

# Advanced Photon Source

## Orientation to Sector 4 beamlines and laboratories

Sector 4 is operated by the Magnetic Materials Group of the X-ray Science Division

# “Safety First” and “Stop authority” principles

## Safety First

- No work we do is so important that it needs to be done without assuring that proper safety measures are in place

## Stop Authority

- If you see work or actions that may put you or others at risk you have the obligation to *stop the work* and bring the situation to the immediate attention of your local contact and/or the floor coordinator.
- If you are asked to stop work, you must do so.

# Emergencies

- In case of an emergency Dial 911 using any ANL phone (or 630-252-1911 when using a cell phone)
- If possible, have someone available to direct emergency personnel to the exact location.
- Then, and only then, should you consider the use of a fire extinguisher.
- Emergencies include Injuries, Fire, Water leaks, Electrical shock, laser exposure



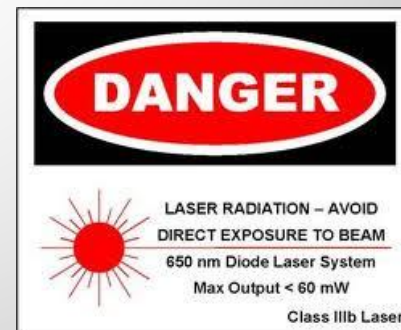
# Safety equipment

- A Class ABC Fire extinguisher is located along 4ID-C at column 76 under the jib crane.
- A shower/eyewash station is located in lab E030.



# RESTRICTED AREAS

- At Sector 4 you may encounter restricted access areas such as laser and magnet enclosures
- These areas may be entered only if you have the **required training and authorization**. You must adhere to all posted entry requirements.



# PEDESTRIANS

Pedestrians in the experiment hall share the walkways with a variety of motorized/moving vehicles (e.g., forklifts, scissor lifts, and tricycles). Pedestrians must exercise caution and **look in both directions before stepping into a walkway from the laboratory/office modules or beamline areas.**



- The sector 4 tricycle is available for your use. Please use the combination lock (5406) and relock after use.
- Watch your speed when operating the sector 4 tricycle.

# HOISTING AND RIGGING

- You may use the hoist located in 4ID-D only after completing APS Chain fall Hoist Training (APS21111).
- The required PPE (goggles, leather gloves) is available outside 4ID-D.



# ENCLOSURES (“HUTCHES”)

- You are not allowed to be inside an experiment station (“hutch”) with the doors closed.
- If you find yourself inside a locked station you can deactivate shutter permit and open the doors by depressing emergency buttons located along the wall
- When your activities involve significant hazards you are not permitted to work alone.
- If you will be working alone conducting non-hazardous activities, it is good practice to inform your local contact that you will be doing so.





# SEARCHING ENCLOSURES

4ID-D only

- A "Search and Secure" must be conducted before beam will be allowed into the station.
- Only ONE person can conduct a search and secure at a time.
- You will be taught how to conduct a Search and Secure by a beamline representative.



# RADIATION SAFETY

- Configuration controls serve to protect personnel from radiation exposure.
- These components are marked by red tags and **MUST NOT** be moved or modified.



# Personnel safety system (PSS)

- The PSS is the interface to the beamline x-ray shutters and active shielding Components (hutch doors)
- Each experiment station has a PSS screen allowing you to control shutters (open/close) in the Sector's stations.
- Note that accidentally knocking the User enable key out of position will disable shutter operation.
- PSS faults have to be cleared by the Floor coordinator



# Sector Utilities: Water

- The main water valves for 4-ID-B/D beamlines are located behind the 4ID-D station. These valves are for emergency use only.
- 4ID-C cooling water is supplied by a chiller located on the roof of the 4-ID-A station.



# Electrical equipment

At APS you are NOT allowed to use electrical equipment that has not undergone inspection by a Nationally Recognized Testing Laboratory (NRTL) or an ANL/APS Designated Electrical Equipment Inspector (DEEI)

If you plan to bring home made electronics or electrical equipment that has not been Inspected and tagged by an NRTL please ship your equipment **AHEAD OF YOUR EXPERIMENT** and have your local contact coordinate an inspection with an APS/DEEI.

In addition, the following activities are prohibited:

- Rewiring of plugs, cables, or any other electrical equipment
- Connecting and Disconnecting motor cables with power on.

Circuit breakers for 4-ID-C and 4-ID-D beamlines are located at columns 76 and 77. Additionally, subpanels are located outside each enclosure and along 4ID-C.

# Equipment protection system

The EPS system monitors beamline vacuum, water flow, temperature, and valve position.

Vacuum valves are controlled within this system.

EPS failures such as vacuum or water trips are handled by your local contact.



# Gas cylinders

- Gas cylinders are stored in the gas yard between sectors 4 and 5.
- The key for the gas storage locker is located in a key box in LOM laboratory E020.



# Radioactive samples

- Restrictions apply to shipping samples in and out of APS.
- Restrictions apply for sample containment during experiment
- Restrictions apply for sample access during experiment
- Restrictions apply for unattended experiments off hours

See:

[http://www.aps.anl.gov/Safety\\_and\\_Training/Hazardous\\_Materials/RadioactiveSamples.html](http://www.aps.anl.gov/Safety_and_Training/Hazardous_Materials/RadioactiveSamples.html)



# Sample preparation facilities

- Located in the wet lab 431/E030
- Users are responsible for cleaning up sample preparation area and all tools used.
- It is your responsibility to remove samples from the facility at the end of your experiment.



# Liquid Helium

- Users are responsible for liquid helium charges. If your experiment requires liquid helium, please contact the user office to set up an account.

# Shipping of samples

- Users are responsible for any shipping charges incurred for the return of equipment or samples. Please provide your preferred carrier and account number to your beamline host. Argonne shipping requires material data safety sheets for any hazardous samples.

# Off hours support

- Between 10:00 pm and 6:00 am, only urgent support calls to your local contact.
- Floor coordinators are on site until 10:00 pm and can be paged at 2-0101.
- Additional information is available at <http://www.aps.anl.gov/Sectors/Sector4/home/>