ISS LEAK

TOOLS AND EQUIPMENT REQUIRED
Ratchet Wrench
1/4” to 3/8” Adapter
3/8” to 1/4” Adapter
3/8” Universal Joint
TBD - Tools required for panel removal
APAS Hatch Tool
7/16” Deepwell Socket
TBD” Extension
Flashlight
D-cell Batts (sixteen)
Dessicant/Shrould assemblies (four)
Standard Screwdriver

> NOTE
> For steps 1-2, **MCC-H** will assist in determining when leak has been isolated using Node 1 module pressure decay.

SPEC 66 ENVIRONMENT or SM SYS SUMM 1

REMOTE ISOLATION STEPS

Node 1 Fwd

1. If pre-ingress

Close Forward Stbd IMV Valve

EPCS

Nod1: ECLSS: Fwd Stbd IMV Vlv

Nod1 Fwd Stbd IMV Vlv

‘RPCM N13B C RPC 13’

1. √Close Cmd - Ena
   sel RPC Commands
   cmd Close **Execute**
   √Position - Cl

   ‘Nod1 Fwd Stbd IMV Vlv’

2. sel Vlv Commands
   cmd On **Execute**
   √Op - Op
   √Cl - Not Cl
   √Stat - Op
   √Ena Stat - On

3. sel Vlv Commands
   cmd Close **Execute**
   √Stat - In Trans
   Wait 20 seconds
   √Stat - Cl

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~

Close Forward Port IMV Valve

Nod1: ECLSS: Fwd Port IMV Vlv

Nod1 Fwd Port IMV Vlv

'RPCM N13B C RPC 14'

4. √Close Cmd - Ena
   sel RPC Commands
   cmd Close **Execute**
   √Position - Cl

   'Nod1 Fwd Port IMV Vlv'

5. sel Vlv Commands
   cmd On **Execute**
   √Op - Op
   √Cl - Not Cl
   √Stat - Op
   √Ena Stat - On

6. sel Vlv Commands
   cmd Close **Execute**
   √Stat - In Trans
   Wait 20 seconds
   √Stat - Cl

7. If leak not isolated, perform steps 11.1 and 11.2.

Node 1 Aft

2. If post-ingress

Close Aft Stbd IMV Valve

EPCS

Nod1: ECLSS: Aft Stbd IMV Vlv

Nod1 Aft Stbd IMV Vlv

'Nod1 Aft Stbd IMV Vlv'

1. sel Vlv Commands
   cmd Close **Execute**
   √Stat - In Trans
   Wait 20 seconds
   √Stat - Cl

Close Aft Port IMV Valve

EPCS

Nod1: ECLSS: Aft Port IMV Vlv

Nod1 Aft Port IMV Vlv

'Nod1 Aft Port IMV Vlv'

2. sel Vlv Commands
   cmd Close **Execute**
   √Stat - In Trans
   Wait 20 seconds
   √Stat - Cl

3. If leak not isolated, perform steps 12.1 and 12.2.

CONFIGURE SHUTTLE FOR NODE 1 INGRESS

NOTE
Upon execution of next step, PMA 2 will be pressurized, if required.

ODS Hatch

3. Equal vlv (two) → Emer

4. Open ODS Hatch per decal.

CM 1,2

5. Ingress External Airlock

Inner A/L Hatch

6. Equal vlv (two) → Emer

7. Close Inner Hatch per decal.

INGRESS ISOLATION STEPS

8. If pre-ingress

PMA 2 Ingress

1. APAS Equal Vlv → Op
2. Open APAS Hatch

   Select 'ÐÀÁÎ×ÅÅ' (WORKING) torque setting on hatch tool.

   Insert tool in hatch socket and rotate 3 to 4 turns in direction of 'ÎÒÊÐ' (OPEN) arrow until tool clicks.

```
*****************************************************
*  If tool prematurely slips or did not engage  *
*     Select 'ÀÂÀÐÅÉÉÍÎÅ' (Emergency)          *
*     setting on hatch tool.                    *
*     Reattempt to rotate.                      *
*****************************************************
```

   Remove tool.

   Attempt to open Hatch.

   Secure Hatch in open position using fixing device.

Node 1 Fwd Hatch

3. Open Node 1 Fwd Hatch per decal.

Node 1 PPRV Configuration

4. Cap Node 1 Port PPRV
5. Cap Node 1 Stbd PPRV
6. Report status to **MCC-H**.
7. Go to Step 9.1.

9. If concurrent with ingress

Node 1 IMV Valves

1. √Port Fwd IMV Vlv (one) - Cl
2. √Stbd Fwd, Stbd Aft IMV Vlv (two) - Cl
3. √Deck Fwd, Deck Aft IMV Vlv (two) - Cl

Node 1 NPRV Verification

4. Remove, tmpry stow Closeout Panel using TBD tools.
5. √Stbd Fwd NPRV Cover - Cl
6. Report status to **MCC-H**.

7. Remove, tmpry stow Closeout Panel using TBD tools.
8. √Stbd Aft NPRV Cover - Cl
9. Report status to **MCC-H**.

10. Remove, tmpry stow Closeout Panel using TBD tools.
11. √Stbd Fwd NPRV Cover - Cl
12. Report status to **MCC-H**.

Module Isolation

If FGB ingress concurrent

FGB PA

13. Clear hatchway and close FGB PA-ICC Hatch per directions.
14. If dP/dT positive or zero (FGB ICC leak)
    √**MCC-H**

PMA 1

15. Disconnect ducting from PMA 1 hard duct, stow in FGB PA.
16. Clear hatchway and close FGB PMA1-PA Hatch with hatch tool.
17. If dP/dT positive or zero (FGB PA leak)
    √**MCC-H**

If PMA 1 ingress concurrent

Node 1 Aft

18. Clear hatchway and close Node 1 Aft Hatch per decal.
19. NOD1 Aft Port, Stbd IMV vlvs (two) - Close
20. If dP/dT positive or zero (PMA 1 leak)
    √**MCC-H**

If Node 1 ingress concurrent

Node 1 Fwd

21. Clear hatchway and close Node 1 Fwd Hatch per decal.
22. NOD1 Fwd Port, Stbd IMV vlvs (two) - Close
23. If dP/dT positive or zero (Node 1 leak)
    √**MCC-H**

If PMA 2 ingress concurrent

PMA 2

24. Clear hatchway and close PMA 2 APAS Hatch with hatch tool.

25. APAS Equal Vlv - Cl
26. If dP/dT positive or zero (PMA 2 leak)
    √**MCC-H**

10. If post-egress

<u>Re-Ingress PMA 2</u>

1. √APAS Equal Vlv → Op
2. Open APAS Hatch
   Select ÐÀÁÎ×ÅÅ' (WORKING) torque setting on hatch tool.
   Insert tool in hatch socket and rotate 3 to 4 turns in direction of 'ÎÒÊÐ' (OPEN) arrow until it clicks.

```
*****************************************************
*  If tool prematurely slips or did not engage  *
*     Select 'ÀÂÀÐÅÉÍÎÅ' (Emergency)        *
*     setting on hatch tool.                  *
*     Reattempt to rotate.                    *
*****************************************************
```

   Remove tool.
   Attempt to open Hatch.
   Secure Hatch in open position using fixing device.

3. If leak in Node 1 Forward Hatch or forward bulkhead

<u>Verify Fwd IMV vlv and cap seal integrity</u>
Nod1: ECLSS: Fwd Stbd IMV Vlv
[Nod1 Fwd Stbd IMV Vlv]
'Nod1 Fwd Stbd IMV Vlv'

√Stat - Cl

Nod1: ECLSS: Fwd Port IMV Vlv
[Nod1 Fwd Port IMV Vlv]
'Nod1 Fwd Port IMV Vlv'

√Stat - Cl

√Fwd Stbd, Fwd Port IMV cap secured (two)

Report status to **MCC-H**.

<u>Reseat Node 1 Fwd Hatch</u>
MPEV → Open
Open Hatch per decal.
√Fwd Stbd, Fwd Port IMV vlv (two) - Cl
Close Hatch

Report status to **MCC-H**.

4. If no leak, re-ingress Node 1
   Equalize Node 1
   Node 1 Fwd MPEV → Op
   Open Hatch per decal.
   Go to step 8.4.

IMV VALVE RECONFIGURATION (Perform if leak not isolated)

11. If Forward IMV valves closed as part of remote isolation

Open Forward Stbd IMV Valve

Nod1: ECLSS: Fwd Stbd IMV Vlv

Nod1 Fwd Stbd IMV Vlv

'Nod1 Fwd Stbd IMV Vlv'

1. sel Vlv Commands
   cmd Open **Execute**
   √Stat - In Trans
   Wait 20 seconds
   √Stat - Op

Open Forward Port IMV Valve

Nod1: ECLSS: Fwd Port IMV Vlv

Nod1 Fwd Port IMV Vlv

'Nod1 Fwd Port IMV Vlv'

2. sel Vlv Commands
   cmd Open **Execute**
   √Stat - In Trans
   Wait 20 seconds
   √Stat - Op

12. If Aft IMV valves closed as part of remote isolation

Open Aft Stbd IMV Valve

Nod1: ECLSS: Aft Stbd IMV Vlv

Nod1 Aft Stbd IMV Vlv

'Nod1 Aft Stbd IMV Vlv'

1. sel Vlv Commands
   cmd Open **Execute**
   √Stat - In Trans
   Wait 20 seconds
   √Stat - Op

Open Aft Port IMV Valve

Nod1: ECLSS: Aft Port IMV Vlv

Nod1 Aft Port IMV Vlv

'Nod1 Aft Port IMV Vlv'

2. sel Vlv Commands
   cmd Open **Execute**
   √Stat - In Trans
   Wait 20 seconds
   √Stat - Op

NODE 1 AND PMA 2 EGRESS CONFIGURATION

13. Perform only if contingency ingress required after FD8.

    Portable Fan Reconfiguration

    1. √Fan Pwr (four) - Off
       Install fresh batteries.

    2. Attach desiccant/shroud assemblies to each fan (four).

    3. Fan Power (four) - High

    4. √Fan RPM control position (four) - Full CW, fan running

NODE 1 AND PMA 2 CLOSEOUT

14. √Fwd Stbd, Fwd Port IMV vlvs (two) - Cl

Nod1 Fwd Hatch

15. If leak isolated
    MPEV - close, cap installed

    If leak not isolated
    MPEV - open, uncapped

16. Close Node 1 Forward Hatch per decal.

APAS Hatch

17. Close APAS Hatch with hatch tool.

18. APAS Equal Vlv - Op

19. Close ODS Hatch per decal.

20. Equal vlv (two) - Off, capped