

## SAFETY & COMPLIANCE SURVEY GUIDELINES FOR LABORATORIES

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### Introduction

Safety & compliance surveys represent one of the most important elements in the implementation of an effective occupational health and safety program. The importance of auditing is underscored in UNL's Injury and Illness Prevention Plan, which requires supervisors to conduct regular work area safety inspections. The benefits and purposes of conducting safety & compliance surveys are listed below:

- Identify uncontrolled hazardous conditions, processes, and work practices that may lead to injury, illness, or prohibited releases to the environment.
- Serve as a communication tool by which responsible individuals are made aware of the potentially hazardous processes, conditions, or work practices and appropriate control measures.
- Identify regulatory risk by assessing compliance with various regulatory standards.

The checklist and information provided below is not meant to cover every possible hazard that may exist in a laboratory, but rather as an abridged guideline to assess hazardous conditions and operations common to laboratories. Labs are encouraged to add additional inspection items as appropriate, based on past inspections, accident or near miss analysis, unique facility/equipment attributes, etc.

Many of these topics are covered in the EHS Virtual Manual. If you do not know how to access the Virtual Manual for your work location, consult your supervisor. If you are interested in receiving training that explains in more detail each of the items listed below, please contact EHS.

If the answer to any item is "No" corrective action should be implemented immediately. Contact EHS for guidance on corrective actions if you are unsure of how to address or correct the identified safety or compliance issue.

**Safety and Compliance Lab Self-Audit Checklist**

| <b>Compliant</b>                 |           |            | <b>Survey Item</b>  |
|----------------------------------|-----------|------------|---|
| <b>Yes</b>                       | <b>No</b> | <b>N/A</b> |   |
| <b>Chemical Safety</b>           |           |            |   |
|                                  |           |            | Entrances to areas where hazardous chemicals are stored are identified with a laboratory door placard and the hazard placard is legible and accurate. ( <i>Contact EHS if new door postings are needed.</i> )   |
|                                  |           |            | An accurate inventory of hazardous chemicals stored or used in the area is available.   |
|                                  |           |            | Employees are aware of how to access Safety Data Sheets (SDSs) for hazardous chemicals that are stored or used in the area.   |
|                                  |           |            | Chemical containers, including compressed gas cylinders, are adequately labeled (labels are present, legible, and complete).  |
|                                  |           |            | Chemicals are stored in a safe and proper manner. (e.g., segregated by compatibility, only necessary cylinders are stored in the lab, flammable liquids are stored in rated cabinets or flammable liquid refrigerators, volumes of chemical stored are smallest feasible and keep spill scenarios to < 20 L, etc.).                           |
|                                  |           |            | Chemicals that may become hazardous upon prolonged storage are dated, have been tested at the appropriate interval, and have not been stored for an excessive period of time. (See EHS SOP: <b>Use And Storage Of Peroxide-Forming Chemicals</b> at <a href="http://ehs.unl.edu/sop/">http://ehs.unl.edu/sop/</a> for additional information) |
|                                  |           |            | Quantity of chemicals outside of storage cabinets is as little as feasible.   |
|                                  |           |            | There is no evidence of food/drink consumption (e.g., wrappers, gum, drink containers, etc.) in the areas where chemicals are used or stored.   |
|                                  |           |            | Fire extinguishers are present, of the appropriate class, accessible, fully charged, mounted in their intended cabinet or bracket, and have been inspected within the last year.  |
|                                  |           |            | Emergency shower and/or eyewash are immediately available, accessible, and operable in areas where chemicals are used that can have an adverse health effects. Eyewashes and showers have been tested regularly. ( <i>Weekly for eyewashes and at least yearly for showers.</i> )   |
|                                  |           |            | Adequate and appropriate chemical spill supplies are readily available.   |
| <b>General Electrical Safety</b> |           |            |   |
|                                  |           |            | Power strips and extension cords are plugged directly into a permanently installed electrical outlet.   |
|                                  |           |            | Extension cords are restricted to temporary use. Multi-plug adapters are not used.  |
|                                  |           |            | Electrical cords are protected from damage and/or are in good repair.   |
|                                  |           |            | Unused openings in electrical cabinets, boxes, and fittings are closed with appropriate covers, plugs, or plates.   |



| Compliant                         |    |     | Survey Item  |
|-----------------------------------|----|-----|--|
| Yes                               | No | N/A |  |
|                                   |    |     | Equipment and/or outlets are enclosed to protect against shock or electrocution.   |
|                                   |    |     | Ground Fault Circuit Interrupters (GFCI) are installed on outlets/circuits in damp/wet locations. Outlets in damp/wet locations are protected by water-tight housings.   |
|                                   |    |     | Power strips are UL or FM approved, and used solely for low power applications.  |
|                                   |    |     | Electrical equipment (includes appliances) are UL or FM approved and have not been altered in a manner that compromises the UL or FM approval.   |
|                                   |    |     | Three feet of clearance is maintained in front of electrical panels or breaker boxes; emergency shut-off controls to equipment are not blocked/inaccessible.   |
| <b>Compressed Gas Cylinders</b>   |    |     |  |
|                                   |    |     | Toxic, corrosive or pyrophoric gases are used/stored in a fume hood or gas cabinet.  |
|                                   |    |     | Compressed gas cylinders are properly restrained.  |
|                                   |    |     | Tubing, regulators, and other ancillary compressed gas cylinder equipment are in good condition and appropriate for the intended use.  |
|                                   |    |     | Valve caps are replaced when cylinders are not immediately in use.   |
| <b>Ventilated Cabinets</b>        |    |     |  |
|                                   |    |     | Fume hood and/or Biosafety Cabinet certification is current (< 1 year); and certification sticker is present and legible.  |
|                                   |    |     | Fume hood and/or Biosafety Cabinet is being used in a manner consistent with its design (e.g., not cluttered); has not been compromised (e.g., structural components removed, holes drilled in the structure, etc.). |
|                                   |    |     | Heated perchloric acid operations are restricted to a wash-down hood designed for this operation.  |
|                                   |    |     | Fume hood is not used for chemical storage (other than items requiring a ventilated enclosure).  |
|                                   |    |     | Fume hood sash is closed except when immediately working at the hood and then the sash is closed at least to the indicated working height to provide worker protection and containment.                              |
| <b>Hazardous Waste Management</b> |    |     |  |
|                                   |    |     | Waste containers are appropriately labeled (chemical name and indication that the material is no longer useable for its intended purpose). Only abbreviations appearing on the SDS are used.                         |
|                                   |    |     | Collection containers are in good condition and compatible with the contents.  |
|                                   |    |     | Collection containers are securely closed when not immediately being filled.   |



| Compliant   |    |     | Survey Item  |
|---|----|-----|--|
| Yes   | No | N/A |  |
|   |    |     | Volumes of waste in storage does not exceed satellite accumulation limits (55 gallon or one quart of P-listed) and are stored in the same area where generated.  |
|   |    |     | Chemical waste is disposed via EHS unless it has been approved for disposal via the sanitary sewer (See EHS SOP, <b>Sewer Disposal List</b> ).   |
|   |    |     | Abandoned chemicals are not present (e.g., unlabeled, unknown, unwanted, unneeded, etc.).  |
|   |    |     | Solder and Solder contaminated materials are properly collected and tagged for pick up by EHS.   |
|   |    |     | Spill residues/materials, contaminated wipers/rags, bench papers or PPE are properly collected and tagged for pick up by EHS.  |
|   |    |     | Radioactive wastes are stored in a container identified with the name of the isotope, the radiation trefoil symbol, and the words "Caution Radioactive Material."  |
| <b>Personal Protective Equipment (PPE) and Lab Attire</b> |    |     |  |
|   |    |     | Personal protective equipment is available, accessible, consistently used by employees, appropriate for the operation(s) conducted, correctly sized and properly maintained.   |
|   |    |     | Standard attire (clothing and/or footwear) is appropriate for the lab (e.g., covers the torso and legs, close-toed shoes, non-melting fabric if there is potential for fire, etc.).  |
|   |    |     | Respirators are used only by persons currently enrolled in EHS's Respiratory Protection Program.   |
| <b>Laboratory and Engineering Controls</b>                |    |     |  |
|   |    |     | Sharps are properly managed (e.g., stored in a rigid, leak-proof, labeled container to prevent accidental contact/injury). Contaminated sharps are appropriately decontaminated or collected for disposal.   |
|   |    |     | General housekeeping is observed in the lab. Work surfaces are routinely decontaminated in biological labs. Effective pest management is observed.   |
|   |    |     | Means of egress (e.g., stairwells, exit doors, and common paths leading thereto) are maintained free of all obstructions or impediments to full instant use in case of fire or other emergency; and are not used for storage of combustible materials. |
|   |    |     | 18" of clearance is maintained in all directions from sprinkler heads. 24" of clearance is maintained from the ceiling in non-sprinkled spaces.  |
|   |    |     | Fire alarm pull stations and fire strobes are unobstructed.  |
|   |    |     | Furnishings and equipment is stable, designed for the intended load, and used/secured in a manner to prevent injury.   |
|   |    |     | Engineering controls are available, appropriate, effective, and consistently used.   |



| Compliant                                       |    |     | Survey Item   |
|---|----|-----|---|
| Yes   | No | N/A |   |
|   |    |     | The integrity of all building systems (e.g., electrical, HVAC, plumbing) are intact and not compromised.  |
|   |    |     | Machines and equipment have sufficient and/or proper guarding to prevent injury.  |
|   |    |     | Handwashing sink is available and handwashing supplies (soap, towels, hand sanitizer, etc.) are available.  |
| <b>Administrative and Other Safety Concerns</b> |    |     |   |
|   |    |     | Room is authorized for current use of registered/licensed material.   |
|   |    |     | All persons have completed appropriate safety training.   |
|   |    |     | Written safety procedures are available and complete (e.g., Virtual Manual/Chemical Hygiene Plan, Biosafety Manual, and lab-specific written protocols as appropriate/applicable) and employees know how and where to access plans and protocols.   |
| <b>Basic Biosafety</b>                          |    |     |   |
|   |    |     | Disinfectant containers are appropriately labeled (name, mfg./received date, and expiration date). Expired disinfectants are not in use.  |
|   |    |     | A biohazardous spill kit is available and appropriately stocked. Spills and contaminated surfaces and equipment are cleaned and decontaminated appropriately.   |
|   |    |     | Biohazardous waste is properly and appropriately decontaminated. Waste is properly stored and transported prior to disposal. Autoclaved waste bags are placed in dark trash bags prior to disposal.   |
|   |    |     | Furniture, chairs and other surfaces are easily disinfected. Carpet is not present.   |
|   |    |     | Lab is secure. Doors are closed/locked when lab is unoccupied. Windows that open have screens.  |
| <b>Advanced Biosafety</b>                       |    |     |   |
|   |    |     | A sign incorporating the universal biohazard symbol is posted at the lab entrance when human materials and/or pathogens are present. A restricted access sign is posted for labs working with animal pathogens, plant pathogens and/or plant pests. |
|   |    |     | Vacuum traps are protected with liquid disinfection traps or in-line HEPA filters. Both protections are used if working with HIV or HBV.  |
|   |    |     | Only animals and plants associated with the work are present in the lab.  |
| <b>Additional Items</b>                         |    |     |   |
|   |    |     |   |
|   |    |     |   |



| Compliant |    |     | Survey Item |
|-----------|----|-----|-------------|
| Yes       | No | N/A |             |
|           |    |     |             |
|           |    |     |             |
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|           |    |     |             |
|           |    |     |             |