

# Alarm Responses

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## 1. Detector operator should first acknowledge the alarm and find the source of the alarm as described below.

When an alarm goes off the first thing to do is trace the source of the alarm via the alarm handler.

The alarm handler should be running in its own desktop labeled alarms. (If it is not running, then type "svt\_alarms" from a terminal window. This will bring up this small panel shown below.)



Double clicking in the center should bring up this panel. Look for whatever (e.g "Interlocks and Others" in the panel below) has the "R" in the red box. Clicking on the black arrow associated with the alarm will bring you down to a subdirectory (Interlocks, Water Manifold, and Other Alarms in this sample. Both Interlocks and Water manifold have alarms in this sample). Clicking on Interlocks in this example brings the you the lowest subdirectory (on the right side of the panel) showing the actual quantities that are monitored. In this example "SVT Water Flow" and "SVT Water Pressure" are alarmed. Clicking on the box to the left of these will "acknowledge" the alarms. When all the alarmed variables have been acknowledged the beeping stops but a red box will remain by these variables until the source of the problem is fixed.



**Note: To temporarily shut off the beeping** in case of an alarm condition, click on "setup" at the top of the above panel and click on "silence forever". After the source of the alarm has been fixed, go back and click on "silence forever" to re-enable the audio alarm.

**2. The detector operator should verify the source of the alarm via the slow controls and take action as describe below.**

Variables that are monitored are

1. **Interlocks** (applies to whole SVT)
2. **Water temperature** (applies to whole SVT)
3. **Water pressure** (applies to whole SVT)
4. **High Voltage** (each ladder)
5. **High Voltage currents** (each ladder)
6. **Low Voltages** (each ladder)
7. **Low Voltage currents** (each ladder)
8. **Ladder Temperatures** (each ladder)
9. **Guard Anode Currents** (each ladder)

The responses to alarms on these quantities are given here.

**1. Interlock**

If an interlock has alarmed the SVT should have automatically shutdown. Check that all voltages are off (via the LV panel and HV panel-See **SVT Quick Reference Manual**). If not (for whatever reason) follow the Normal Shutdown procedures and if this fails, follow the Emergency shutdown Procedures. Notify an SVT expert.

**2. Water temperature**

This sometimes occurs when the modified chilled water (MCW) fails. The SVT water system is separate from the MCW but uses it as a heat sink. From the Detector Operator's Panel hit "Full Power OFF" to shut down the SVT. When the SVT has turned off (takes about 10 minutes) shut off the water system as described in the "Emergency Shutdown Procedures (part "A")" of the **SVT Quick Reference Manual**. Notify an SVT expert.

**3. Water pressure**

If the water pressure gets too high the water system needs to be turned off as soon as possible. Follow "Emergency Shutdown Procedures(part "A")" as described in the **SVT Quick Reference Manual**. This should turn of the SVT voltages also. Notify an SVT expert.

- 4. High Voltage**
- 5. High Voltage current**
- 6. Low Voltage** (will see “Low Voltage Fault” message)
- 7. Low Voltage current**
- 8. Ladder Temperatures**
- 9. Guard Anode currents**

Typically for alarms on items 4-9 the slow controls Detector Operator’s panel or Expert’s panel will show a ladder in red as in Figure 1. This indicates that one or more monitored variables associated with this ladder has a problem. It is simplest to shut this ladder off and notify an SVT expert.

To turn off a ladder go to the Experts Panel and click on a ladder. A panel for that ladder will appear as in Figure 2.

First make sure high voltage is off. Click on “Disable HV” where arrow “A” points in Figure 2. When you click, hold the button for 3 seconds as sometimes a quick click does not register.

Then enter “0” where arrow “B” points (Note: To get the “0” to register you must type in the “0” while the mouse pointer remains in the box and hit return before moving the mouse pointer). Click (and hold) “set now” below there. If it is not already showing zero where arrow “C” points it should shortly (sometimes it takes 1-2 minutes to register). If not , then repeat the procedure.

Next, turn off the low voltage for that ladder by clicking(and holding) on “Off” where arrow “D” points. All the low voltages should shortly turn off(may take 1-2 minutes to register).

From the Expert’s panel click on AutoControl, and then Masks. Find the ladder just disabled and click on “No” for both High and Low Voltage. This will ensure that this ladder will remain off next time the SVT is powered down and then back up.

Notify an SVT expert.

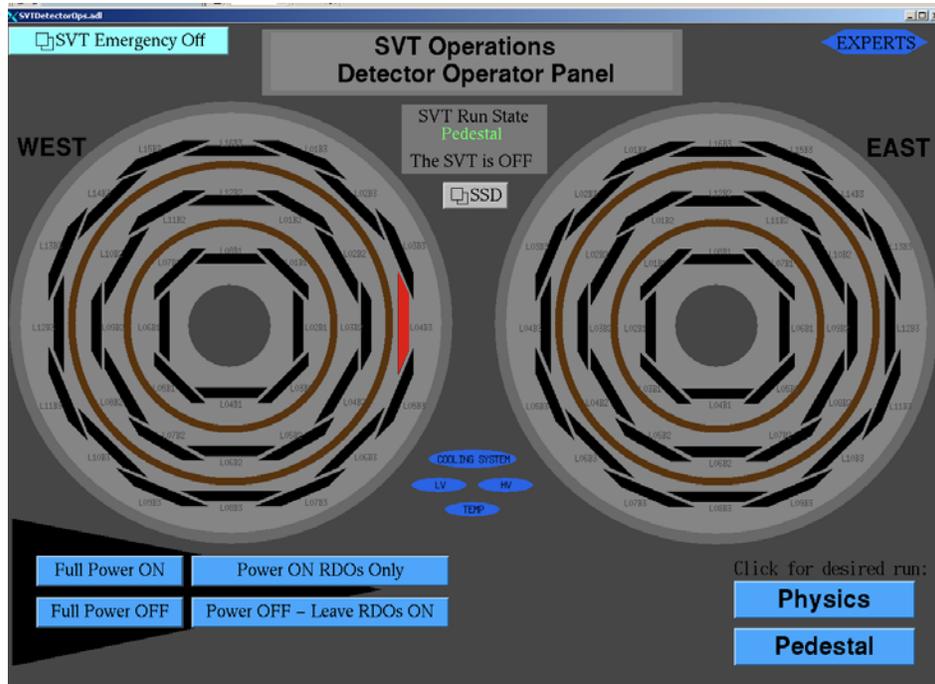


Figure 1. Detector Operator’s Panel showing an alarm on ladder L04B3 West.

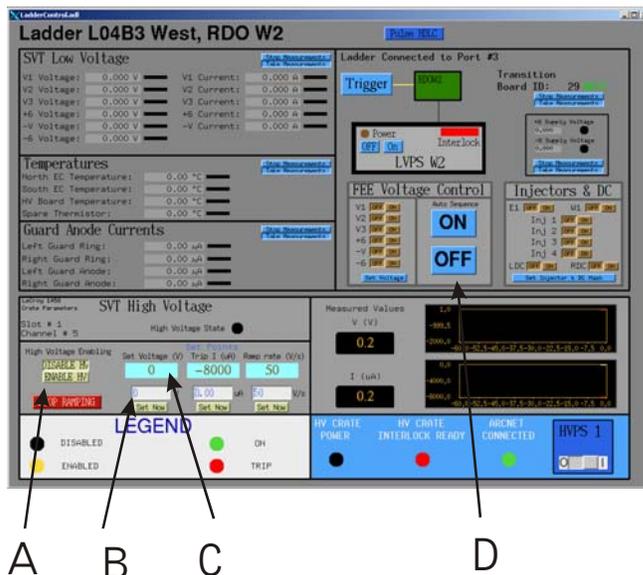


Figure 3. Ladder information and controls for L04B3 West via Expert’s Panels.

### What to do if nobody knows what to do

If there is an alarm (or alarms) and nobody in the control room knows what to do, and an SVT expert can’t be reached, then follow “Emergency Shutdown Procedures” (parts A) as described in the **SVT Quick Reference Manual**. This will turn off (actually crash) the

detector and water system. Normally this is to be avoided and the actions described above in this document are the correct ones to take.