Saint Louis University Laboratory Inspections

Why Are Inspections Important?

- Ensure a safe work environment for SLU employees, students, and visitors
- Determine compliance with federal, state, and local regulations
  - OSHA, NIOSH, EPA, MoDNR, CDC, USDA, NRC and others
- Identify hazards and areas of concern *before* incidents occur
- Identify corrective actions
- Identify best practices to address concerns
- Lab personnel are encouraged to proactively perform self-inspections

Types of Laboratory Inspections

Inspection	Relevant Laboratories	Frequency
Environmental Safety	All laboratories.	Annually
Biological Safety	Labs using biological agents (BSL-2 agents or higher, recombinant or synthetic nucleic acid molecules (rsNA), or toxins).	Annually
Radiation Safety	Laboratories approved for radioactive materials use.	Quarterly

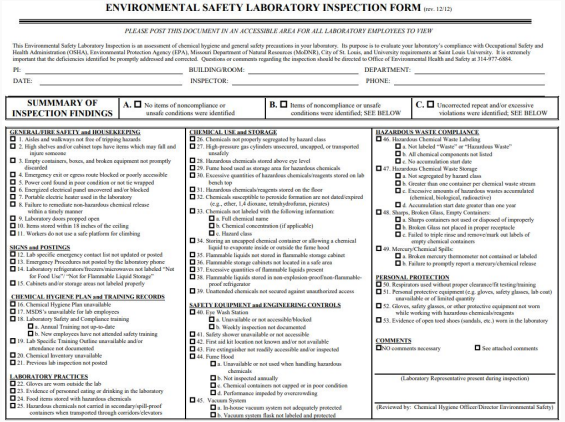
General Safety

All inspections look for common general safety items to ensure safe work practices.

- Training
  - Lab Safety, Lab-Specific (general and biosafety), Radiation Safety
- Personal Protective Equipment
- Engineering controls
  - Biological safety cabinets, fume hoods, compressed gas restraints
- Eyewashes

Environmental Safety Laboratory Inspections

- Performed annually.
- Covers general safety, chemical safety, and hazardous waste.
- Laboratories are expected to make corrections to compliance issues noted during the inspection.



ENVIRONMENTAL SAFETY LABORATORY INSPECTION FORM (rev. 12/12)

PLEASE POST THIS DOCUMENT IN AN ACCESSIBLE AREA FOR ALL LABORATORY EMPLOYEES TO VIEW

This Environmental Safety Laboratory Inspection is an assessment of chemical hygiene and general safety precautions in your laboratory. Its purpose is to evaluate your laboratory's compliance with Occupational Safety and Health Administration (OSHA), Environmental Protection Agency (EPA), Missouri Department of Natural Resources (MoDNR), City of St. Louis, and University requirements at Saint Louis University. It is extremely important that the deficiencies identified be promptly addressed and corrected. Questions or comments regarding the inspection should be directed to Office of Environmental Health and Safety at 314-977-6004.

PI: _____ BUILDING/ROOM: _____ DEPARTMENT: _____

DATE: _____ INSPECTOR: _____ PHONE: _____

SUMMARY OF INSPECTION FINDINGS	A. ☐ No items of noncompliance or unsafe conditions were identified	B. ☐ Items of noncompliance or unsafe conditions were identified; SEE BELOW	C. ☐ Uncorrected repeat and/or excessive violations were identified; SEE BELOW

GENERAL FIRE SAFETY and HOUSEKEEPING
☐ 1. Aisles and walkways not free of tripping hazards
☐ 2. High shelves and/or cabinet tops have items which may fall and injure someone
☐ 3. Empty containers, boxes, and broken equipment not promptly discarded
☐ 4. Emergency exit or egress route blocked or poorly accessible
☐ 5. Power cord found in poor condition or not tie wrapped
☐ 6. Energized electrical panel uncovered and/or blocked
☐ 7. Portable electric heater used in the laboratory
☐ 8. Failure to remediate non-hazardous chemical release within a timely manner
☐ 9. Laboratory doors propped open
☐ 10. Items stored within 18 inches of the ceiling
☐ 11. Workers do not use a safe platform for climbing

SIGNS and POSTINGS
☐ 12. Lab specific emergency contact list not updated or posted
☐ 13. Emergency Procedures not posted by the laboratory phone
☐ 14. Laboratory refrigerators/freezers/microwaves not labelled "Not for Food Use"/ "Not for Flammable Liquid Storage"
☐ 15. Cabinets and/or storage areas not labeled properly

CHEMICAL HYGIENE PLAN and TRAINING RECORDS
☐ 16. Chemical Hygiene Plan unavailable
☐ 17. MSDS's unavailable for lab employees
☐ 18. Laboratory Safety and Compliance training
  ☐ a. Annual Training not up-to-date
  ☐ b. New employees have not attended safety training
☐ 19. Lab Specific Training Outline unavailable and/or attendance not documented
☐ 20. Chemical Inventory unavailable
☐ 21. Previous lab inspection not posted

LABORATORY PRACTICES
☐ 22. Gloves are worn outside the lab
☐ 23. Evidence of personnel eating or drinking in the laboratory
☐ 24. Food items stored with hazardous chemicals
☐ 25. Hazardous chemicals not carried in secondary/spill-proof containers when transported through corridors/elevators

CHEMICAL USE and STORAGE
☐ 26. Chemicals not properly segregated by hazard class
☐ 27. High-pressure gas cylinders unsecured, uncapped, or transported unsafely
☐ 28. Hazardous chemicals stored above eye level
☐ 29. Fume hood used as storage area for hazardous chemicals
☐ 30. Excessive quantities of hazardous chemicals/reagents stored on lab bench top
☐ 31. Hazardous chemicals/reagents stored on the floor
☐ 32. Chemicals susceptible to peroxide formation are not dated/expired (e.g., ether, 1,4 dioxane, tetrahydrofuran, picrates)
☐ 33. Chemicals not labeled with the following information:
  ☐ a. Full chemical name
  ☐ b. Chemical concentration (if applicable)
  ☐ c. Hazard class
☐ 34. Storing an uncapped chemical container or allowing a chemical liquid to evaporate inside or outside the fume hood
☐ 35. Flammable liquids not stored in flammable storage cabinet
☐ 36. Flammable storage cabinets not located in a safe area
☐ 37. Excessive quantities of flammable liquids present
☐ 38. Flammable liquids stored in non-explosion-proof/non-flammable-proof refrigerator
☐ 39. Unattended chemicals not secured against unauthorized access

SAFETY EQUIPMENT and ENGINEERING CONTROLS
☐ 40. Eye Wash Station
  ☐ a. Unavailable or not accessible/blocked
  ☐ b. Weekly inspection not documented
☐ 41. Safety shower unavailable or not accessible
☐ 42. First aid kit location not known and/or not available
☐ 43. Fire extinguisher not readily accessible and/or inspected
☐ 44. Fume Hood
  ☐ a. Unavailable or not used when handling hazardous chemicals
  ☐ b. Not inspected annually
  ☐ c. Chemical containers not capped or in poor condition
  ☐ d. Performance impaded by overcrowding
☐ 45. Vacuum System
  ☐ a. In-house vacuum system not adequately protected
  ☐ b. Vacuum system flask not labeled and protected

HAZARDOUS WASTE COMPLIANCE
☐ 46. Hazardous Chemical Waste Labeling
  ☐ a. Not labeled "Waste" or "Hazardous Waste"
  ☐ b. All chemical components not listed
  ☐ c. No accumulation start date
☐ 47. Hazardous Chemical Waste Storage
  ☐ a. Not segregated by hazard class
  ☐ b. Greater than one container per chemical waste stream
  ☐ c. Excessive amounts of hazardous wastes accumulated (chemical, biological, radioactive)
  ☐ d. Accumulation start date greater than one year
☐ 48. Sharps, Broken Glass, Empty Containers:
  ☐ a. Sharps containers not used or disposed of improperly
  ☐ b. Broken Glass not placed in proper receptacle
  ☐ c. Failed to triple rinse and remove/mark out labels of empty chemical containers
☐ 49. Mercury/Chemical Spills:
  ☐ a. Broken mercury thermometer not contained or labeled
  ☐ b. Failure to promptly report a mercury/chemical release

PERSONAL PROTECTION
☐ 50. Respirators used without proper clearance/fit testing/training
☐ 51. Personal protective equipment (e.g., gloves, safety glasses, lab coat) unavailable or of limited quantity
☐ 52. Gloves, safety glasses, or other protective equipment not worn while working with hazardous chemicals/reagents
☐ 53. Evidence of open toed shoes (sandals, etc.) worn in the laboratory

COMMENTS
☐ NO comments necessary ☐ See attached comments

(Laboratory Representative present during inspection)

[Reviewed by: Chemical Hygiene Officer/Director Environmental Safety]

Environmental Safety Laboratory Inspection Form

GENERAL/FIRE SAFETY and HOUSEKEEPING

- ☐ 1. Aisles and walkways not free of tripping hazards
- ☐ 2. High shelves and/or cabinet tops have items which may fall and injure someone
- ☐ 3. Empty containers, boxes, and broken equipment not promptly discarded
- ☐ 4. Emergency exit or egress route blocked or poorly accessible
- ☐ 5. Power cord found in poor condition or not tie wrapped
- ☐ 6. Energized electrical panel uncovered and/or blocked
- ☐ 7. Portable electric heater used in the laboratory
- ☐ 8. Failure to remediate non-hazardous chemical release within a timely manner
- ☐ 9. Laboratory doors propped open
- ☐ 10. Items stored within 18 inches of the ceiling
- ☐ 11. Workers do not use a safe platform for climbing

SIGNS and POSTINGS

- ☐ 12. Lab specific emergency contact list not updated or posted
- ☐ 13. Emergency Procedures not posted by the laboratory phone
- ☐ 14. Laboratory refrigerators/freezers/microwaves not labeled "Not for Food Use"/ "Not for Flammable Liquid Storage"
- ☐ 15. Cabinets and/or storage areas not labeled properly

CHEMICAL HYGIENE PLAN and TRAINING RECORDS

- ☐ 16. Chemical Hygiene Plan unavailable
- ☐ 17. MSDS's unavailable for lab employees
- ☐ 18. Laboratory Safety and Compliance training
  - ☐ a. Annual Training not up-to-date
  - ☐ b. New employees have not attended safety training
- ☐ 19. Lab Specific Training Outline unavailable and/or attendance not documented
- ☐ 20. Chemical Inventory unavailable
- ☐ 21. Previous lab inspection not posted

LABORATORY PRACTICES

- ☐ 22. Gloves are worn outside the lab
- ☐ 23. Evidence of personnel eating or drinking in the laboratory
- ☐ 24. Food items stored with hazardous chemicals
- ☐ 25. Hazardous chemicals not carried in secondary/spill-proof containers when transported through corridors/elevators

CHEMICAL USE and STORAGE

- ☐ 26. Chemicals not properly segregated by hazard class
- ☐ 27. High-pressure gas cylinders unsecured, uncapped, or transported unsafely
- ☐ 28. Hazardous chemicals stored above eye level
- ☐ 29. Fume hood used as storage area for hazardous chemicals
- ☐ 30. Excessive quantities of hazardous chemicals/reagents stored on lab bench top
- ☐ 31. Hazardous chemicals/reagents stored on the floor
- ☐ 32. Chemicals susceptible to peroxide formation are not dated/expired (e.g., ether, 1,4 dioxane, tetrahydrofuran, picrates)
- ☐ 33. Chemicals not labeled with the following information:
  - ☐ a. Full chemical name
  - ☐ b. Chemical concentration (if applicable)
  - ☐ c. Hazard class
- ☐ 34. Storing an uncapped chemical container or allowing a chemical liquid to evaporate inside or outside the fume hood
- ☐ 35. Flammable liquids not stored in flammable storage cabinet
- ☐ 36. Flammable storage cabinets not located in a safe area
- ☐ 37. Excessive quantities of flammable liquids present
- ☐ 38. Flammable liquids stored in non-explosion-proof/non-flammable-proof refrigerator
- ☐ 39. Unattended chemicals not secured against unauthorized access

SAFETY EQUIPMENT and ENGINEERING CONTROLS

- ☐ 40. Eye Wash Station
  - ☐ a. Unavailable or not accessible/blocked
  - ☐ b. Weekly inspection not documented
- ☐ 41. Safety shower unavailable or not accessible
- ☐ 42. First aid kit location not known and/or not available
- ☐ 43. Fire extinguisher not readily accessible and/or inspected
- ☐ 44. Fume Hood
  - ☐ a. Unavailable or not used when handling hazardous chemicals
  - ☐ b. Not inspected annually
  - ☐ c. Chemical containers not capped or in poor condition
  - ☐ d. Performance impeded by overcrowding
- ☐ 45. Vacuum System
  - ☐ a. In-house vacuum system not adequately protected
  - ☐ b. Vacuum system flask not labeled and protected

HAZARDOUS WASTE COMPLIANCE

- ☐ 46. Hazardous Chemical Waste Labeling
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  - ☐ b. Greater than one container per chemical waste stream
  - ☐ c. Excessive amounts of hazardous wastes accumulated (chemical, biological, radioactive)
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  - ☐ a. Sharps containers not used or disposed of improperly
  - ☐ b. Broken Glass not placed in proper receptacle
  - ☐ c. Failed to triple rinse and remove/mark out labels of empty chemical containers
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  - ☐ a. Broken mercury thermometer not contained or labeled
  - ☐ b. Failure to promptly report a mercury/chemical release

PERSONAL PROTECTION

- ☐ 50. Respirators used without proper clearance/fit testing/training
- ☐ 51. Personal protective equipment (e.g. gloves, safety glasses, lab coat) unavailable or of limited quantity
- ☐ 52. Gloves, safety glasses, or other protective equipment not worn while working with hazardous chemicals/reagents
- ☐ 53. Evidence of open toed shoes (sandals, etc.) worn in the laboratory

COMMENTS

☐ NO comments necessary ☐ See attached comments

(Laboratory Representative present during inspection)

(Reviewed by: Chemical Hygiene Officer/Director Environmental Safety)

Most Common Areas of Noncompliance

1. Chemicals not labeled with the full chemical name, concentration and/or hazard class.
2. Laboratory refrigerators/freezers/microwaves not labeled “Not for Food Use” & “Not for Flammable Liquid Storage”.
3. Flammable liquids stored in non-explosion-proof/ non-flammable-proof refrigerators.
4. Chemicals not properly segregated by hazard class.
5. Vacuum systems not adequately protected with in-line filters.

Environmental Safety Highlights

Broken glass boxes are designed for disposal of clean broken glass, glass bottles that have been tripled rinsed and other sharp glass that is not contaminated. Please triple rinse glassware and mark out or remove labels before disposal in the broken glass box.

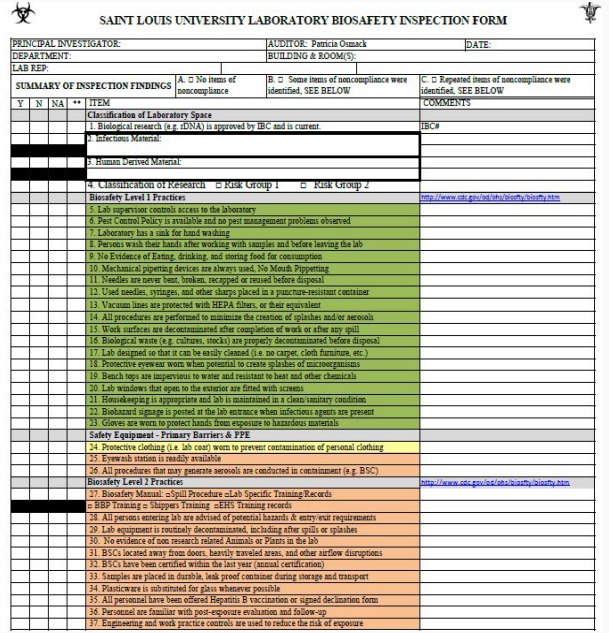
All peroxide-forming chemicals (diethyl ether, picric acid, tetrahydrofuran, etc.) must be dated when received and dated when opened. Please do not open if expired or crystals have formed inside the bottle. Request a chemical waste pickup.

Food and drinks are not allowed inside the laboratory. Each lab should have a designated area to ensure food and drink are not used or stored in the lab.

Minors (< 18 yrs old) are not allowed to access or work in the laboratory without official approval. Consult the EHS Minors in Labs Policy.

Biosafety Inspections

- Performed annually and anytime lab locations or work practices change.
- Required for Institutional Biosafety Committee Protocol approval.
- Typically not announced but are usually performed the same month every year.



SAINT LOUIS UNIVERSITY LABORATORY BIOSAFETY INSPECTION FORM

PRINCIPAL INVESTIGATOR:				AUDITOR: Patricia Osmack	DATE:
DEPARTMENT:				BUILDING & ROOM(S):	
LAB REP:					
SUMMARY OF INSPECTION FINDINGS				A. ☐ No items of noncompliance	B. ☐ Some items of noncompliance were identified, SEE BELOW
					C. ☐ Repeated items of noncompliance were identified, SEE BELOW
Y	N	NA	**	ITEM	COMMENTS
				Classification of Laboratory Space	
				1. Biological research (e.g. rDNA) is approved by IBC and is current.	IBC#
				2. Infectious Material:	
				3. Human Derived Material:	
				4. Classification of Research ☐ Risk Group 1 ☐ Risk Group 2	
				Biosafety Level 1 Practices	http://www.cdc.gov/od/ohs/biosfty/biosfty.htm
				5. Lab supervisor controls access to the laboratory	
				6. Pest Control Policy is available and no pest management problems observed	
				7. Laboratory has a sink for hand washing	
				8. Persons wash their hands after working with samples and before leaving the lab	
				9. No Evidence of Eating, drinking, and storing food for consumption	
				10. Mechanical pipetting devices are always used. No Mouth Pipetting	
				11. Needles are never bent, broken, recapped or reused before disposal	
				12. Used needles, syringes, and other sharps placed in a puncture-resistant container	
				13. Vacuum lines are protected with HEPA filters, or their equivalent	
				14. All procedures are performed to minimize the creation of splashes and/or aerosols	
				15. Work surfaces are decontaminated after completion of work or after any spill	
				16. Biological waste (e.g. cultures, stocks) are properly decontaminated before disposal	
				17. Lab designed so that it can be easily cleaned (i.e. no carpet, cloth furniture, etc.)	
				18. Protective eyewear worn when potential to create splashes of microorganisms	
				19. Bench tops are impervious to water and resistant to heat and other chemicals	
				20. Lab windows that open to the exterior are fitted with screens	
				21. Housekeeping is appropriate and lab is maintained in a clean/sanitary condition	
				23. Biohazard signage is posted at the lab entrance when infectious agents are present	
				23. Gloves are worn to protect hands from exposure to hazardous materials	
				Safety Equipment - Primary Barriers & PPE	
				24. Protective clothing (i.e. lab coat) worn to prevent contamination of personal clothing	
				25. Eyewash station is readily available	
				26. All procedures that may generate aerosols are conducted in containment (e.g. BSC)	
				Biosafety Level 2 Practices	http://www.cdc.gov/od/ohs/biosfty/biosfty.htm
				27. Biosafety Manual: ☐Spill Procedure ☐Lab Specific Training Records	
				☐ BBP Training ☐ Shippers Training ☐EHS Training records	
				28. All persons entering lab are advised of potential hazards & entry/exit requirements	
				29. Lab equipment is routinely decontaminated, including after spills or splashes	
				30. No evidence of non research related Animals or Plants in the lab	
				31. BSCs located away from doors, heavily traveled areas, and other airflow disruptions	
				32. BSCs have been certified within the last year (annual certification)	
				33. Samples are placed in durable, leak proof container during storage and transport	
				34. Plasticware is substituted for glass whenever possible	
				35. All personnel have been offered Hepatitis B vaccination or signed declination form	
				36. Personnel are familiar with post-exposure evaluation and follow-up	
				37. Engineering and work practice controls are used to reduce the risk of exposure	

Biosafety Inspection Form

Classification of Laboratory Space
1. Biological research (e.g. rDNA) is approved by IBC and is current.
2. Infectious Material:
3. Human Derived Material:
4. Classification of Research □ Risk Group 1 □ Risk Group 2
Biosafety Level 1 Practices
5. Lab supervisor controls access to the laboratory
6. Pest Control Policy is available and no pest management problems observed
7. Laboratory has a sink for hand washing
8. Persons wash their hands after working with samples and before leaving the lab
9. No Evidence of Eating, drinking, and storing food for consumption
10. Mechanical pipetting devices are always used, No Mouth Pippetting
11. Needles are never bent, broken, recapped or reused before disposal
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24. Protective clothing (i.e. lab coat) worn to prevent contamination of personal clothing
25. Eyewash station is readily available
26. All procedures that may generate aerosols are conducted in containment (e.g. BSC)
Biosafety Level 2 Practices
27. Biosafety Manual: □Spill Procedure □Lab Specific Training/Records
□ BBP Training □ Shippers Training □EHS Training records
28. All persons entering lab are advised of potential hazards & entry/exit requirements
29. Lab equipment is routinely decontaminated, including after spills or splashes
30. No evidence of non research related Animals or Plants in the lab
31. BSCs located away from doors, heavily traveled areas, and other airflow disruptions
32. BSCs have been certified within the last year (annual certification)
33. Samples are placed in durable, leak proof container during storage and transport
34. Plasticware is substituted for glass whenever possible
35. All personnel have been offered Hepatitis B vaccination or signed declination form
36. Personnel are familiar with post-exposure evaluation and follow-up
37. Engineering and work practice controls are used to reduce the risk of exposure

Common Areas of Noncompliance

- Biological Safety Cabinet not certified within 12 months.
- Eyewash not flushed weekly and recorded.
- Vacuum flasks missing HEPA filters between flask and vacuum source.
- Not wearing appropriate PPE according to biosafety level and eIBC protocol.
- Incorrect disposal of biological waste.
- Sharps not handled/stored/disposed of properly.
- Plants in labs.

Biosafety Inspection Highlights

- Lab-specific biosafety training records for all personnel should be maintained in the research space.
- Training records should be documented on the *Laboratory Training Record* spreadsheet to be attached to the eIBC protocol.

SAINT LOUIS UNIVERSITY

LABORATORY TRAINING RECORD

Principle Investigator(s):			IBC Protocol(s)#:		Location:			
Name	SLU Username	Lab Specific Biosafety Training Date	General Lab Safety Training Date (Annual)	Blood Borne Pathogen Training Date (Annual)	Shipper's Training Date (Biannual)	BSL-3 Training Date (Yearly)	ABSL-3 Training Date (Annually)	Select Agent Training Date (Yearly)

SAINT LOUIS UNIVERSITY

Lab-Specific Biosafety Training Form

This document is to be retained by the Principal Investigator/Lab Group and available to EHS Staff for review. Training dates should be added to the Lab Training Form, which must be attached to the eIBC protocol(s).

Principal Investigator Name(s)/Lab Group: _____

Research Location(s): _____

Researcher Name: _____

Researcher Responsibilities	Initials
1. I agree to read all the eIBC Protocols on which I am listed as personnel. I will also review all updated materials in their entirety as they become available (e.g., amendments and renewals). I acknowledge that I can log into protocols at: http://eibc.slu.edu	
2. I further agree to complete all training required for handling biological agents. • Laboratory Safety & Compliance Training *(every 12 months)* • Bloodborne Pathogen Training *(every 12 months for required personnel)* • Shipper's Training *(every 24 months for those involved in biological agent shipping)* • BSL-3/Select Agent Training *(each calendar year for required personnel)*	
3. I understand the importance of following all the specifications of each eIBC Protocol so that all personnel will be adequately protected from the possibility of contact with the biological agent(s).	
4. I understand that signs and symptoms of an exposure to each biological agent are described in the applicable eIBC Protocol. I agree to immediately report any potential exposures to my supervisor.	
5. I agree to utilize the required personal protective equipment (PPE) detailed in each eIBC Protocol specific to the biological agent(s) that I work with.	
6. I understand the procedures for handling biological spills and releases. I will promptly report any spill/release or other incident involving biological agents to my supervisor and the Biological Safety Officer (314-977-6688)	
7. I agree to strictly follow the decontamination methods specified in the applicable eIBC Protocol(s).	
8. I had the opportunity to ask the named PI questions and have received answers to all my questions.	

General Biological Spill Protocol: It is understood that the following general spill procedures are minimum guidelines to be observed in any laboratory or other research facility in which a biological agent or toxin has been spilled or released.

- Wear gloves and a lab coat. If splashing is possible, also wear eye protection (safety glasses, goggles, or face shield) and a surgical mask.
- Use forceps to pick up broken glass and discard into a SHARPS container.
- Cover spilled material with paper towels.
- Carefully pour appropriate diluted disinfectant (stated in each eIBC Protocol specific to the biological agent) onto the paper towels in sufficient quantity to ensure effective inactivation, making sure you work from the outside of the spill to the inside.
- Allow a 20-minute contact period.
- Pick-up paper towels and dispose in biohazard waste containers.
- Re-wipe spill area with properly diluted disinfectant.
- Place all contaminated materials, including PPE, into biohazard waste containers.
- Wash hands with soap and water.

Important for ABSL-3 and BSL-3 Labs: Do not attempt to clean up spills in these labs. Exit lab as per protocol and contact DPS at 314-977-3000 to report the spill.

Researcher Signature: _____ **Date:** _____

(Revision date: 2023-06-08)

Autoclave Inspections

- Autoclave function must be validated weekly (spore tests) when the autoclave is used to decontaminate waste.
- Autoclave records are checked annually.

Attest™ 1292 Biological Indicator Submission
(3 hour vials)

Date: _____

Autoclave Location: _____

Submitted By: _____

Items Autoclaved:

Water Bottles _____ Tray _____
Cage _____ Test Pack _____
Hard Case _____ Other (specify) _____

Autoclave Cycle Information:

____Pre-Vac ____Gravity ____Liquids
Temperature: _____°F Pressure: _____ psi
Sterilization Time: _____ min. Dry Time: _____ min.

Indicator Reader Location

	Sample ID	Circle Results			Sample ID	Circle Results	
7	_____	Pos	Neg	**10**	_____	Pos	Neg
8	_____	Pos	Neg	**11**	_____	Pos	Neg
9	_____	Pos	Neg	**12**	_____	Pos	Neg

Time Indicator Placed In Reader: _____

Please indicate Sample ID next to position. (e.g., Location, Control, etc.)

Test Finalized:

Date: _____ Time: _____

By: _____

Radiation Safety Inspections

Training: All personnel working with radioactive materials must have completed the Radiation Safety Orientation and passed the associated test

Radionuclide Shipment Log (Green Sheet): must be completed as required including surveys and inventory log

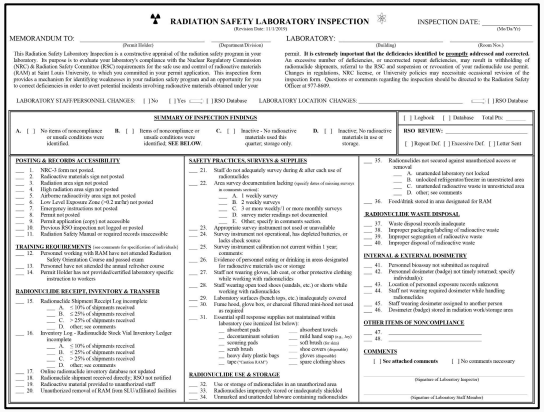
PPE: Appropriate PPE must be worn for the radioactive materials being used. Typically, this includes lab coat, gloves, protective eyewear, and dosimeters if required

Surveys: Survey meter readings (unless H-3 use only, which is not detectable with meter) and wipe tests must be documented weekly. Surveys of personnel and nearby area required following all procedures involving radioactive materials (no documentation required)

Inventory: A quarterly physical inventory of all radionuclides must be completed. This includes all radioactive materials on hand, whether in stock vials, experiments, or waste. The online Radiation Safety database must be updated by the Permit Holder/lab following the inventory

Security: Radionuclides must be secured against unauthorized access or removal at all times

Food and Drink: No food and drink is allowed in any laboratory where radioactive materials are used or stored



RADIATION SAFETY LABORATORY INSPECTION

(Revision Date: 11/1/2019)

INSPECTION DATE: _____ (Mo/Da/Yr)

MEMORANDUM TO: _____ (Permit Holder) _____ (Department Division)

LABORATORY: _____ (Building) _____ (Room No.)

This Radiation Safety Laboratory Inspection is a constructive appraisal of the radiation safety program in your laboratory. Its purpose is to evaluate your laboratory's compliance with the Nuclear Regulatory Commission (NRC) & Radiation Safety Committee (RSC) requirements for the safe use and control of radioactive materials (RAM) at Saint Louis University, to which you committed in your permit application. This inspection form provides a mechanism for identifying weaknesses in your radiation safety program and an opportunity for you to correct deficiencies in order to avert potential incidents involving radioactive materials obtained under your permit. **It is extremely important that the deficiencies identified be promptly addressed and corrected.** An excessive number of deficiencies, or uncorrected repeat deficiencies, may result in withholding of radionuclide shipments, referral to the RSC and suspension or revocation of your radionuclide use permit. Changes in regulations, NRC license, or University policies may necessitate occasional revision of the inspection form. Questions or comments regarding the inspection should be directed to the Radiation Safety Officer at 977-8849.

LABORATORY STAFF/PERSONNEL CHANGES: [ ] No [ ] Yes <—; [ ] RSO Database LABORATORY LOCATION CHANGES: <—; [ ] RSO Database

SUMMARY OF INSPECTION FINDINGS

A. [ ] No items of noncompliance or unsafe conditions were identified.
B. [ ] Items of noncompliance or unsafe conditions were identified; **SEE BELOW**.
C. [ ] Inactive - No radioactive materials used this quarter; storage only.
D. [ ] Inactive: No radioactive materials in use or storage.

[ ] Logbook [ ] Database Total Pts: _____

RSO REVIEW: _____

[ ] Repeat Def. [ ] Excessive Def. [ ] Letter Sent

POSTING & RECORDS ACCESSIBILITY

___ 1. NRC-3 form not posted.
___ 2. Radioactive materials sign not posted.
___ 3. Radiation area sign not posted.
___ 4. High radiation area sign not posted.
___ 5. Airborne radioactivity area sign not posted.
___ 6. Low-Level Exposure Zone (<0.2 mrem) not posted.
___ 7. Caution radiation magnets not posted.
___ 8. Permit not posted.
___ 9. Permit application (copy) not accessible.
___ 10. Previous RSO inspection not logged or posted.
___ 11. Radiation Safety Manual or required records inaccessible.

TRAINING REQUIREMENTS (See comments for specification of individuals)

___ 12. Personnel working with RAM have not attended Radiation Safety Orientation Course and passed exam.
___ 13. Personnel have not attended bi-annual refresher course.
___ 14. Permit Holder has not provided/certified laboratory specific instruction to workers.

RADIONUCLIDE RECEIPT, INVENTORY & TRANSFER

___ 15. Radionuclide Shipment Receipt Log incomplete
___ A. ≤ 10% of shipments received.
___ B. ≤ 25% of shipments received.
___ C. > 25% of shipments received.
___ D. other; see comments.
___ 16. Inventory Log - Radionuclide Stock Vial Inventory Ledger incomplete
___ A. ≤ 10% of shipments received.
___ B. ≤ 25% of shipments received.
___ C. > 25% of shipments received.
___ D. other; see comments.
___ 17. Online radionuclide inventory database not updated.
___ 18. Radionuclide shipment received directly; RSO not notified.
___ 19. Radioactive material provided to unauthorized staff.
___ 20. Unauthorized removal of RAM from SLU-Affiliated facilities.

SAFETY PRACTICES, SURVEYS & SUPPLIES

___ 21. Staff do not adequately survey during & after each use of radionuclides.
___ 22. Area survey documentation lacking (specify dates of missing surveys in comments section)
___ A. 1 weekly survey.
___ B. 2 weekly surveys.
___ C. 3 or more weekly/1 or more monthly surveys.
___ D. survey meter readings not documented.
___ E. Other; specify in comments section.
___ 23. Appropriate survey instrument not used or unavailable.
___ 24. Survey instrument not operational, has depleted batteries, or lacks check source.
___ 25. Survey instrument calibration not current within 1 year; comments:
___ 26. Evidence of personnel eating or drinking in areas designated for radioactive materials use or storage.
___ 27. Staff not wearing gloves, lab coat, or other protective clothing while working with radionuclides.
___ 28. Staff wearing open toed shoes (sandals, etc.) or shorts while working with radionuclides.
___ 29. Laboratory surfaces (bench tops, etc.) inadequately covered.
___ 30. Fume hood, glove box, or charcoal filtered mini-hood not used as required.
___ 31. Essential spill response supplies not maintained within laboratory (see itemized list below):
___ absorbent pads
___ decontamination solution
___ scouring pads
___ scrub brush
___ heavy duty plastic bags
___ tape (Various RAM?)
___ absorbent towels
___ mild hand soap (e.g., Ivy)
___ soft brush (to dust)
___ shoe covers (disposable)
___ gloves (disposable)
___ spare clothing/shoes

RADIONUCLIDE USE & STORAGE

___ 32. Use or storage of radionuclides in an unauthorized area.
___ 33. Radionuclides improperly stored or inadequately shielded.
___ 34. Unmarked and unattended labware containing radionuclides.
___ 35. Radionuclides not secured against unauthorized access or removal.
___ A. unattended laboratory not locked.
___ B. unlocked refrigerator/freezer in unrestricted area.
___ C. unattended radioactive waste in unrestricted area.
___ D. other; see comments.
___ 36. Food/drink stored in area designated for RAM.

RADIONUCLIDE WASTE DISPOSAL

___ 37. Waste disposal records inadequate.
___ 38. Improper packaging/labeling of radioactive waste.
___ 39. Improper segregation of radioactive waste.
___ 40. Improper disposal of radioactive waste.

INTERNAL & EXTERNAL DOSIMETRY

___ 41. Personnel bioassay not submitted as required.
___ 42. Personnel dosimeter (badge) not timely returned; specify individual(s):
___ 43. Location of personnel exposure records unknown.
___ 44. Staff not wearing required dosimeter while handling radionuclides.
___ 45. Staff wearing dosimeter assigned to another person.
___ 46. Dosimeter (badge) stored in radiation work/storage area.

OTHER ITEMS OF NONCOMPLIANCE

___ 47. _____
___ 48. _____

COMMENTS

[ ] See attached comments [ ] No comments necessary

_____ (Signature of Laboratory Inspector)

_____ (Signature of Laboratory Staff Member)

Radiation Safety Inspection Form

POSTING & RECORDS ACCESSIBILITY

___ 1. NRC-3 form not posted.
___ 2. Radioactive materials sign not posted
___ 3. Radiation area sign not posted
___ 4. High radiation area sign not posted
___ 5. Airborne radioactivity area sign not posted
___ 6. Low Level Exposure Zone (>0.2 mr/hr) not posted
___ 7. Emergency instructions not posted
___ 8. Permit not posted
___ 9. Permit application (copy) not accessible
___ 10. Previous RSO inspection not logged or posted
___ 11. Radiation Safety Manual or required records inaccessible

TRAINING REQUIREMENTS {see comments for specification of individuals}

___ 12. Personnel working with RAM have not attended Radiation Safety Orientation Course and passed exam
___ 13. Personnel have not attended the annual refresher course
___ 14. Permit Holder has not provided/certified laboratory specific instruction to workers

RADIONUCLIDE RECEIPT, INVENTORY & TRANSFER

___ 15. Radionuclide Shipment Receipt Log incomplete
- ___ A. ≤ 10% of shipments received
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- ___ absorbent pads
- ___ absorbent towels
- ___ decontaminant solution
- ___ mild hand soap (e.g., Joy)
- ___ scouring pads
- ___ soft brush (for skin)
- ___ scrub brush
- ___ shoe covers (disposable)
- ___ heavy duty plastic bags
- ___ gloves (disposable)
- ___ tape ("Caution RAM")
- ___ spare clothing/shoes

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- ___ C. unattended radioactive waste in unrestricted area
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OTHER ITEMS OF NONCOMPLIANCE

___ 47. _____
___ 48. _____

COMMENTS

[ ] **See attached comments** [ ] No comments necessary

_____
(Signature of Laboratory Inspector)

_____
(Signature of Laboratory Staff Member)

Summary

Contact ehs@slu.edu for any questions regarding inspections.

Please complete the Safety Awareness Quiz on Laboratory Inspections by September 30th, 2023.