SAMPLE MANAGEMENT

- Samples MUST be checked-in upon arrival with Sample Management Staff prior to beam exposure. (Outside of normal business hours, make arrangements for sample check-in with Instrument Staff).
- Samples and/or equipment CANNOT be removed from ORNL without approval.
  - "Hand Carry" and "Authorized Limits Evaluation for Clearance" forms are required.
  - Check with Local Contact, other Instrument Staff, or an Instrument Hall Coordinator (IHC) to ensure requirements for removal are met.

INSTRUMENT AREA ORIENTATION

Work Areas at the Instrument

- Workbenches are located on the CORELLI mezzanine for use by staff and Users. Be aware of activities going on. Discuss all work with Instrument Staff before proceeding, especially if it requires use of more than simple hand tools (e.g. screwdrivers, Allen wrenches).
- Nitrile gloves are located to the right of the workbench closest to the Sample Room. Extra safety glasses and leather gloves are located in the tan cabinet next to the roof access ladder.

Radiological Controls

- CORELLI has one User-accessible Radioactive Materials area in the Sample Room, located on the CORELLI mezzanine.
  - Unescorted access to this area requires successful completion of Radiological Worker Training and is controlled by an interlocked instrument personnel protection system.
  - Access to this area is prohibited when the shutter is open.

Cadmium

- CORELLI utilizes cadmium metal for shielding. It is toxic and should only be handled with gloves.
- Any stray pieces of cadmium or unidentifiable metals should be stored in labeled containers or immediately reported to Instrument Staff or the IHCs.

Cryogens

- Many of the sample environments used at CORELLI utilize cryogens. Safety glasses should be worn while in the vicinity of cryogen containers in case of accidental spillage or venting.
- Only trained ORNL personnel may perform cryogenic operations.

Other Areas

- Users should not attempt to access these "off-limits" areas without staff escort:
  - CORELLI Detector Vessel Chamber (as well as the vessel itself) located under the mezzanine
  - Chopper access staircase located along the side of the CORELLI beamline
- Under no circumstances should Users attempt to access the CORELLI roof.
  - Use of the roof access ladder requires training and safety checks must be in place.

INSTRUMENT OPERATIONS

Instrument Personnel Protection System (IPPS)

- The IPPS is an engineered system designed to prevent personnel exposure to ionizing radiation.
- A sequence of actions defined by procedure is executed to ensure that controlled areas with potential for elevated radiation levels are clear of personnel while the primary shutter is open. This procedure must be executed successfully to open the primary shutter.
- User operation of the CORELLI IPPS requires training by an Instrument Staff member (conducted as part of instrument-specific training).
- Following training, please refer to the job aid posted at the IPPS panel.

Sample Handling at the Instrument (Post Irradiation)

- Users may not place any samples in the beam that have not been approved on the Experiment Safety Summary. DO NOT place an unapproved sample in the neutron beam!
- Properly screen all samples removed from beam with the RadEye™G as demonstrated in radiological worker training.

- If RadEye™G alarms during sample screening,
  - DO NOT move the sample, and
    Contact Radiological Control Technician (RCT) immediately.
- If RadEye™G does not alarm,
  - Place the sample in the corresponding container/bag affixed with the ITEMS label,
  - Apply an adhesive "Caution Radioactive Material" label to the sample container/bag, and
  - Place the sample in the white plastic 'Out' bin located on top of the blue workbench.
- Contact RCT immediately if a sample, cell, or can is suspected to have been compromised.
- Following beam exposure, powder and liquid sample containers cannot be opened without additional review. Arrange for review through Local Contact. DO NOT open them yourself!

RESPONSE TO ABNORMAL CONDITIONS AND ALARMS

- Emergency exit door is located next to the large Experiment Hall roll-up door, visible from the bottom of the CORELLI mezzanine staircase.
- Nearest fire alarm pull box is located next to the Sample Environment cage, visible from the bottom of the CORELLI mezzanine staircase.

	EVACUATION (Fire)—Go outside immediately! Meet at Assembly Point under bridge. Listen for additional instructions to return.
	TAKE COVER (Tornado)—Go to basement! From the Experiment Hall, go out the door located between the bathroom and the Sample Environment cage and follow the stairwell down to the basement.
	SHELTER IN PLACE – Stay inside! If outside, go immediately to the nearest building. Remain indoors until additional instructions are issued.
	RADIATION ALARM (Magenta beacon)—Leave instrument area immediately! Go to Instrument Hall Coordinator (IHC) Office. Do not return until cleared by the IHCs.
	OXYGEN DEFICIENCY ALARM (Blue beacon)—Leave instrument area immediately! Go to Instrument Hall Coordinator (IHC) Office. Do not return until cleared by the IHCs.

EXPERIMENT REVIEW

- The "Experiment Safety Summary" identifies any additional hazards and defines controls specifically for your experiment. Review this primary tool for hazard communication carefully prior to signing! Discuss any questions or concerns with Instrument Staff.
- Follow sample environment-specific steps for placing samples in the neutron beam. These steps will be described to you by Sample Environment Staff or Instrument Staff during training.

Electrical Safety

- Users are not authorized to work on or near any exposed, energized electrical circuits or parts!
- All User electrical equipment must be NRTL-approved, or approved by SNS Electrical Equipment Inspector. If you are unsure if equipment has been approved, alert Instrument Staff immediately.

Experiment Monitoring

- Questions about your experiment should be addressed to your Local Contact or other Instrument Staff during normal work hours or the Instrument Hall Coordinators after work hours.
- Web sites available for monitoring experiment as well as the accelerator status are:
  - Data monitoring for CORELLI: https://monitor.sns.gov/dasmon/corelli/runs/
  - SNS operating status: http://status.sns.ornl.gov/index.jsp