ALARM CODES (PDI)

CODES	DEFINITION	ACTION
00214	LGC USING IMU WHEN POWER TURNED OFF	GUID CONT - AGS
00402 (4 TIMES)	DAP STEERING LOST	GUID CONT - AGS
00511	NEITHER OR BOTH LR ANT POSITION DISCRETES PRESENT	LDG ANT - HOVER, NO ΔH (N63) UPDATE (10 SEC): LDG ANT - DES
01107	PHASE TABLE DISCREPANCY	GUID CONT-AGS (LAND MANUALLY IF DESIRED)
RECURRING 01406	TGO COMP FAIL (P64)	NO GUIDANCE, SWITCH TO P66 OR SWITCH TO AGS
RECURRING 01410	DES GUIDANCE EQUATIONS OVERFLOW (P64)	NO GUIDANCE, SWITCH TO P66 OR SWITCH TO AGS
01412	NON CONVERGING P63 TIG	MSFN UPLINK NEW S.V. & TARGET
01466	INSUFFICIENT THROTTLE SERVICING (P66)	IF RECURS, MAN THR & ATT HOLD (or AGS)
01703	TIG SLIPPED DUE TO INTEGRATION	SLIP PDI ONE REV
2XXXX	ALL POODOO'S (EXCEPT 21406)	GUID CONT - AGS
21406	BAD RETURN FROM TIME TO TGT RTN (P63)	MSFN UPLINK NEW S.V. & RECALL P63
RECURRING 3XXXX	ALL SOFTWARE RESTARTS (BAILOUT)	CONTINUE-INSURE NO UNSAFE CONDITION DEVELOPS.
N49	RMAX VMAX <.3nm; 2.0fps	1. IF STEADY STATE-RESET 2. REJECT FIRST MARK THEN ACCEPT NEXT COUPLE OF MARKS AND MONITOR FOR NEXT CONVERGENCE >2.0nm OR 12.0fps PRIOR TO CSI OR >.8nm OR 5.0fps AFTER CSI CONSIDERED EXCESSIVE
F97N63	LGC THINKS ENG FAILED	PRO TO SET ΔV MON. DO NOT ENTER BECAUSE IT WILL SLIP TIG IF RECURRING, NO GUIDANCE

MISSION RULES NO-GO'S

PRE PDI		PDI TO PDI +6+10	PDI +6+10 TO HI GATE	HI GATE TO TD
EPS	ONE DC BUS	ABORT	ABORT	ABORT
	ONE DESCENT FEEDER SHORTED	ABORT	ABORT	ABORT
	ONE ASCENT FEEDER SHORTED	ABORT	ABORT	ABORT
	4 DESCENT BATS	ABORT	ABORT	GO
	ONE ASCENT BAT	ABORT	ABORT	GO
	BOTH INVERTERS	ABORT	ABORT	GO
	AC BUS A AND B	ABORT	ABORT	GO
ED	ONE PYRO SYSTEM ARMED	ABORT	ABORT	ABORT
	ONE PYRO SYSTEM DEARMED	ABORT	GO	GO
	ONE STAGING RELAY CLOSED	ABORT	ABORT	ABORT
	ONE PYRO SYSTEM BATTERY	ABORT	GO	GO
ECS	CABIN PRESS <~~4.4~~ 4.0	ABORT	ABORT	GO
	SUIT LEAK	ABORT	ABORT	ABORT
	BOTH SUIT FANS	ABORT	ABORT	GO
	BOTH DEMAND REGS	ABORT	ABORT	GO
	BOTH H20 SEPS	ABORT	ABORT	GO
	BOTH DESCENT O2 TANKS	ABORT	ABORT	GO
	BOTH ASC O2 TANKS	ABORT	ABORT	GO
	PRI OR SEC COOLANT LOOP	ABORT	ABORT	GO
	PRI OR SEC H20 FEED	ABORT	ABORT	GO
	BOTH DESCENT H20 TANKS	ABORT	ABORT	GO
	BOTH ASC H20 TANKS	ABORT	ABORT	GO
G&C	PGNS GUID STEER	ABORT	ABORT	GO
	3 AXIS ATT CONT			
	PGNS RATE CMD & PGNS AUTO	ABORT	ABORT	OPTION
	AGS RATE CMD	ABORT	ABORT	OPTION
	2 ACA	ABORT	ABORT	OPTION
	AUTO +X & AUTO DPS IGNITION	GO	GO	GO
	2 FDAI-ATT/RATE/ERR	OPTION	OPTION	OPTION
	LR	ABORT	ABORT	GO
	REDNT APS ON	ABORT	GO	GO
	P & R GDA TRIM (IMPING CONST VIOL)	ABORT	ABORT	ABORT
	MANUAL THROTTLE (2 TTCA) & AUTO THROT	ABORT	ABORT	ABORT
DPS	PROP LEAK (ΔQ FU/OX>10%)	ABORT	ABORT	ABORT
	FU OR OX INLET/ULLAGE<160	ABORT	ABORT	ABORT
	BINGO/2%			ABORT
APS	PROP LEAK	ABORT	ABORT	ABORT
	FU/OX INLET PRESS<62,>220	ABORT	ABORT	ABORT
	APS HE 1 OR 2 DECREASING	ABORT	ABORT	ABORT
RCS	HE/PROP LEAK			
	PROP LEAK (DOWNSTREAM OF MAIN)	ABORT	ABORT	GO
	FU/OX MNFLD A OR B PRESS<100	ABORT	ABORT	GO

7/14/71

EVT (DOCKED) 7/23/71	EVT (UNDOCKED, STABLE)	EVT (UNDOCKED, UNSTABLE)
CDR Egress Feet First and Transfer To CSM, LMP Tend Lifeline	CSM Maneuver Apex to LM Forward Hatch	CSM Maneuver to LM
CDR Ingress CSM Head First, Face Toward MDC, and Move To LEB Retrieve C 02 Hoses and Comm Umbilical	CDR, Then LMP, Egress Feet First, Move Along Handrails to CSM LMP Tend Lifeline	CDR Egress Feet First, Move to EVA Handrail Clear of Hatch LMP Tend Lifeline
CMP Connect C Comm Umbilical To CDR	CDR Ingress CSM, Head First, Face Toward MDC, And Move To LEB Retrieve C 02 Hoses And Comm Umbilical	LMP Egress, Move Up EVA Handrail
CDR Configure Audio Panel As Desired (Vac transfer to ECS if necessary, CMP cue card)	CMP Connect C Comm Umbilical To CDR	CDR and LMP Push Away from LM at Same Time (Give Signal, Pull In, Push Off)
CDR Secure Position In LEB & Tend Lifeline For LMP	CDR Configure Audio Panel As Desired Secure Position In LEB And Tend Lifeline For LMP	CSM Maneuver Apex to CDR and LMP
LMP Egress Feet First and Transfer to CSM, Remove ISA, push inside – if T <15 min, return to LM, retrieve SRC on floor	LMP move to CM hatch, remove ISA, push inside, if T <15 min, return to LM – attach small hook to SRC on floor, return to CM	CDR and LMP Use CSM Handholds to Move To Side Hatch
LMP Ingress CSM Feet First, Face Toward MDC, and Assume Position In Center Couch Area	LMP Ingress CSM Feet First, Face Toward MDC, and Assume Position In Center Couch Area	CDR Ingress CSM, Head First, Face Toward MDC, And Move To LEB Retrieve C 02 Hoses And Comm Umbilical
CDR Connect R Electrical Umbilical to LMP	CDR Connect R Electrical Umbilical To LMP	CMP Connect C Comm Umbilical To CDR
CMP Close Hatch	CMP Close Hatch	CDR Configure Audio Panel As Desired Secure Position in LEB And Tend Lifeline For LMP
	*********************************	LMP Ingress CSM Feet First, Face Toward MDC, and Assume Position In Center Couch Area
	LEVA – Lower As Required OPS 02 – On	CDR Connect R Electrical Umbilical To LMP
	SUIT ISOL VALVES (Both) – SUIT DISC	CMP Close Hatch
	Purge Valves – OPEN (Give Mark To CMP For T+25 Min On OPS)	
	Verify 02 Flow & PGA Press 3.4-4.0 Psig	
	Disconnect LM 02 Hoses	
	Disconnect LM Comm Umbilical Stow LM Hoses	
	CDR Transfer To CSM LEB (LMP Manage Lifeline)	
	LMP Transfer To CSM Center Couch Area (CDR Manage Lifeline)	
	*********************************	

```
* * * * * * * * * * * * * * * * * *
* CB(11) STAB CONT: ATCA (PGNCS)-CLOSE
* V48E, 12021 PRO
* LOAD LM WT, PRO
* V25N07E
*   1257E
*   303E
*     1E
* V25N07E
*   1260E
*     6E
*     1E
* V01N01E, 1257E, VER 00303, E
* 1260E, VER (00006)
* V48E, PRO, PRO
* TTCA/TRANS (2) - DISABLE
* ACA PROP (2) - DISABLE
* * * * * * * * * * * * * * * * * *
```
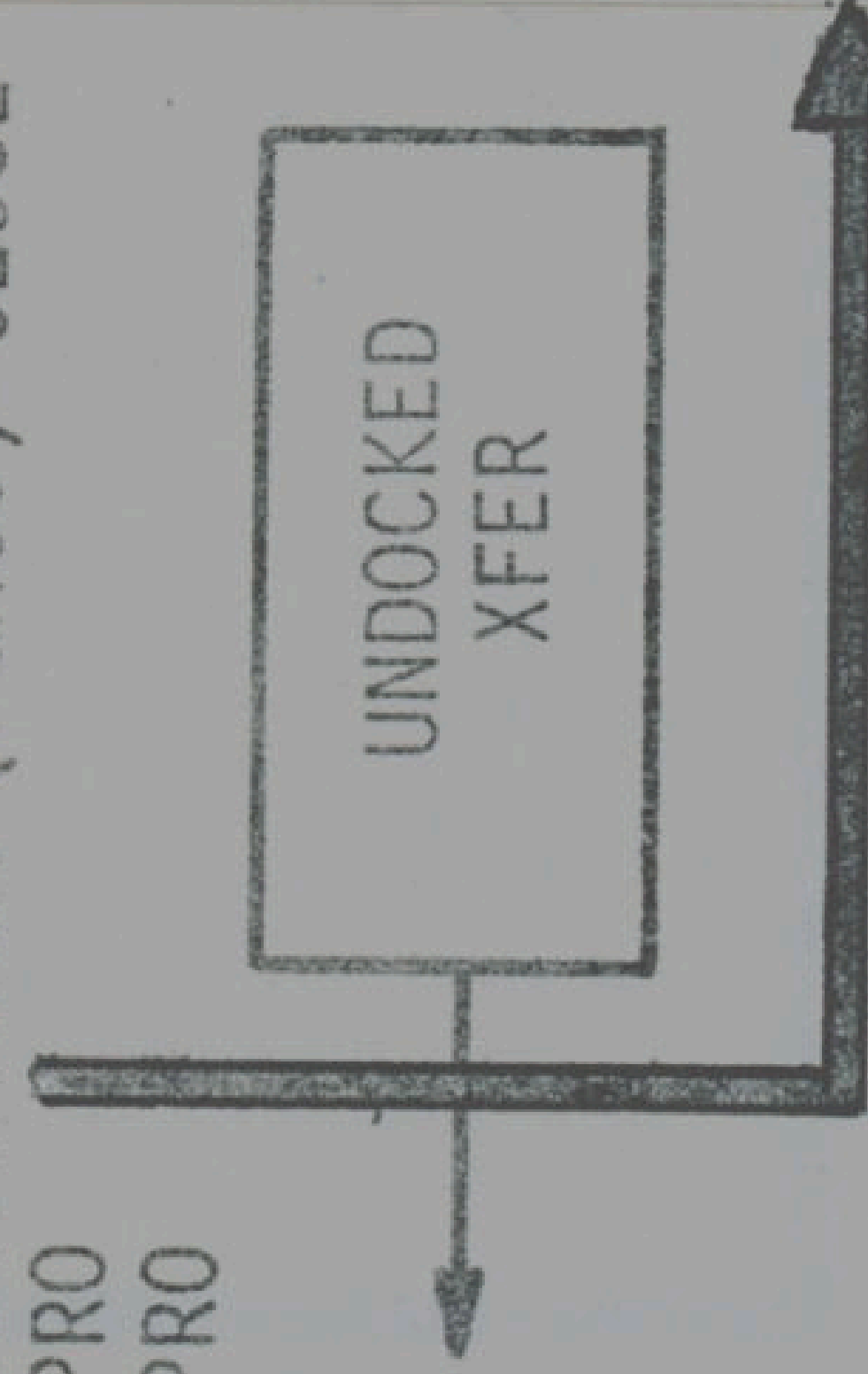
UNDOCKED XFER

CONTINGENCY EVT (2 OPS)

PREP. FOR EGRESS

Configure CB's As Required
Doff IV Gloves, Stow Under Netting
  Behind LMP
Doff Helmets, Verify Feedport Cover
  Installed
Apply Antifog
Stow Helmets On Ceiling
Verify Wristwatch Donned
FWD Hatch Handle - UNLOCK
Verify With CMP That Tunl Is Depressed

Verify - PGA Zipper Locked
Stow COAS On Fwd Window Mount
Stow DEDA & DSKY Desk, Loose Items

EQUIPMENT PREP (OPTIONAL)

Install 2 spring bungees vertically
  in recharge station for temp stowage
  of ISA and SRC. Attach both to top
  horiz bar, secure one to BSLSS tie-
  down and other to lower snap on LH
  eng cover.

Place transfer items in ISA:
  SEQ Mags - 6 RHSSC, 2 bot boot
    box, 1 ISA, 1 camera
  70mm mags - 7 RHSSC, 6 bot boot box
  PPK's - Aft of SRC's
  Other rock bags optional

Remove ISA, extend straps, tie
  straps diagonally to minimize size
Stow ISA behind bungees in recharge sta

Unstow one SRC, stow behind bungees
Unstow 2nd SRC, stow on floor fwd CDR
  sta, T-handle fwd, bot face inboard
Route CDR's outboard restraint cable
  over top to secure

OPS DONNING

Stow PGA Gas Connector Plugs & LCG
  Plugs in PGA pocket
Unstow OPS Straps & Purge Vlvs (LHSSC)
  Purge Vlvs - Hi
Don Purge Valves (Upper Red)
Don OPS Straps (Break Stitches 2 Places
  Remove Keeper, Extend To Max Length,
  Route Thru PGA LH D-RING With
  Adjustable Strap On RH Side)

LMP 1st - Unstow OPS & Checkout * * * *
  Vrfy OPS Reg Decays To 2.5 PSI (~3 Min)
Unstow OPS O2 Gas Hose
Remove O2 & Water Hoses
Secure OPS To OPS Straps
  (Do Not Twist Strap)
Connect OPS Hose To PGA (Inboard Blue)
Conn ECS Hoses (R/R, B/B) & Water Hose
Fix OPS Flaps To Expose Press Gage
CDR Repeat OPS DONNING * * * *

CB(11) ECS: CABIN FAN - Open (VERIFY)

Unstow Lifeline/Tethers - RHSSC
Verify Small Hooks Attached to Lifeline
Attach Waist Tether Hooks To PGA
  (Connect To LMP RH Side, Route In
  Front of LMP & Behind CDR & Connect
  To CDR LH Side, Verify Hooks Locked)
Secure Tool B (aft RHSSC) to CDR tether
  if required
Verify LM O2 Hoses - R/R, B/B
PGA Diverter Valves - Vertical
Don Helmets
Don LEVA's, Verify Helmet Aligned
CK Conn - Hel, O2, Comm, Purge Vlvs
Verify LM Restraints Removed
Don EV Gloves, Verify Locked   * * * * * * *
                                * SEE NEXT *
                                * PAGE FOR *
                                * UNDOCKED *
SUIT INTEGRITY CHECK   * XFER *
SUIT GAS DIVERTER - PULL-EGRESS * * * * * * *
CABIN GAS RETURN - EGRESS
SUIT CIRCUIT RELIEF - CLOSE

PRESS REG A - EGRESS
PRESS REG B - DIRECT O2
Monitor CUFF GAGE 3.7-4.0 PSIG Then
  PRESS REG B - EGRESS (Cuff Gage
  Decay <.3 Psig in 1 Min)
  Verify Purge Valves Accessible

SUIT CIRCUIT RELIEF - AUTO (SUIT CKT
  PRESS DECAYS TO 4.8 PSIA)
Confirm CSM Side Hatch Open And
  CMP Go For LM Depress

LCG - COLD, As REQ'D
CB(16) ECS: LCG Pump - Open
Disconnect LM H2O Hoses
Inspect EMU

CABIN DEPRESS

CB(16) ECS: CABIN REPRESS-OPEN
CABIN REPRESS VLV - CLOSE (VERIFY)
Fwd Dump Valve - OPEN Then AUTO
  At 3.5 Psia
Verify LM Suit Press 3.6-4.3 Psia
  And Decaying Slowly
Fwd Dump Valve - OPEN
Monitor Cabin Press To 0 Psia
Verify LM Suit Press 3.6-4.3 Psia

HATCH OPENING

Unstow SRC behind bungee, CDR attach
  small hook, lock
LMP unstow ISA, Attach small
  hook, lock

Open Hatch
LMP Verify XFER Items Ready
VERIFY/PERFORM:
CB(11) STAB/CONT: ATCA (PGNS) - OPEN
                   AELD - OPEN
                   ATT DIR CONT- OPEN
CB(16) STAB/CONT: ATCA (AGS) - OPEN
                   AELD - OPEN

ABNORMAL VEHICLE DYNAMICS

Use ACA Hardover to Stabilize Vehicle
If RCS TCA LT ON-CB QUAD TCA - OPEN
GUID CONT-AGS, MODE CONT-ATT HOLD, ATT CONT(3)-MODE CONT,
V77E (PGNS ONLY)
If Not Stabilized-CB(11) STAB/CONT:ATT DIR CONT-OPEN
If Not Stabilized-TTCA/TCA/TRANSL(2) - DISABLE, DEADBAND - MAX
If Not Stabilized-ACA PROP(2) - DISABLE

RAPID IMU REALIGN

1) AGS INERTIAL FDAI TO 0°, 0°, 0°
2) V41 N20E, E, E, E,
3) V40 N20 0°, 0°, 0° ON AGS FDAI, ENTR
   WAIT 11 SEC.
4) P51E, PRO, P00E
5) V25N07E, 77E, 10000E, 1E
6) PERFORM P52, OPTION 3 (AUTO OPTICS ARE GOOD)
   NOTE: FOR TEMPORARY LOSS OF CDR'S BUS, UPDATE
   LGC CLOCK WITH V55 TO COMPLETE RECOVERY.

LIGHT	MEANING	IMMEDIATE ACTION (POSSIBLE OPERATIONAL IMPLICATIONS)
DC BUS BATTERY	CDR BUS FAILURE C&W LTS: ASC PRESS: SUIT/FAN, HEATER CES AC: INVERTER, ECS AGS: RNDZ RDR, S-BD RCVR LGC: PRE AMPS	(DPS GOES TO 100% And GDA LOCKED) GUIDE CONT - AGS, SUIT FAN - 2, CDR AUDIO CONT - BU, S-BD-XMTR/RCVR & PWR AMPL - PRIM, INV 2, Activate Sec Glycol Loop TO START DPS: DES ENG CMD OVRD - ON TO STOP DPS: DES ENG CMD OVRD - OFF, ENG ARM - OFF TO START APS: AGS Auto ON TO STOP APS: AGS Auto OFF, ABORT STAGE - Reset UNSTAGED (M45) STAGED (M47)
DC BUS BATTERY	LMP BUS FAILURE C&W LTS: CES AC: RCS TCA CES DC: INVERTER AGS: PRE AMPS	(DPS GOES TO 100% And GDA LOCKED) GUID CONT - PGNS, SUIT FAN - 1, LMP AUDIO CONT - BU, PWR AMPL - SEC, INV 1 TO START APS/DPS: ENG START - PUSH TO STOP APS/DPS: ENG STOP - PUSH UNSTAGED (M45) STAGED (M47)
ASC PRESS	Either He PRESS<2775psi (Before Staging)	IF APS NOT PRESSURIZED - CONSULT MSFN, GO TO MAL PROC APS-1 IF APS PRESSURIZED - CLOSE ASC He REG 1 & 2: MONITOR ASC He PRESS; IF BOTH <2775 AND DECREASING - IMMEDIATE LIFTOFF MONITOR FUEL/OXID PRESS; IF EITHER DECREASING - IMMEDIATE LIFTOFF (M37)
DES REG	220 psi>He Press>260psi	DES He REG 1 - CLOSE, DES He REG 2 - OPEN Monitor TEMP/PRESS, Maintain FUEL & OXID>160psi (M31)
CES AC	ATCA AC Out of Tolerance	GUID CONT - PGNS, GYRO TEST - POS RT. If Light Stays ON, CWEA Fail. Poss Loss of AGS Control, FDAI Rate Needles Unreliable,RR Usable (M27)
CES DC	ATCA DC Out of Tolerance	GUID CONT - PGNS, GYRO TEST - POS RT. If Lt Stays ON, CWEA Fail, If Lt OFF - Cycle CWEA CB, If Lt Stays OFF, Cycle DECA GMBL AC CB To Unlock Throttle. If Lt Reappears: Poss GDA Lock-up, DPS To 100%, No AGS Attitude Control (M27)
AGS	AGS Power Supply Out of Tolerance,AGS Heater Failed ON,AGS Self Test Failed	GUID CONT - PGNS. If PGNS Unavailable: MODE CONT (AGS) - ATT HOLD, AGS RATE CMD OK, But NO ATT HOLD (Free Drift). 412R, Self Test. (M17)

LIGHT	MEANING	IMMEDIATE ACTION (POSSIBLE OPERATIONAL IMPLICATIONS)
LGC	LGC Power, Scaler, or Counter Fail	GUID CONT - AGS. Poss No Auto Eng Shutdown. If RESTART Lt ON, LGC Fail. CB(11)AEA - CLOSE (M10)
ISS	IMU, ICDU or PIPA (Thrusting) FAIL	GUID CONT - AGS. Pos No Auto Eng Shutdown. IF PROG Lt NOT On, CWEA Fail. CB(11) AEA - CLOSE (M9)
RCS TCA	One Or More Thrusters Fail Off,Collinear Thrusters Firing Simultaneously	If Stable, Recycle CWEA. If Unstable (or unusual thruster activity) or (M42) PDI 10% THROT Affected CB QUAD TCA - Open, LGC THR PAIR CMDS - DISABLE During ullage (PDI), if RCS TCA lite and quad flag comes on:Pull CB for 1st flag. If 2nd flag appears, pull CB, DISABLE and reclose 1st CB
RCS A REG RCS B REG	165psi>Reg Press>218psi	Monitor MANF PRESS, When <100psi: Bad System MAIN SOV - CLOSE, (M42) CRSFD - OPEN
ASC HI REG	Manf Press>220psi	ASC He REG 1 & 2 CLOSE, When <220psi, Open Each REG Separately. (M38)
ASC QTY	<10 Sec Burn Time	MAIN SOV (2) - OPEN, ASC FEED 2 (2) - CLOSE (M38)
ENG GMBL	GMBL Cmd/Response Discrepancy	ENGN GMBL - OFF. If Lt Still ON: ENG GMBL - ENABLE (CWEA FAIL) (M25)
INVERTER	AC VOLTS <112 398>FREQ>402	Check AC VOLTS & FREQ. Switch to INV - 2. Bus A&B BUS TIE INV 1 (2) - OPEN (INV 1 Feeder Short). BUS B: BUS TIE INV 2 - OPEN (BUS B Short) BUS A&B: BUS TIE INV 1 (2) - CLOSE. Select INV 1. BUS A: BUS TIE INV 2 - OPEN (INV 2 Feeder Short). BUS A: BUS TIE INV 1 - OPEN (BUS A Short, Lt Stays ON; Close BUS B: BUS TIE INV 2 Before Selecting (M50) INV 2). (M49)
BATTERY	BATT OVERTEMP REV CURRENT >10A OVERCURRENT	UNSTAGED: Check All BATS VOLTS, AMPS & TB's (M48) If VOLTS, AMPS OK: Faulty BAT - OFF Then ON If VOLTS, AMPS NOT OK: Faulty BAT - OFF (M49) STAGED: Check BAT 5, 6 VOLTS, AMPS & TB'S If VOLTS, AMPS NOT OK: CB (11&16) CROSS TIE BUS - CLOSE Faulty BAT: NORMAL FEED - OFF, Good BAT: BACKUP FEED - ON (M48)
ED RELAY	ED Relays K1 To K6 CLOSE With MASTER ARM - OFF	BEFORE PDI: Do NOT Set MASTER ARM-ON, STAGE RELAY - RESET, Appropriate LOGIC POWER CB - OPEN AFTER PDI: Do NOT Set MASTER ARM - ON, STAGE RELAY - RESET If STAGE SEQ RELAYS LT Still ON: ASC He PRESS - FIRE, Monitor ASC Fuel/Oxid Press. If APS Pressurizes, ABORT (M73)
STAGE SEQ RELAY LT. OFF AT PDI	Possible Relay Fail	AT PDI: MASTER ARM - OFF, Open LOGIC PWR CB On System Which Had SEQ LT - ON, MASTER ARM - ON. At Ignition Monitor DPS SHe And FUEL/OXID PRESS. SHe Tank Inoperative: STOP PB - PUSH, (M74) ENG ARM - OFF, SHe Tank OK: MASTER ARM - OFF, LOGIC PWR CB - CLOSE (M73) ASC He Press-FIRE, if APS Pressurizes, ABORT
RCS	A OR B He Press<1700	Monitor He PRESS & RCS QUANTITY. Affected Sys:LGC THR PAIR CMDS (4)-DISABLE, MAIN SOV - CLOSE, CB(11 or 16) QUAD TCA (4) - Open. Monitor MANF PRESS Go to Mal Proc RCS 1 (M41)

Top Job

CONTINGENCY INT (2 OPS)

Container

Coptinest

Top