*Updated 20190604*

**Emergency Response Guidelines (ERG)**

All experiments taking place under the guidance of the Small Experiment Readiness Review process and approval, are required to submit, in addition to the Conduct-of-Operations (COO), Experiment Safety Assessment Document (ESAD) and, Radiation Safety Assessment Document (RSAD), a document that summarizes the location of major hazards in the area(s) where the experiment is taking place, the location of the various emergency systems as well as emergency procedures and egress routes to be used during that experiment: the Emergency Response Guidelines (ERG) – this document. Shift personnel and anyone else wishing access during the duration of the experiment, must read and sign to indicate they have understood the COO, ESAD, RSAD and ERG of the experiment. Isotope production takes place in the Low Energy Recirculator Facility (LERF). Anyone feeling in doubt with the information contained in the ERG should contact the person responsible for the LERF Safety Awareness training and schedule guided refresher training.

***The LERF building***

The LERF building has three levels. A ground level entrance, the Accelerator enclosure or **Vault** located below ground (shown as First Floor on the attached drawings) and a second floor with a Control Room, various laser labs and support services (e.g. power supplies).

***Purpose***

Familiarize users with safety hazards and protection systems in the LERF.

***Prerequisites to access the Vault without escort***

ES&H Orientation (SAF100)  
Rad Worker I Training or equivalent (must have been issued a dosimeter by JLab) ODH training (SAF103)  
General Access Radiological Work Permit [RWP] (SAF801kd)  
FEL Safety Awareness (SAF143kd)

***Reminder***

* **Access to the Vault and some locations of the 2nd -floor require wearing a Radiation Dosimeter**
* **No one under 18 years may enter the Vault**
* **No food or drinking inside the Vault**
* **Check postings at the entrance to the various enclosures** (e.g. long pants may be

required, special training). ***If in doubt, please contact the LERF Geographic Coordinator or his/her designee,***

James Coleman [x-7312, pager: (757) 5847312, email: colemanj@jlab.org ]

Check that all work or test set ups follow the work controls indicated in the ESH&Q manual (http://www.jlab.org/ehs/ehsmanual/index.html) and on the supplemental Physics Division Work Planning Guidance (http://www.jlab.org/div\_dept/physics\_division//work\_guidance\_final.pdf). **If in doubt, consult the LERF Safety Officer (Harry Fanning), the Physics Division ESH&Q coordinator (B. Manzlak) or the Physics Division Safety Officer (E. Folts).**

***Undergraduate Students in the Vault***

Regardless of task, undergraduate students doing work in the Vault must follow the two-person rule during their first three-months at JLab. During that period, undergraduate students are allowed to work in the Vault if (a) their work in the Vault is always under the supervision of an authorized ``buddy’’ (the ``buddy’’ can not be another undergraduate) and, (b) a permanent JLab staff member is cognizant of the work to be done, has supervisory responsibility for their work and approves the ``buddy’’.

**Appendix A**

This appendix lists likely hazards, protection & emergency systems used and emergency procedures to be reviewed during the LERF Safety Awareness walkthrough.

Hazards:

* Fire (electrical equipment, breaker panels, paper, trash, cables)
* Tripping and overhead hazards
* Falling hazards
* Elevated work
* High-pressure systems including low-conductivity water distribution
* Radiation hazards (beam-on, contaminated and activated areas)
* Loud noise hazards (thin vacuum windows)
* Flammable gasses
* Cryogenic (ODH and “cold-bite”)
* Magnets and magnetic fields
* Electrical

o AC & DC (various voltages)  
o Magnet power supplies and their current distribution systems o High-Voltage supplies

Protection & Emergency systems and procedures:

* Signs and postings,  
  o Radiation areas

o Hearing protection requirements o Exit signs  
o Exit routes (evacuation plans)  
o Oxygen Deficiency Hazards

* Personnel Protection Requirements (e.g. hardhat, safety glasses, ...)
* First Aid kit and Emergency Defibrillator
* Telephone locations with emergency numbers
* Fire

o Detection systems o Alarm pull boxes o Fire alarm bells  
o Extinguishers

o Evacuation routes and muster points

* Electrical

o Power shutoff switches

o Circuit breaker panels

* Weather related hazards

o Tornado emergency response

* Emergency lights
* Beam status, interlock and abort  
  o Machine State Status Indicators, o Magenta/purple beacons,  
  o Access doors to hall  
  o Key interlocks  
  o Run/Safe boxes
* Oxygen Deficiency Hazard condition detection

o Sensors locations

o Blue beacons & alarms locations

* Radiation Monitors (Controlled Area Radiation Monitors – CARMs)
* Radiation Control Group staging areas for equipment to be removed from hall
* Red beacons for hazards (e.g. energized magnets and cranes)
* Yellow beacons for warning or caution (e.g. energized lasers, forklifts)
* Cabinets for storing flammable materials
* Lockout/Tagout Stations
* Eye wash stations





