

Turning on MVT when beam is (finally) acceptable

During normal operation with Premix Gas
(Period from January 12th to January 31th)

Note: MVT Low Voltage should be kept ON at all times from now on. Indeed, if beam is bad enough to damage the MVT Front-End Units, it will surely damage the SVT even more: beam should be shut down immediately.

1. Turn on gas system and **check interlock status.**
 - a. Go to CVT -> MVT Overview GUI
 - i. Click on the gray “[]” button on the “Gas” mini-panel
 1. Select BMT Gas, click on “Start”.
 2. Select FMT Gas, click on “Start”.
 3. *Wait till the Flow Differential Current value drops under the Fault value (orange “warning” indicator) for both FMT and BMT, it should take under 10min.*
 4. Close the BMT and FMT Gas system GUIs.
 - ii. Click on the gray “[]” button on the “Interlock” mini-panel
 1. Scroll all the way down.
 2. If there is one or several interlocks in fault, reset them. If it comes back in fault mode, call the expert!
2. Turn on BMT HV and get up to safe HV values
 - a. Go to CVT -> MVT Overview GUI
 - i. Click on the gray “[]” button on the “BMT HV / FMT HV” mini-panel up top.
 - ii. Select “Restore Settings”
 - iii. Select the File “MVT_HV-AllOn_Intermediate.snp”
 - iv. Click again on the gray “[]” button on the “BMT HV / FMT HV” mini-panel up top.
 - v. Select “Channel Controls”
 1. Click on “ON Menu”
 2. Select “MVT - ON”
 3. Observe the High Voltage increasing until their safe value (about half the nominal values).
 4. Wait a few seconds until currents stabilize under 100 nA (if there is beam, just wait for current to stabilize).
 5. Close the window.
3. Turn on BMT HV and get up to nominal values
 - a. Go to CVT -> MVT Overview GUI
 - i. Click on the gray “[]” button on the “BMT HV / FMT HV” mini-panel up top.
 - ii. Select “Restore Settings”
 - iii. If Solenoid field is less than 100%, select the file “MVT_HV-AllOn_MidField.snp”. If Solenoid field is 100%, select the file “MVT_HV-AllOn_FullField_engineering.snp”.

- iv. This time, since the HV are on already on, HV will increase directly.
4. After a few minutes (HV are ramping up slowly), all HV indicators from CVT -> MVT Overview GUI (top part) should be green.
5. Double check LV are on by checking that all indicators from CVT -> MVT Overview -> Low Voltage subpanel GUI are green and "ON". They should not be turned off at this stage anyway.
6. You are ready to take data

If anything goes wrong or seems abnormal, call the MVT expert: (757) 541-7539

PS: Some tile of BMT or disks of FMT are intentionally turned off or with a HV set to 0. No need to call the expert for this, it is done on purpose.