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Number: BL 08-38
Revision: Rev. 0
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Supersedes Issues:

Title: Beamline 8.3.2 Monochromator Venting and Access					
Section where used: <i>(List all sections/groups that will use this procedure)</i> Floor Operations, Mechanical Technology, and BL 8.3.2 BL Staff					
Type of Procedure: <i>(Administrative / Technical)</i> Technical					
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Revision Log:				
No.	Date	Pgs. Affected	Type of Change	Brief Description of Revision
0	6/7/10	--	--	Original Revision 0 issued.

1.0 PURPOSE

To ensure that BL 8.3.2 monochromator vacuum is vented and pumped properly and that access to the monochromator is done safely in accordance with the shielding control procedure.

2.0 SCOPE

This procedure identifies the hazard related to the weight of the mono door and provides instruction for its safe removal and replacement.

Trained persons will follow this procedure by venting the chamber in the appropriate sequence, as specified in Section 5.1, before accessing the monochromator door in Section 5.2.

After work has been completed and the chamber closed, the beamline will be pumped down in the appropriate sequence as specified in Section 5.3 before the BL can receive beam.

The responsible BL 8.3.2 Scientist will ensure that training in this procedure is given to beamline staff who require vacuum chamber access. ALS Staff trained on this procedure are listed in Appendix I.

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Beamline 8.3.2 Monochromator Chamber Venting and Access

3.0 REFERENCES

- [1] DOE Order 5480.19, Conduct of Operations, Guidelines, Chapter 8
- [2] OP 02-04, Shielding Control Procedure

4.0 REQUIRED MATERIALS, EQUIPMENT, SUPPLIES, TOOLS, AND MANPOWER

- [1] Beamline Shielding Change Form (OP 02-04 Appendix AIB)
- [2] Floor Operator
- [3] 8.3.2 Beamline staff trained on this procedure

5.0 PROCEDURE

NOTE: Access to the monochromator first requires venting of the entire beamline.

5.1 To Vent the Beamline

- [1] Contact a Floor Operator to initiate a Beamline Shielding Change Form and take the beamline offline.
- [2] Vent diagnostic chamber inside of hutch:
 - [a] Close hand valve between the turbo pump and the roughing pump.
 - [b] Turn off turbo pump by pushing the OFF button on the controller.
 - [c] Turn off roughing pump located at the backside of the hutch.
 - [d] Turn off ion gauge controller inside the hutch.
 - [e] Open hand valve on the top of the diagnostic chamber and vent the chamber to air.
- [3] Close valve VVR203 located upstream of the monochromator.
- [4] Ensure that the turbo pump is off and the isolation valve is closed.
- [5] Turn off ion pumps IP204 and IP205.
- [6] Turn off ion gauge IG203.
- [7] Vent beamline to dry nitrogen and purge.

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5.2 To Access the Monochromator**5.2.1 To Open the Monochromator**

- [1] Have Floor Operator unlock and remove the Radiation Safety Security Device (RSSD) lock.

CAUTION: *The door for the monochromator is heavy and represents a potential pinch hazard.*

- [2] Remove three screws (left, right, and center) from the top row of the monochromator door.
- [3] Insert the three partially-threaded guide rods in those holes.
- [4] Remove the remaining screws from the monochromator door.
- [5] Move the two slideways towards the monochromator connecting bars.
- [6] Slide the monochromator door along the guide rods until the connecting bars are lined up with the slideways.
- [7] Slide the connecting bars upwards until inside of the slideways and insert the locking bolt.
- [8] Adjust the leveling nuts to relieve pressure from the guide rods.
- [9] Remove the guide rods.
- [10] Carefully slide the monochromator door upstream and out of the way.

5.2.2 To Close the Monochromator

CAUTION: *The door for the monochromator is heavy and represents a potential pinch hazard.*

- [1] Carefully slide the monochromator door in front of the chamber.
- [2] Insert the three partially-threaded guide rods through the door and into the chamber in the upper left, right, and center holes.
- [3] Adjust the leveling nuts to allow the door to rest on the guide rods.
- [4] Remove the locking bolts and lower the connecting bars.

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- [5] Slide the monochromator door towards the vacuum chamber.
- [6] Insert the screws for attaching the door to the vacuum chamber and secure the door to the chamber.
- [7] Remove the guide rods.
- [8] Insert the three remaining door screws.
- [9] Have a Floor Operator replace and lock the RSSD lock.
- [10] To complete the process, have a Floor Operator close out the Shielding Change Form and key-enable the beamline.

5.3 To Pump the Beamline

- [1] Remove N2 purge lines and close off the beamline.

CAUTION: *Make sure that pressure on both sides of the valve are equal, a otherwise damage to the valve could occur.*

- [2] Open the turbo pump isolation valve.
- [3] Turn on the main roughing pump.
- [4] Turn on the turbo pump after the beamline is roughed down.
- [5] Turn on IG203.
- [6] Pump diagnostic chamber inside hutch
 - [a] Close valve on top of diagnostic chamber.
 - [b] Turn on roughing pump and open the hand valve between the turbo pump and roughing pump.
 - [c] After chamber is roughed down, turn on the turbo pump.
 - [d] After turbo pumps sufficiently, turn on the ion gauge controller.
- [7] Turn on IP204 and IP205.

6.0 APPENDIX

- I Staff Persons Trained in Procedure BL 08-38

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