Neutron Physics: Administrative Procedures

There are some things to do before you start the neutron physics experiment. Here is a summary of them.

Safety Training:

These two steps must be completed before you can do the experiment.

1. You should take (and pass) an on line course in radiation safety pertinent to the reactor called "General Employee Radiological Training", generally called a GERT. Do this before the following step if you possibly can. See the Appendix to this note for instructions how to access the on line GERT course; there is also a link to these instructions on the 8.13 web page for the neutrons experiment (`http://web.mit.edu/8.13/38.shtml`).

2. Take an introductory briefing, tour and safety instruction at the reactor conducted by a reactor staff member; this is called a "Reactor Practicum". We plan to have two of these on Fridays this fall. The first will be this Friday, September 25, at 10:00AM at the reactor.

   Those who are doing the neutrons experiment first will have to take the Practicum this Friday. I encourage all others to sign up for it this Friday as well. If we cannot accomodate you this Friday, we will let you know by email and schedule you for the second session—which we plan to hold on October 9.

   To sign up, go to `http://vpr.mit.edu/cgi-bin/NRLpracticum.pl`
   (if asked to log in, user name "guest" with password "course8" should work).

Security:

Responding to Homeland Security policies, the Nuclear Regulatory Commission has designated the reactor as a "Restricted Area." That means that unless you have been fingerprinted and approved by the NRC you must have "continuous escort" within the reactor. We expect to have three 8.13 instructors and one TA qualified to provide such supervision and one of us, or an appropriate member of the reactor staff, must be with you while you are in the reactor to do the experiment. This provides considerably less freedom for when you work on the experiment than was available prior to September 11, 2001.

The reactor normally operates 24x7 and the experiment can be operated on line using *iLab*. My guess is that after one or two regular 8.13 class periods of three hours, it will make more sense for you to run the experiment on line—probably from 4-361. Sometimes long counting time are necessary, and if you want to operate outside of normal class hours it should be possible to do so using your own computer.

On Line Operation:

There is a good web site with a lot of useful information about the reactor and the experimental equipment we will use for the neutron physics experiment. I recommend that you explore it before you go to the reactor to run the experiment for the first time. The URL (there is a link on the 8.13 web page for the neutron physics experiment) is:
`http://norbert.mit.edu/reactor/`

To run the experiment on line, you will need a LabView plugin for your web browser. We will have a computer set up for you to use in 4-361. If you want to run it from your own computer, you will need the free LabView 8.2.1 Run-Time Engine; it includes the plugin. To learn how to get it, go to the above URL, click "Experiments" and download the "iLabs_Getting_Started.pdf" file.

You should become a registered *iLab* user even if you only run on line from 4-361. That takes a couple of days, so be sure to register at least several days before you will want to run the experiment on line. The iLabs_Getting_Started.pdf file will also tell you how to do that.

Some Practical Advice:

- Take your MIT student ID card, as you will have to exchange it for a temporary badge while at the reactor.
- There are no restroom facilities inside the reactor containment building.
- Not all settings for the neutron physics experiment can be controlled on line; you will want to make sure they are set correctly for your intended on line session.
- On line operation must be scheduled at least 24 hours in advance, as the reactor operator will have to open and close the beam shutter for you. The scheduling is done on *iLab*. The current (Fall 2009) version of the software will tell others who want to schedule time that your time has been reserved, but you must still send an email to `kirky@mit.edu` with your reservation time so that she can tell the reactor operator. (This will be fixed late in the semester.)

Appendix –Taking the GERT Course:

You will need your MIT ID number, kerberos ID and certificate.

1. Connect to `http://web.mit.edu/environment` and click on "MIT EHS Training" in the top menu. Then choose the button "I have EHS training requirements for an academic subject" and click `SUBMIT`.

   - If you have done an EHS training needs assessment before, that should open a page called "My EHS Training—Summary Page." Choose the "Update EHS Activities" button about half way down the page and add "Use the Nuclear Reactor". That should add two requirements to your training. One will be "Radiation Safety: Reactor..." with number 311w; that is the GERT test. The other will be "Radiation Safety: Reactor Practicum..." with number 314c.
   - If you have not done an EHS training needs assessment before, you can do that by selecting "My EHS Training Wizard". Choose "Use the Nuclear Reactor" for your activity. When you have done that, you should find the "My EHS Training—Summary Page" open and you can proceed as in the step above. (If it does not open, back up to the "MIT EHS Training" page and choose "My EHS Training" from the menu at the left.)

2. Just above the list of needed training, click the "Go to Web Class" button. That will open another page. On it click the "Course Catalog" tab. Near the bottom of the EHS list you will see a link to the "Reactor General Employee Radiological Training"; that is the link to the GERT course.

3. Note: I found the system would not let me do the training until I had specified a supervisor. If you find yourself in that situation, then I'd recommend choosing Edward Lau (the Reactor Superintendant) from the list.