Shiftinstructions for the Forward Neutron Calorimeter

23-August-1999 / FNC group

Error condition Guide in Section 2 !

This small guide contains two sections. The first section explains how to check various running conditions of the FNC (note that most of these checks are also done automatically and will result in BBL3 alarm or an error message to the FNC group if they are not fulfilled). The second part deals with some special error conditions and how to solve them.

Note that the instructions "How to Collect Beam Gas Data for the Forward Neutron Calorimeter" and "How to Change the FNC HV" are separate.

The table of contents gives an overview of the running/error conditions covered by this guide. In case another error occurs, something is unclear or... please contact the FNC group:

- first try to phone our **offices: 4169 and 4168**
- if nobody is there try the **handy: 0174/4029117**
- if there is no answer try the **FNC cityfon: 0168/445 38 08**

Contents

The following text often refers to ”the FNC X-terminal”. This Terminal can be found in room 307 rack B5/right. Ths DAQ/slow control computer is located in room 101 rack O6. The FNC electronics can be found in the same room in the racks O6, O7 and O8.

1 How to check the system

If you have to reboot the system:
login: onl, password: *displayed on FNC X-terminal, please take care of upper and lower case*

1.1 Is the local FNC DAQ running?

There are two possiblities to check this:

Softwarecheck:

- Goto to the FNC X-Terminal and check whether the scaler values displayed in the “SLOW Control Panel” are updated frequently (every minute). If this is the case the local DAQ system running.
- If not check whether the local slow control system is running and follow the instructions given in the corresponding subsection.

Hardwarecheck:

- Goto Room 101 and check whether the left green screen **above** rack O6 is updated frequently (every 10 seconds).
- Check whether the two uppermost LEDS of the Flash ADCs in the Bottom of Rack O7 are blinking. **Note:** The LEDS are only flashing if the central DAQ is active!
- If the two last conditions are not fulfilled try to restart the DAQ according tp the instructions given in section 2.1.

1.2 Is the HV applied and correct?

Goto the FNC X-Terminal. Check whether the fnchv button of the “SLOW control panel” has a green color and that the display was updated within the last minute. If the button is red the HV check program is NOT running. simply try to click on the fnchv button to restart the program.

Check with the 'HV value' button the settings of the individual HV channels. Watch especially for * in the list. These symbols indicate big differences between desired and measured voltages.

Check in room 101 that the LeCroy HV system in Rack O8 is powered and running (4 red LEDs on the right are on)

1.3 Is the Monitoring system running?

- Goto the FNC X-Terminal and check whether the flashmon button has a green color. If not, the monitoring program is not running. Restart it by pressing the flashmon button. If this does not work try to restart the Slow control according to the instructions in the following paragraph. If this does not work either call the FNC support.

- Is the empty Bunch signal working? This signal is used to create the monitoring triggers. The "Monitorrate (Hz)" is the prescaled empty bunch signal frequency. You can check the frequency of this signal on the FNC X-Terminal. The rate should be $\sim 0.9\,\mathrm{Hz}$ (run condition in 99).

- Now check whether meaningfull monitoring information has been gathered within the last few hours:

  1. Press the SLOWFLOW button. An interactive PAW session pops up.
  2. Enter any module number (1 ... 75) in the "Module No." field.
  3. Press the "Monitor" button. A graph appears which shows the evolution of the Gain monitoring factor over the last few hours. Note that the X-scale is the day of the current year.
  4. If this graph is a smooth curve everything is okay. Gain variations of up to 10% synchronous with the HERA beam filling are OK. Something is wrong if the monitor factor dropped to zero or made big jumps. If the monitoring factor looks strange, please call the FNC support. **Note:** Monitoring information is only collected when the central DAQ is running. Therefore big gaps in the gain factor evolution might indicate times where the central DAQ was down.

1.4 Is the local slowcontrol system running?

This section gives a short introduction on how to determine that the slow-control system is working properly. If these checks are OKAY then also the local DAQ is running and the HV should be OK.

Check the following things on the FNC X-terminal (room 307, rack B5/right):

1. **The SLOW control Panel window is open**
   If not:

   (a) Choose "Exit Program" from the panel

   (b) Restart "Slowcontrol" from the application menu
   If this doesn't work:

   (c) Log out of the X-terminal

   (d) connect with an X session to axhrs1.desy.de

   (e) login as onl with the password noted near the X-terminal screen.

   (f) if also this does not work call the FNC expert

2. **Check that the time after the line "Last update occured:" is not older than 2 minutes**
   If not:
   Follow the instructions given in the previous point.

3. **Check that the "fnchv" button has a green color (i.e. the HV control program is running)**
   If not:
   Check that there are normal running conditions (Luminosity) and that no (other) expert is working on the system. If these conditions are fulfilled just press the button. It will change its color from red to green within some seconds. If this is not the case, even after some retries call an FNC expert.

4. **Check that the "dbint" button has a green color (i.e. the basic slow control routines are running)**
   If not:
   Check that there are normal running conditions (Luminosity) and that no (other) expert is working on the system. If these conditions are fulfilled just press the button. It will change its color from red to green within some seconds. If this is not the case, even after some retries call an FNC expert.

2 Special Error Conditions

2.1 Power glitch/interruption in room 101

If there is a power interruption in Room 101 try to **call FNC expert** first. If you cannot contact him you should follow the points given below. These instructions also applies in case of a BBL3 alarm of the FNC Flash ADC crate (BBL3 identification:

```
FPS_FNC+_VME_CRATES_FADC_FNC_DAQ
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corresponding to the slow control channel

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YC_10001000000
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1. Goto Room 101. Check that all crates in the racks O6, O7 and O8 are powered. In case of a power glitch normally the DC supply of the FADC and the FASTBUS crate (1st and 2nd from bottom in rack O7) are off. Check also that the HV supply (rack O8 bottom) is switched on and that the HV is on (see section 1.2).
2. Reload the acquisition code of the CHI processor. Follow the instructions next to the Falco Terminal in Room 101 Rack O6.
3. Normally everything should now work again. If the central DAQ is running the DSP processor is reloaded automatically within one minute.
4. Return the the FNC X-terminal Choose host axhrs1 from the menu (if logged out) Login as onl with the password noted near the screen. The slowcontrol panel should pop up.
5. Check that the system is running according to the instruction in section 1.4
6. In case the previous procedure fails: **Call an FNC expert.**

2.2 Power glitch/interruption in the tunnel

Reconfigure the FNC Monitor Box since most likely the old configuration is lost.

1. Open the "For Experts ONLY!" panel
2. Press the Configure LED's button
3. Press 4 rightmost LED buttons
4. Select length 7
5. Press the "Configure" button
6. Check the the line "leds: 0 0 0 1 1 1 1 length: 7" appears in the window. If this is the case everything is okay. If not call an FNC expert.

Call an FNC expert!

2.3 BBL3 HV alarm

Applies to the following BBL descriptions/Slow control channels:

`FPS/FNC_HV_POWER_BBL3_FNC_power_supply_status`	`YHZ05000600000`
`FPS/FNC_HV_POWER_voltage_FNC_NOT_ON`	`YHZ05104200000`

Most likely after a power failure or a failure the HV mainframe. In this case the HV crate in Room 101, Rack O8 goes into standby mode. Try to switch the HV crate off and on again (large button at the bottom of crate). Go to the FNC X-terminal, press the "HV Control" button. A panel will pop up. Pressthe "Full HV settings" button and wait two minutes.

If this doesn't help either call the FNC expert. Please make a note in the FNC Logbook in any case!

2.4 Temperature Limit exceeded

If the temperature of the device exceeds the given limits it is necessary to switch off as much as possible of the system. In particular the temperature labelled "Monibox" should be NOT higher than $40°C$.

1. Switch off the HV on FNC panel "HV Control" (FNC X-terminal).
2. Follow the instructions given in section 2.2. But enable NONE of the LEDs and set the Length to zero.
3. Call FNC expert.