

Brookhaven National Laboratory/National Synchrotron Light Source			
<b>Subject:</b>	<b>VACUUM PROCEDURES FOR BEAMLINE X-23A</b>		
<b>Number:</b>	LS-OPS-0082	<b>Revision:</b>	B
<b>Effective:</b>	04/11/05	<b>Page 1 of 2</b>	
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\*Approval signatures on file with master copy.

The following procedures must be followed when bleeding up different beam line sections and when returning these sections to operation (refer to Beam Line Layout Drawing):

## **I. FRONT END (PROCEDURE TO BE PERFORMED BY NSLS VACUUM GROUP ONLY)**

### **A. Bleed-Up**

1. Notify the Coordinator (Beeper 5824).
2. Refer to Front End Vacuum Procedures (SLS-07.19-13-1).

### **B. Return to Operation**

1. Notify the Coordinator (Beeper 5824).
2. Refer to Front End Vacuum Procedures (SLS-07.19-13-1).

## **II. SECTION BETWEEN VALVE 1A AND Be WINDOW**

### **A. Bleed Up**

1. Notify the Coordinator (Beeper 5824) and open lock #1.
2. Close and seal Valve 1A and F.E. G.P. valve.
3. Hook-up turbo to this section.
4. Coordinator places Yellow Tags on Valve 1A and F.E. G.P. valve.
5. Slowly bleed-up with boil-off N2 while Coordinator monitors front end pressure.

### **B. Return to Operation**

1. Bake and pump to  $< 2 \times 10^{-9}$  Torr.
2. Notify the Coordinator (Beeper 5824).
3. Prepare for F.E. RGA scan. \*
4. Open Valve 1A into front end provided pressure  $< 2 \times 10^{-9}$  Torr downstream of this valve.
5. Perform RGA scan. \*
6. If RGA scan or pressure reading (if no RGA scan required) is satisfactory, Coordinator removes Yellow Tags from Valve 1A and F.E. G.P. valve. Re-padlock Valve 1A in the open position.
7. Remove any unprotected turbo pump from this section or valve off the turbo pump and place a Yellow Tag on the valve.\*\*

## **III. SECTION BETWEEN Be WINDOW and Kapton WINDOW**

### **A. Opening to Air**

1. Notify the Coordinator (Beeper 824) and open lock #1.
2. Close and seal Valve 1A.
3. Coordinator places yellow tag on Valve 1A.
4. Turn on 30 1/sec ion pump power supply to pump space between Be Window 1 and Valve 1A.
5. Close small valve at the He flow exit. (Item B on Safety Checklist).

### **B. Return to Operation**

1. Connect roughing pump and TC gauge to 120 VAC power.

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2. Open roughing valve and pump this section of beamline (to approx. 50 – 100 mTorr); record ultimate pressure and close roughing valve.
3. Backfill with He and establish He flow.
4. Update He cycling log. (Item A on Safety Checklist).
5. Coordinator removes Yellow Tag from Valve 1A and re-padlocks Valve 1A in the open position.

**\* NSLS POLICY FOR RGA SCANS (24 HOUR NOTICE REQUIRED)**

An RGA scan is required before returning to operation if there is a major change of hardware in the vacuum system, i.e. changing of samples, mirrors, windows, monochromator crystals or gratings, manipulators, detectors, etc., **with the following two exceptions:**

1. After UHV sample chambers have been bled up for replacing components, an RGA scan will not be required if the chamber pressure is returned to  $< 2 \times 10^{-9}$  Torr and the Front End pressure remains  $< 2 \times 10^{-9}$  Torr when vacuum sections upstream of the chamber are opened into the Front End.
2. If any vacuum section upstream of the bled-up section remains at a pressure of  $< 9 \times 10^{-10}$  Torr as read using a hot-filament ion gauge, when the entire beamline is opened into the Front End, and the Front End pressure does not increase, no RGA is required.

**\*\* NSLS TURBO PUMP POLICY**

An unprotected turbo pump is one not separated from the Front End by a beamline valve which automatically closes in the event of a power loss or a pressure increase at the turbo pump. **No unprotected turbo pump can share a contiguous vacuum with the Front End.**

## NSLS REVISION & PERIODIC REVIEW LOG

**Document Number:** LS-OPS-0082

**Subject:** VACUUM PROCEDURES FOR BEAMLIN X23A

> See NSLS Quality Control Coordinator for original revision and review signatures <

### REVISION TABLE

Rev	Description	Date
B	MAJOR MODIFICATION OF BEAMLIN. INITIAL RELEASE INTO CONTROLLED DOCUMENT SYSTEM.	04/11/05