



# ISS-ULF5/STS-133 ERRATA

## NOTE

This Errata pack contains information that is applicable to both the Shuttle & Station Crews & Flight Control Teams.



## CONTENTS:

- Section A - Procedures That Must Be Uplinked Real Time**
- Section B - Changes To Be Uplinked Real Time Only If Required**
- Section C - Changes Made To The Crew's SODF Prior To Launch**
- Attachment 1 - ODF Status for Flight**
- Attachment 2 - 3 Change-out/Temp Pages**

**All technical changes to the ISS SODF, as documented in this errata package, have been approved through the US Systems Operations Data File Control Board CR process.**

Some of the changes apply to future flights also and will be republished after this flight. These changes are denoted by (¥) following the CR number.

Some of the changes apply to this flight only and will not appear in future publications.

If you choose to incorporate 'flight-specific' changes into your 'generic' book(s), it is recommended that you do so in a manner that allows them to be removed for future flights (e.g., use pencil rather than ink, retain old pages rather than throw them away, etc.).

**Refer questions or comments on these changes to the SODF Coordinator, SODF Manager, or Ops Planner.**

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**SECTION A: PROCEDURES THAT MUST BE UPLINKED REAL-TIME.**

The following procedures are needed but were received too late for incorporation into the crew's books for transport on ULF5. They must be sent to the crews via OCA.

Change Request Number

Change Request Title

**SECTION B:      CHANGES APPROVED FOR REAL-TIME UPLINK IF REQUIRED.**

The following changes will be implemented in real-time only if the covered situation arises. Copies of the CRs have been provided to the ODF Console. Each console position should ascertain if his position is affected and be prepared to submit a flight note if uplink is required.

Change Request Number

Change Request Title

**NONE**

**SECTION C: CHANGES MADE TO THE CREW'S SODF PRIOR TO LAUNCH.**

The following changes have been incorporated into the crew's flight copies. At the time of printing these changes have not been made in IPV. In order to avoid print driver problems, please print from the ULF5 Errata .pdf file located

CR	DESCRIPTION	ATT#	FILE NAME
Assy_Ops-2173	<p><b>UPDATE UOP CONNECTION IN 1.100 CBCS INSTALLATION</b></p> <p><i>Page 4, Table 1. Parts List</i></p> <p><i>UOP Power PSA Cable, 120VDC</i></p> <p><i>From: 1008, 1007, 1002</i>  <i>To: 1005, 1008, 1002</i></p> <p><i>Page 5, Step 1.1</i></p> <p><i>From: Verifying No Power Applied to Node 1 UOP 1 J3</i>  <i>To: Verifying No Power Applied to Node 1 UOP 1 J4</i></p> <hr/> <p><i>Page 5, step 2.2</i></p> <p><i>From: UOP Power PSA Cable, 120VDC P2 → ← J3 on Node 1 UOP 1</i>  <i>To: UOP Power PSA Cable, 120VDC P2 → ← J4 on Node 1 UOP 1</i></p>	N/A	
Assy_Ops-2174	<p><b>1.115 PMM VESTIBULE - CONFIGURE FOR INGRESS</b></p> <p><i>Page 39, Table 1. 1553 Buses in W0205 P106 and W0202 P118 Connectors</i></p> <p><i>From: CB INT 2 Prime C&amp;C</i>  <i>To: CB INT 2 Prime C&amp;C</i></p> <hr/>	N/A	

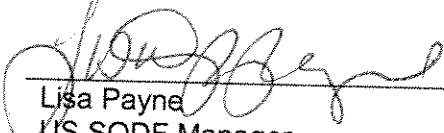
Assy_Ops-2175	<p><b>TABLE 1 REFERENCE FIX TO 1.115</b></p> <p>Page 76, step 16.1</p> <p>From: sel [YY] where [YY] = Bus Name from Table 1 To: sel [XX] where [XX] = Bus Name from Table 1</p> <p>From: [YY] Bus Status To: [XX] Bus Status</p>	N/A	
Assy_Ops-2172	<p><b>DCB S/N UPDATE IN DESCENT SAMPLE TRANSFER PROC</b></p> <p>Page 179, PARTS:</p> <p>From: Double Coldbag S/N 1007 To: Double Coldbag S/N 1007</p> <p>Page 183, step 8</p> <p>From: Double Cold Bag S/N 1007 To: Double Cold Bag S/N 1007</p>	N/A	
Assy_Ops-2171	<p><b>UPDATE TO GLACIER STATUS CHECK TEMPERATURE</b></p> <p>Glacier Status Check Cue Card Back (ASSY OPS-2b/ULF5/B) and page 348</p> <p>Step 1.4 "If ascent Glacier"</p> <p>From: √Display - 'CURR TEMP:' is +35.0° C ± 5.0° C To: √Display - 'CURR TEMP:' is +4.0° C ± 2.0° C</p>		N/A
<b>ISS EVA SYSTEMS</b>			
<b>CR</b>	<b>DESCRIPTION</b>	<b>ATT#</b>	<b>FILE NAME</b>
ISS_EVA_SYS-00629 (¥)	<p><b>EVA NH3 DECON PROCEDURES &amp; CUE CARD</b></p> <p>Replace pages 799 thru 806 and cue card</p>	2	19265x.doc 19265x.pdf 19502x.doc 19502x.pdf
<b>Joint Operations</b>			
<b>FN</b>	<b>DESCRIPTION</b>	<b>ATT#</b>	<b>FILE NAME</b>
F039915	<p><b>25-0309 3.119 RADIATION AREA MONITOR DOSIMETERS - INSTALLATION OF DOSIMETERS ON ISS</b></p> <p>Note: Do not remove existing procedure.</p> <p>Before page 153, add 25-0309 3.119 Radiation Area Monitor Dosimeters - Installation of Dosimeters on ISS (5 pages)</p>	3	M_12622_25_0309.pdf M_12622_25_0309.docx

PREPARED BY:



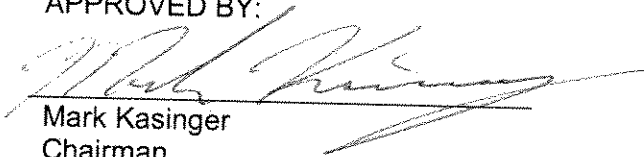
Cindy Simon  
ULF5 SODF Coordinator

REVIEWED BY:



Lisa Payne  
US SODF Manager

APPROVED BY:



Mark Kasinger  
Chairman,  
US Systems Operations Data File Control Board

# ATTACHMENT 1



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## **ODF STATUS FOR FLIGHT Expedition 25/ULF5**

Start Use: **1 NOV 10**

E25 Coordinator: Kim Hussein

ULF5 Coordinator: Cindy Simon

For the latest status of SODF books for ULF5 please refer to the SODF website and select the E25 Flight Status Sheet.

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# ATTACHMENT 2

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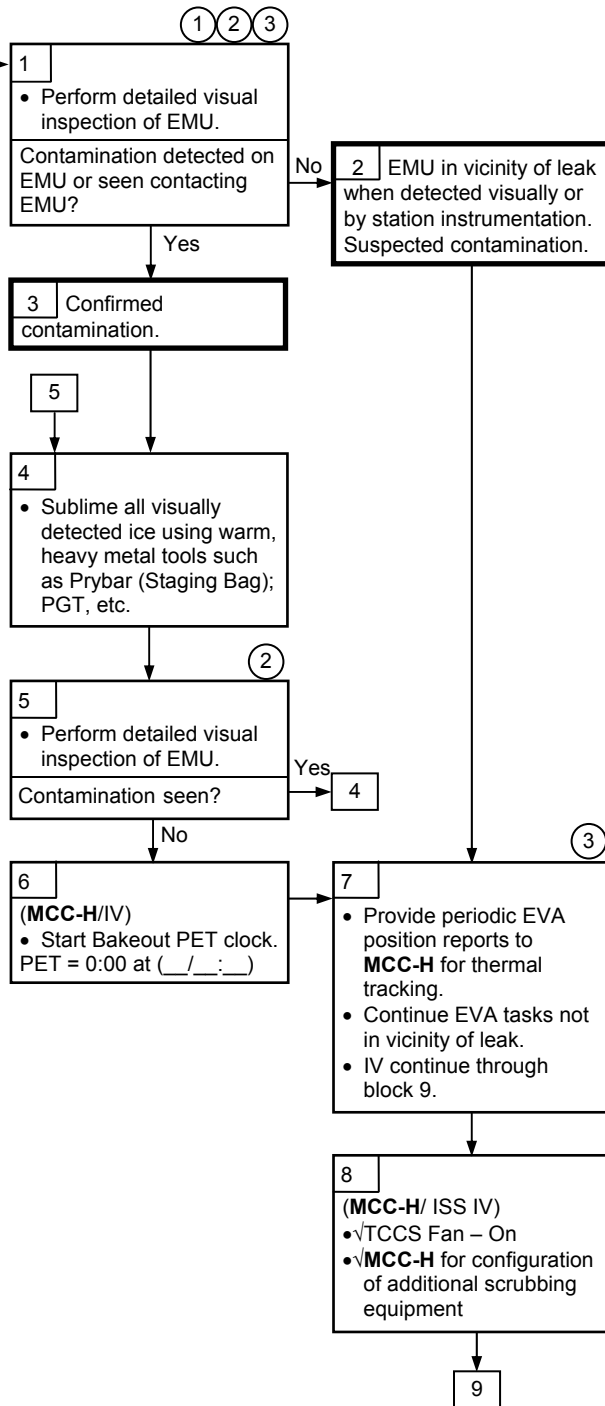
**EVA**

**4.141 ISS EVA AMMONIA DECONTAMINATION**

(ISS EVA SYS/ULF5 - ALL/FIN X/HC/Paper on ISS) Page 1 of 6 pages

Crew Visually Detects Plume, Leaking QD, White Crystals, or "Snow" Coming from Station During EVA

Station System Leak Suspected Due to Steady (not Step Function) Decrease in Pressure or Temperature

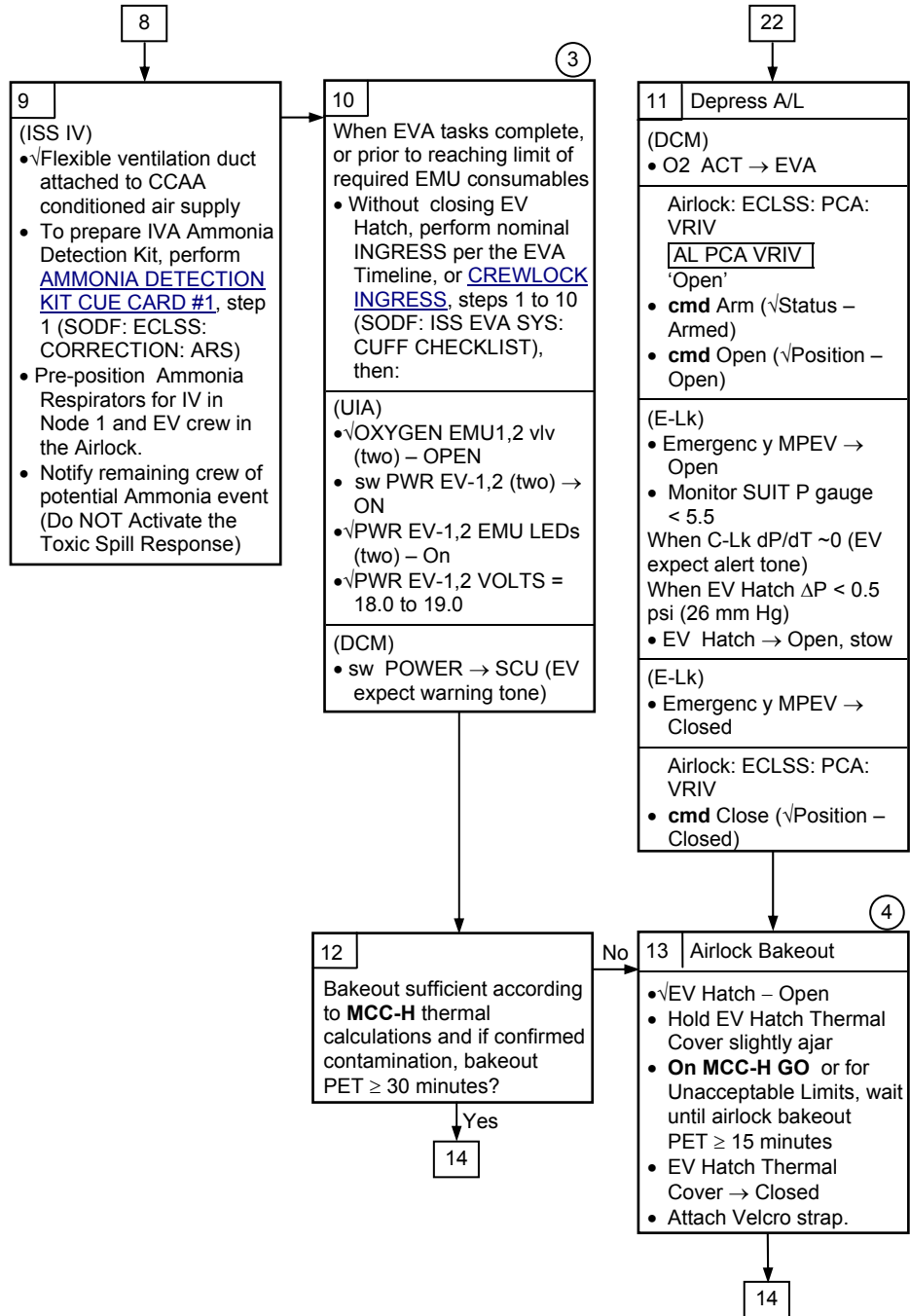


① All displays in this procedure are on the PCS, unless otherwise noted.

② Ammonia visual inspection should be performed in night or shaded ambient light with helmet spot lights used to illuminate TMG. Use of sun visor during inspection should be avoided. View TMG from an oblique angle. The following are indications of ice on the EMU:  
 a. Loss of TMG thread pattern.  
 b. Waxy gloss or hard pack snow appearance.  
 c. Unusual contours.

③ For confirmed contamination, 2:20 of EMU consumables must be available to support activities from ingress through EMU doffing. For suspected contamination, 1:05 of consumables required. EVA tasks must be deferred to protect these consumables. MCC-H will calculate consumables remaining and bakeout time left. See Flight Rule B15-108 for rationale on consumables.

**4.141 ISS EVA AMMONIA DECONTAMINATION**  
 (ISS EVA SYS/ULF5 - ALL/FIN X/HC/Paper on ISS) Page 2 of 6 pages

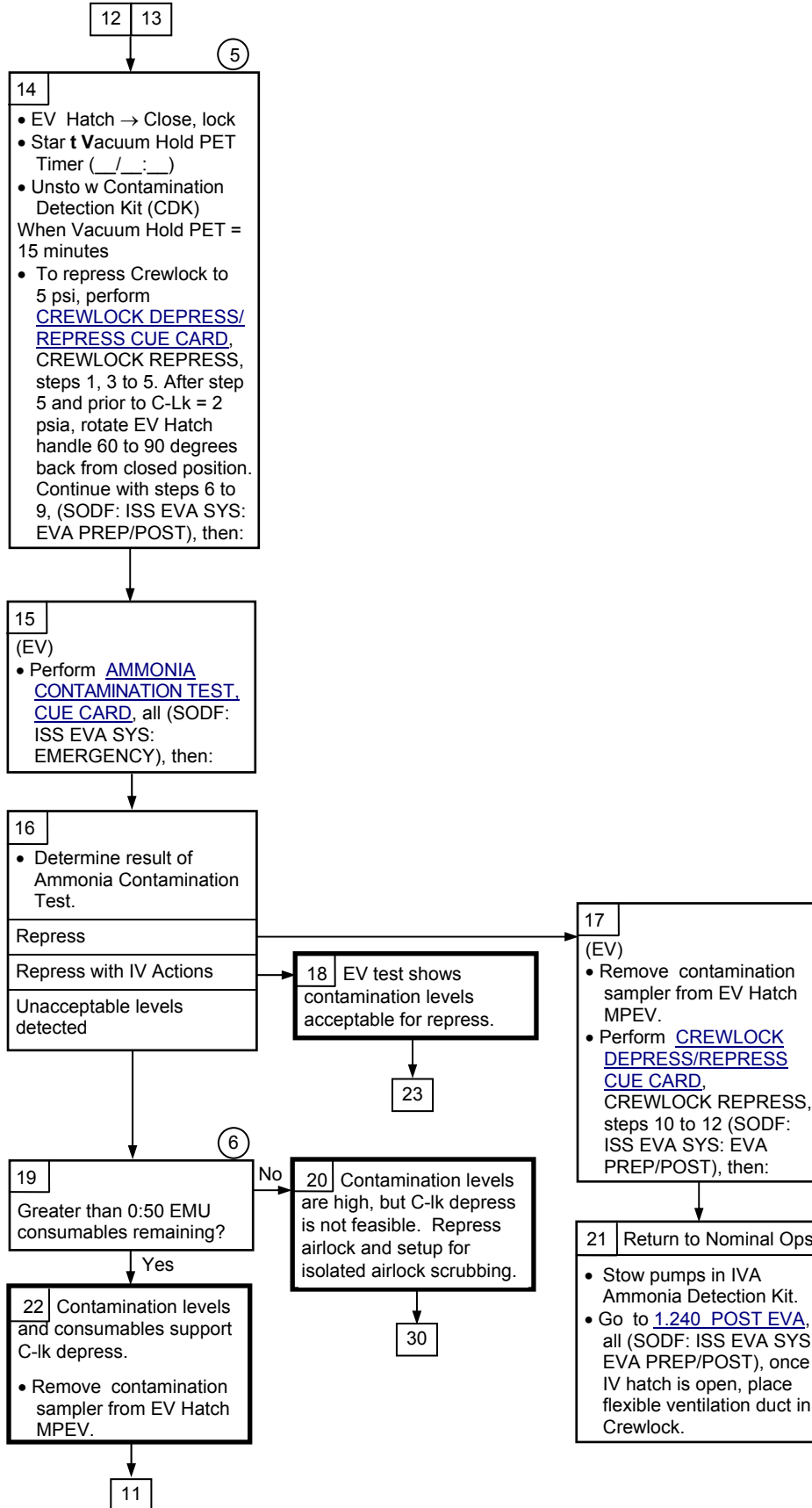


③ For confirmed contamination, 2:20 of EMU consumables must be available to support activities from ingress through EMU doffing. For suspected contamination, 1:05 of consumables required. EVA tasks must be deferred to protect these consumables. **MCC-H** will calculate consumables remaining and bakeout time left. See Flight Rule B15-108 for rational on consumables.

④ Crew should remain in Crewlock throughout Airlock bakeout. However, if temporary egress is required, SCU strain relief hook must be connected to EMU D-Ring.

**4.141 ISS EVA AMMONIA DECONTAMINATION**

(ISS EVA SYS/ULF5 - ALL/FIN X/HC/Paper on ISS) Page 3 of 6 pages



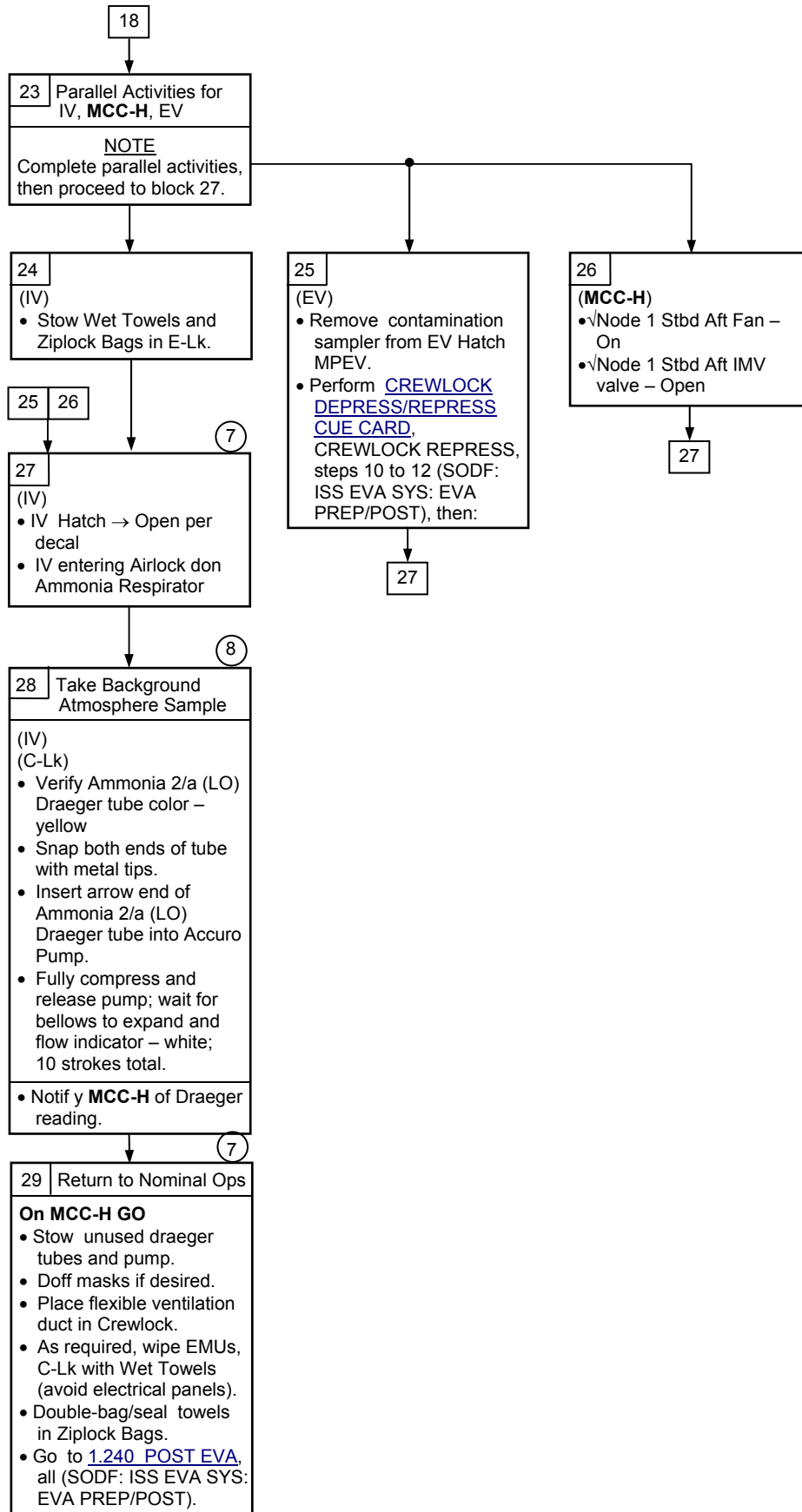
5  
The EV hatch handle cannot be rotated unless the crewlock pressure is less than 2 psia per Flight Rule B15-14, Airlock Hatch Cover Thermal Constraints.

6  
0:50 of EMU Consumables supports only depress, hatch opening, equalization, and metox change out or helmet doffing. If additional bakeout is required, time must be added to the consumables requirement.  
  
If a contamination test is to be performed during the subsequent repress, an additional 0:30 minutes of consumables is needed.



**4.141 ISS EVA AMMONIA DECONTAMINATION**

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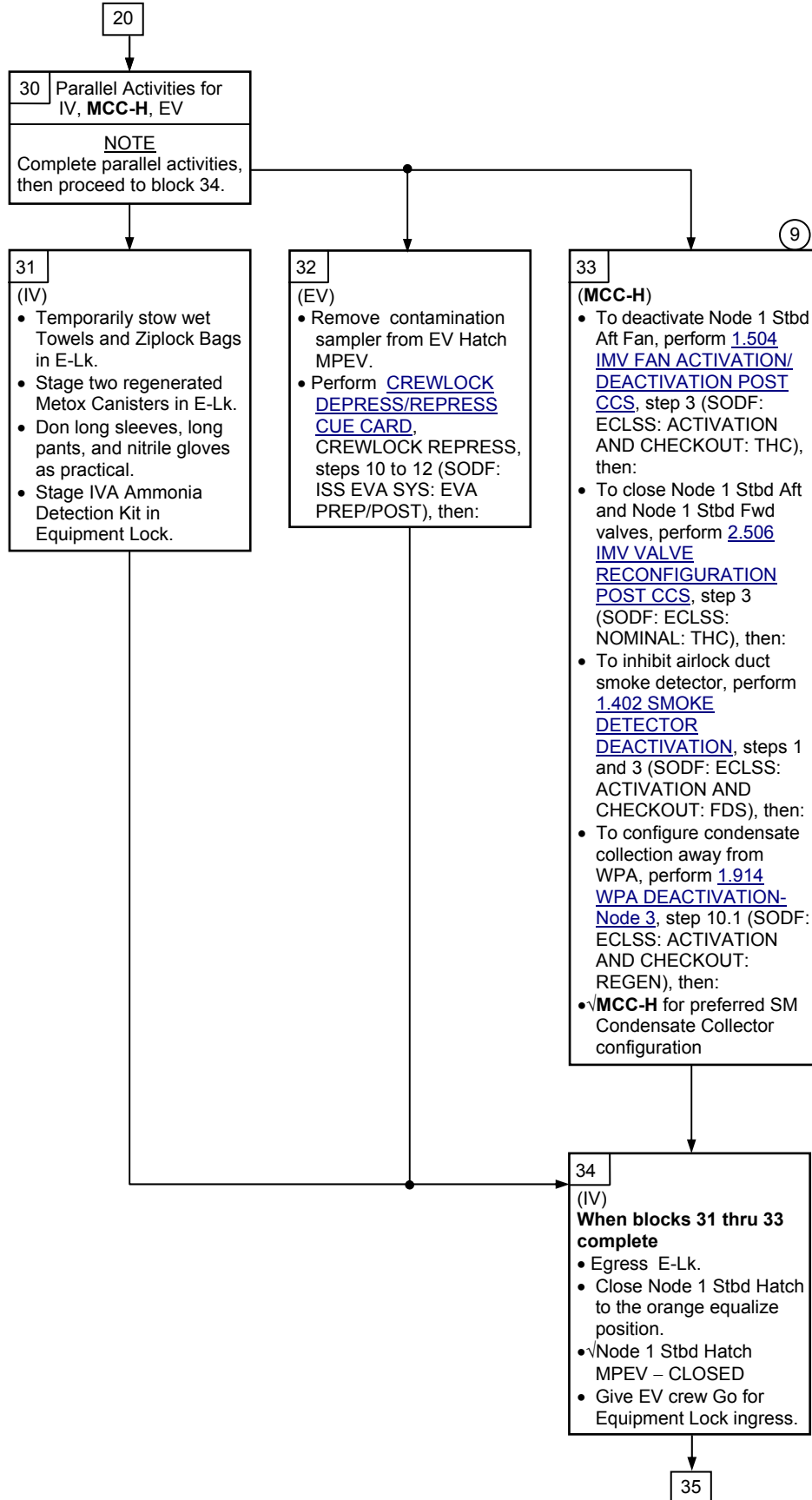


⑦ Ammonia Concentration will be below mask donning limits of 30 ppm; however, some crew may be sensitive at lower levels of ammonia.

⑧ Non-zero levels of background ammonia are nominally expected to exist on ISS, however; these should not be greater than 10 ppm.

**4.141 ISS EVA AMMONIA DECONTAMINATION**

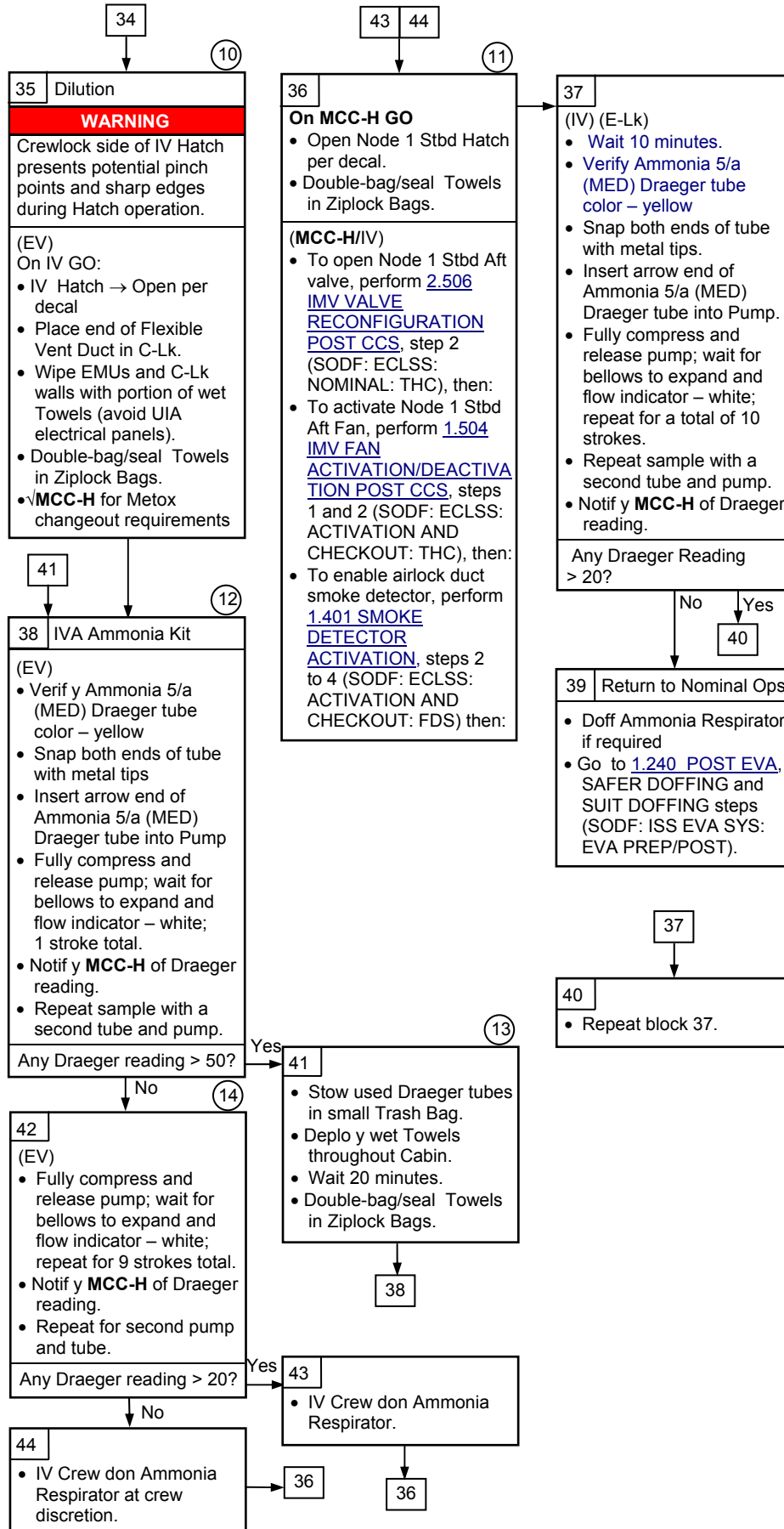
(ISS EVA SYS/ULF5 - ALL/FIN X/HC/Paper on ISS) Page 5 of 6 pages



⑨  
26 mg/m<sup>3</sup> of NH<sub>3</sub> uses approximately half of an MF Bed ORU life. Isolating WPA from the waste water bus prevents usage of WPA consumables until **MCC** can assess actual NH<sub>3</sub> levels and impact to WPA ORUs.

**4.141 ISS EVA AMMONIA DECONTAMINATION**

(ISS EVA SYS/ULF5 - ALL/FIN X/HC/Paper on ISS) Page 6 of 6 pages



⑩ Opening the IV Hatch results in dilution by a factor of 6.

⑪ Atmospheric mixing will dilute Airlock atmosphere by 50 % every 6 minutes. Mixing will be 99 % complete after 42 minutes. Maximum dilution is approximately 28:1 with shuttle present and 26:1 without shuttle. These ratios are based on a volume which does not include an MPLM.

⑫ A Draeger reading of 50 after one stroke is equivalent to an actual concentration of 750 ppm.

⑬ NH3 has an affinity for water. Deploying wet Towels will form a water + NH3 solution in the towel which can then be bagged.

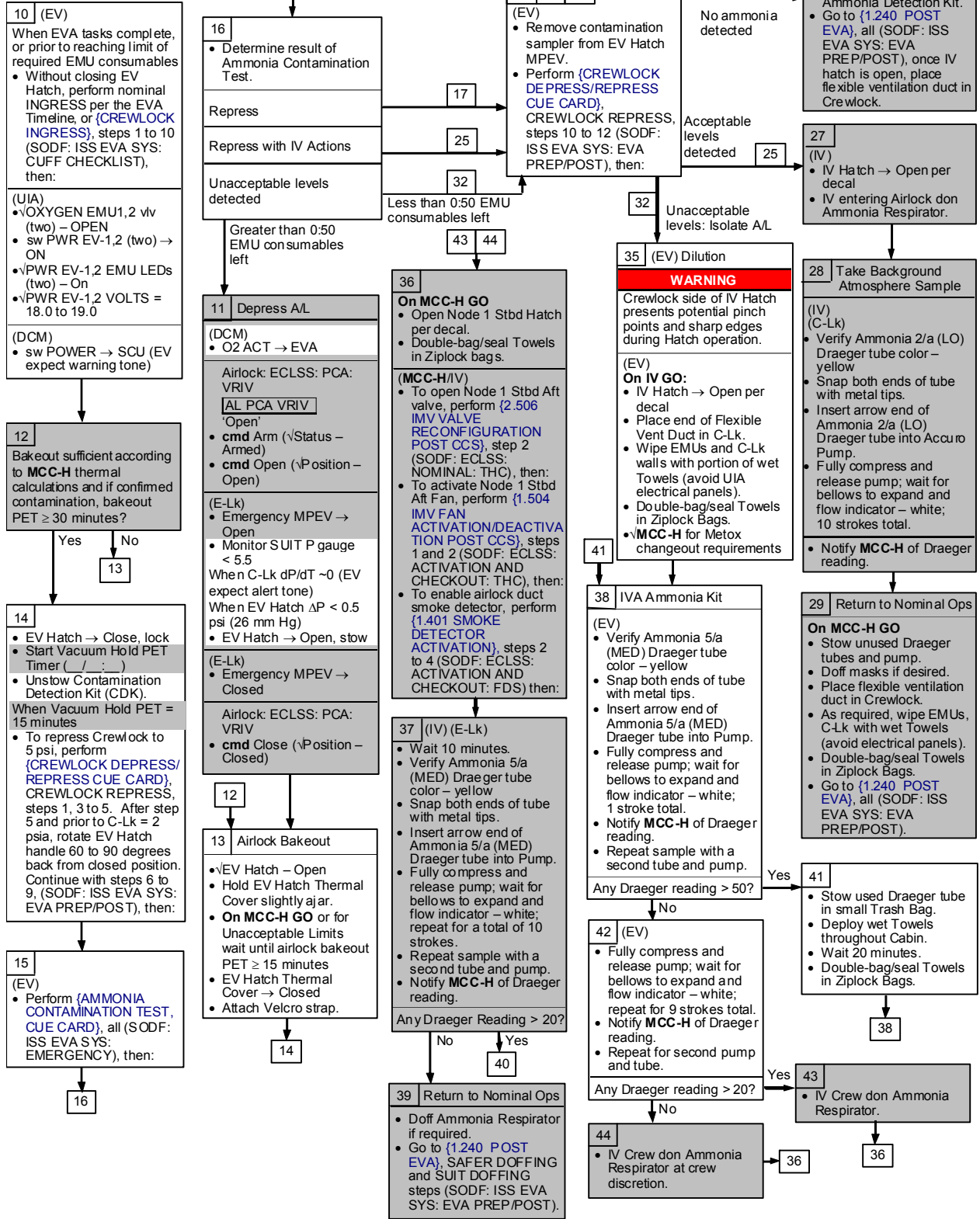
⑭ A total of 10 strokes will be completed between block 38 and 42. A Draeger reading of 20 after 10 total strokes is equivalent to an actual concentration of 30 ppm.

# AMMONIA CONTAMINATION CUE CARD

(EVA SYS/E24 - ALL/FIN X/Paper on ISS) Page 1 of 2 pages

## AMMONIA CONTAMINATION CUE CARD

EV  IV/MCC



# AMMONIA CONTAMINATION CUE CARD

(EVA SYS/E24 - ALL/FIN X/Paper on ISS) Page 2 of 2 pages

## AMMONIA CONTAMINATION TEST

- IV 1.  IV Hatch equalization valve – OFF  
Record Crewlock Pressure \_\_\_\_\_
- EV C-Lk 2. Place ISS Contamination Sampler over EV Hatch MPEV.

**WARNING**

Even small loads imparted on ISS Contamination Sampler during testing can produce false negative results. All tethers should be removed from sampler after installation on EV Hatch MPEV.

- 3. Remove tethers from ISS Contamination Sampler.
- 4.  Crewlock lights (two) – ON, maximum intensity
- 5. Using RET, retrieve Ammonia Detector from Contamination Detection Kit.
- 6. Verify Draeger tube color – yellow

**CAUTION**

Minimize contact with the fracture regions of the Draeger tube. Minor glove RTV damage is possible, but protective pressure bladders and restraints are unaffected.

- 7. Using RET as a lever, break off both tether points on Ammonia Detector.
- 8. Insert Ammonia Detector into ISS Contamination Sampler.
- 9.  ISS Contamination Sampler fully seated on EV Hatch MPEV  
 Ammonia Detector fully seated in ISS Contamination Sampler

**WARNING**

Precise sampling times are critical for accurate testing. IV should coordinate start of timer with opening of EV Hatch MPEV.

- IV 10. EV Hatch MPEV → OPEN
- 11. Start timer (04:30 sampling time).
- EV 12. When timer expired, EV Hatch MPEV → CLOSED  
| (IV determines if valid test from C-Lk  $\Delta P < 0.1$  psi)
- MCC-H/IV 13. Verify EV Hatch Thermal Cover – Closed,  MCC-H if open

**NOTE**

- 1. If ammonia is present, Draeger tube will turn deep blue.
- 2. It is acceptable to remove adapter from airlock valve to obtain a clearer view of Draeger tube.

- 14. If Crewlock  $\Delta P \geq 0.1$  psi (indicates leak in sampling hardware)
  - 14.1 To repress Crewlock to 5.0 psi  
IV hatch equalization vlv → throttle NORM to OFF
  - 14.2 Go to step 1 to repeat test with new Ammonia Detector.
- 15. Determine test results based on Table 1 and notify MCC-H.

Table 1. Ammonia Test Pass/Fail Criteria

Reaction Line	Assumed Concentration (2X Factor of Safety)	Report Status
$0 < X < 2$	10 ppm	Repress
$2 < X < 5$	30 ppm	
$5 < X < 10$	60 ppm	Repress with IV Actions
$10 < X < 30$	180 ppm	Unacceptable

- IV 16. Go to block 16 in [4.141 ISS EVA AMMONIA DECONTAMINATION](#), all (SODF: ISS EVA SYS: EMERGENCY).

# ATTACHMENT 3

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## 25-0309 3.119 RADIATION AREA MONITOR DOSIMETERS - INSTALLATION OF DOSIMETERS ON ISS

(JNT OPS/ULF5 - ALL/FIN 14) Page 1 of 5 pages

### OBJECTIVE:

To provide instructions and locations for collecting (white and blue) Radiation Area Monitors from previous expeditions for return, for deploying the new (cherry-colored) Radiation Area Monitors throughout ISS, and for photographing each newly deployed Monitor for ground verification purposes.

### PARTS:

Radiation Area Monitor Hardware Ziplock Bag

Radiation Area Monitors Ziplock Bag (contains loose monitors)

Radiation Area Monitors (cherry, quantity 26) P/N SEZ33111519-313 S/Ns  
2418-2443

New RAM Location Subpacks (4) P/N SEG46116951-605 (each contains 1  
monitor plus tether and label)

Radiation Area Monitors (cherry) P/N SEZ33111519-313 S/Ns 2446-2449

JLP1A0-01:

New RAM Location Subpack P/N SEG46116951-605 (contains 1 monitor plus  
tether and label)

Radiation Area Monitor (white) P/N SEZ33111519-313 S/N 2406

ISS (various locations):

Radiation Area Monitors (blue, quantity 26) P/N SEZ33111519-313 S/Ns 2356-  
2381

LAB1PD3:

Ziploc Bag:

Radiation Area Monitor (blue) P/N SEZ33111519-313 S/N 2133

Digital Camera

### NOTE

1. Radiation Area Monitors are color-coded.  
For the ULF5 mission:  
Deploy: ULF5 cherry Radiation Area Monitors (30)  
Return: 20A blue Radiation Area Monitors (26)  
Return: ULF4 white Radiation Area Monitor (1)  
Return: 13A.1 blue Radiation Area Monitor (1)
2. Refer to Table 1 (SM), Table 2 (NOD1), Table 3 (A/L), Table 4 (NOD3/Cupola),  
Table 5 (LAB), Table 6 (NOD2), Table 7 (COL), Table 8 (JEM) for exact locations.
3. A total of 30 monitors will be deployed. 25 of the deployment locations should  
have a piece of Velcro with a tether attached to it from previous installations. 5  
locations will require Velcro, tethers, and labels be applied, which are provided in  
the New RAM Location Subpacks.

1. Unstow Radiation Area Monitor Hardware Ziplock Bag using the ULF5  
Transfer Resupply List as a reference.



**25-0309 3.119 RADIATION AREA MONITOR DOSIMETERS -  
INSTALLATION OF DOSIMETERS ON ISS**

(JNT OPS/ULF5 - ALL/FIN 14) Page 2 of 5 pages

**2. DEPLOYING NEW RADIATION AREA MONITORS**

For all RAM locations listed in Tables 1-8

If deploying RAM in an OLD location (refer to last column in table)

- 2.1 Remove blue Radiation Area Monitor from deployed location leaving the tether at the location.

Stow blue Radiation Area Monitor in Ziplock Bag containing the loose Monitors.

- 2.2 Attach tether to cherry ULF5 Radiation Area Monitor and secure monitor to Velcro affixed to deploy location.

If deploying RAM in a NEW location (refer to last column in table)

- 2.3 Retrieve new RAM Location Label from the proper New RAM Location Subpack and affix next to location where the Radiation Area Monitor will be deployed. Refer to Location Description column.

- 2.4 Retrieve cherry ULF5 Radiation Area Monitor with attached tether and Velcro from the proper New RAM Location Subpack.

Verify monitor location corresponds to location decal.

- 2.5 Affix Velcro to deploy location adjacent to the label (if necessary).

√Tether is attached to Radiation Area Monitor, and secure RAM to Velcro affixed to deploy location.

- 2.6 Photograph the deployment site so that the field of view is approximately 3 feet wide and the Radiation Area Monitor is identifiable in the approximate center of the frame.

Verify RAM label corresponds to location decal.

**NOTE**

Radiation Area Monitor S/N 2133 was reported lost during 1J/A docked operations (March 2008). It was found in 2010 and was reported to be stowed in a Ziploc bag at LAB1PD3 on GMT 2010/113.

3. Retrieve Radiation Area Monitor (blue) S/N 2133 from a Ziploc bag at LAB1PD3.
4. Stow Ziplock Bag with twenty-six loose blue 20A Radiation Area Monitors, one loose white ULF4 Radiation Area Monitor, and one loose blue 13A.1 Radiation Area Monitor for return using the ULF5 Transfer List as reference.

**25-0309 3.119 RADIATION AREA MONITOR DOSIMETERS -  
INSTALLATION OF DOSIMETERS ON ISS**

(JNT OPS/ULF5 - ALL/FIN 14) Page 3 of 5 pages

Table 1. Radiation Area Monitor Locations in Service Module

RAM S/N	RAM Label	Location Description	New/Old Location?
2421	ULF5/SM-P339	Panel 339: aft, overhead of Treadmill, upper center part of the panel.	Old
2422	ULF5/SM-P327	Panel 327: overhead, forward of Treadmill.	Old
2423	ULF5/SM-P307	Panel 307: overhead of Central Post, next to panel label.	Old
2424	ULF5/SM-W14	Window #14, Transfer Compartment Adapter section, starboard nadir quadrant.	Old
2425	ULF5/SM-P242	Panel 242: port wall of Port Crew Quarters (каюта), aft, upper corner of panel.	Old
2426	ULF5/SM-P442	Panel 442: starboard wall of Starboard Crew Quarters (каюта), aft, upper corner of panel.	Old

Table 2. Radiation Area Monitor Locations in Node 1

RAM S/N	RAM Label	Location Description	New/Old Location?
2418	ULF5/NOD1P4_03	Closeout panel on the port side of aft hatch, upper edge of panel.	Old
2419	ULF5/NOD1OP2	On the zenith side of the footbridge across the port hatch.	Old
2420	ULF5/NOD1S1_02	Closeout panel on starboard side of forward hatch, upper edge of panel.	Old

Table 3. Radiation Area Monitor Locations in Joint Airlock

RAM S/N	RAM Label	Location Description	New/Old Location?
2432	ULF5/A/L1 AD3	Aft wall, low outboard in large section.	Old
2433	ULF5/A/L1 OF3	Forward wall, high outboard in large section	Old

Table 4. Radiation Area Monitor Locations in Node 3 and Cupola

RAM S/N	RAM Label	Location Description	New/Old Location?
2446	ULF5/NOD3FD5	Forward, deck standoff panel between T2 and WRS-1 racks. Center of panel, between UOP and Fire Port.	New
2447	ULF5/NOD3OA2	On the zenith side of the footbridge across the aft hatch. (Compare to similar RAM deployment locations in Node 1 and Node 2.)	New
2448	ULF5/Cupola	Crew preference. Area above windows 2 or 3 preferred (nadir end of module).	New

**25-0309 3.119 RADIATION AREA MONITOR DOSIMETERS -  
INSTALLATION OF DOSIMETERS ON ISS**

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Table 5. Radiation Area Monitor Locations in US Lab

RAM S/N	RAM Label	Location Description	New/Old Location?
2427	ULF5/LAB1_OS6	Overhead, starboard standoff panel between DDCU-2 and TCS racks.	Old
2428	ULF5/LAB1_D3	Inside of the WORF rack, in the vicinity of the D3 window.	Old
2429	ULF5/LAB1_PD2	Port, deck standoff panel between the Avionics-3 and ExPRESS-7 racks.	Old
2430	ULF5/LAB1_OS0	Closeout panel on starboard side of forward hatch, upper edge of panel.	Old
2431	ULF5/CHeCS_Meds	CHeCS RSR (LAB1D4), centered on inner side of D2 locker door.	Old

Table 6. Radiation Area Monitor Locations in Node2

RAM S/N	RAM Label	Location Description	New/Old Location?
2434	ULF5/NOD2S5_CQ	Center of the outer (Starboard) wall of the Node 2 Starboard Crew Quarters. Should not be covered by any shielding material.	Old
2435	ULF5/NOD2P5_CQ	Center of the outer (Port) wall of the Node 2 Port Crew Quarters. Should not be covered by any shielding material.	Old
2436	ULF5/CQ-3 (Deck)	Center of the outer (Deck) wall of the Node 2 Deck Crew Quarters. Should not be covered by any shielding material.	Old
2437	ULF5/NOD2OP2	On the zenith side of the footbridge across the port hatch.	Old
2449	ULF5/OVHD_CQ	Center of the outer (Overhead) wall of the Node 2 Overhead Crew Quarters. Should not be covered by any shielding material.	New

Table 7. Radiation Area Monitor Locations in Columbus

RAM S/N	RAM Label	Location Description	New/Old Location?
2438	ULF5/Col_EPM	Face of the European Physiology Module Rack (COL1A3), above the Right Utility Distribution Panel.	Old
2439	ULF5/Col_EDR	Face of the European Drawer Rack (COL1F1), on the Lower Utility Distribution Panel.	Old
2443	ULF5/TEPC	Monitor should be deployed directly on the surface of the ISS TEPC DETECTOR ASSY and can be secured with Kapton Tape if necessary. Refer to execute note for exact location of TEPC Detector.	Old

Table 8. Radiation Area Monitor Locations in Japanese Experiment Module

RAM S/N	RAM Label	Location Description	New/Old Location?
2440	ULF5/JPM1FD4	Forward, deck standoff panel between	Old

**25-0309 3.119 RADIATION AREA MONITOR DOSIMETERS -  
INSTALLATION OF DOSIMETERS ON ISS**

(JNT OPS/ULF5 - ALL/FIN 14)

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		MELFI Rack (D4) and Work Station Rack (F4), next to JAXA Area Dosimeter.	
2441	ULF5/JPM1F8-OVHD	Next to JAXA Area Dosimeter on forward overhead corner on port endcone	Old
2442	ULF5/JLP1A0-01	Deploy next to JAXA Area Dosimeter on aft side of vestibule between JLP and JPM. Tether and label should still be in ziplock with old (ULF4) RAM; they will be needed to complete the deployment of the ULF5 RAM.	New