Shutting down the Saturn

You need to turn off the X-ray generator, the XStream low-temperature device and the Haskris recirculating water chiller.

First, power down the X-ray generator using JXG. JXG will be running on the PC to the right of the instrument. Look along the bottom of the monitor for the symbol, JXG.
Under the Instrument tab, select SealedTubeAgingDown-Mo.xgr and hit the Run command. The power to the tube will gradually ramp down to 20kV and 2mA. It will take ~5 minutes. Once, it has powered down, go to the instrument and push the red Off button (not the big red Stop button).

![User interface](image)

**Shutting off the XStream low-temperature device.**

The He compressor is located behind the Saturn. There is a large green On/Off button near the top left of the front panel. Push the green button to turn off the He compressor. You also need to turn off the XStream controller, which is located at the top of the instrument. Press the green button to turn it off.

With the generator off and the XStream off, you can turn off the Haskris water chiller/pump. Push the on/off button.

**Restarting the Saturn and XStream Low-temp device**
First, start the Haskris recirculating chiller by pushing the on/off switch to on.

You can turn the Saturn/XStream on in any order.

**Restarting the Saturn.**

Turn on the X-ray generator. Press the Green ON button, which is located next to the big, Red emergency shutoff button. A green ready light will come on in a few seconds. Press the grey ON button just below the ready light. The generator will blink at 20 kV and 2 mA for a few seconds. When the generator settings show a constant 20 kV and 2 mA, go to the PC and select JXG, the X-ray generator control program (see above). Under Instrument, select Script tool. Use the drop down menu and select ‘SealedTubeUpQuickMo.xgr’ (or something like that). The X-ray generator will power up to 50 kV and 30 mA, its normal operating power.

**Restarting the XStream low-temperature device.**

Behind the Saturn, push the large green button on the He Compressor.

The XStream controller is located on top of the Saturn enclosure. Push the green on/off button to start the controller. After a few seconds, press the back button to execute the cool down to -173 C. It will cool down fairly quickly. It should reach -173 C in about 30 minutes.