tr>
<tr>
<td>cb G&amp;N IMU MNA &amp; MNB (2) - OPEN (Pn1 5)</td>
<td></td>
</tr>
<tr>
<td>V37E06E</td>
<td>3.0</td>
</tr>
<tr>
<td>F V50 N25, 00062, CMC PWR DN</td>
<td></td>
</tr>
<tr>
<td>PRO, HOLD (~5 SEC) UNTIL STBY LT - ON</td>
<td></td>
</tr>
</tbody>
</table>

### SCS Power Down

<table>
<thead>
<tr>
<th>Item</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCEPTABLE S/C ATTITUDE</td>
<td></td>
</tr>
<tr>
<td>BMAG PWR (2) - OFF</td>
<td></td>
</tr>
<tr>
<td>PROVIDES MIN IMP</td>
<td></td>
</tr>
<tr>
<td>FDAI/GPI PWR - OFF</td>
<td></td>
</tr>
<tr>
<td>SCS ELECTRONICS PWR - ECA</td>
<td></td>
</tr>
<tr>
<td>(REQUIRES AC1 &amp; MNB)</td>
<td></td>
</tr>
<tr>
<td>ORDEAL PWR &amp; LIGHTING - OFF</td>
<td></td>
</tr>
<tr>
<td>cb SCS LOGIC BUS (4) - OPEN (Pn1 8)</td>
<td>2.0</td>
</tr>
<tr>
<td>SCS ELECTRONICS PWR - OFF</td>
<td></td>
</tr>
<tr>
<td>RHC PWR NORM (2) - OFF</td>
<td></td>
</tr>
</tbody>
</table>
LAUNCH BUS LOSS

MN BUS A LOST - LAUNCH

EDS AUTO/OFF - OFF
TVC GMBL DR (P,Y) - 2
SCS TVC (P,Y) - RATE CMD
BMAG MODE (3) - RATE 2
FDAI SEL - 2
cb SPS PITCH 2 & YAW 2 (Pn1 8) - OPEN
  (AFTER GIMBAL MOTORS ON)

AC INV 3 - MNB
AC INV 3 AC 1 - ON
AC INV 1 AC 1 - OFF
A11 F/C MNA - OFF
ALL F/C MNB - MNB (BEFORE CM/SM SEP)
cb MNA BAT BUS A (Pn1 275) - OPEN
cb MNB BAT C (Pn1 275) - CLOSED

MN BUS B LOST - LAUNCH

EDS AUTO/OFF - OFF
TVC GMBL DR (P,Y) - 1
SPS TVC (P,Y) - RATE CMD
/ BMAG MODE (3) - RATE 1
FDAI SEL - 1
cb SPS PITCH 1 & YAW 1 (Pn1 8) - OPEN
  (AFTER GIMBAL MOTORS ON)

AC INV 3 - MNA
AC INV 3 AC 2 - ON
AC INV 2 AC 2 - OFF
A11 F/C MNB - OFF
A11 F/C MNA - MNA (BEFORE CM/SM SEP)
cb MNB BAT BUS B (Pn1 275) - OPEN
cb MNA BAT C (Pn1 275) - CLOSED
AC BUS 1 LOST - LAUNCH

BMAG MODE (3) - RATE 2  
FDAl SEL - 2  
TVC SERVO PWR 1 - AC2/MNB  
SCS TVC PITCH, YAW - RATE CMD

AC INV 1 MNA - OFF  
SUIT COMPR - AC 2  
ECS GLY PUMP - AC 2  
S BD NORM XPNDR - SEC  
S BD NORM PWR AMP - SEC

AC BUS 2 LOST - LAUNCH

\sqrt{BMAG} MODE (3) - RATE 1  
FDAl SEL - 1  
TVC SERVO PWR 2 - AC1/MNA  
MTVC WITH THUMBWHEELS (MODE III OR IV)

AC INV 2 MNB - OFF  
\sqrt{SUITE} COMPR - AC 1  
\sqrt{ECS} GLY PUMP - AC 1

BAT BUS A LOST - LAUNCH

EDS AUTO/OFF - OFF  
AUTO RCS SEL (RING 1) - OFF  
IF BUS LOST BEFORE GMBL MTRS ON  
TVC GMBL DR (P,Y) - 2  
cb SPS P2 & Y2 (Pn1 8) - OPEN  
(AFTER SEC GIMBAL MOTORS ON)

cb MNA BAT C (Pn1 275) - CLOSED

BAT BUS B LOST - LAUNCH

EDS AUTO/OFF - OFF  
AUTO RCS SEL (RING 2) - OFF  
IF BUS LOST BEFORE GMBL MTRS ON  
TVC GMBL DR (P,Y) - 1  
cb SPS P1 & Y1 (Pn1 8) - OPEN  
(AFTER PRI GIMBAL MOTORS ON)

cb MNB BAT C (Pn1 275) - CLOSED
SPS BURN BUS LOSS

MN BUS A LOST - SPS BURN

TVC GMBL DR (P,Y) - 2
SCS TVC (P,Y) - RATE CMD
  cb SPS P2 & Y2 (Pn1 8) - OPEN
  (CRIT BURNS - AFTER GMBL MTRS ON)
FDAI SEL - 2
✓FDAI SOURCE - CMC
RHC PWR DIRECT 2 - MNB
BMAG MODE (3) - RATE 2
✓ΔV THRUST B - NORM
AUTO RCS SEL - MNB

AC INV 3 - MNB
AC INV 3 AC 1 - ON
AC INV 1 AC 1 - OFF
A11 F/C MNA - OFF
ALL F/C MNB - MNB
  cb MNA BAT BUS A (Pn1 275) - OPEN

MN BUS B LOST - SPS BURNS

SCS TVC (P,Y) - RATE CMD
TVC GMBL DR (P,Y) - 1
  cb SPS P1 & Y1 (Pn1 8) - OPEN
  (CRIT BURNS - AFTER GMBL MTRS ON)
FDAI SEL - 1
✓FDAI SOURCE - CMC
RHC PWR DIRECT 1 - MNA
BMAG MODE (3) - RATE 1
✓ΔV THRUST A - NORM
AUTO RCS SEL - MNA

AC INV 3 - MNA
AC INV 3 AC 2 - ON
AC INV 2 AC 2 - OFF
A11 F/C MNB - OFF
A11 F/C MNA - MNA
  cb MNB BAT BUS B (Pn1 275) - OPEN
AC BUS 1 LOST - SPS BURNS

TVC SERVO PWR 1 - AC2/MNB
SCS TVC (P&Y) - RATE CMD
BMAG MODE (3) - RATE 2
FDAI SEL - 2
✓FDAI SOURCE - CMC

AC INV 1 MNA - OFF
SUIT COMPR - AC 2
ECS GLY PUMP - AC 2
S BD NORM XPNDR - SEC
S BD NORM PWR AMP - SEC
SPS GAUGING - AC 2

AC BUS 2 LOST - SPS BURNS

TVC SERVO PWR 2 - AC1/MNA
BMAG MODE (3) - RATE 1
SCS TVC (P&Y) - AUTO
ΔVCG - LM/CSM
MTVC WITH TRIM THUMBWHEELS (SCS BURN ONLY)
FDAI SEL - 1
✓FDAI SOURCE - CMC

AC INV 2 MNB - OFF
✓SUIT COMPR - AC 1
✓ECS GLY PUMP - AC 1

BAT BUS A LOST - SPS BURNS

TVC GMBL DR (P,Y) - 2
(IF BUS LOST BEFORE GMBL MTRS ON)
cb SPS P2 & Y2 (Pn1 8) - OPEN
(CRIT BURNS - AFTER GMBL MTRS ON)
cb MNA BAT C (Pn1 275) - CLOSED

BAT BUS B LOST - SPS BURNS

TVC GMBL DR (P,Y) - 1
(IF BUS LOST BEFORE GMBL MTRS ON)
cb SPS P1 & Y1 (Pn1 8) - OPEN
(CRIT BURNS - AFTER GMBL MTRS ON)
cb MNB BAT C (Pn1 275) - CLOSED
ENTRY BUS LOSS

MN BUS A LOST - ENTRY

BMAG MODE (3) - RATE 2
FDAI SEL - 2
FDAI SOURCE - CMC
AUTO RCS SEL (12) - MNB (ONLY IF BUS LOST AFTER SM SEP)

AC INV 3 - MNB
AC INV 3 AC 1 - ON
AC INV 1 AC 1 - OFF
A11 F/C MNA - OFF
ALL F/C MNB - MNB (BEFORE CM/SM SEP)
cb MNA BAT BUS A (Pn1 275) - OPEN
cb MNB BAT C (Pn1 275) - CLOSED

MN BUS B LOST - ENTRY

BMAG MODE (3) - RATE 1
FDAI SEL - 1
FDAI SOURCE - CMC
AUTO RCS SEL (12) - MNA (ONLY IF BUS LOST AFTER SM SEP)

AC INV 3 - MNA
AC INV 3 AC 2 - ON
AC INV 2 AC 2 - OFF
A11 F/C MNB - OFF
A11 F/C MNA - MNA (BEFORE CM/SM SEP)
cb MNB BAT BUS B (Pn1 275) - OPEN
cb MNA BAT C (Pn1 275) - CLOSED

AC BUS 1 LOST - ENTRY

BMAG MODE (3) - RATE 2
FDAI SEL - 2
FDAI SOURCE - CMC

AC INV 1 MNA - OFF
SUIT COMPR - AC 2
ECS GLY PUMP - AC 2
S BD NORM XPNDR - SEC
S BD NORM PWR AMP - SEC
AC BUS 2 LOST - ENTRY

BMAG MODE (3) - RATE 1
FDAI SEL - 1
✓FDAI SOURCE - CMC

AC INV 2 MNB - OFF
✓SUIT COMPR - AC 1
✓ECS GLY PUMP - AC 1

BAT BUS A LOST - ENTRY

cb SCS B/D ROLL, P&Y (MNA) (3) (Pn1 8)
Before CM/SM SEP - OPEN
After RCS transfer to CM - CLOSE
cb SCS CONTR/AUTO (2) (Pn1 8) - OPEN
(AFTER APEX COVER JET)
cb MNA BAT C (Pn1 275) - CLOSED

BAT BUS B LOST - ENTRY

cb SCS B/D ROLL, P&Y (MNB) (3) (Pn1 8)
Before CM/SM SEP - OPEN
After RCS transfer to CM - CLOSE
cb SCS CONTR/AUTO (2) (Pn1 8) - OPEN
(AFTER APEX COVER JET)
cb MNB BAT C (Pn1 275) - CLOSED
ALL FC'S DISCONNECTED - POWERED FLT
ATTEMPT FC RECONNECT (ONE BUS AT A TIME)

IF RECONNECT NOT SUCCESSFUL

FC 1 - MN B
FC 2 - MN B
FC 3 - MN A

IF STILL NO SUCCESS

SCE PWR - AUX
EDS AUTO/OFF - OFF
cb MNA BAT C (Pn1 275) - CLOSED
cb MNB BAT C (Pn1 275) - CLOSED

AC BUS OVERLD + AC BUS + MN BUS UNDER V LITES
AFFECTED AC BUS - OFF (REASON - AC BUS SHORT)

FC 1 (2,3) LITE
VERIFY FC 1 (2,3) REAC tb - gray

IF tb BP

FC 1 (2,3) REAC v1v - OPEN (up)

IF tb STILL BP & REAC FLOW ~0

OPEN CIRCUIT FC 1 (2,3)
SM RCS THRUSTER FAILED ON

BMAG MODE (3) - RATE 2
CHG TO OTHER SC CONT MODE
ROT CONT PWR DIR (2) - MNA/MNB
STOP SPACECRAFT RATES WITH DIRECT RCS
AUTO RCS SEL (16) - OFF

IF CONDITION PERSISTS

AUTO RCS SEL (16) - ON (AS REQ'D)
MAN ATT (3) - ACCEL CMD
STOP SPACECRAFT RATES
cb SCS DIR ULL (2)(Pnl 8) - open
ROT CONT PWR DIR (2) - OFF

IF CONDITION PERSISTS

NEUTRALIZE RHC
SM RCS PRPLNT (AFFECTED QUAD) - OFF

SM RCS LITE

SM RCS HE (2) - CLOSE
SEE RCS 1

SM RCS QUAD SECURE

SM RCS He 1 & 2 (AFFECTED QUAD) (2) - CLOSE
SM RCS PRIM PRPLNT (AFFECTED QUAD) - CLOSE
Fire one jet in affected quad - 2 sec continuously
AUTO RCS SELECT (AFFECTED QUAD) (4) - OFF (except BOOST)
CM RCS FAILS TO PRESSURIZE OR FEED PRPLNT

IF NO PRESSURIZATION

✓ cb EPS BAT BUS (2) (Pn1 229) - CLOSE
✓ cb PYRO A/B SEQ A/B (2) (Pn1 250) - CLOSE
✓ cb SECS ARM (2) (Pn1 8) - CLOSE
✓ SECS PYRO ARM (2) - ARM
✓ SECS LOGIC (2) - ON
CM RCS - PRESS

IF NO RCS PRPLNT FEED

✓ cb EPS GRP 1 & 3 (Pn1 229) - CLOSE
✓ cb SM RCS HTR A&B (Pn1 8) - CLOSE
✓ cb RCS PRPLNT ISOL (2) (Pn1 8) - CLOSE
CM RCS PRPLNT - ON

IF STILL NO FEED

cb EPS GRP 5 (Pn1 229) - CLOSE
cb RCS LOGIC (2) (Pn1 8) - CLOSE
CM RCS LOGIC - ON
CM PRPLNT - DUMP MOMENTARILY, THEN OFF
VO5 NO9 ALARM CODES

00110 Mark reject has been entered but ignored
     Continue

00113 No inbits (chain 16)
     Continue: if alarm recurs use MDC DSKY.

00114 More marks made than desired
     Continue

00115 V41 N91 keyed with OPTICS MODE not in CMC
     OPTICS MODE - CMC and OPTICS ZERO - OFF

00116 Optics switch altered before 15 sec zero time elapsed
     OPTICS ZERO - ZERO (15 sec).

00117 V41 N91 keyed but CMC has reserved OCDU (from start of gimbal test in P40 until termination of TVC
     functional allocation of the "optics" CDU Driving Output)
     V41 N91 not yet available

00120 Optics torque has been requested but optics have not been zeroed since last FRESH START or RESTART
     OPTICS ZERO - OFF then ZERO (15 sec).

00121 In 0.05 sec following mark, an ICDU changed by more than 0.033°
     Repeat MK.

(m)00205 PIPA saturated
     Use SCS control (G&N 12).

00206 The IMU zero routine has been entered with both the GMBL LOCK
     1t and NO ATT 1t on
     Coarse align to 0,0,0 Reselect V40E.

(m)00207 ISS turn-on request not present for 90 sec
     Redo IMU turn on (G&N 12).

(m)00210 The IMU is not operating
     Redo IMU turn on. If alarm recurs perform fresh start (V36E).
     Consult MSFN. (G&N 12).
Coarse align error
If P51(3)/52(4) in progress record gyro torquing angles and perform fine align check in P52(4)
Otherwise, see G/1-24. (G&N 12).

PIPA fail, but PIPA is not being used
PIPA BIAS check (G&N 6/8).

IMU not operating with turn-on request
See 00210

Program using IMU when turned OFF
See 00210 or exit program.

IMU coarse align or pulse torque
difficulty has occurred
If code 211 also, perform 211 cure only
Reinitiate current program.
If alarm recurs, terminate use of
ISS (G&N 12).

IMU orientation unknown
Align or if aligned set REFSMMAT flag

Desired middle gimbal angle is excessive
Call N22 - maneuver if MGA < 85° or
realign IMU.

Second MINKEY pulse torque must be done.

Target out of view (90 deg test)
(G/3-7, 3-11, 6-3, 7-16)

Acceptable star pair is not available
(G/6-3, 6-6)

Rend navigation not operating
Select P20 Opt. 0 or 4 or continue.

W-matrix overflow
Notify MSFN but continue.
W-matrix automatically reinitialized at
next mark.

No solution on first iteration in P31 or
P32/72
(G/4-6, 4-8)

Post CSI Perigee/lune alt < 85nm/ 5.8nm
(G/4-6, 4-8)

Post CDH Perigee/lune alt < 85nm/ 5.8nm
(G/4-6, 4-8)

Time from TIG (CSI) to TIG (CDH)
< 10 min
(G/4-6, 4-8)
00604 Time from TIG (CDH) to TIG (TPI) 
<10 min 
(G/4-6.4-8)

00605 Number of iterations exceeds loop maximum 
(G/4-6.4-8,4-15,4-16)

00606 \( \Delta V \) (CSI) has been >1000 fps for last two iterations 
(G/4-6.4-8)

00611 No TIG for given ELEV angle 
(G/4-10,4-12)

00612 State vector in wrong sphere of influence at TIG 
(G/4-15)

00613 Reentry angle out of limits 
(G/4-16)

(m)00777 ISS warning caused by PIPA fail 
(G&N 6).

01102 CMC self test error 
(G/2-3)

(m)01105 Downlink too fast 
Rset. If alarm recurs DOWNLINK FAILURE. 
(G&N 12).

(m)01106 Uplink too fast 
Rset. If alarm recurs UPLINK FAILURE. 
(G&N 12).

(m)01107 Phase table failure-assume erasable memory is destroyed 
If Comm: 1. V74 CMC DOWNLINK 
2. P27 As Necessary. 
3. V48 As Necessary (V46). 
4. Reestablish REFSSMATT via P51 As Necessary. 
If FRESH START recurs, CMC FAILURE (SSR-3).

If no Comm, pg G/9-1

01301 Arccs in or arccos input is greater than one 
Notify MSFN, continue.

(m)01407 VG increasing 
(G&N 12).

01426 IMU unsatisfactory 
Realign or use SCS.
01427  IMU reversed
       Note FDAO operation is inverted.
01520  V37 request not permitted at this time
       Wait till COMP ACTY 1t.
       not on continuously - reselect V37 or if
       P62-67, select POO and then desired
       program.
01600  Overflow in drift test
       This is gnd test alarm only.
01601  Bad IMU torque abort
       See 01600
01703  Insufficient time for integration.
       TIG slipped
       (G/5-3,5-16)
(m)03777 ISS warning caused by ICDU fail
       (G&N 6)
(m)04777 ISS warning caused by ICDU & PIPA fail
       (G&N 6)
(m)07777 ISS warning caused by IMU fail
       (G&N 6)
(m)10777 ISS warning caused by IMU & PIPA
       fail (G&N 6)
(m)13777 ISS warning caused by IMU & ICDU fail
       (G&N 6)
(m)14777 ISS warning caused by IMU,ICDU & PIPA
       fail
       (G&N 6)
**20430 Orbital integration has been
       terminated to avoid possible
       infinite loop.
       Notify MSFN.
       Probable S.V. uplink required
**20607 No solution to conic subroutine
       Reselect program.
**20610 Alt at specified TIG in P37 < 400K ft
       Reselect P37 and decrease TIG.
**21204 Negative or zero time waitlist call.
       If ave-g or ext. vb. on, continue.
       Otherwise reselect program.
**21206 Second job attempts to go to sleep via
       keyboard and display program
       See 21204.
**21210  Second attempt is made to stall
Reselect program
Do not attempt use of IMU while CMC is
using it.

**21302  SQRT called with negative argument
See 21204

**21501  Keyboard and display alarm during
internal use
See 21204

**21502  Illegal flashing display
See 21204

**21521  P01 selected and P11 has already been
performed
Select correct program

*31104  Delay routine busy
Reselect extended verb or continue with
program.
Notify MSFN.

*31201  Executive overflow - no vac area
Reselect Extended Verb and/or Continue
Program.

*31202  Executive overflow - no core sets
See 31201

*31203  Waitlist overflow - too many tasks
See 31201

*31211  Illegal interrupt of extended verb
Reselect extended verb after optics
marking is completed.

(m) - Malfunction procedure indicated

**(2xxxx) - Generates restart (no 1t), F37 (POODO0)

*(3xxxx) - Restart (no 1t) and program
continues (i.e. attempted
recovery)(BAILOUT)

NOTE - All **alarms act as *type if
they occur when Ave-g is on or
display type extended verb
is active.