

## 7 Module Disconnection Checklist

*TM4 with UCx#43*

SEQ	ITEM	NOTE	CHECK
Safety	Acknowledge and Activate Work Permit	Call ISAC operators (x7500) Call Main Control Room 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 / Full Face Respirator</li> </ul>	Remove and replace second pair of overshoes when exiting the pit to reduce risk of spreading contamination.	✓
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> Check the general field of ITW/ ITE	RAM or pole monitor ( $\leq 500 \mu\text{Sv/h}$ )	✓
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 and high vacuum gages</li> </ul>	Check or confirm with ISAC operators	✓
2	Two HV Cover Keys	Retrieve from electrical room	✓
3	High Active Cooling Water	Close valves for water supply and return	✓


Target Module Connection and Disconnection Procedure		
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4	HV Cover and HV Fence on Module Top	Limit switches and signal cable plugs	✓
5	Compressed Air	Release QC Release air cylinder back pressure	✓
6	Shutter	Pull up bellows. Strap tie air cylinder	✓
7	<b>Gas Line</b>	<b>FEBIAD Target only</b> <b>Close two manual valves (station and module)</b>	✓
8	Two 6-pin connectors (T,H)		✓
9	Extraction Electrode (I)		✓
10	Einzel Lens (Y)		✓
11	a) Water Lines: <ol style="list-style-type: none"> <li>1. Target Oven</li> <li>2. Tube Heater</li> <li>3. MSP</li> <li>4. EE</li> <li>5. HS</li> <li>6. Window</li> <li>7. Coil 1</li> </ol> b) HS line Purging c) Bypass fitting installation	b) Nitrogen purge at 90 PSI for 6 minutes to purge the Heat Shield (HS) line in station  c) Install bypass fittings to all above waterlines. <i>All line are purged and filled with 6ops; argon for storage (except HS and Window)</i>	✓
12	Open valves for water supply and return.	<i>winter shut down Valves are closed</i>	✓
13	High Current Cables: <ol style="list-style-type: none"> <li>a) (A)Target Oven +</li> <li>b) (B)Target Oven -</li> <li>c) (C)Tube heater -</li> <li>d) (D)Tube heater +</li> <li>e) (H)60kV Bias</li> <li>f) (PQ)Coil +</li> <li>g) (RU)Coil -</li> </ol>	f) FEBIAD or p2n target only g) FEBIAD or p2n target only	✓
14	Vacuum System <ol style="list-style-type: none"> <li>a) TP1 Controller cable</li> <li>b) TP2 Controller cable</li> <li>c) TP1 BV1</li> <li>d) TP2 BV2</li> <li>e) IG1</li> <li>f) TP1 TP2 Fans</li> </ol>	a) Connector on TP1 b) Connector on TP2 c) KF 25 between BV1, foil cover BV1, 24 VDC plug d) KF 25 between BV2, foil cover BV2, 24 VDC plug e) Beside the shutter, use PNG1 cable f) Switch off all fans (2 of 110 V plugs for ITW, extension bar for ITE)	✓

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SEQ	ITEM	NOTE	CHECK
15	Steerers ITE: <ul style="list-style-type: none"> <li>• Left ✓</li> <li>• Top ✓</li> <li>• Bottom (Right) ✓</li> </ul> ITW: <ul style="list-style-type: none"> <li>• X</li> <li>• Y</li> <li>• Common</li> </ul>	a) ITE -TM2 <ul style="list-style-type: none"> <li>• Left - Y</li> <li>• Top -X</li> <li>• Bottom (right) - Common</li> </ul> b) ITW - TM4 <ul style="list-style-type: none"> <li>• X - Top</li> <li>• Y - Left</li> <li>• Common - Bottom (right)</li> </ul>	
16	Final Check	Module is clear for move	
17	Return Work Permit and E-log Entry		

NOTES:

DATE: 2024-01-22  
 TARGET: UC#43  
 TARGET MOUDLE: TM1 TM2 TM3 TM4  
 STATION: ITW ITE  
 SIGNATURE 1:   
 SIGNATURE 2: 