

## 7 Module Disconnection Checklist

| SEQ    | ITEM   | NOTE  | CHECK |
|--------|--|---|-------|
| Safety | Acknowledge and Activate Work Permit   | Call ISAC operators (x7500) Call Main Control Room if to notify of water shutoff or if supplied airhood is necessary (x.7333)   | ✓     |
| Safety | Hold Pre-Job Briefing  | <ul style="list-style-type: none"> <li>• Discuss hazards, safety protocols and work steps listed in this document and checklists.</li> <li>• All workers on the work permit shall be present. If there are concerns about the job, discuss with supervisors and re-plan if necessary.</li> <li>• If you become contaminated during the job, contact the Main Control Room at x7500 for assistance.</li> </ul> | ✓     |
| Safety | <ul style="list-style-type: none"> <li>• Electronic Dosimeter ✓</li> <li>• Tank Suit ✓</li> <li>• Respirator ✓</li> <li>• Overshoes (double) ✓</li> <li>• Gloves (double) ✓</li> <li>• Safety Glasses / <del>Full Face</del> Respirator ✓</li> </ul> | Remove and replace second pair of overshoes when exiting the pit to reduce risk of spreading contamination.   | OK    |
| Prep   | Check tools: <ul style="list-style-type: none"> <li>✓ Hex Keys (3/16" &amp; 3/8")</li> <li>• Side Cutter</li> <li>✓ Wipes</li> <li>• 10" Cable Ties</li> <li>• RAM</li> </ul>  |   |       |
| Safety | <b>P beam off for at least 30 min before entering target pit</b><br>Check the General Field of ITW/ ITE ✓  | RAM or pole monitor ( $\leq 500 \mu\text{Sv/h}$ )   | OK    |
| 1      | Switch off: <ul style="list-style-type: none"> <li>✓ Heaters, Coil</li> <li>✓ Bias, Einzel Lens, Anode</li> <li>✓ EE</li> <li>• Turbo Pumps</li> </ul>   | Check or confirm with ISAC operators<br><br><i>turbo pumps still on</i>   | OK    |
| 2      | Two HV Cover Keys ✓  | Electrical room   | OK    |
| 3      | High Active Cooling Water  | Close valves for water supply and return  | OK    |
| 4      | HV Cover and HV Fence on Module Top ✓  | Limit switches and signal cable plugs   | OK    |

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|-----|---|--|-------|
| 5   | Compressed Air  | Release QC<br>Release air cylinder back pressure ✓   | OK    |
| 6   | Shutter <i>do it tomorrow</i>   | Pull up bellows. Strap tie air cylinder  | OK    |
| 7   | Gas Line <i>N/A</i>   | <b>FEBIAD Target only</b><br>Close two manual valves (station and module)  | NA    |
| 8   | Two 6-pin connectors (T,H)  | Connect grounding wires to 60 kv bias  | OK    |
| 9   | Extraction Electrode (I)  |  | OK    |
| 10  | Einzel Lens (Y)   |  | OK    |
| 11  | a) Water Lines:<br>✓ 1. Target Oven<br>✓ 2. Tube Heater<br>✓ 3. MSP<br>✓ 4. EE<br>✓ 5. HS<br>✓ 6. Window<br>✓ 7. Coil 1<br>✓ b) HS line Purging   | b) Nitrogen purge at 90 PSI for 6 minutes to purge the Heat Shield (HS) line in station<br><br><i>all lines are purged.</i>  | OK    |
| 12  | High Current Cables:<br>✓ a) (A)Target Oven +<br>✓ b) (B)Target Oven -<br>✓ c) (C)Tube heater -<br>✓ d) (D)Tube Heater +<br>✓ e) (H)60KV Bias<br>✓ <del>f) (PQ)Coil +</del><br>✓ <del>g) (RU)Coil -</del> | f) <del>FEBIAD target only</del><br>g) <del>FEBIAD target only</del>   | OK    |
| 13  | Vacuum System<br>a) TP1 Controller cable ✓<br>b) TP2 Controller cable ✓<br>c) TP1 BV1 ✓<br>d) TP2 BV2 ✓<br>e) IG1 ✓<br>f) TP1 TP2 Fans ✓  | a) Connectors on pumps<br>c) KF 25 between BVs.<br>Foil cover BVs, 24 V DC plug<br>d) KF 25 between BVs<br>Foil cover BVs, 24 V DC plug<br>e) Beside the shutter, use PNG1 cable<br>f) Switch off all fans (2 of 110 V Plugs for ITW<br>Switch on Extension bar for ITE) ✓ | OK    |
| 14  | Steers<br>ITE:<br>• Left<br>• Top<br>• Bottom (Right)<br>ITW:<br>✓ • X<br>✓ • Y<br>✓ Common   | a) Switch off IG1<br>b) ITE -TM2<br>• Left - Y<br>• Top -X<br>• Bottom (right) - Common<br>c) ITW - TM4<br>✓ • X - Top<br>✓ • Y - Left<br>✓ • Common - Bottom (right)  | OK    |

| Target Module Connection and Disconnection Procedure |               |                           |
|--|---------------|---------------------------|
| Document-141576                                      | Release No. 3 | Release Date.: 2019-10-23 |

| SEQ | ITEM                               | NOTE                     | CHECK |
|-----|------------------------------------|--------------------------|-------|
| 15  | Final Check                        | Module is clear for move |       |
| 16  | Return Work Permit and E-log Entry |                          |       |


NOTES:

DATE: 2019-01-27 - 2019-02-03 (Vacuum)

TARGET: UCx 29#

TARGET MOUDLE: TM1 TM2 TM3 TM4

STATION: ~~ITW~~ ITE

SIGNATURE 1: 

SIGNATURE 2: 