NODE 1 CBM PETAL COVERS CAPTURE

OBJECTIVE:
Capture CBM deployable petal covers on four Node 1 radial ports prior to EVA release of the petal cover launch restraints.

LOCATION:
Node 1

DURATION:
4 hours

REFERENCED PROCEDURE(S):
None

NOTE
Order of execution is Port, Starboard, Zenith, Nadir.

1. VERIFY APCU POWER ON

PCS Node 1: EPS

Node 1:EPS

sel RPCM N13B B

RPCM N13B B

√Integ Cntr incrementing

Node 1:EPS

sel RPCM N14B B

RPCM N14B B

√Integ Cntr incrementing

CRT SM 200 APCU Status

√APCU 1,2 OUT VOLTS LOW (RES) (two) > 122

2. VERIFY RACU POWER AVAILABILITY

PCS FGB:EPS

FGB:EPS

'RACU Details'

√RACU 5 Output Voltage: 121 --- 125 V
√RACU 6 Output Voltage: 121 --- 125 V

3. <u>INHIBIT PORT CBM PRIMARY RT FDIR</u>

PCS Node 1: CDH

Node 1: C&DH

sel N1-1

Secondary NCS MDM Node 1

sel UB ORB N1 1
sel RT Status

UB Orb RT Status

sel Inhib FDIR RT Commands

N1 1 MDM UB ORB N1 1 Inhib FDIR

cmd Inhib FDIR CBM N1 Prt Prim **Execute**

UB Orb RT Status

√RT FDIR Inhibited Number 19 - X

4. <u>INHIBIT PORT CBM SECONDARY RT FDIR</u>

PCS Node 1: CDH

Node 1: C&DH

sel N1-2

Primary NCS MDM Node 1

sel UB ORB N1 2
sel RT Status

UB Orb RT Status

sel Inhib FDIR RT Commands

N1 2 MDM UB ORB N1 2 Inhib FDIR

cmd Inhib FDIR CBM N1 Prt Sec **Execute**

UB Orb RT Status

√RT FDIR Inhibited Number 19 – X

5. INHIBIT STARBOARD CBM PRIMARY RT FDIR

NOTE
Steps (25 --- 47) engage latches on the Node 1 Starboard CBM deployable cover.

PCS Node 1: CDH

Node 1: C&DH

sel N1-1

Secondary NCS MDM Node 1

sel UB ORB N1 1
sel RT Status

UB Orb RT Status

sel Inhib FDIR RT Commands

N1 1 MDM UB ORB N1 1 Inhib FDIR

cmd Inhib FDIR CBM N1 Stbd Prim **Execute**

UB Orb RT Status

√RT FDIR Inhibited Number 16 - X

6. INHIBIT STARBOARD CBM SECONDARY RT FDIR

PCS Node 1: CDH

Node 1: C&DH

sel N1-2

Primary NCS MDM Node 1

sel UB ORB N1 2
sel RT Status

UB Orb RT Status

sel Inhib FDIR RT Commands

N1 2 MDM UB ORB N1 2 Inhib FDIR

cmd Inhib FDIR CBM N1 Stbd Sec **Execute**

UB Orb RT Status

√RT FDIR Inhibited Number 16 – X

7. INHIBIT ZENITH CBM PRIMARY RT FDIR

NOTE
Steps (48 --- 70) engage latches on the Node 1 Zenith CBM deployable cover.

PCS Node 1: CDH

Node 1: C&DH

sel N1-1

Secondary NCS MDM Node 1

sel UB ORB N1 1
sel RT Status

UB Orb RT Status

sel Inhib FDIR RT Commands

N1 1 MDM UB ORB N1 1 Inhib FDIR

cmd Inhib FDIR CBM N1 Zen Prim **Execute**

UB Orb RT Status

√RT FDIR Inhibited Number 20 - X

8. INHIBIT ZENITH CBM SECONDARY RT FDIR

PCS Node 1: CDH

Node 1: C&DH

sel N1-2

Primary NCS MDM Node 1

sel UB ORB N1 2
sel RT Status

UB Orb RT Status

sel Inhib FDIR RT Commands

N1 2 MDM UB ORB N1 2 Inhib FDIR

cmd Inhib FDIR CBM N1 Zen Sec **Execute**

UB Orb RT Status

√RT FDIR Inhibited Number 20 – X

9. INHIBIT NADIR CBM PRIMARY RT FDIR

NOTE
Steps (71 --- 94) engage latches on the Node 1 Nadir CBM deployable cover.

PCS Node 1: CDH

Node 1: C&DH

sel N1-1

Secondary NCS MDM Node 1

sel UB ORB N1 1
sel RT Status

UB Orb RT Status

sel Inhib FDIR RT Commands

N1 1 MDM UB ORB N1 1 Inhib FDIR

cmd Inhib FDIR CBM N1 Nad Prim **Execute**

UB Orb RT Status

√RT FDIR Inhibited Number 17 - X

10. INHIBIT NADIR CBM SECONDARY RT FDIR

PCS Node 1: CDH

Node 1: C&DH

sel N1-2

Primary NCS MDM Node 1

sel UB ORB N1 2
sel RT Status

UB Orb RT Status

sel Inhib FDIR RT Commands

N1 2 MDM UB ORB N1 2 Inhib FDIR

cmd Inhib FDIR CBM N1 Nad Sec **Execute**

UB Orb RT Status

√RT FDIR Inhibited Number 17 - X

11. CLOSE PRIMARY RPCs

PCS S&M

N1 Active CBM Display

'(Center Table)'

sel N1 Port
sel Command/Procedures
sel Engage N1 Port CBM Petal Covers

CBM Engage N1 Port CBM Petal Covers

sel RPCM N1RS2 C RPC [X] CBM N1 Port Pri [Y] Cl

[X] = 7 8 10 11

[Y] = 1 2 3 4

cmd RPCM N1RS2 C RPC [X] CBM N1 Port Pri [Y] Cl **Execute**

N1 Active CBM Display

'N1 Port CBM Data'

√RPCM N1RS1 B RPC [X] Cntr Asy [Y] - Cl

Repeat

12. ACTIVATE PORT CBM PRIMARY MASTER CONTROLLER

CBM Engage N1 Port CBM Petal Covers

cmd CBM State to Active N1 Port Master 1 **Execute**

N1 Active CBM Display

'(Center Table)'

√N1 Port Mode - ACTV
√N1 Port State - PRI
√N1 Port Comm Error - No X
√Master Cmd status - CPLT

sel BIT Results

N1 Active CBM Bit Results

√No Xs

13. SET CONTROLLER POSITIONS ZERO

NOTE
Set All Posns Zero command should be issued to use currently active RS-485 bus channel (A or B). Active channel is indicated in “485 Bus Used” telemetry field.

N1 Active CBM Display
‘(Center Table)’

sel Command/Procedures
sel Other Commands
sel Set Bolt Position

CBM Set Bolt Position

cmd CBM Set All Posns Zero Bus‘X’ **Execute**

N1 Active CBM Display
‘(Center Table)’

√Master Cmd status - CPLT

14. VERIFY RS-485 COMM STATUS

N1 Active CBM Display
‘N1 Port’

√Bolt Cmd Stat (sixteen) - CPLT
√Latch Cmd Stat (four) - CPLT

If any Bolt or Latch Cmd Status - MSBD

‘(Center Table)’

sel Command/Procedures
sel Other Commands
sel BIT Commands

CBM Bit Commands

cmd CBM Act Bit Active CBM All Ctrlr **Execute**

N1 Active CBM Display
‘(CBM Graphic)’

√Conf Request - BIT

'(Center Table)'

sel Command/Procedures
sel Other Commands
sel Confirm/Nonconfirm

CBM Confirm Nonconfirm

cmd CBM Confirmation Cmd **Execute**

N1 Active CBM Display
'(Center Table)'

√Master Cmd status - CPLT
√Bolt 1-1 Cmd Code - BIT
√Latch 1-1 Cmd Code - BIT

'N1 Port'

√Bolt Cmd Stat (sixteen) - CPLT
√Latch Cmd Stat (four) - CPLT

'(Center Table)'

sel BIT Results

N1 Active CBM Bit Results

√No Xs

15. VERIFY CONTROLLER POSITIONS ZERO

NOTE
Set All Posns Zero command should be issued to use currently active RS-485 bus channel (A or B). Active channel is indicated in "485 Bus Used" telemetry field.

Node 1 Active CBM Display
'N1 Port'

√Bolt Pos (sixteen): 0
√Latch Pos (four): 0

If any Bolt or Latch Posn ≠ 0

N1 Active CBM Display
'(Center Table)'

sel Command/Procedures
sel Other Commands
sel Set Bolt Position

CBM Set Bolt Position

cmd CBM Set All Posns Zero BusX **Execute**

N1 Active CBM Display
'(Center Table)'

√Master Cmd status - CPLT
√Bolt 1-1 Cmd Code - RELD
√Latch 1-1 Cmd Code - RELD

'N1 Port'

√Bolt Cmd Stat (sixteen) - CPLT
√Latch Cmd Stat (four) - CPLT
√Bolt Pos (sixteen): 0
√Latch Pos (four): 0

16. TEST BOLT DRIVE

N1 Active CBM Display
'(Center Table)'

sel Command/Procedures
sel Engage N1 Port CBM Petal Covers

CBM Engage N1 Port CBM Petal Covers

cmd CBM BBoltck nominal **Execute**
Wait 90 seconds.

N1 Active CBM Display
'(Center Table)'

√Bolt 1-1 Cmd Code - BBCK
√Master Cmd status - CPLT

'N1 Port'

√Bolt Cmd Stat (sixteen) - CPLT
√Bolt Pos (sixteen): 50 --- 51

17. DEACTIVATE PORT CBM PRIMARY MASTER CONTROLLER

NOTE
Steps (10 --- 15) verify secondary power and command path.

CBM Engage N1 Port CBM Petal Covers

cmd CBM State to Deactivate N1 Port **Execute**

N1 Active CBM Display
'(Center Table)'

√N1 Port Mode - DEAC

18. OPEN PRIMARY RPCs

CBM Engage N1 Port CBM Petal Covers

sel RPCM N1RS2 C RPC [X] CBM N1 Port Pri [Y] [X] = 7 8 10 11
[Y] = 1 2 3 4

cmd RPCM N1RS2 C RPC [X] CBM N1 Port Pri [Y] Op **Execute**

N1 Active CBM Display
'N1 Port CBM Data'

√RPCM N1RS1 B RPC [X] Cntr Asy [Y] - Op

Repeat

19. CLOSE SECONDARY RPCs

CBM Engage N1 Port CBM Petal Covers

sel RPCM N1RS1 B RPC [X] CBM N1 Port Pri [Y] [X] = 5 6 13 14
[Y] = 1 2 3 4

cmd RPCM N1RS1 B RPC [X] CBM N1 Port Pri [Y] Cl **Execute**

N1 Active CBM Display
'N1 Port CBM Data'

√RPCM N1RS2 C RPC [X] Cntr Asy [Y] - Cl

Repeat

20. ACTIVATE PORT CBM SECONDARY MASTER CONTROLLER

CBM Engage N1 Port CBM Petal Covers

cmd CBM State to Active N1 Port Master 2 **Execute**

N1 Active CBM Display
'(Center Table)'

√N1 Port Mode - ACTV
√N1 Port State - SEC
√N1 Port Comm Error - No X
√Master Cmd status - CPLT

sel BIT Results

N1 Active CBM Bit Results

√No Xs

21. SET CONTROLLER POSITIONS ZERO

NOTE
Set All Posns Zero command should be issued to use currently active RS-485 bus channel (A or B). Active channel is indicated in "485 Bus Used" telemetry field.

N1 Active CBM Display
'(Center Table)'

sel Command/Procedures
sel Other Commands
sel Set Bolt Position

CBM Set Bolt Position

cmd CBM Set All Posns Zero Bus'X' **Execute**

N1 Active CBM Display
'(Center Table)'

√Master Cmd status - CPLT

22. VERIFY RS-485 COMM STATUS

N1 Active CBM Display
'N1 Port'

√Bolt Cmd Stat (sixteen) - CPLT
√Latch Cmd Stat (four) - CPLT

If any Bolt or Latch Cmd Status - MSBD

'(Center Table)'

sel Command/Procedures
sel Other Commands
sel BIT Commands

CBM Bit Commands

cmd CBM Act Bit Active CBM All Ctrlr **Execute**

N1 Active CBM Display
'(CBM Graphic)'

√Conf Request - BIT

'(Center Table)'

sel Command/Procedures
sel Other Commands
sel Confirm/Nonconfirm

CBM Confirm Nonconfirm

cmd CBM Confirmation Cmd **Execute**

N1 Active CBM Display
'(Center Table)'

√Master Cmd status - CPLT
√Bolt 1-1 Cmd Code - BIT
√Latch 1-1 Cmd Code - BIT

'N1 Port'

√Bolt Cmd Stat (sixteen) - CPLT
√Latch Cmd Stat (four) - CPLT

'(Center Table)'

sel BIT Results

N1 Active CBM Bit Results

√No Xs

23. VERIFY CONTROLLER POSITIONS ZERO

NOTE
Set All Posns Zero command should be issued to use currently active RS-485 bus channel (A or B.) Active channel is indicated in “485 Bus Used” telemetry field.

Node 1 Active CBM Display
‘N1 Port’

√Bolt Pos (sixteen): 0
√Latch Pos (four): 0

If any Bolt or Latch Posn ≠ 0

N1 Active CBM Display
‘(Center Table)’

sel Command/Procedures
sel Other Commands
sel Set Bolt Position

CBM Set Bolt Position

cmd CBM Set All Posns Zero BusX **Execute**

N1 Active CBM Display
‘(Center Table)’

√Master Cmd status - CPLT
√Bolt 1-1 Cmd Code - RELD
√Latch 1-1 Cmd Code - RELD

‘N1 Port’

√Bolt Cmd Stat (sixteen) - CPLT
√Latch Cmd Stat (four) - CPLT
√Bolt Pos (sixteen): 0
√Latch Pos (four): 0

24. CLOSE CAPTURE LATCHES

CBM Engage N1 Port CBM Petal Covers

cmd CBM Close Nominal **Execute**
Wait 10 seconds.

N1 Active CBM Display
'(Center Table)'

√Latch 1-1 Cmd Code - CLOS
√Master Cmd status - CPLT

'N1 Port'

√Latch Cmd Stat (four) - CPLT
√Latch Pos (four): 0 --- 0.2

25. VERIFY LATCH ANGLES ZERO

N1 Active CBM Display
'N1 Port'

If Latch Pos (four) ≠ 0

N1 Active CBM Display
'(Center Table)'

sel Command/Procedures
sel Command Templates
sel CBM Set Latch Angles Template

CBM Set Latch Angles Template

cmd	Subsystem ID Counts	4	
	RS485 Bus select	0	
	Last Completed Command	5	
	Subsystem Identifier 17	21	
	Shaft Angle Status 17	0	
	Subsystem Identifier 18	37	
	Shaft Angle Status 18	0	
	Subsystem Identifier 19	53	
	Shaft Angle Status 19	0	
	Subsystem Identifier 20	69	
	Shaft Angle Status 20	0	**Execute**

N1 Active CBM Display
'(Center Table)'

√Latch 1-1 Cmd Code - RELD
√Master Cmd status - CPLT

'N1 Port'

√Latch Cmd Stat (four) - CPLT
√Latch Pos (four): 0

26. DEPLOY CAPTURE LATCHES TO 45 DEGREES

NOTE
Expect MALF for Latch Cmd Stats upon completion of deploy to 45 degrees.

N1 Active CBM Display
'(Center Table)'

sel Command/Procedures
sel Engage N1 Port CBM Petal Covers

CBM Engage N1 Port CBM Petal Covers

cmd CBM Deploy to 45 Degrees **Execute**
√Master Cmd status - PEND

N1 Active CBM Display
'(CBM Graphic)'

√Conf Request - DPLY

CBM Engage N1 Port CBM Petal Covers

cmd CBM Confirmation Cmd **Execute**
Wait 90 seconds.

N1 Active CBM Display
'(Center Table)'

√Latch 1-1 Cmd Code - DPLY
√Master Cmd status - FAIL

'N1 Port'

√Latch Cmd Stat (four) - MALF
√Latch Pos (four): 9.0 --- 9.4

27. CLOSE CAPTURE LATCHES

CBM Engage N1 Port CBM Petal Covers

cmd CBM Close Nominal **Execute**
Wait 90 seconds.

N1 Active CBM Display
'(Center Table)'

√Master Cmd status - CPLT
√Latch 1-1 Cmd Code - CLOS

'N1 Port'

√Latch Cmd Stat (four) - CPLT
√Latch Pos (four): 0 --- 0.2

28. DEACTIVATE PORT CBM SECONDARY MASTER CONTROLLER

CBM Engage N1 Port CBM Petal Covers

cmd CBM State to Deactivate N1 Port **Execute**

N1 Active CBM Display
'(Center Table)'

√N1 Port Mode - DEAC

29. OPEN SECONDARY RPCs

CBM Engage N1 Port CBM Petal Covers

sel RPCM N1RS1B RPC [X] CBM N1 Port Pri [Y] [X] = 5 6 13 14
[Y] = 1 2 3 4

cmd RPCM N1RS1B RPC [X] CBM N1 Port Pri [Y] Op **Execute**

N1 Active CBM Display
'N1 Port CBM Data'

√RPCM N1RS2 C RPC [X] Cntr Asy [Y] - Op

Repeat

30. CLOSE PRIMARY RPCs

PCS S&M

N1 Active CBM Display

'(Center Table)'

sel N1 Stbd
sel Command/Procedures
sel Engage N1 Starboard CBM Petal Covers

CBM Engage N1 Starboard CBM Petal Covers

sel RPCM N1RS2 A RPC [X] CBM N1 Stbd Pri [Y]

[X] = 5 6 10 11

[Y] = 1 2 3 4

cmd RPCM N1RS2 A RPC [X] CBM N1 Stbd Pri [Y] Cl **Execute**

N1 Active CBM Display

'N1 Starboard CBM Data'

√RPCM N1RS2 A RPC [X] Cntr Asy [Y] - Cl

Repeat

31. ACTIVATE STARBOARD CBM PRIMARY MASTER CONTROLLER

CBM Engage N1 Starboard CBM Petal Covers

cmd CBM State to Active N1 Stbd Master 1 **Execute**

N1 Active CBM Display

'(Center Table)'

√N1 Stbd Mode - ACTV
√N1 Stbd State - PRI
√N1 Stbd Comm Error - No X
√Master Cmd status - CPLT

sel BIT Results

N1 Active CBM Bit Results

√No Xs

32. SET CONTROLLER POSITIONS ZERO

NOTE
Set All Posns Zero command should be issued to use currently active RS-485 bus channel (A or B). Active channel is indicated in “485 Bus Used” telemetry field.

N1 Active CBM Display
‘(Center Table)’

sel Command/Procedures
sel Other Commands
sel Set Bolt Position

CBM Set Bolt Position

cmd CBM Set All Posns Zero Bus‘X’ **Execute**

N1 Active CBM Display
‘(Center Table)’

√Master Cmd status - CPLT

33. VERIFY RS-485 COMM STATUS

N1 Active CBM Display
‘N1 Stbd’

√Bolt Cmd Stat (sixteen) - CPLT
√Latch Cmd Stat (four) - CPLT

If any Bolt or Latch Cmd Status - MSBD

‘(Center Table)’

sel Command/Procedures
sel Other Commands
sel BIT Commands

CBM Bit Commands

cmd CBM Act Bit Active CBM All Ctrlr **Execute**

N1 Active CBM Display
‘(CBM Graphic)’

√Conf Request - BIT

'(Center Table)'

sel Command/Procedures
sel Other Commands
sel Confirm/Nonconfirm

CBM Confirm Nonconfirm

cmd CBM Confirmation Cmd **Execute**

N1 Active CBM Display
'(Center Table)'

√Master Cmd status - CPLT
√Bolt 1-1 Cmd Code - BIT
√Latch 1-1 Cmd Code - BIT

'N1 Stbd'

√Bolt Cmd Stat (sixteen) - CPLT
√Latch Cmd Stat (four) - CPLT

'(Center Table)'

sel BIT Results

N1 Active CBM Bit Results

√No Xs

34. VERIFY CONTROLLER POSITIONS ZERO

NOTE
Set All Posns Zero command should be issued to use currently active RS-485 bus channel (A or B.) Active channel is indicated in "485 Bus Used" telemetry field.

Node 1 Active CBM Display
'N1 Stbd'

√Bolt Pos (sixteen): 0
√Latch Pos (four): 0

If any Bolt or Latch Posn ≠ 0

N1 Active CBM Display
'(Center Table)'

sel Command/Procedures
sel Other Commands
sel Set Bolt Position

CBM Set Bolt Position

cmd CBM Set All Posns Zero BusX **Execute**

N1 Active CBM Display
'(Center Table)'

√Master Cmd status - CPLT
√Bolt 1-1 Cmd Code - RELD
√Latch 1-1 Cmd Code - RELD

'N1 Stbd'

√Bolt Cmd Stat (sixteen) - CPLT
√Latch Cmd Stat (four) - CPLT
√Bolt Pos (sixteen): 0
√Latch Pos (four): 0

35. TEST BOLT DRIVE

N1 Active CBM Display
'(Center Table)'

sel Command/Procedures
sel Engage N1 Stbd CBM Petal Covers

CBM Engage N1 Stbd CBM Petal Covers

cmd CBM BBoltck nominal **Execute**
Wait 90 seconds.

N1 Active CBM Display
'(Center Table)'

√Bolt 1-1 Cmd Code - BBCK
√Master Cmd status - CPLT

'N1 Stbd'

√Bolt Cmd Stat (sixteen) - CPLT
√Bolt Pos (sixteen): 50 --- 51

36. DEACTIVATE STARBOARD CBM PRIMARY MASTER CONTROLLER

NOTE
Steps (33 --- 39) verify secondary power and command path.

CBM Engage N1 Starboard CBM Petal Covers

cmd CBM State to Deactivate N1 Stbd **Execute**

N1 Active CBM Display
'(Center Table)'

√N1 Stbd Mode - DEAC

37. OPEN PRIMARY RPCs

CBM Engage N1 Starboard CBM Petal Covers

sel RPCM N1RS2 A RPC [X] CBM N1 Stbd Pri [Y]

[X] =	5	6	10	11
[Y] =	1	2	3	4

cmd RPCM N1RS2 A RPC [X] CBM N1 Stbd Pri [Y] Op **Execute**

N1 Active CBM Display
'N1 Starboard CBM Data'

√RPCM N1RS2 A RPC [X] Cntr Asy [Y] - Op

Repeat

38. CLOSE SECONDARY RPCs

CBM Engage N1 Starboard CBM Petal Covers

sel RPCM N1RS1 C RPC [X] CBM N1 Stbd Pri [Y]

[X] =	5	6	12	13
[Y] =	1	2	3	4

cmd RPCM N1RS1 C RPC [X] CBM N1 Stbd Pri [Y] Cl **Execute**

N1 Active CBM Display
'N1 Starboard CBM Data'

√RPCM N1RS1 C RPC [X] Cntr Asy [Y] - Cl

Repeat

39. ACTIVATE STARBOARD CBM SECONDARY MASTER CONTROLLER

CBM Engage N1 Starboard CBM Petal Covers

cmd CBM State to Active N1 Stbd Master 2 **Execute**

N1 Active CBM Display
'(Center Table)'

√N1 Stbd Mode - ACTV
√N1 Stbd State - SEC
√N1 Stbd Comm Error - No X
√Master Cmd status - CPLT

sel BIT Results

N1 Active CBM Bit Results

√No Xs

40. SET CONTROLLER POSITIONS ZERO

NOTE
Set All Posns Zero command should be issued to use currently active RS-485 bus channel (A or B). Active channel is indicated in "485 Bus Used" telemetry field.

N1 Active CBM Display
'(Center Table)'

sel Command/Procedures
sel Other Commands
sel Set Bolt Position

CBM Set Bolt Position

cmd CBM Set All Posns Zero Bus'X' **Execute**

N1 Active CBM Display
'(Center Table)'

√Master Cmd status - CPLT

41. VERIFY RS-485 COMM STATUS

N1 Active CBM Display
'N1 Stbd'

√Bolt Cmd Stat (sixteen) - CPLT
√Latch Cmd Stat (four) - CPLT

If any Bolt or Latch Cmd Status - MSBD

'(Center Table)'

sel Command/Procedures
sel Other Commands
sel BIT Commands

CBM Bit Commands

cmd CBM Act Bit Active CBM All Ctrlr **Execute**

N1 Active CBM Display
'(CBM Graphic)'

√Conf Request - BIT

'(Center Table)'

sel Command/Procedures
sel Other Commands
sel Confirm/Nonconfirm

CBM Confirm Nonconfirm

cmd CBM Confirmation Cmd **Execute**

N1 Active CBM Display
'(Center Table)'

√Master Cmd status - CPLT
√Bolt 1-1 Cmd Code - BIT
√Latch 1-1 Cmd Code - BIT

'N1 Stbd'

√Bolt Cmd Stat (sixteen) - CPLT
√Latch Cmd Stat (four) - CPLT

‘(Center Table)’

sel BIT Results

N1 Active CBM Bit Results

√No Xs

42. VERIFY CONTROLLER POSITIONS ZERO

NOTE
Set All Posns Zero command should be issued to use currently active RS-485 bus channel (A or B). Active channel is indicated in “485 Bus Used” telemetry field.

Node 1 Active CBM Display
‘N1 Stbd’

√Bolt Pos (sixteen): 0
√Latch Pos (four): 0

If any Bolt or Latch Posn ≠ 0

N1 Active CBM Display
‘(Center Table)’

sel Command/Procedures
sel Other Commands
sel Set Bolt Position

CBM Set Bolt Position

cmd CBM Set All Posns Zero BusX **Execute**

N1 Active CBM Display
‘(Center Table)’

√Master Cmd status - CPLT
√Bolt 1-1 Cmd Code - RELD
√Latch 1-1 Cmd Code - RELD

‘N1 Stbd’

√Bolt Cmd Stat (sixteen) - CPLT
√Latch Cmd Stat (four) - CPLT
√Bolt Pos (sixteen): 0
√Latch Pos (four): 0

43. CLOSE CAPTURE LATCHES

CBM Engage N1 Stbd CBM Petal Covers

cmd CBM Close Nominal **Execute**
Wait 10 seconds.

N1 Active CBM Display
'(Center Table)'

√Latch 1-1 Cmd Code - CLOS
√Master Cmd status - CPLT

'N1 Stbd'

√Latch Cmd Stat (four) - CPLT
√Latch Pos (four): 0 --- 0.2

44. VERIFY LATCH ANGLES ZERO

N1 Active CBM Display
'N1 Stbd'

If Latch Pos (four) ≠ 0

N1 Active CBM Display
'(Center Table)'

sel Command/Procedures
sel Command Templates
sel CBM Set Latch Angles Template

CBM Set Latch Angles Template

cmd	Subsystem ID Counts	4	
	RS485 Bus select	0	
	Last Completed Command	5	
	Subsystem Identifier 17	21	
	Shaft Angle Status 17	0	
	Subsystem Identifier 18	37	
	Shaft Angle Status 18	0	
	Subsystem Identifier 19	53	
	Shaft Angle Status 19	0	
	Subsystem Identifier 20	69	
	Shaft Angle Status 20	0	**Execute**

N1 Active CBM Display
'(Center Table)'

√Latch 1-1 Cmd Code - RELD
√Master Cmd status - CPLT

'N1 Stbd'

√Latch Cmd Stat (four) - CPLT
√Latch Pos (four): 0

45. DEPLOY CAPTURE LATCHES TO 45 DEGREES

NOTE
Expect MALF for Latch Cmd Stats upon completion of deploy to 45 degrees.

N1 Active CBM Display
'(Center Table)'

sel Command/Procedures
sel Engage N1 Stbd CBM Petal Covers

CBM Engage N1 Stbd CBM Petal Covers

cmd CBM Deploy to 45 Degrees **Execute**

√Master Cmd status - PEND

N1 Active CBM Display
'(CBM Graphic)'

√Conf Request - DPLY

CBM Engage N1 Stbd CBM Petal Covers

cmd CBM Confirmation Cmd **Execute**
Wait 90 seconds.

N1 Active CBM Display
'(Center Table)'

√Latch 1-1 Cmd Code - DPLY
√Master Cmd status - FAIL

'N1 Stbd'

√Latch Cmd Stat (four) - MALF
√Latch Pos (four): 9.0 --- 9.4

46. CLOSE CAPTURE LATCHES

CBM Engage N1 Stbd CBM Petal Covers

cmd CBM Close Nominal **Execute**
Wait 90 seconds.

N1 Active CBM Display
'(Center Table)'

√Master Cmd status - CPLT
√Latch 1-1 Cmd Code - CLOS

'N1 Stbd'

√Latch Cmd Stat (four) - CPLT
√Latch Pos (four): 0 --- 0.2

47. DEACTIVATE STARBOARD CBM SECONDARY MASTER CONTROLLER

CBM Engage N1 Starboard CBM Petal Covers

cmd CBM State to Deactivate N1 Stbd **Execute**

N1 Active CBM Display
'(Center Table)'

√N1 Stbd Mode - DEAC

48. OPEN SECONDARY RPCs

CBM Engage N1 Starboard CBM Petal Covers

sel RPCM N1RS1 C RPC [X] CBM N1 Stbd Pri [Y]

[X] = 5 6 12 13

[Y] = 1 2 3 4

cmd RPCM N1RS1 C RPC [X] CBM N1 Stbd Pri [Y] Op **Execute**

N1 Active CBM Display
'N1 Starboard CBM Data'

√RPCM N1RS1 C RPC [X] Cntr Asy [Y] - Op

Repeat

49. CLOSE PRIMARY RPCs

PCS S&M

N1 Active CBM Display

'(Center Table)'

sel N1 Zen
sel Command/Procedures
sel Engage N1 Zenith CBM Petal Covers

CBM Engage N1 Zenith CBM Petal Covers

sel RPCM N13B B RPC [X] CBM N1 Zen Pri [Y]

[X] =	11	12	13	14
[Y] =	1	2	3	4

cmd RPCM N13B B RPC [X] CBM N1 Zen Pri [Y] Cl **Execute**

N1 Active CBM Display

'N1 Zenith CBM Data'

√RPCM N13B B RPC [X] Cntr Asy [Y] - Cl

Repeat

50. ACTIVATE ZENITH CBM PRIMARY MASTER CONTROLLER

CBM Engage N1 Zenith CBM Petal Covers

cmd CBM State to Active N1 Zen Master 1 **Execute**

N1 Active CBM Display

'(Center Table)'

√N1 Zen Mode - ACTV
√N1 Zen State - PRI
√N1 Zen Comm Error - No X
√Master Cmd status - CPLT

sel BIT Results

N1 Active CBM Bit Results

√No Xs

51. SET CONTROLLER POSITIONS ZERO

NOTE
Set All Posns Zero command should be issued to use currently active RS-485 bus channel (A or B). Active channel is indicated in “485 Bus Used” telemetry field.

N1 Active CBM Display
‘(Center Table)’

sel Command/Procedures
sel Other Commands
sel Set Bolt Position

CBM Set Bolt Position

cmd CBM Set All Posns Zero Bus‘X’ **Execute**

N1 Active CBM Display
‘(Center Table)’

√Master Cmd status - CPLT

52. VERIFY RS-485 COMM STATUS

N1 Active CBM Display
‘N1 Zen’

√Bolt Cmd Stat (sixteen) - CPLT
√Latch Cmd Stat (four) - CPLT

If any Bolt or Latch Cmd Status - MSBD

‘(Center Table)’

sel Command/Procedures
sel Other Commands
sel BIT Commands

CBM Bit Commands

cmd CBM Act Bit Active CBM All Ctrlr **Execute**

N1 Active CBM Display
‘(CBM Graphic)’

√Conf Request - BIT

'(Center Table)'

sel Command/Procedures
sel Other Commands
sel Confirm/Nonconfirm

CBM Confirm Nonconfirm

cmd CBM Confirmation Cmd **Execute**

N1 Active CBM Display
'(Center Table)'

√Master Cmd status - CPLT
√Bolt 1-1 Cmd Code - BIT
√Latch 1-1 Cmd Code - BIT

'N1 Zen'

√Bolt Cmd Stat (sixteen) - CPLT
√Latch Cmd Stat (four) - CPLT

'(Center Table)'

sel BIT Results

N1 Active CBM Bit Results

√No Xs

53. VERIFY CONTROLLER POSITIONS ZERO

NOTE
Set All Posns Zero command should be issued to use currently active RS-485 bus channel (A or B). Active channel is indicated in "485 Bus Used" telemetry field.

Node 1 Active CBM Display
'N1 Zen'

√Bolt Pos (sixteen): 0
√Latch Pos (four): 0

If any Bolt or Latch Posn ≠ 0

N1 Active CBM Display
'(Center Table)'

sel Command/Procedures
sel Other Commands
sel Set Bolt Position

CBM Set Bolt Position

cmd CBM Set All Posns Zero BusX **Execute**

N1 Active CBM Display
'(Center Table)'

√Master Cmd status - CPLT
√Bolt 1-1 Cmd Code - RELD
√Latch 1-1 Cmd Code - RELD

'N1 Zen'

√Bolt Cmd Stat (sixteen) - CPLT
√Latch Cmd Stat (four) - CPLT
√Bolt Pos (sixteen): 0
√Latch Pos (four): 0

54. TEST BOLT DRIVE

N1 Active CBM Display
'(Center Table)'

sel Command/Procedures
sel Engage N1 Zen CBM Petal Covers

CBM Engage N1 Zen CBM Petal Covers

cmd CBM BBoltck nominal **Execute**
Wait 90 seconds.

N1 Active CBM Display
'(Center Table)'

√Bolt 1-1 Cmd Code - BBCK
√Master Cmd status - CPLT

'N1 Zen'

√Bolt Cmd Stat (sixteen) - CPLT
√Bolt Pos (sixteen): 50 --- 51

55. DEACTIVATE ZENITH CBM PRIMARY MASTER CONTROLLER

> NOTE
> Steps (56 --- 62) verify secondary power and command path.

CBM Engage N1 Zenith CBM Petal Covers

cmd CBM State to Deactivate N1 Zen **Execute**

N1 Active CBM Display
'(Center Table)'

√N1 Zen Mode - DEAC

56. OPEN PRIMARY RPCs

CBM Engage N1 Zenith CBM Petal Covers

sel RPCM N13B B RPC [X] CBM N1 Zen Pri [Y]

[X] =	11	12	13	14
[Y] =	1	2	3	4

cmd RPCM N13B B RPC [X] CBM N1 Zen Pri [Y] Op **Execute**

N1 Active CBM Display
'N1 Zenith CBM Data'

√RPCM N13B B RPC [X] Cntr Asy [Y] - Op

Repeat

57. CLOSE SECONDARY RPCs

CBM Engage N1 Zenith CBM Petal Covers

sel RPCM N14B B RPC [X] CBM N1 Zen Pri [Y]

[X] =	3	4	5	6
[Y] =	1	2	3	4

cmd RPCM N14B B RPC [X] CBM N1 Zen Pri [Y] Cl **Execute**

N1 Active CBM Display
'N1 Zenith CBM Data'

√RPCM N14B B RPC [X] Cntr Asy [Y] - Cl

Repeat

58. ACTIVATE ZENITH CBM SECONDARY MASTER CONTROLLER

CBM Engage N1 Zenith CBM Petal Covers

cmd CBM State to Active N1 Zen Master 2 **Execute**

N1 Active CBM Display
'(Center Table)'

√N1 Zen Mode - ACTV
√N1 Zen State - SEC
√Comm Error - No X
√Master Cmd status - CPLT

sel BIT Results

N1 Active CBM Bit Results

√No Xs

59. SET CONTROLLER POSITIONS ZERO

NOTE
Set All Posns Zero command should be issued to use currently active RS-485 bus channel (A or B). Active channel is indicated in "485 Bus Used" telemetry field.

N1 Active CBM Display
'(Center Table)'

sel Command/Procedures
sel Other Commands
sel Set Bolt Position

CBM Set Bolt Position

cmd CBM Set All Posns Zero Bus'X' **Execute**

N1 Active CBM Display
'(Center Table)'

√Master Cmd status - CPLT

60. VERIFY RS-485 COMM STATUS

N1 Active CBM Display
'N1 Zen'

√Bolt Cmd Stat (sixteen) - CPLT
√Latch Cmd Stat (four) - CPLT

If any Bolt or Latch Cmd Status - MSBD

'(Center Table)'

sel Command/Procedures
sel Other Commands
sel BIT Commands

CBM Bit Commands

cmd CBM Act Bit Active CBM All Ctrlr **Execute**

N1 Active CBM Display
'(CBM Graphic)'

√Conf Request - BIT

'(Center Table)'

sel Command/Procedures
sel Other Commands
sel Confirm/Nonconfirm

CBM Confirm Nonconfirm

cmd CBM Confirmation Cmd **Execute**

N1 Active CBM Display
'(Center Table)'

√Master Cmd status - CPLT
√Bolt 1-1 Cmd Code - BIT
√Latch 1-1 Cmd Code - BIT

'N1 Zen'

√Bolt Cmd Stat (sixteen) - CPLT
√Latch Cmd Stat (four) - CPLT

‘(Center Table)’

sel BIT Results

N1 Active CBM Bit Results

√No Xs

61. VERIFY CONTROLLER POSITIONS ZERO

NOTE
Set All Posns Zero command should be issued to use currently active RS-485 bus channel (A or B). Active channel is indicated in “485 Bus Used” telemetry field.

Node 1 Active CBM Display
‘N1 Zen’

√Bolt Pos (sixteen): 0
√Latch Pos (four): 0

If any Bolt or Latch Posn ≠ 0

N1 Active CBM Display
‘(Center Table)’

sel Command/Procedures
sel Other Commands
sel Set Bolt Position

CBM Set Bolt Position

cmd CBM Set All Posns Zero BusX **Execute**

N1 Active CBM Display
‘(Center Table)’

√Master Cmd status - CPLT
√Bolt 1-1 Cmd Code - RELD
√Latch 1-1 Cmd Code - RELD

‘N1 Zen’

√Bolt Cmd Stat (sixteen) - CPLT
√Latch Cmd Stat (four) - CPLT
√Bolt Pos (sixteen): 0
√Latch Pos (four): 0

62. CLOSE CAPTURE LATCHES

CBM Engage N1 Zen CBM Petal Covers

cmd CBM Close Nominal **Execute**
Wait 10 seconds.

N1 Active CBM Display
'(Center Table)'

√Latch 1-1 Cmd Code - CLOS
√Master Cmd status - CPLT

'N1 Zen'

√Latch Cmd Stat (four) - CPLT
√Latch Pos (four): 0 --- 0.2

63. VERIFY LATCH ANGLES ZERO

N1 Active CBM Display
'N1 Zen'

If Latch Pos (four) ≠ 0

N1 Active CBM Display
'(Center Table)'

sel Command/Procedures
sel Command Templates
sel CBM Set Latch Angles Template

CBM Set Latch Angles Template

cmd	Subsystem ID Counts	4	
	RS485 Bus select	0	
	Last Completed Command	5	
	Subsystem Identifier 17	21	
	Shaft Angle Status 17	0	
	Subsystem Identifier 18	37	
	Shaft Angle Status 18	0	
	Subsystem Identifier 19	53	
	Shaft Angle Status 19	0	
	Subsystem Identifier 20	69	
	Shaft Angle Status 20	0	**Execute**

N1 Active CBM Display
'(Center Table)'

√Latch 1-1 Cmd Code - RELD
√Master Cmd status - CPLT

'N1 Zen'

√Latch Cmd Stat (four) - CPLT
√Latch Pos (four): 0

64. DEPLOY CAPTURE LATCHES TO 45 DEGREES

NOTE
Expect MALF for Latch Cmd Stats upon completion of deploy to 45 degrees.

N1 Active CBM Display
'(Center Table)'

sel Command/Procedures
sel Engage N1 Zen CBM Petal Covers

CBM Engage N1 Zen CBM Petal Covers

cmd CBM Deploy to 45 Degrees **Execute**

√Master Cmd status - PEND

N1 Active CBM Display
'(CBM Graphic)'

√Conf Request - DPLY

CBM Engage N1 Zen CBM Petal Covers

cmd CBM Confirmation Cmd **Execute**
Wait 90 seconds.

N1 Active CBM Display
'(Center Table)'

√Latch 1-1 Cmd Code - DPLY
√Master Cmd status - FAIL

'N1 Zen'

√Latch Cmd Stat (four) - MALF
√Latch Pos (four): 9.0 --- 9.4

65. CLOSE CAPTURE LATCHES

CBM Engage N1 Zen CBM Petal Covers

cmd CBM Close Nominal **Execute**
Wait 90 seconds.

N1 Active CBM Display
'(Center Table)'

√Master Cmd status - CPLT
√Latch 1-1 Cmd Code - CLOS

'N1 Zen'

√Latch Cmd Stat (four) - CPLT
√Latch Pos (four): 0 --- 0.2

66. DEACTIVATE ZENITH CBM SECONDARY MASTER CONTROLLER

CBM Engage N1 Zenith CBM Petal Covers

cmd CBM State to Deactivate N1 Zen **Execute**

N1 Active CBM Display
'(Center Table)'

√N1 Zen Mode - DEAC

67. OPEN SECONDARY RPCs

CBM Engage N1 Zenith CBM Petal Covers

sel RPCM N14B B RPC [X] CBM N1 Zen Pri [Y]

[X] =	3	4	5	6
[Y] =	1	2	3	4

cmd RPCM N14B B RPC [X] CBM N1 Zen Pri [Y] Op **Execute**

N1 Active CBM Display
'N1 Zenith CBM Data'

√RPCM N14B B RPC [X] Cntr Asy [Y] - Op

Repeat

68. <u>CLOSE PRIMARY RPCs</u>

PCS S&M

N1 Active CBM Display

'(Center Table)'

sel N1 Nad
sel Command/Procedures
sel Engage N1 Nadir CBM Petal Covers

CBM Engage N1 Nadir CBM Petal Covers

sel RPCM N13B B RPC [X] CBM N1 Nad Pri [Y] [X] = 3 4 5 6
[Y] = 1 2 3 4

cmd RPCM N13B B RPC [X] CBM N1 Nad Pri [Y] Cl **Execute**

N1 Active CBM Display

'N1 Nadir CBM Data'

√RPCM N13B B RPC [X] Cntr Asy [Y] - Cl

Repeat

69. <u>ACTIVATE NADIR CBM PRIMARY MASTER CONTROLLER</u>

CBM Engage N1 Nadir CBM Petal Covers

cmd CBM State to Active N1 Nad Master 1 **Execute**

N1 Active CBM Display

'(Center Table)'

√N1 Nad Mode - ACTV
√N1 Nad State - PRI
√N1 Nad Comm Error - No X
√Master Cmd status - CPLT

sel BIT Results

N1 Active CBM Bit Results

√No Xs

70. SET CONTROLLER POSITIONS ZERO

NOTE
Set All Posns Zero command should be issued to use currently active RS-485 bus channel (A or B). Active channel is indicated in “485 Bus Used” telemetry field.

N1 Active CBM Display
‘(Center Table)’

sel Command/Procedures
sel Other Commands
sel Set Bolt Position

CBM Set Bolt Position

cmd CBM Set All Posns Zero Bus‘X’ **Execute**

N1 Active CBM Display
‘(Center Table)’

√Master Cmd status - CPLT

71. VERIFY RS-485 COMM STATUS

N1 Active CBM Display
‘N1 Nad’

√Bolt Cmd Stat (sixteen) - CPLT
√Latch Cmd Stat (four) - CPLT

If any Bolt or Latch Cmd Status - MSBD

‘(Center Table)’

sel Command/Procedures
sel Other Commands
sel BIT Commands

CBM Bit Commands

cmd CBM Act Bit Active CBM All Ctrlr **Execute**

N1 Active CBM Display
‘(CBM Graphic)’

√Conf Request - BIT

'(Center Table)'

sel Command/Procedures
sel Other Commands
sel Confirm/Nonconfirm

CBM Confirm Nonconfirm

cmd CBM Confirmation Cmd **Execute**

N1 Active CBM Display
'(Center Table)'

√Master Cmd status - CPLT
√Bolt 1-1 Cmd Code - BIT
√Latch 1-1 Cmd Code - BIT

'N1 Nad'

√Bolt Cmd Stat (sixteen) - CPLT
√Latch Cmd Stat (four) - CPLT

'(Center Table)'

sel BIT Results

N1 Active CBM Bit Results

√No Xs

72. VERIFY CONTROLLER POSITIONS ZERO

NOTE
Set All Posns Zero command should be issued to use currently active RS-485 bus channel (A or B). Active channel is indicated in "485 Bus Used" telemetry field.

Node 1 Active CBM Display
'N1 Nad'

√Bolt Pos (sixteen): 0
√Latch Pos (four): 0

If any Bolt or Latch Posn ≠ 0

N1 Active CBM Display
'(Center Table)'

sel Command/Procedures
sel Other Commands
sel Set Bolt Position

CBM Set Bolt Position

cmd CBM Set All Posns Zero BusX **Execute**

N1 Active CBM Display
'(Center Table)'

√Master Cmd status - CPLT
√Bolt 1-1 Cmd Code - RELD
√Latch 1-1 Cmd Code - RELD

'N1 Nad'

√Bolt Cmd Stat (sixteen) - CPLT
√Latch Cmd Stat (four) - CPLT
√Bolt Pos (sixteen): 0
√Latch Pos (four): 0

73. TEST BOLT DRIVE

N1 Active CBM Display
'(Center Table)'

sel Command/Procedures
sel Engage N1 Nad CBM Petal Covers

CBM Engage N1 Nad CBM Petal Covers

cmd CBM BBoltck nominal **Execute**
Wait 90 seconds.

N1 Active CBM Display
'(Center Table)'

√Bolt 1-1 Cmd Code - BBCK
√Master Cmd status - CPLT

'N1 Nad'

√Bolt Cmd Stat (sixteen) - CPLT
√Bolt Pos (sixteen): 50 --- 51

NOTE
Steps (79 --- 86) verify secondary power and command path.

74. DEACTIVATE NADIR CBM PRIMARY MASTER CONTROLLER

CBM Engage N1 Nadir CBM Petal Covers

cmd CBM State to Deactivate N1 Nad **Execute**

N1 Active CBM Display
'(Center Table)'

√N1 Nad Mode - DEAC

75. OPEN PRIMARY RPCs

CBM Engage N1 Nadir CBM Petal Covers

sel RPCM N13B B RPC [X] CBM N1 Nad Pri [Y]

[X] =	3	4	5	6
[Y] =	1	2	3	4

cmd RPCM N13B B RPC [X] CBM N1 Nad Pri [Y] Op **Execute**

N1 Active CBM Display
'N1 Nadir CBM Data'

√RPCM N13B B RPC [X] Cntr Asy [Y] - Op

Repeat

76. CLOSE SECONDARY RPCs

CBM Engage N1 Nadir CBM Petal Covers

sel RPCM N14B B RPC [X] CBM N1 Nad Pri [Y]

[X] =	11	12	13	14
[Y] =	1	2	3	4

cmd RPCM N14B B RPC [X] CBM N1 Nad Pri [Y] Cl **Execute**

N1 Active CBM Display
'N1 Nadir CBM Data'

√RPCM N14B B RPC [X] Cntr Asy [Y] - Cl

Repeat

77. ACTIVATE NADIR CBM SECONDARY MASTER CONTROLLER

CBM Engage N1 Nadir CBM Petal Covers

cmd CBM State to Active N1 Nad Master 2 **Execute**

N1 Active CBM Display
'(Center Table)'

√N1 Nad Mode - ACTV
√N1 Nad State - SEC
√N1 Nad Comm Error - No X
√Master Cmd status - CPLT

sel BIT Results

N1 Active CBM Bit Results

√No Xs

78. SET CONTROLLER POSITIONS ZERO

NOTE
Set All Posns Zero command should be issued to use currently active RS-485 bus channel (A or B). Active channel is indicated in "485 Bus Used" telemetry field.

N1 Active CBM Display
'(Center Table)'

sel Command/Procedures
sel Other Commands
sel Set Bolt Position

CBM Set Bolt Position

cmd CBM Set All Posns Zero Bus'X' **Execute**

N1 Active CBM Display
'(Center Table)'

√Master Cmd status - CPLT

79. VERIFY RS-485 COMM STATUS

N1 Active CBM Display
'N1 Nad'

√Bolt Cmd Stat (sixteen) - CPLT
√Latch Cmd Stat (four) - CPLT

If any Bolt or Latch Cmd Status - MSBD

'(Center Table)'

sel Command/Procedures
sel Other Commands
sel BIT Commands

CBM Bit Commands

cmd CBM Act Bit Active CBM All Ctrlr **Execute**

N1 Active CBM Display
'(CBM Graphic)'

√Conf Request - BIT

'(Center Table)'

sel Command/Procedures
sel Other Commands
sel Confirm/Nonconfirm

CBM Confirm Nonconfirm

cmd CBM Confirmation Cmd **Execute**

N1 Active CBM Display
'(Center Table)'

√Master Cmd status - CPLT
√Bolt 1-1 Cmd Code - BIT
√Latch 1-1 Cmd Code - BIT

'N1 Nad'

√Bolt Cmd Stat (sixteen) - CPLT
√Latch Cmd Stat (four) - CPLT

‘(Center Table)’

sel BIT Results

N1 Active CBM Bit Results

√No Xs

80. VERIFY CONTROLLER POSITIONS ZERO

NOTE
Set All Posns Zero command should be issued to use currently active RS-485 bus channel (A or B). Active channel is indicated in “485 Bus Used” telemetry field.

Node 1 Active CBM Display
‘N1 Nad’

√Bolt Pos (sixteen): 0
√Latch Pos (four): 0

If any Bolt or Latch Posn ≠ 0

N1 Active CBM Display
‘(Center Table)’

sel Command/Procedures
sel Other Commands
sel Set Bolt Position

CBM Set Bolt Position

cmd CBM Set All Posns Zero BusX **Execute**

N1 Active CBM Display
‘(Center Table)’

√Master Cmd status - CPLT
√Bolt 1-1 Cmd Code - RELD
√Latch 1-1 Cmd Code - RELD

‘N1 Nad’

√Bolt Cmd Stat (sixteen) - CPLT
√Latch Cmd Stat (four) - CPLT
√Bolt Pos (sixteen): 0
√Latch Pos (four): 0

81. CLOSE CAPTURE LATCHES

CBM Engage N1 Nad CBM Petal Covers

cmd CBM Close Nominal **Execute**
Wait 10 seconds.

N1 Active CBM Display
'(Center Table)'

√Latch 1-1 Cmd Code - CLOS
√Master Cmd status - CPLT

'N1 Nad'

√Latch Cmd Stat (four) - CPLT
√Latch Pos (four): 0 --- 0.2

82. VERIFY LATCH ANGLES ZERO

N1 Active CBM Display
'N1 Nad'

If Latch Pos (four) ≠ 0

N1 Active CBM Display
'(Center Table)'

sel Command/Procedures
sel Command Templates
sel CBM Set Latch Angles Template

CBM Set Latch Angles Template

cmd	Subsystem ID Counts	4	
	RS485 Bus select	0	
	Last Completed Command	5	
	Subsystem Identifier 17	21	
	Shaft Angle Status 17	0	
	Subsystem Identifier 18	37	
	Shaft Angle Status 18	0	
	Subsystem Identifier 19	53	
	Shaft Angle Status 19	0	
	Subsystem Identifier 20	69	
	Shaft Angle Status 20	0	**Execute**

N1 Active CBM Display
'(Center Table)'

√Latch 1-1 Cmd Code - RELD
√Master Cmd status - CPLT

'N1 Nad'

√Latch Cmd Stat (four) - CPLT
√Latch Pos (four): 0

83. DEPLOY CAPTURE LATCHES TO 45 DEGREES

NOTE
Expect MALF for Latch Cmd Stats upon completion of deploy to 45 degrees.

N1 Active CBM Display
'(Center Table)'

sel Command/Procedures
sel Engage N1 Nad CBM Petal Covers

CBM Engage N1 Nad CBM Petal Covers

cmd CBM Deploy to 45 Degrees **Execute**
√Master Cmd status - PEND

N1 Active CBM Display
'(CBM Graphic)'

√Conf Request - DPLY

CBM Engage N1 Nad CBM Petal Covers

cmd CBM Confirmation Cmd **Execute**
Wait 90 seconds.

N1 Active CBM Display
'(Center Table)'

√Latch 1-1 Cmd Code - DPLY
√Master Cmd status - FAIL

'N1 Nad'

√Latch Cmd Stat (four) - MALF
√Latch Pos (four): 9.0 --- 9.4

84. CLOSE CAPTURE LATCHES

CBM Engage N1 Nad CBM Petal Covers

cmd CBM Close Nominal **Execute**
Wait 90 seconds.

N1 Active CBM Display
'(Center Table)'

√Master Cmd status - CPLT
√Latch 1-1 Cmd Code - CLOS

'N1 Nad'

√Latch Cmd Stat (four) - CPLT
√Latch Pos (four): 0 --- 0.2

85. DEACTIVATE NADIR CBM SECONDARY MASTER CONTROLLER

CBM Engage N1 Nadir CBM Petal Covers

cmd CBM State to Deactivate N1 Nad **Execute**

N1 Active CBM Display
'(Center Table)'

√N1 Nad Mode - DEAC

86. OPEN SECONDARY RPCs

CBM Engage N1 Nadir CBM Petal Covers

sel RPCM N14B B RPC [X] CBM N1 Nad Pri [Y]

[X] =	11	12	13	14
[Y] =	1	2	3	4

cmd RPCM N14B B RPC [X] CBM N1 Nad Pri [Y] Op **Execute**

N1 Active CBM Display
'N1 Nadir CBM Data'

√RPCM N14B B RPC [X] Cntr Asy [Y] - Op

Repeat

87. OPEN PRIMARY RPCs

CBM Engage N1 Nadir CBM Petal Covers

sel RPCM N13B B RPC [X] CBM N1 Nad Pri [Y] [X] = 3 4 5 6
[Y] = 1 2 3 4

cmd RPCM N13B B RPC [X] CBM N1 Nad Pri [Y] Op **Execute**

N1 Active CBM Display
'N1 Nadir CBM Data'

√RPCM N13B B RPC [X] Cntr Asy [Y] - Op

Repeat

88. INHIBIT CLOSE COMMAND FOR PRIMARY RPCs

N1 Active CBM Display
'N1 Port CBM Data'
'RPCM N1RS2 C (Primary Power)'

sel RPC [X] [X] = 7 8 10 11

RPCM N1 RS2 C:RPC#[X] Detail

sel Commands

RPCM N1RS2 C [X]

cmd Close Cmd - Inhibit **Execute**

RPCM N1 RS2 C:RPC#[X] Detail

√Close Cmd - Inh

Repeat

89. INHIBIT CLOSE COMMAND FOR SECONDARY RPCs

N1 Active CBM Display
'N1 Port CBM Data'
'RPCM N1RS1 B (Secondary Power)'

sel RPC [X] [X] = 5 6 13 14

RPCM N1 RS1 B:RPC#[X] Detail

sel Commands

RPCM N1RS1 B [X]

cmd Close Cmd - Inhibit **Execute**

RPCM N1 RS1 B:RPC#[X] Detail

√Close Cmd - Inh

Repeat

90. INHIBIT CLOSE COMMAND FOR PRIMARY RPCs

N1 Active CBM Display
'N1 Starboard CBM Data'
'RPCM N1RS2 A (Primary Power)'

sel RPC [X] [X] = 5 6 10 11

RPCM N1 RS2 A:RPC#[X] Detail

sel Commands

RPCM N1RS2 A [X]

cmd Close Cmd - Inhibit **Execute**

RPCM N1 RS2 A:RPC#[X] Detail

√Close Cmd - Inh

Repeat

91. INHIBIT CLOSE COMMAND FOR SECONDARY RPCs

N1 Active CBM Display
'N1 Starboard CBM Data'
'RPCM N1RS1 C (Secondary Power)'

sel RPC [X] [X] = 5 6 12 13

RPCM N1 RS1 C:RPC#[X] Detail

sel Commands

RPCM N1RS1 C [X]

cmd Close Cmd - Inhibit **Execute**

RPCM N1 RS1 C:RPC#[X] Detail

√Close Cmd - Inh

Repeat

92. INHIBIT CLOSE COMMAND FOR PRIMARY RPCs

N1 Active CBM Display
'N1 Zenith CBM Data'
'RPCM N13B B (Primary Power)'

sel RPC [X] [X] = 11 12 13 14

RPCM N13 B B:RPC#[X] Detail

sel Commands

RPCM N13B B [X]

cmd Close Cmd - Inhibit **Execute**

RPCM N13 B B:RPC#[X] Detail

√Close Cmd - Inh

Repeat

93. INHIBIT CLOSE COMMAND FOR SECONDARY RPCs

N1 Active CBM Display
'N1 Zenith CBM Data'
'RPCM N14B B (Secondary Power)'

sel RPC [X] [X] = 3 4 5 6

RPCM N14 B B:RPC#[X] Detail

sel Commands

RPCM N14B B [X]

cmd Close Cmd - Inhibit **Execute**

RPCM N14 B B:RPC#[X] Detail

√Close Cmd - Inh

Repeat

94. INHIBIT CLOSE COMMAND FOR PRIMARY RPCs

N1 Active CBM Display
'N1 Nadir CBM Data'
'RPCM N13B B (Primary Power)'

sel RPC [X] [X] = 3 4 5 6

RPCM N13 B B:RPC#[X] Detail

sel Commands

RPCM N13B B [X]

cmd Close Cmd - Inhibit **Execute**

RPCM N13 B B:RPC#[X] Detail

√Close Cmd - Inh

Repeat

95. <u>INHIBIT CLOSE COMMAND FOR SECONDARY RPCs</u>

N1 Active CBM Display
‘N1 Nadir CBM Data’
‘RPCM N14B B (Secondary Power)’

sel RPC [X] [X] = 11 12 13 14

RPCM N14 B B:RPC#[X] Detail

sel Commands

RPCM N14B B [X]

cmd Close Cmd - Inhibit **Execute**

RPCM N14 B B:RPC#[X] Detail

√Close Cmd - Inh

Repeat