



Environmentally Speaking

University of Georgia
Environmental Safety Division

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Coming Soon—a Specific Emergency Operations Plan for You by Dena Roth, Program Specialist for Emergency Operations

Written emergency operation plans tend to be one-size fits all. Although the “all hazard” approach assumes that emergencies are handled in a similar way, there are still emergency situations that are specific to your department/division or building.



A series of emergency operations plan modules have been developed that utilizes the “all hazard” approach, but allow for specifics and are designed to be user-friendly for people who do not respond to emergencies on a routine basis.

The basic module is for the classroom/office. It contains emergency information for:

- Fires
- Severe weather and natural disasters
- Accidents, serious injuries, or illness
- Utility failures
- Hostage or criminal behavior
- Bomb threats

Other modules that have been developed or are being developed are:

- Animal research and care
- Biologicals
- Chemicals
- Hotels
- Health clinics
- Information technology/computer systems
- Sporting venues

The modules allow users to identify refuge areas for severe weather, outside meeting places for building evacuation, and the location of certain types of emergency supplies; to create phone trees and after-hours call lists; and provide for special circumstances such as emergency planning information for people with disabilities. The modules are designed to be user-friendly in a checklist format and easy to revise by simply replacing the checklist or information page that has changed without having to discard the entire module.



If I have met with you previously, I will be getting in contact with you to arrange a time to meet again and bring copies of the plan. If you are interested in more information for your area, please contact me at (706) 369-5625 or by email at droth@esd.uga.edu.

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Chemical Questions?

Need some quick information on a chemical? Check out the NIOSH Pocket Guide to Hazardous Chemicals at <http://www.cdc.gov/niosh/npg/npg.html>. In a REAL hurry? Go straight to the chemical name index at <http://www.cdc.gov/niosh/npg/npgdname.html>. Need a Material Safety Data Sheet (MSDS)? There are more than a dozen MSDS search sites available at <http://www.esd.uga.edu/rtk/msds.html>.

Time to brush up on your chemical specific Right to Know training? Every employee who is exposed to hazardous chemicals during their work activities is required to have chemical specific training each year.

On-line chemical specific training

is available at <http://www.esd.uga.edu/rtkcs/> for lab workers and at <http://www.usg.edu/ehs/training/chemical> for any employee. Round out your training by discussing specific chemical hazards (available from chemical container labels, MSDS, the NIOSH Pocket Guide to Hazardous Chemicals, and other sources) and emergency procedures with your supervisor; document your training using the form provided at the end of the online training course, and you’re done! Be sure to file the training form with your other training or personnel files; and any time a new chemical is introduced into your work area, simply discuss the hazards with your supervisor and add it to the list for subsequent annual refresher training.

Summer Workers Coming Soon!

If new staff will be joining you for the summer, remember to include safety training during their orientation. If you have a number of new employees coming in, this might be a good time to review safety topics with all employees, including the experienced staff and the new hands.



Everyone needs to know emergency procedures, including:

- Who to notify and how to notify them
- Location and use of fire extinguishers
- Location and use of first aid kits
- How to report an accident or injury
- The Right to Know material covered during initial orientation

Depending on their duties and work environment, employees may also need to know:

- Location of Material Safety Data Sheets
- Chemical or biological safety procedures
- Safe operation of equipment or machinery
- Choosing, using, and maintaining protective clothing and equipment
- Use of eyewashes, safety showers, and fire-blankets
- Signs and relief of heat stress
- Safe lifting procedures
- Safe operation of a vehicle

Give us a call if we can assist you in helping to get your new employees off to a safe start!



What's New in Right to Know?

The University Right to Know program is changing. Environmental Safety Division Project Coordinator Bob Wentworth has taken on coordination of Right to Know activities.

If you work with chemicals, you need chemical specific Right to Know training as required by the State of Georgia. Lab workers may receive this training by visiting www.esd.uga.edu/rtkcs. Any employee can receive training at <http://www.usg.edu/ehs/training/chemical/>. The online course will qualify as either initial RTK chemical-specific training or annual refresher training. In either case, be sure to also discuss with your supervisor the specific hazards and safety precautions for the hazardous materials in your specific workplace.

Questions? You can reach Bob at (706) 542-5801 or rwentworth@esd.uga.edu to request MSDS binders, chemical specific Right to Know training, or other services related to Right to Know.

While you're at it, check out some videos! The Environmental Safety Division video library includes tapes on hazardous materials management, safety in the arts, back safety, pesticides, grounds keeping, etc. You can view a complete listing and order form at <http://www.esd.uga.edu/info/pub/vlibrary.pdf> or on page five of this newsletter. These are free for your use.

Upcoming Safety Courses at Training & Development

For online catalog and registration forms go to the Training & Development website: www.busfin.uga.edu/staff/

Radiation Safety Training

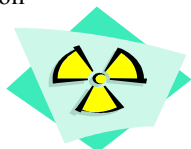
If you have authorization to use radioactive materials, please attend these programs in the order listed below. Questions? Contact Dennis Widner, health physicist, at (706) 542-0526 or dwidner@esd.uga.edu.

Module 3: Radioisotope Acquisition and Disposition

May 23, 1:30–3:30 p.m.

Module 5: Dosimetry

May 30, 1:30–3:30 p.m.



Solid and Hazardous Waste Management

This course will cover the smart and legal way to identify, store, transport, and dispose of hazardous waste. It will also register you in UGA's Hazardous Materials Program and familiarize you with the steps involved in getting hazardous waste removed from your workplace. This class satisfies the initial and annual refresher training requirements mandated by the EPA and DOT.

May 16, 9:00–11:30 a.m.

June 26, 9:00–11:30 a.m.



Questions? Contact Greg Bell, certified hazardous materials manager, by email at gbell@esd.uga.edu, or Judy Harper, administrative secretary, by email at jharper@esd.uga.edu or by phone at (706) 369-5706.

New Radiation Safety Training

The radiation safety office has initiated a new radiation safety training program. It is a modular approach that offers considerable flexibility for different types of radiation users at UGA.

Georgia regulations require that certain individuals have specific training before they are allowed to use radioactive materials or radiation sources. The training should be commensurate with their level of expected radiation exposure.

The modular training system allows users to select only those sessions that will be required for their work. It also prevents them from taking courses which may have little to do with their research or job duties.

The modular approach also introduces radiation safety topics gradually so that a new radiation user, without previous formal training, could take a few modules and begin limited radiation work right away. That person could then take additional modules as their exposure and safety responsibilities increased.

On the other hand, experienced radiation users could take modules as refresher

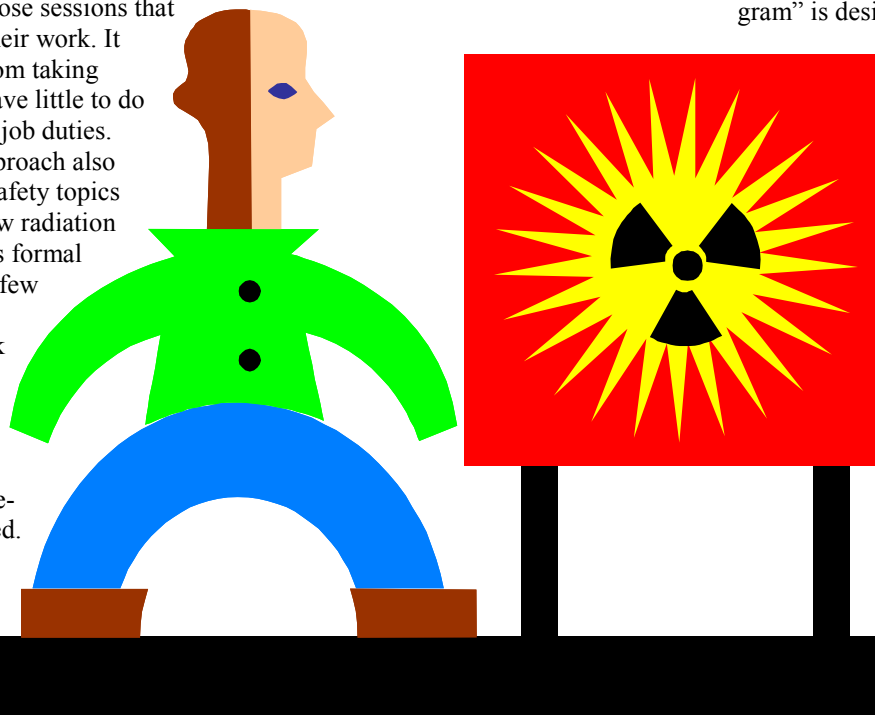
training or to learn the radiation safety procedures at UGA. Since each module requires only 1–2 hours of classroom time and since they are offered frequently, all radiation users can easily remain compliant with UGA and state training requirements.

Here are the modules currently offered by the radiation safety office:

- Module Zero, “Orientation” offers introductory topics on the safe use of radiation at UGA. It also meets or exceeds the minimum training requirements for the State of Georgia.
- Module One, “Safety and Radiation” introduces the theoretical concepts of radiation, radiation risks, and how one

begins to protect him or herself from it, including the proper protective equipment. It also covers some safe handling techniques and how to properly wear a personal dosimeter.

- Module Two, “Basic Radiation Principles” explores the interaction of radiation with matter and why it is so easily detected. Different types of radiation surveys and the instruments used for them are also presented.



- Module Three, “RAM Acquisition and Disposition” is specific to the procedures necessary at UGA to order and safely dispose of RadioActive Material (RAM). This is a particularly important module since there is considerable paperwork and other regulatory concerns with receiving and shipping RAM.

- Module Four, “In-Lab Verification of Training” moves from the classroom into the laboratory where the student may demonstrate their practical radiation safety knowledge. It is also used to “test out” of modules 1–3 or to verify the training of a user with experience from another institution.

- Module Five, “Dosimetry” provides numerous techniques and rules-of-thumb for students to estimate the radiation dose they may receive while performing their own procedures. This training is especially useful for principal investigators to classify their lab workers and to inform them of their level of risk in working on their projects.

- Module Six, “Laboratory Safety Program” is designed to help principal investigators create and maintain robust radiation safety programs for their laboratories and projects. The PI has considerable responsibility for the radiation safety of project workers, thus Mod 6 covers the documentation, records, and other regulatory requirements necessary to remain compliant with UGA and Georgia regulations.

- Modules Seven and beyond are created as necessary to meet specific radiation safety training needs. These are topical

courses covering various radiation sources such as x-ray machines, sealed sources, irradiators, etc.

Please visit the new and improved radiation safety office web page at www.esd.uga.edu/rad to view the modules and sign up for training. All courses are taught at the UGA Training and Development Center.

It is the hope of all radiation safety office staff that we have provided a convenient and informative training program. The cost in time and money (all RSO modules are free) to attend these sessions are so minimal that we invite all of you to attend Module Zero and learn how safe radiation use at UGA is. Until then, remember that time, distance, and shielding are the three keys to radiation safety.

Laboratory Safety Review, Part II by Wes Kolar, Environmental Safety Specialist

Part I of the Laboratory Safety Review dealt with the proper function of fume hoods, safety showers, and eye washes. In this article we will take a closer look at additional safety equipment including first aid kits, spill kits, peroxide-forming chemicals, flammable liquid storage, and hazardous waste labeling and storage.



Spill Kits

While most laboratories are equipped with general spill kits, not all kits are appropriate for the chemicals that are employed in a given lab. For instance, many labs do not have enough spill control supplies present to handle large spills. If the potential exists in your laboratory for a chemical spill in excess of one gallon, you may need to keep extra absorbent materials on hand, such as a large bag of kitty litter. If you routinely use strong acids and bases, then neutralizing material should also be kept with your spill control supplies. Sodium bicarbonate is particularly useful as a neutralizer as it can be used on either acids or bases.

First Aid Kits

The Laboratory Safety Manual (Section 2.III.P) requires that each laboratory be equipped with a well stocked first aid kit. The manual, however, leaves it up to each individual laboratory to determine what supplies are needed for the kit. Most laboratory first aid kits contain little more than bandages and tape.

While these basic supplies are fine for many applications, they are inadequate for most laboratories. It is up to each laboratory to decide what materials are needed for a given first aid kit. For instance, laboratories that routinely employ hydrofluoric acid should be supplied with an HF spill kit including: 1) a cold, dilute solution of benzalkonium chloride, and 2) calcium gluconate paste. For additional information on putting together an HF burn treatment kit, please contact the author at wkolar@esd.uga.edu. Laboratories where phenol is routinely employed should keep polyethylene glycol on hand to treat exposure injuries after they have been rinsed with copious amounts of water. It is a good idea to look through a first aid supply catalog in order to determine what supplies are needed for an individual lab.

Peroxide-Forming Chemicals

Many laboratories routinely use peroxide-forming chemicals such as anhydrous ether, tetrahydrofuran, 1,4-dioxane, cyclohexene, isopropyl ether, potassium metal, and sodium amide. These chemicals can become more dangerous if stored in a lab beyond their intended time period due to the formation of potentially explosive peroxides. Peroxide-forming chemicals should be stored in a lab for no more than three months to one year depending on the substance in question. A more complete list of peroxide-forming chemicals along with storage guidelines is given in Appendix I of the Laboratory Safety Manual, <http://www.esd.uga.edu/chem/pub/append-I.pdf>. Additional information on peroxide-forming chemicals is also available from the author at wkolar@esd.uga.edu.

Flammable Liquid Refrigeration

When it is necessary to refrigerate flammable liquids (those liquids that have an NFPA flammability rating of 3 or 4), either a flammable material storage refrigerator or an intrinsically safe refrigerator must be used.

Either type of refrigerator is approved for the storage of flammable materials. Intrinsically safe refrigerators have the added advantage of being safe even when they are placed in potentially explosive environments. Household refrigerators should never be used to store flammable materials as this practice has resulted in explosions.

Hazardous Waste

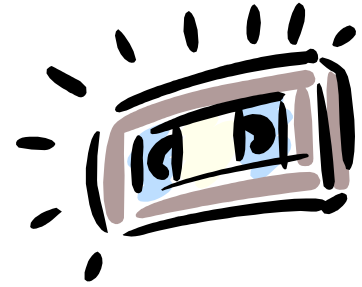
Chemical waste that is flammable, toxic, reactive, or corrosive must be properly labeled and stored. Labeling requirements include the phrase "Hazardous Waste" along with the accumulation start date and a clear indication of the contents of the container. Hazardous waste must be stored in a container that is appropriate for the contents. Finally, waste must be segregated according to compatibility (e.g., don't store acid wastes with basic wastes). Failure to follow the guidelines for waste labeling and storage can result in a notice of violation from the Environmental Protection Division and may also result in fines. Hazardous waste pickups are free for the UGA research community. To qualify for waste pickups, at least one person from each laboratory must have completed the "Solid and Hazardous Waste Management" course that is offered through Staff Training and Development several times a year. For more information on hazardous waste management, please contact Brian Adams at the UGA Hazardous Materials Treatment Facility (369-5706).

Part III of the Laboratory Safety Review series will look more closely at equipment safety and record keeping requirements in UGA laboratories. Until then, let's work together to ensure the safest possible laboratories at the University of Georgia.



Safety Videos Available

The Environmental Safety Division has a library of safety videos which can be borrowed free of charge by University employees. Call us at (706) 542-0113 or place a checkmark by the videos you wish to borrow and return this completed page to us. Videos can be borrowed for up to two weeks or longer, if necessary; they can also be reserved for upcoming training classes you might be conducting. Please let us know if you have any special training needs so that we can look for particular safety topics for future video purchases. For a description of each video, including its length, go to our website: www.esd.uga.edu/info/pub/vlibrary.pdf.



Art Safety:

Health Hazards and the Visual Arts

Chemical and Laboratory Safety:

- Hazardous Chemical Waste Management in the Laboratory
- Chemical Storage Hazards
- Chemical Hazards
- A Place for Everything: Chemical Storage in the Laboratory
- Practicing Safe Science
- The Keys to Laboratory Safety
- Introduction to Reactive and Explosive Materials
- Radio Nuclide Hazards
- Science—Live to Tell About It
- Glassware Washing Hazards
- Centrifugation Hazards
- Fume Hood Test and Training
- Safety Showers and Eyewashes
- All Washed Up
- Safe Handling of Laboratory Glassware Whose Job Is It Anyway
- Laboratory Fume Hood Safety
- Assessing Risks of Toxic Chemicals
- Flammables and Explosives
- Mammalian Cell Culture Hazards
- X-Ray Diffraction Hazards
- Controlling Your Risks—HIV in the Research Laboratory
- Working with HIV Safely in the Laboratory
- Preventing Contamination
- Get Your Checklist Ready—A Guide to Lab Safety Inspections
- Laboratory Safety: Potential Hazards II
- Ether Removal at Mercer Univ. Reactives/Explosives, AETC
- Hazardous Materials
- Lab Safety

Driver's Safety:

- Just Another Saturday Night
- Breaking the Accident Chain of Events
- Night Driving

Emergency Procedures:

- Tornado—Nature's Fury
- Chernobyl—Legacy of a Meltdown

- Emergency Response
- Preparing for a Crisis on Campus
- An Orientation to Community Disaster Exercises
- Bioterrorism and Mass Casualty presentation; UGA; 10/31/01

Fire Safety:

- Fire Safety in the Lab
- Fire Escape—Getting Out Alive
- How Fast It Burned
- Ready to Respond

Gas Cylinders:

- Gas Cylinders—Welding, Cutting, and Brazing
- Compressed Gases Can Be Dangerous; An Explosion Case History
- Handling Compressed Gas Cylinders
- Gas Cylinders—Overview

General Safety:

- Salmonella—The Enemy Within
- The Invisible Killer—Carbon Monoxide
- Confined Spaces—Silent Killer
- Self Help for Back Pain
- Return to Work for Employees
- Return to Work for Supervisors
- Star Witness—Accident Reporting
- Safety in the Workplace
- Science of Cause & Avoidance

- Good Safety is Good Business
- How to Investigate an Accident
- Documentation of Safety Efforts
- Ergonomics—Taking Matters into Your Own Hands
- Ergonomics—Your Body at Work
- Near Misses
- It Only Takes a Second
- Minimizing Back Strain on the Job
- VDT and Workstation Ergonomics

Operations and Maintenance:

- Pesticide Safety—Worker Protection (English/Spanish version)
- Summer Groundskeeping
- Groundskeeping Safely—Be a Pro
- Bloodborne Pathogens Safety—Custodians

Right to Know/Hazard Communication:

- Cracking the Code
- Material Safety Data Sheets
- MSDS—Roadmap to Safety; Read the Label
- Your Right to Know
- Right to Know—Administrators and Trainers Guide
- Your Right to Know and MSDS—Roadmap to Safety

Name _____	Date Requested _____
Department _____	
Room No. _____ Building _____	
Mailing address (if off-campus) _____	
Phone _____	E-mail _____

Outlying Facilities Make Strides Toward Improved Safety

Bill Favalaro
Environmental Safety Coordinator
Support and Outreach for the
Outlying Facilities



When I began to work with the outlying facilities six months ago, I could not have imagined the tremendous progress I would see in such a short time. The outlying facilities, which primarily include the extension and experiment facilities located in Griffin, Tifton, Brunswick, Sapelo, and Skidaway, have greeted me with uncompromising support and a strong commitment to safety. We have worked together to solve many concerns and are striving daily to make the existing programs better. New programs are being developed to assist the facilities in support of a safer environment with better regulatory compliance.

Recently the Coastal Plains Experiment Station in Tifton held a “Safety Week,” which was an entire week dedicated to safety issues. The program was a big success. My compliments to Dr. David Wilson and Dr. David Riley for creating a strong and successful safety week program. I will continue to encourage other facilities to have a safety week each year in order to promote improved

safety and regulatory compliance.

Additional thanks to Jim Graham for being the driving force in the effort to have a “mock” EPD inspection performed at the Tifton facility. The inspection was another indication of the Coastal Plains Experiment Station’s commitment to improve safety and has already given many a better understanding of regulatory compliance issues and laboratory management.

Special thanks to Joe Gardner in his support of work related to respiratory certification for workers at the Mountain Research and Education Center in Blairsville. Respiratory protection is one of the issues I am currently working on in an effort to see improved respiratory safety at all locations.

Thanks to all the outlying locations for their continued support as we strive to make the workplace safer and more environmentally sound. Let me know if I can help you in any way. I can be contacted at (706) 369-5706, or by email at wfavaloro@esd.uga.edu.

Kudos

- Thanks go to Deans Anderson, Buchanan, Mace, Oie, Patel, and Prasse—as well as many others—who met with division staff to discuss the 2001 laboratory inspection reports.
- Our appreciation to Dr. Michael Pierce, Chemical and Laboratory Safety Committee chair, for his assistance in addressing laboratory inspection concerns.
- Kudos to Rachelle Lehner and the staff of UGA Housing for a great series of safety-emphasis training sessions during April and May.
- Thanks to Jay Toci for his efforts in engaging ESD in the risk management arena.
- Congratulations to ESD staffers Charles Meaders, Brian Adams, and Jeff Shirey for completing the Hazmat Technician course at the Georgia Institute of Technology.



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