

Sector 29 Orientation

Magnetic Materials Group, XSD

“Safety-first” and “Stop work 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 Work Authority

- If you see work or actions that appear unsafe, you have the authority and 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

- For emergencies, call:
 - **911** (from any ANL phone)
 - **630-252-1911** (from any cell phone)
- Emergencies include Injuries, Fire, Water leaks, Electrical shock, laser exposure
- In the case of a fire, leave the building using the nearest exit. Do NOT attempt to use fire extinguishers unless you have received appropriate training
- Tornado shelters are located in the men/women bathroom

Safety Equipment

- Fire extinguishers can be located by the identifying signs
- Again, do not use fire extinguishers unless you have received training to do so
- Cryogenic PPE equipments (masks, gloves) are located in the PPE cabinet by the 29ID-C (ARPES) end-station.
- Safety goggles can be found in multiple places along the beamline (clean room, main toolbox, electrical bench).



Restricted Areas

- 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.



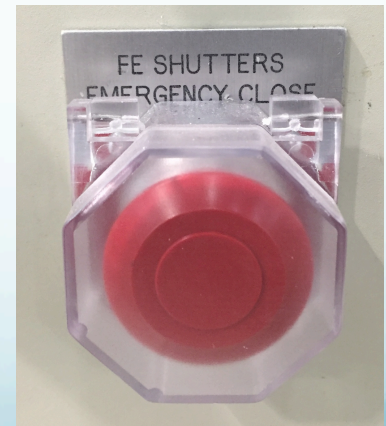
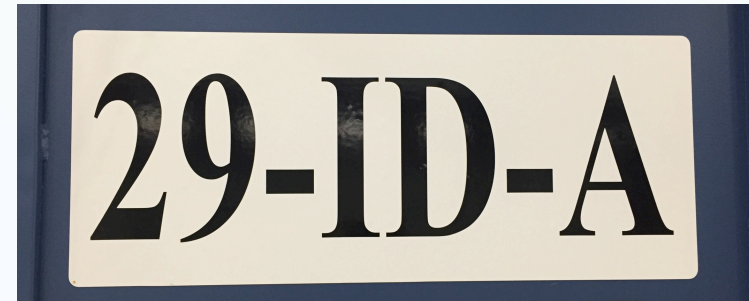
Pedestrians

- Pedestrians in the experimental hall share the walkways with a variety of motorized/moving vehicles (e.g. forklifts, scissor lifts, tricycles). Pedestrians must exercise caution and look in both directions before stepping into a walkway from the laboratory/office module or beamline areas.
- The sector 29 tricycle is available for your use. Please use the combination lock (2601) and relock after use.
- Each tricycle in the APS belong to a specific sector/group. Please be respectful, do not use anyone else's.
- Watch your speed when operating the sector 29 tricycle.



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
- 29ID only consists of a single hutch (29-ID-A). You should never have to open the A hutch unless otherwise instructed by beamline personnel.



Radiation Safety

- The entire beamline vacuum vessels are under configuration control which serve to protect personnel from radiation exposure.
- These components are marked by red tags and MUST NOT be moved or modified.
- As a rule thumb, you should never modify any of the vacuum components unless otherwise instructed by beamline personnel.



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



Electrical Equipment

At the 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)

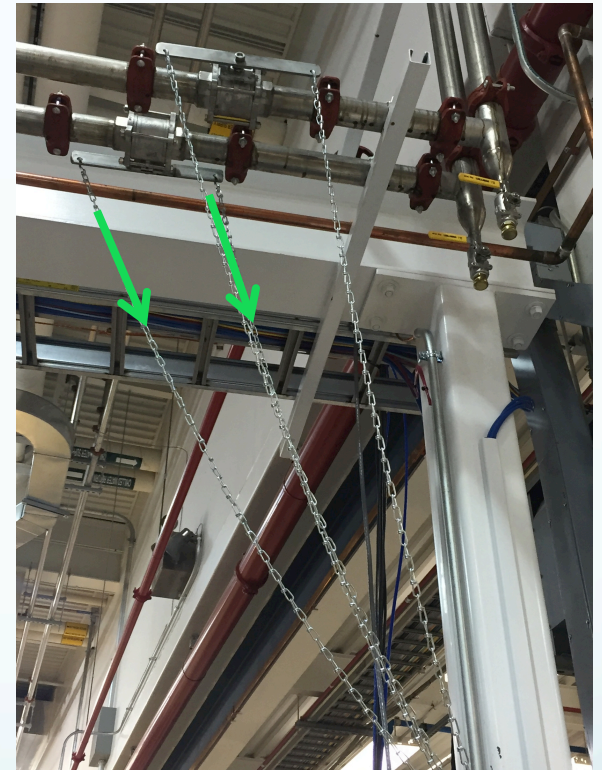
If you plan to bring homemade electronics or electrical equipment that has not been inspected and tagged by an NRTL please send your equipment AHEAD OF YOUR EXPERIMENT and have your local contact coordinate an inspection with an APS/DEEI.

In addition, the following activities are prohibited:

- Rewiring electrical plugs and pre-existing cables
- Connecting and Disconnecting motor cables with power on.

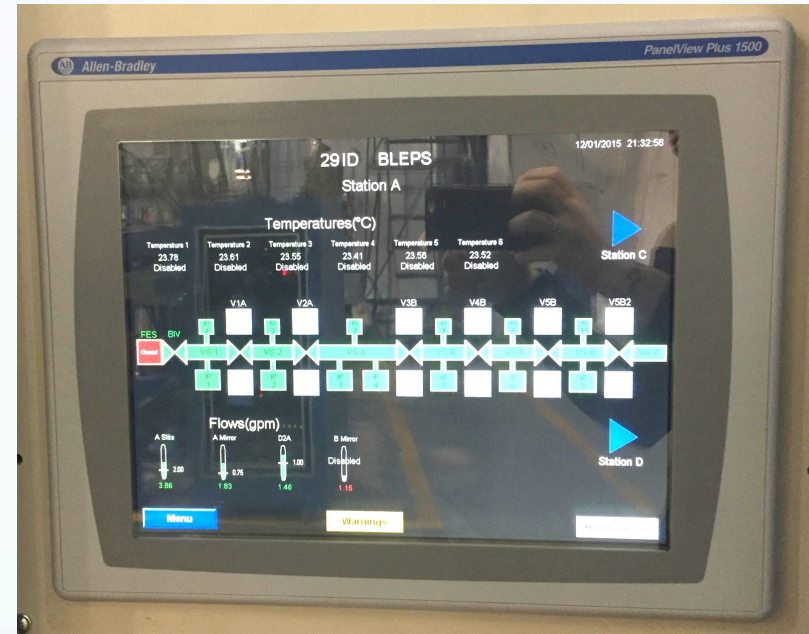
Sector Utilities: Electricity & Water

- The main water valves for 29ID-C and -D branches are located above the 29ID-C (ARPES) end-station (behind column 152). These valves are for emergency use only.
- Circuit breakers for the beamline are located at column 152. Additionally, subpanels are located along the beamline.



Equipment Protection System (EPS)

- 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 30 and 31.
- Please contact a beamline representative for access and replacement of gas cylinders or dewars (LN/LHe).



Shipping policy and Transport of Samples

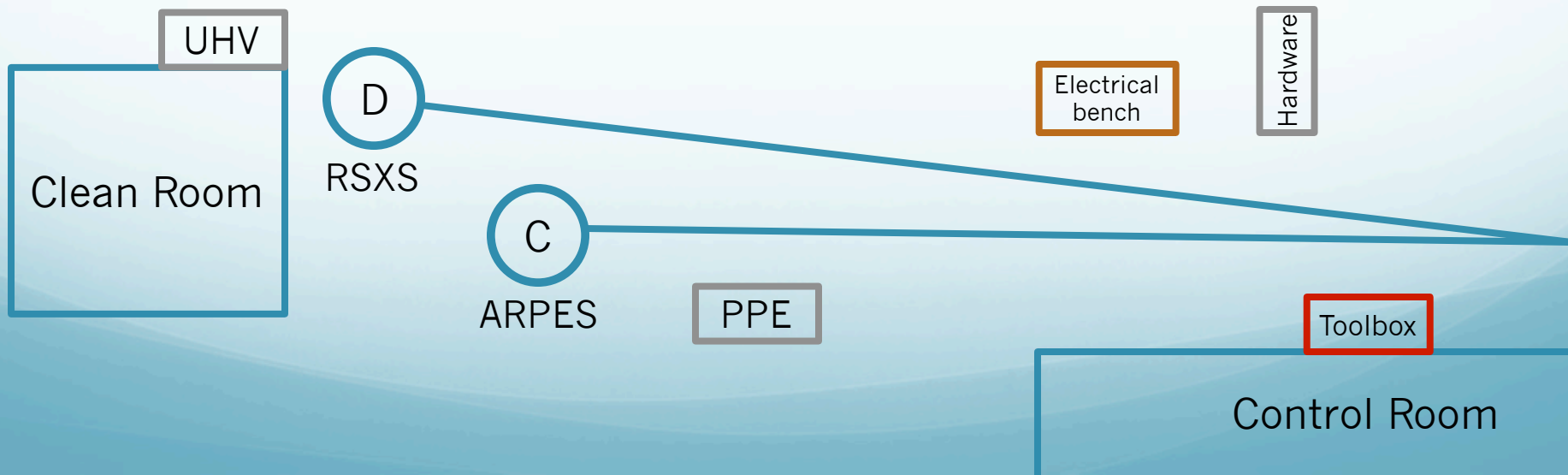
- Users are required to comply with U.S. Department of Energy, Argonne National Laboratory, and APS requirements for inbound and outbound shipping.
- In general, users are not permitted to either transport hazardous material on the Argonne site or arrange for shipment directly to the APS. Hazardous materials must be processed through Argonne's hazardous materials receiving area. Special provisions apply for small-quantity exceptions and biohazards.
- The APS User Experiment Safety Coordinator, Bruce Glagola is available for guidance and assistance (glagola@aps.anl.gov, 630-252-9797)

For more information see:

http://www.aps.anl.gov/Users/Become_A_User/Before_You_Arrive/Arrange_for_shipping.html

Housekeeping & supplies

- 29-ID consists of two branches for which user groups can overlap:
 - Please put away all tools and equipment when you are done using them. See beamline schematic below for equipment locations.
 - Keep all work surfaces clear so that others can use it.
- Keep all the egress aisles (marked by yellow tape) clear of obstruction

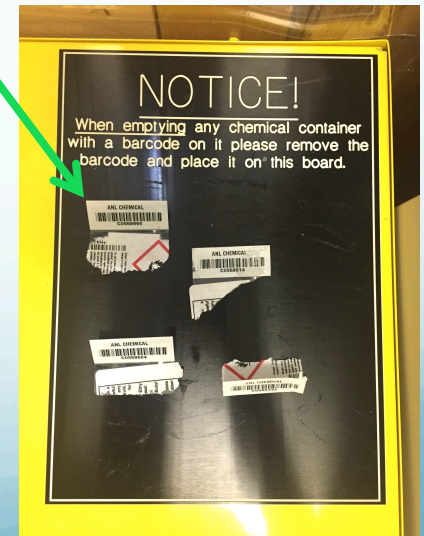
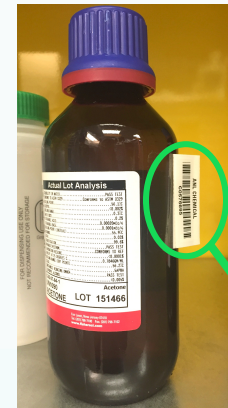


Clean Room Policies: UHV

- Both end-stations operates in the UHV range. Therefore, all of the clean room tools and hardware are for **UHV use only** and should be handled and kept as such.
- Avoid contamination:
 - Degrease and clean all components and tools.
 - **Always wear clean gloves:** a single fingerprint can contain 10^{18} molecules, more than 1 to 10 million times the total number of molecules in a typical vacuum chamber.
 - If you touch any non-UHV object (flanges, wrench, bolt, pen, notebook...), be sure to either carefully wipe your gloves with ethanol or change them.
- Use good UHV practices. If you are unsure what that means, make sure to discuss it with beamline personnel.

Clean Room Policies: Chemicals

- Ethanol and acetone are available for use in the clean room. They must be stored in the chemical cabinet.
- If you empty a bottle, please tape its tag onto the chemical custody board, and let beamline personnel know so that it can be replaced. Place empty bottle in a cardboard box labeled “fragile” beside the trash.
- All chemicals/materials must be labeled! Label all beakers/containers with your name and their contents.
- Chemical waste must be disposed of properly. Please do NOT pour chemicals down sinks. Speak with your local contact for proper disposal.



Working off-hours and/or alone

- 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.
- If you are not comfortable performing a task by yourself or feel that you do not have the appropriate training for it, please hold off and contact your local contact or the floor coordinator.
- Working overtired is never a good idea and leads to more mistakes than good scientific data, especially when working with complex UHV system in which opening the wrong valve at the wrong time can cause the system to be out of service for more than a week, impacting both your beamtime and those of the next groups of users.

Off-hours Support

- We request that you only call during off-hours (10pm – 6am) if you are in need of urgent support or have an urgent issue that must be resolved immediately.
- Floor coordinators are on-site until 10:00 pm and can be paged at 2-0101.
- After 10:00 pm, you can call the Control Room (24/7) at 2-9424.
- Additional information is available at <http://www.aps.anl.gov/Sectors/Sector29/>

Before you leave...

- Users are responsible to clean up before leaving!
 - Do not leave without your samples; we take no responsibility for samples left behind. If necessary, speak with your local contact to arrange shipments of samples/materials.
 - Please clean up any workspaces used in the laboratories and return any equipment/tools when finished.
 - Sector 29 provides users with an office in 437/D008. Please be courteous to others and take all food and belongings with you when you leave.