

Laboratory Security

University of Tennessee Safety Policy LS-004

Document Contact: EHS
Date effective: May 1, 2017
Revision Date: July 24, 2017

Purpose

This document shall provide standards for laboratories with respect to the security of equipment, property, and hazardous materials.

Scope and Applicability

This standard addresses security for work with hazardous substances (including biological agents) and export control. Personal safety and security is not specifically covered in this document.

This document shall apply to students, staff, and faculty in laboratories that contain hazardous materials or for labs that fall under the campus Export Control Program.

Abbreviations and Definitions

Abbreviations

CFATS: Chemical Facility Anti-Terrorism Standard -from the Department of Homeland Security

EHS: Environmental Health and Safety

PI: Principal Investigator

Definitions

Responsible Unit: department head, research center director, facility supervisor or college as appropriate.

Policy Statement (Roles and Responsibilities)

Environmental Health and Safety shall:

- Review and revise this policy and guidance when necessary.
- Disseminate information regarding this document through appropriate channels of campus communication.
- Consult on the topic of laboratory security upon request. This role may be delegated by EHS to the UT Police Department or appropriate responsible unit.

Responsible unit shall:

- Ensure that appropriate facilities and equipment are available to meet the security requirements.
- Ensure that any security concerns or occurrences are communicated to the appropriate campus entities.
- Ensure that principal investigators (PIs) and/or laboratory supervisors carry out their roles and responsibilities.

Laboratory Supervisors and Principal Investigators shall:

- Ensure students and employees are oriented to the relevant components of this guide and how they are applied in assigned lab spaces.
- Ensure students and employees follow this guide.
- Report any incident involving theft, unauthorized entry, vandalism and similar events to the UT Police Department.
- Be responsible for establishing security procedures for the laboratory

Employees that work in laboratories shall:

- Participate in any orientation or training related to lab security
- Be familiar with the basic security requirements for the lab in which they work
- Report any deficiencies or breaches in security to the lab manager or PI

Guidance

See attached appendices for additional guidance

References**University of Tennessee, Environmental Health and Safety (Safety Manual) Documents**

LS-030 Controlled Substances for Research

LS-021 Chemicals Requiring Approval for Use

EC-004 Chemical Inventories

Training

General security shall be covered with new students, faculty, and staff during orientation. Appendix A may be used to fulfill this objective.

Recordkeeping

There are no specific recordkeeping requirements for this policy outside of standard training recordkeeping.

Appendices

The following appendices should be used as guidance for planning specific security needs and orientation.

Appendix A: General Guidelines for Laboratory Security

Appendix B: Specific Guidelines for Laboratory Security

Appendix C: Working Alone (Lab Safety Manual excerpt)

Disclaimer

The information provided in these guidelines is designed for educational use only and is not a substitute for specific training or experience.

The University of Tennessee Knoxville and the authors of these guidelines assume no liability for any individual's use of or reliance upon any material contained or referenced herein. The material contained in these guidelines may not be the most current.

This material may be freely distributed for nonprofit educational use. However, if included in publications,

written or electronic, attributions must be made to the author. Commercial use of this material is prohibited without express written permission from the author.

Appendix A:

General Guidelines for Laboratory Security

1. Ensure entry doors are locked at the end of the shift. Noted that labs under the Radiation Safety program require the doors be locked anytime a lab is unoccupied
2. Individuals who do not routinely work in the lab are encouraged to wear identification (e.g. name badge), or make their identity known upon entry.
3. Lab staff should question any unrecognized individual who enter the lab
4. Don't provide access codes or keys to individual who are not authorized to be in the lab.
5. Report any security breaches to the next higher level of authority (supervisor, department head) and UT Police as soon as possible.
6. Working alone, especially after normal business hours, is addressed in the Lab Safety Manual available from Environmental Health and Safety (see "Appendix C: Working Alone" of this document for an excerpt).
7. Ensure containers are properly labeled.
8. Chemical inventories must be updated according to the UTK-EHS Procedure "Chemical Inventories" (at least once per year). See the Safety Manual for details.

Security surveys are available upon request from campus police.

Appendix B:

Specific Guidelines for Laboratory Security

Security Measures for Controlled Substances

There are extensive security requirements for labs that contain controlled substances.

Broad categories of security include recordkeeping, controlled access, licensing, background checks, and reporting security breaches. Consult safety policy LS-030 (Controlled Substances for Research) found in the online safety manual for detailed security measures related to this area.

Security Measures for Radioactive Materials

The Radiation Safety Department is the primary contact for required security measures under this section and can be contacted at 865-974-5580. Security measures required for radioactive materials must meet the basic regulatory security requirement which states that radioactive sources must be secured from unauthorized access. The university is required to maintain security of sources at all times. Radioactive sources must either be locked up, or under the supervision of a trained radiation worker. A trained radiation worker is a person who is current with the required radiation safety training module which authorizes them to work with the type of radiation source in question.

Security Measures for Biohazards, Including Select Agents

The Biosafety Officer is the primary contact for required security measures under this section and can be contacted at 865-974-1938. Security measures associated with biohazards include:

1. Infectious agents categorized as Risk Group 2 (or higher) must be secured. Security measures include lockable storage devices, locked laboratory doors (when personnel not present), card/code-restricted areas/zones, or combination thereof. Stringency may vary based on the agents, regulatory requirements, or other special considerations identified by safety and security risk assessments.
2. Storage devices located in unlocked/unrestricted common areas shall be locked and appropriately labeled with biohazard signage and contact information.
3. Biological materials under regulatory permit (e.g. USDA, CDC, etc.) must be secured according to the specified permit provisions.
4. DHHS/USDA select toxins under the de Minimis threshold quantity must be secured in a locked container (refrigerator, freezer, cabinet, etc.), which is maintained in a secured laboratory or storage area. An inventory must be maintained by laboratory personnel. SOPs for toxin amounts, use, and storage/security must be approved by the Institutional Biosafety Committee (IBC).
5. DHHS/USDA select agents and toxins (exceeding de Minimis threshold quantity) are subject to a comprehensive plan inclusive of equipment, laboratory, building, and campus security measures. This plan will be developed by the Biosafety Office in collaboration with campus security authorities. The plan must be approved by the IBC and federal authorities as applicable.
6. Wastes containing biological hazards from any of the above must remain within the control of the laboratory or approved personnel until it has been inactivated and/or disposed in accordance with biological waste disposal requirements.

Security Measures for Export Control

The Export Control Officer is the primary contact for required security measures under this section and can be contacted at 865-974-0232. Security measures associated with export control include:

1. Follow the conditions of the Technology Control Plan (TCP) for the respective project. Be aware of the list of approved project personnel.
2. Work locations require a clearly defined perimeter, which is adequate to protect against oral and visual disclosure of the export control-listed materials. This is generally but not always a locked area.
3. Export controlled materials and activities should be restricted to approved project personnel, to prevent inadvertent disclosure that would be in violation of export control laws.
4. Secure export control-listed materials in a locked storage container when not in the personal possession of approved project personnel. Keys or combinations may only be issued to approved project personnel authorized on the TCP.
5. Export controlled data and information should be stored and used on computers that have been security hardened for export control. Keep screens locked, and computers secured, when not in use. Contact OIT or your department IT staff for security hardening

Security Measures for Substances Covered by the Department of Homeland Security, Chemical Facilities, Anti-terrorism Standard (CFATS)

The campus Safety Officer is the primary contact for required security measures under this section and can be contacted at 865-974-5084. Currently there are no substances on the CFATS list on campus that exceed the threshold levels of having a security plan.

Environmental Health and Safety will continue to review the chemical inventory and purchases made through the primary chemical supplier to identify lab that might fall under this program.

Note that the chemicals covered by the CFATS program are included in the Chemicals Requiring Approval (LS-021) policy found in the Safety Manual. This applies to substances with a threshold of 100 lbs. or less.

Security Measures for Chemicals Requiring Approval

It's recognized that certain substances above threshold quantities and concentration are highly hazardous. Additional review and approval is necessary for these substances. EHS will evaluate labs that contain twice the threshold quantity for the Chemicals Requiring Approval list, which is found in policy LS-021 (Chemicals Requiring Approval) found in the safety manual.

Security of Class IV Laser Systems and X-ray Producing Devices

Class IV laser systems and x-ray producing devices should be secured from unauthorized use. This can be achieved by maintaining security of the room, or by more localized methods of securing the machine itself.

Managing Security Breaches or Thefts

The following should be performed in the event of a security breach

1. Contact UT Police immediately
2. Notify the lab manager, and PI and department head. or PI and the department head
3. Secure the area to the extent feasible to prevent contamination of the crime scene
4. Collect and document information regarding the event

Managing Unusual Occurrences

Unusual occurrences should be reported to your supervisor, UT Police, and safety department. Examples include:

- A situation where someone known or unknown is inquiring about the security of a laboratory, or has unusual questions regarding the activities or hazards that may occur in a laboratory.
- Situations where seemingly innocuous property such as glassware, gas compressors, or other lab ware goes missing.
- Situations where you suspect a security breach even if nothing appears stolen or compromised.

In general, if you encounter a situation that you feel is unusual, you should report it.

Appendix C:

Working Alone

Whenever possible, laboratory personnel should avoid working alone when conducting research, especially when experiments involve hazardous substances and procedures. Laboratories should establish specific guidelines and standard operating procedures specifying when working alone is not allowed and develop notification procedures when working alone occurs. See section 12.10.5 “Prior Approval”.

If a laboratory worker determines it is necessary to work alone, consideration should be given to notifying someone else in the area – in an adjacent room, another lab on the same floor, or a lab on a different floor. It is recommended that a “buddy system” be established for regular, routine checks on personnel working alone, such as every 15-30 minutes, to ensure that no accidents have occurred. This could be accomplished by physically walking to the room where the lab worker is or through the use of a phone. A system of visual checks should be established to indicate there are no problems or to determine if help is needed.

Please note: For rooms that are locked due to security needs, prior arrangements need to be made to allow the designated buddy access. However, please be aware that Emergency Responders may not always have access to locked doors – which could result in a delay in response in the event of an emergency. Also understand that if the door to the lab does not have a window, or if the window is covered, then there is a chance that if something happened to a person working alone in a locked lab, then they may not be discovered until someone else from the lab goes into the room (which could be a day or more).

Examples of activities where working alone would be permissible include:

- Office work such as writing papers, calculations, computer work, and reading.
- Housekeeping activities such as general cleaning, reorganization of supplies or equipment, etc., as long as no moving of large quantities of chemicals is involved.
- Assembly or modification of laboratory apparatus when no chemical, electrical, or other physical hazards are present.
- Routine lab functions which are part of a standard operating procedure which has been demonstrated to be safe and not involve hazardous materials.

Examples of activities where working using a “buddy system” should be considered include:

- Experiments involving toxic or otherwise hazardous chemicals, especially poison inhalation hazards.
- Experiments involving pyrophoric chemicals
- Experiments involving high-pressure equipment
- Experiments involving large quantities of cryogenic materials
- Experiments involving work with unstable (explosive) materials.
- Experiments involving Class 3b or 4 LASERS
- Transfer of large quantities of flammable materials, acids, bases, and other hazardous materials
- Changing out compressed gas cylinders containing hazardous materials.

(Excerpted from the UTK-EHS Lab Safety Manual; retrieved July 24, 2017)