

# SBC 19-ID Beamline Shutdown Procedure

This procedure should be performed for beamline 19-ID at the beginning of an APS maintenance or shutdown period of 2 weeks or longer duration.

	19-ID	ITEM																																							
1.	$\rho$	Install the face shield on the ADSC detector in the end station enclosure (D-hutch).																																							
2.	$\rho$	Drive sample goniometer in the D-hutch to $\omega = 90^\circ$ , $\kappa = 0^\circ$ and $\phi = 0^\circ$ .																																							
3.	$\rho$	Save and Print all current motor positions.																																							
4.	$\rho$	Ensure that all D-hutch attenuators are OUT and close shutter to de-energize modules.																																							
5.	$\rho$	Switch off Uniblitz shutter controller inside D-hutch.																																							
6.	$\rho$	Drive in order: <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>Monochromator focus to 0.05 mm</td> <td>Final value:</td> <td>mm</td> </tr> <tr> <td>Monochromator energy to 12 keV</td> <td>Final value:</td> <td>keV</td> </tr> <tr> <td>Mirror focus to 0.05 mm (0 mm if power is going off)</td> <td>Final value:</td> <td>mm</td> </tr> <tr> <td>Mirror angle to <math>0^\circ</math></td> <td>Final value:</td> <td><math>^\circ</math></td> </tr> <tr> <td>Mirror height to 4 mm or limit</td> <td>Final value:</td> <td>mm</td> </tr> <tr> <td>Mirror lane to 0 mm</td> <td>Final value:</td> <td>mm</td> </tr> <tr> <td>Downstream support halfway to 0 mm</td> <td></td> <td></td> </tr> <tr> <td>Horizontal collimator slits halfway to 0 mm</td> <td></td> <td></td> </tr> <tr> <td>Vertical collimator slits (CS:YC) to 0 mm</td> <td>Final value:</td> <td>mm</td> </tr> <tr> <td>Goniometer (GO:Y) to 0 mm</td> <td>Final value:</td> <td>mm</td> </tr> <tr> <td>Guard slits support (GS:Y) to 0 mm or limit (-14 mm)</td> <td>Final value:</td> <td>mm</td> </tr> <tr> <td>Horizontal collimator slits to 0 mm or limit</td> <td>Final value:</td> <td>mm</td> </tr> <tr> <td>Downstream support 0 mm or limit</td> <td>Final value:</td> <td>mm</td> </tr> </table> <p><i>Ensure that the bellows between the downstream support and the guard-slit box are not over stretched. Save and Print final motor positions.</i></p>	Monochromator focus to 0.05 mm	Final value:	mm	Monochromator energy to 12 keV	Final value:	keV	Mirror focus to 0.05 mm (0 mm if power is going off)	Final value:	mm	Mirror angle to $0^\circ$	Final value:	$^\circ$	Mirror height to 4 mm or limit	Final value:	mm	Mirror lane to 0 mm	Final value:	mm	Downstream support halfway to 0 mm			Horizontal collimator slits halfway to 0 mm			Vertical collimator slits (CS:YC) to 0 mm	Final value:	mm	Goniometer (GO:Y) to 0 mm	Final value:	mm	Guard slits support (GS:Y) to 0 mm or limit (-14 mm)	Final value:	mm	Horizontal collimator slits to 0 mm or limit	Final value:	mm	Downstream support 0 mm or limit	Final value:	mm
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7.	$\rho$	Ensure that ADSC detector and electronics have been shutdown per <i>SBC CCD Detector Systems, Shutdown Procedure, ADSC Quantum 315 CCD Detector, SBC Beamline 19-ID</i> .																																							
8.	$\rho$	Logoff idesc computer inside D-hutch.																																							
9.	$\rho$	Logoff Linux computers and beamline PC in operations area outside D-hutch.																																							
10.	$\rho$	Logoff Linux computers and PCs in work areas IDWA, IDWB and IDWC.																																							
11.	$\rho$	Switch off NIM BIN, and power supplies for ion chamber (dial down to 0 kV), Amptek and Bicron detectors (ID-RACK #3 and inside D-hutch). Bicron power supply is separate from NIM BIN power but located in the NIM BIN.																																							
12.	$\rho$	Valve off gas cylinders at cylinder head for nitrogen and helium in D-hutch.																																							
13.	$\rho$	Record readings from vacuum gauges in D-hutch: <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>Vacuum gauge 1</td> <td></td> <td>torr</td> </tr> <tr> <td>Vacuum gauge 2</td> <td></td> <td>torr</td> </tr> </table>	Vacuum gauge 1		torr	Vacuum gauge 2		torr																																	
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14.	$\rho$	Close manual rough vacuum valve near shutter/attenuator assembly in D-hutch, and leave D-hutch door open.																																							
15.	$\rho$	Ensure that nitrogen cold stream has been shutdown in an orderly manner.																																							

## SBC 19-ID Beamline Shutdown Procedure

16.	ρ	Switch off goniometer power supply in D-hutch.			
17.	ρ	Record pressure in mono tank and other beamline sections (ID-RACK #12).			
		IG1	torr	IG5	torr
		IG2	torr	IG6	torr
		IG3	torr	IG7	torr
		IG4	torr	IG8	torr
		Close beamline gate valves (upstream to downstream) and put valve controllers in “lock” position; put utility vacuum valve D7 (D-hutch) in bypass mode and leave open.			
18.	ρ	Unplug rough vacuum scroll pump inside D-hutch and record hours of use:			
		Scroll pump hours of use	hrs		
19.	ρ	Check / switch off microscope lights and fiber optic lights D-hutch.			
20.	ρ	Switch off “sky” camera in the D-hutch.			
21.	ρ	Switch off sample visualization monitors inside the D-hutch. <i>Leave the sample visualization computer and monitor running.</i>			
22.	ρ	Switch off sample visualization monitors and bpm digital display box outside D-hutch.			
23.	ρ	Check water level of Neslab chiller in 19ID-C enclosure (C-hutch). <i>Top-off Neslab water if needed or if chiller will be unattended for one week or longer.</i> Use water inside C-hutch to bring level just above top slot mark. Leave Neslab unit <i>ON</i> when operating Cryotherm liquid nitrogen pump ID-C.			
24.	ρ	Switch off remote camera power strip inside C-hutch.			
25.	ρ	Switch off lights in all beamline enclosures.			
26.	ρ	Turn off circulating pump on water skid and record which pump was used (#1 or #2) and hours of use. (435 LOM Mezzanine):			
		Water pump #1	ρ Used	hrs	
		Water pump #2	ρ Used	hrs	

ρ Randy Alkire

ρ Norma Duke

ρ Mike Molitsky

ρ Frank Rotella

SIGNATURE(S): \_\_\_\_\_

DATE \_\_\_\_\_

TIME \_\_\_\_\_

REMARKS: \_\_\_\_\_

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