

# LASER INTERFEROMETER GRAVITATIONAL WAVE OBSERVATORY

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	Pumping the Beam Tube with the Vacuum Equipment-Check List	

The purpose of this procedure is to permit safe and controlled pumping of the beam tube by the adjacent vacuum volume.

NOTE: A Site Work Permit and authorization by the site vacuum manager is required **before** this activity can take place. Only trained personnel are authorized to perform this task.

## Procedure:

1. Confirm that acceptable (by the site vacuum manager) RGA data of the current configuration exists.
2. Obtain the pressure readings on both the beam tube and the vacuum equipment volumes. Confirm these by independent means.
3. Confirm that data logging is operational.
4. Confirm that the 80K pump is cold and stable with more than 80% liquid indicated. Confirm this by independent means.
5. Confirm that gate valves which are to remain closed are locked out.
6. Confirm that purge and roughing valves have blankoffs in place.
7. Confirm that annulus systems are under vacuum. Close the gate seal annulus of valves which will be opened.
8. Enable the valve interlocks at the CDS computer.
9. If the pressure on the beam tube is less than  $1 \times 10^{-4}$  torr and the pressure at the 80k pump is less than  $1 \times 10^{-7}$  torr then the gate valve may be opened.
10. Monitor pressures and 80K pump parameters. Close the gate valve if conditions do not progress normally.
11. To leave the system unattended for more than 8 hours the main turbo must be isolated at the 10 inch valve and the liquid level in the 80k pump must be  $> 80\%$ .
12. Main ion pumps shall be isolated if the pressure is above  $1 \times 10^{-6}$  torr.
13. Isolate the beam tube if the LN storage dewar level falls below the 10% level.