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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.

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 2 AND VALVE 4

A. Bleed-Up

1. Notify the Coordinator (Beeper 5824).
2. Close Valve 1 and Valve 2. Close Valve 4.
3. Hook up turbo pump to this section.
4. Coordinator places Yellow Tag on Valve 2.
5. Slowly bleed-up with boil-off N_2 while Coordinator monitors pressure in MB1.

B. Return to Operation

1. Bake and pump to $< 2 \times 10^{-9}$ Torr.
2. Notify the Coordinator (Beeper 5824).
3. Prepare for RGA scan.*
4. Open Valve 2 and Valve 1 provided pressure is $< 2 \times 10^{-9}$ Torr downstream of Valve 1. Valve 1 may only be opened after Valve 2 and Valve 4 are opened.
5. Perform RGA scan.*
6. If RGA scan or pressure reading (if no RGA scan required) is satisfactory, Coordinator removes Yellow Tag from Valve 2.
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 VALVE 4 AND DIAMOND *or* CsI WINDOW

A. Bleed-Up

1. Notify the Coordinator (Beeper 5824).
2. Close Valve 2 and Valve 4.
3. Hook up turbo pump to this section.
4. Coordinator places Yellow Tag on Valve 4.
5. Slowly bleed-up with boil-off N_2 while Coordinator monitors pressure in M5.

B. Return to Operation

1. Bake and pump to $< 2 \times 10^{-9}$ Torr. The Diamond *or* CsI Window **must not be baked above 100^0 C.**

2. Notify the Coordinator (Beeper 5824).
3. Prepare for RGA scan.*
4. Open Valve 2 and Valve 4 provided pressure < 2 x 10^{-9} Torr downstream of Valve 1.
5. Perform RGA scan.*
6. If RGA scan or pressure reading (if no RGA scan required) is satisfactory, Coordinator removes Yellow Tag from Valve 4.
7. Remove any unprotected turbo pump from this section or valve off the turbo pump and place a Yellow Tag on the valve.**

IV. SECTION DOWNSTREAM OF DIAMOND *or* CsI WINDOW

A. Bleed-Up

1. Close Valve 4.
2. Slowly bleed-up while monitoring pressure between Valve 4 and window.

B. Return to Operation

1. Pump to 400 mTorr.
2. Open Valve 4 provided pressure < 6 x 10^{-9} Torr downstream of Valve 4.

*** 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 < 2×10^{-9} Torr and the Front End pressure remains < 2×10^{-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 < 9×10^{-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.**

Document Review Frequency	
3	Years

Review signatures on file with master copy of controlled document

LIGHT SOURCES DIRECTORATE REVISION LOG

Document Number:	LS-OPS-0121
Subject:	VACUUM PROCEDURES FOR BEAMLINE U-4IR

Rev	Description	Date
B	Initial release into the Controlled Document System.	02/10/10