CH 4B(2B) CONFIGURE FOR NOMINAL OPERATIONS

CAUTION
Steps 1 and 2 must both be performed sequentially during an insolation period to prevent a possible APCU overcurrent trip in eclipse once the discharge control and heater power control FIs are activated.

1. RECONFIGURE BCDU AND BATTERY CONTROL FUNCTIONAL INHIBITS

   1. Disable BCDU Discharge Control and Heater Power Control

PCS P6: EPS: ENERGY STORAGE 4B(2B)

ENERGY STORAGE 4B(2B)

'BCDU 2B(4B)1,2'

sel Software TBD (Primary PVCU MDM)
cmd BCDU 4B(2B)1,2 Disch Cntl Inh - On Arm
cmd BCDU 4B(2B)1,2 Disch Cntl Inh - On
√BCDU 4B(2B)1,2 Disch Cntl Inh Stat - On

cmd BCDU 4B(2B)1,2 Heater Power Cntl Inh - On Arm
cmd BCDU 4B(2B)1,2 Heater Power Cntl Inh - On
√BCDU 4B(2B)1,2 Heater Power Cntl Inh Stat - On

sel Software TBD (Backup PVCU MDM)
cmd BCDU 4B(2B)1,2 Disch Cntl Inh - On Arm
cmd BCDU 4B(2B)1,2 Disch Cntl Inh - On
√BCDU 4B(2B)1,2 Disch Cntl Inh Stat - On

cmd BCDU 4B(2B)1,2 Heater Power Cntl Inh - On Arm
cmd BCDU 4B(2B)1,2 Heater Power Cntl Inh - On
√BCDU 4B(2B)1,2 Heater Power Cntl Inh Stat - On

sel Converter
√BCDU 4B(2B)1,2 Converter Status - On
sel FI
√BCDU 4B(2B)1,2 FI Position - Cl
sel Htr Sw A
√BCDU 4B(2B)1,2 Htr Switch A Position - Op
sel Htr Sw B
√BCDU 4B(2B)1,2 Htr Switch B Position - Op

   2. Enable Battery Reverse Polarity Protection

sel Software TBD (Primary PVCU MDM)
cmd Batt 4B1(2B1)1,2 Rev Polarity Inh - Off Arm
cmd Batt 4B1(2B1)1,2 Rev Polarity Inh - Off
√Batt 4B1(2B1)1,2 Rev Polarity Inh Stat - Off

cmd Batt 4B2(2B2)1,2 Rev Polarity Inh - Off Arm
cmd Batt 4B2(2B2)1,2 Rev Polarity Inh - Off
√Batt 4B2(2B2)1,2 Rev Polarity Inh Stat - Off

sel Software TBD (Backup PVCU MDM)
cmd Batt 4B1(2B1)1,2 Rev Polarity Inh - Off Arm
cmd Batt 4B1(2B1)1,2 Rev Polarity Inh - Off
√Batt 4B1(2B1)1,2 Rev Polarity Inh Stat - Off

cmd Batt 4B2(2B2)1,2 Rev Polarity Inh - Off Arm
cmd Batt 4B2(2B2)1,2 Rev Polarity Inh - Off
√Batt 4B2(2B2)1,2 Rev Polarity Inh Stat - Off

2. UPDATE BUS VOLTAGE SETPOINTS AND MONITOR P6 EPS SYSTEMS
   1. Update SSU and BCDU Bus Voltage Setpoints via PPL
      P6: EPS: TBD

      sel SSU Bus Voltage Setpt PPL Ver ID - TBD
      ODIN/PHALCON perform TBD Data Load Procedure to Primary PVCU MDM
      √SSU Bus Voltage Setpt PPL Ver ID - TBD

      sel SSU Bus Voltage Setpt PPL Ver ID - TBD
      ODIN/PHALCON perform TBD Data Load Procedure to Backup PVCU MDM
      √SSU Bus Voltage Setpt PPL Ver ID - TBD

   2. Monitor BCDU/Battery, DCSU, and SSU Performance
      P6: EPS: SSU 4B(2B)
      SSU 4B(2B)
      'Output'

      √Bus Voltage Setpoint: 160 V
      √Voltage: 157 --- 163 V

      P6: EPS: ENERGY STORAGE 4B(2B)
      ENERGY STORAGE 4B(2B)
      'BCDU 2B(4B)1,2'

      √SOC - Increasing
      √SOC - 60 --- 100%

      'Battery 4B1(2B1)1,2'

      √Avg Press - Increasing
      √Avg Press ≤ 6890 kPa
      √Avg Temp: 0 --- 10° C

‘Battery 4B2(2B2)1,2’

√Avg Press - Increasing
√Avg Press ≤ 6890 kPa
√Avg Temp: 0 --- 10° C

sel TBD

√Mode Regulation Setpoint: 151 V

P6: EPS: DCSU 4B(2B)
DCSU 4B(2B)
‘Primary Pwr Bus’

√Bus Voltage: 157 --- 163 V

Wait for transition to eclipse.

P6: EPS: SSU 4B(2B)
SSU 4B(2B)
‘Output’

√Bus Voltage Setpoint: 160 V
√Voltage: 148 --- 154 V

P6: EPS: ENERGY STORAGE 4B(2B)
ENERGY STORAGE 4B(2B)
‘BCDU 4B(2B)1,2’

√SOC - Decreasing
√SOC: 60 --- 100%

‘Battery 4B1(2B1)1,2’

√Avg Press - Decreasing
√Avg Press ≤ 6890 kPa
√Avg Temp: 0 --- 10° C

‘Battery 4B2(2B2)1,2’

√Avg Press - Decreasing
√Avg Press ≤ 6890 kPa
√Avg Temp: 0 --- 10° C

sel TBD

√Mode Regulation Setpoint: 151 V

P6: EPS: DCSU 4B(2B)
DCSU 4B(2B)
'Primary Pwr Bus'

√Bus Voltage: 48 --- 154 V

3. UPDATE BATTERY CHARGE PROFILE AND BCDU VOLTAGE SETPOINTS
P6: EPS: TBD

sel CH4B Battery Current Setpt PPL Ver ID - TBD
ODIN/PHALCON perform TBD Data Load Procedure to Primary PVCU MDM
√CH4B Battery Current Setpt PPL Ver ID - TBD

sel CH2B Battery Current Setpt PPL Ver ID - TBD
ODIN/PHALCON perform TBD Data Load Procedure to Primary PVCU MDM
√CH2B Battery Current Setpt PPL Ver ID - TBD

sel CH4B Battery Current Setpt PPL Ver ID - TBD
ODIN/PHALCON perform TBD Data Load Procedure to Backup PVCU MDM
√CH4B Battery Current Setpt PPL Ver ID - TBD

sel CH2B Battery Current Setpt PPL Ver ID - TBD
ODIN/PHALCON perform TBD Data Load Procedure to Backup PVCU MDM
√CH2B Battery Current Setpt PPL Ver ID - TBD

P6: EPS: ENERGY STORAGE 4B(2B)
ENERGY STORAGE 4B(2B)
'BCDU 4B(2B)1,2'

sel TBD

√Bus Threshold Setpt: 147 V

4. UPDATE SSU 4B(2B) LOSS OF COMM SETPOINTS
P6: EPS: SSU 4B(2B)
SSU 4B(2B)

sel PVCE

'Vbus LOC Setpt'

Enter 1 6 0 in the three digit field
cmd Vbus LOC Setpt - Set Arm
cmd Vbus LOC Setpt - Set
√New Vbus LOC Setpt: 160 V

5. UPDATE BCDU 4B(2B) LOSS OF COMM SETPOINTS
P6: EPS: ENERGY STORAGE 4B(2B)
ENERGY STORAGE 4B(2B)
‘BCDU 4B(2B)1,2’

sel TBD
‘Mode Regulation LOC Setpt’

Enter 1 5 1 in data field
cmd Mode Regulation LOC Setpt - Set Arm
cmd Mode Regulation LOC Setpt - Set
√Mode Regulation LOC Setpt: 151 V

P6: EPS: TBD

sel CH4B Battery Current LOC Setpt PPL Ver ID - TBD
ODIN/PHALCON perform TBD Data Load Procedure to Primary PVCU MDM
√CH4B Battery Current LOC Setpt PPL Ver ID - TBD

sel CH2B Battery Current LOC Setpt PPL Ver ID - TBD
ODIN/PHALCON perform TBD Data Load Procedure to Primary PVCU MDM
√CH2B Battery Current LOC Setpt PPL Ver ID - TBD

sel CH4B Battery Current LOC Setpt PPL Ver ID - TBD
ODIN/PHALCON perform TBD Data Load Procedure to Backup PVCU MDM
√CH4B Battery Current LOC Setpt PPL Ver ID - TBD

sel CH2B Battery Current LOC Setpt PPL Ver ID - TBD
ODIN/PHALCON perform TBD Data Load Procedure to Backup PVCU MDM
√CH2B Battery Current LOC Setpt PPL Ver ID - TBD

6. OPEN DCSU RBI 6 TO ISOLATE BUS AND PREPARE FOR APCU SHUTDOWN
P6: EPS: DCSU 4B(2B)
DCSU 4B(2B)

sel RBI 6
cmd Position - Open Arm
cmd Position - Open
√Position - Open

‘RBI 6’

√Current < 2 A
√Voltage: 134 --- 146 V

P6: EPS
‘Channel 4B(2B) Output’

√Power < 1 kW
√Current < 2 A