PennState Physical Plant
ENVIRONMENTAL HEALTH & SAFETY

LionSafe Assessment Definitions

BSL-2 Audit

Sort Order	Checklist Question / Findings Template	Corrective Action Template	Days To Correct
Documentation			
1	***A Unit Specific Plan is present in the lab.***		*30*
	A Unit Specific Plan is not present in the laboratory.	Complete the Unit Specific Plan. A copy of the Unit Specific Plan must be printed and available in a safety binder. https://ehs.psu.edu/sites/ehs/files/certificationofagreementpage.docx	
2	***The Unit Specific Plan has been reviewed within the past year by all members of the lab.***		*30*
	The plan has not been reviewed in the past year. Some members of the laboratory have not reviewed the plan in the past year.	Review the Unit Specific Plan and ensure the information is up to date. Ensure all members of the laboratory have signed the certification of agreement page after reviewing the Unit Specific Plan. https://ehs.psu.edu/sites/ehs/files/certificationofagreementpage.docx	
Biosafety			
3	***The biosafety section of the Unit Specific Plan is completed.***		*30*
	The biosafety section of the Unit Specific Plan is not completed.	Complete the biosafety section of the Unit Specific Plan.	
4	***Procedures that have a high potential for creating aerosols or splashes are conducted in a BSC or another appropriate combination of PPE and engineering controls is used.***		*30*
	Aerosol/splash producing procedures are not conducted in a BSC.; Aerosol/splash producing procedures are not conducted using the appropriate combination of engineering controls and PPE.	Modify SOPs to perform aerosol/splash producing procedures in a BSC.; Conduct a risk assessment to determine the appropriate combination of engineering controls and PPE to protect personnel from aerosol/splash producing procedures.; Purchase necessary engineering controls and/or PPE based on risk assessment.	
5	***All procedures are performed to minimize the creation of splashes and/or aerosols.***		*30*
	Procedures are performed that create splashes or aerosols.	Perform a risk assessment and determine if splash/aerosol producing procedures can be modified to minimize splashes or aerosols.	

Sort Order	Checklist Question / Findings Template	Corrective Action Template	Days To Correct
Biosafety			
6	***Work surfaces are cleaned and decontaminated with an appropriate disinfectant after completion of work with potentially infectious material, and after spills, splashes, or other potential contamination.***		*30*
	Work surfaces are not cleaned or decontaminated with an appropriate disinfectant after completion of work with potentially infectious materials.; Work surfaces are not cleaned or decontaminated with an appropriate disinfectant after spills, splashes, or other potential contamination.; An appropriate disinfectant is not available in the lab.	Purchase an appropriate disinfectant for the materials handled in the laboratory.; Train personnel to decontaminated work surfaces.; Develop a decontamination SOP for work surfaces.	
7	***Laboratory equipment is routinely decontaminated with an appropriate disinfectant after spills and splashes, before repair, maintenance, or removal from the lab.***		*30*
	Equipment is not decontaminated with an appropriate disinfectant after splashes or spills with potentially infectious materials.; An appropriate disinfectant is not available in the lab.; Equipment is not decontaminated before repair or maintenance.	Purchase an appropriate disinfectant for the materials handled in the laboratory.; Train personnel to decontaminated equipment.; Develop a decontamination SOP for equipment.	
8	***Vacuum lines used with biohazardous materials are protected with liquid disinfectant traps, in-line HEPA filters, or their equivalent. Filters are replaced as needed, or are on a replacement schedule determined by a risk assessment.***		*30*
	Vacuum lines are not protected.; Filters are not replaced regularly or on any set replacement schedule.	Install a liquid disinfectant trap, in-line HEPA filter, or an equivalent.; Develop a replacement schedule for HEPA filters.; Develop a schedule to empty the liquid disinfectant trap and refill with fresh disinfectant. Ensure proper contact time of disinfectant is taken into account.	
9	***Mechanical pipetting devices are used. Mouth pipetting is prohibited.***		*30*
	Mouth pipetting occurs.	Purchase mechanical pipetting devices.; Train personnel that mouth pipetting is strictly prohibited.	

Sort Order	Checklist Question / Findings Template	Corrective Action Template	Days To Correct
Training			
10	***Online trainings are supplemented with lab-specific training that is pertinent to the tasks and materials that will be handled. Laboratory-specific training is revisited when there are new tasks or procedures, modifications to existing ones, or additions***		*30*
	Lab specific training is not provided.; Lab specific training is not pertinent to the tasks and materials handled.; Lab specific training is insufficient for the tasks and materials handled.; Lab specific training has not been updated for new tasks or procedures, modifications to existing ones, or additions of new hazardous materials.	Develop and provide lab specific training that is pertinent to the hazardous materials that will be handled.; Update lab specific training to be pertinent to the hazardous materials that will be handled.	
BSL-2 Procedures			
11	***The PI has an adequate procedure for having personnel demonstrate proficiency in standard microbiological practices and techniques before working with materials that require BSL-2 containment, including Bloodborne Pathogens.***		*30*
	Personnel are not required to demonstrate proficiency in practices or techniques before working with biohazardous materials.	Develop an adequate procedure to ensure personnel can demonstrate proficiency in practices and techniques before working with biohazardous materials.	
Safety Equipment			
12	***An eyewash station is readily available.***		*30*
	An eyewash station is not present and available.	An eyewash station is required in this work area. Contact safety officer or facility coordinator to have one installed.	
13	***Eyewash station is accessible and unobstructed.***		*30*
	Eyewash station is obstructed.	Clear the area in front of and around the eyewash.	
14	***Weekly eyewash flushing is performed and documented on the eyewash inspection form.***		*30*
	The eyewash station is not flushed weekly, or it cannot be determined if it has been due to lack of documentation.	Flush the eyewash weekly, documenting it on the Eyewash inspection form.; https://ehs.psu.edu/laboratory-safety/forms	

Sort Order	Checklist Question / Findings Template	Corrective Action Template	Days To Correct
Security and Access Control			
15	***Access to the laboratory is limited or restricted when experiments are in progress.***		*30*
	Access to the laboratory is unrestricted while experiments are in progress.; The laboratory door is regularly propped open while experiments are in progress.	Train laboratory personnel to close the door while experiments are in progress.; Perform a hazard assessment to determine if the laboratory door(s) should be locked while experiments are in progress.	
Signage and Labels			
16	***A BSL-2 door sign issued by EHS is posted at the entrance to the laboratory. The sign includes: the biosafety symbol, agent information, entry and exit requirements, and up to date emergency contact information for the PI.***		*30*
	There is no BSL-2 sign on the door.	EHS issues a new door sign.; Update contact information on the door sign.; Update agent information on the door sign.; Update entry and/or exit requirements on the door sign.	
Laboratory and Research Safety			
17	***Furniture is sturdy and appropriate for the laboratory.***		*30*
	Furniture is inappropriate for the operation.; Furniture is not sturdy.; Furniture is made out of materials that are not appropriate for use in a laboratory.	Remove furniture that is inappropriate for the operation.; Purchase furniture that is designed to support anticipated loads and uses.; Have that are impervious to water and resistant to heat and standard laboratory chemicals installed.	
18	***Chairs are covered with non-porous material that can be cleaned and decontaminated.***		*30*
	Cloth covered chairs are present in the lab.; Chairs covered with porous materials are present in the lab.; Chairs that cannot be easily cleaned and/or decontaminated are present in the lab.	Replace chairs with laboratory chairs designed to be cleaned and decontaminated easily.	
19	***Laboratory windows that open to the exterior are fitted with screens.***		*30*
	Laboratory windows open to the exterior and they are not fitted with screens.	Place a work order to have windows fitted with screens.	
20	***Animals and plants not associated with the research are prohibited from the laboratory.***		*30*
	Animals that are not associated with the research are present in the laboratory.; Plants that are not associated with the research are present in the laboratory.	Promptly remove animals that are not associated with the research from the laboratory.; Promptly remove plants that are not associated with the research from the laboratory.	

Sort Order	Checklist Question / Findings Template	Corrective Action Template	Days To Correct
Laboratory and Research Safety			
21	***The research group follows good pest management practices and reports pest problems to their safety officer or facility coordinator.***		*30*
	The research group does not know what good pest management practices are for a laboratory.; The research group does not follow good pest management practices.; The research group does not report pest problems to their safety officer or facility coordinator.; The research group attempts to handle pest problems on their own.	Eliminate laboratory created conditions that would encourage or allow pests to thrive.; Report pest problems to the appropriate facility coordinator or safety officer.; Discuss appropriate pest management practices for the facility with the facility coordinator or safety officer.; Review and implement suggestions in "IPM at Penn State." https://ehs.psu.edu/pesticide-management/resources	
22	***The laboratory is organized so that it can be easily cleaned. Carpets and rugs are not present.***		*30*
	Carpets or rugs are present in the laboratory.; Laboratory cannot be easily cleaned.	Promptly remove carpets or rugs from the laboratory.; Reorganize laboratory so that it can easily be cleaned.	
23	***All personnel are aware that eating, drinking, smoking, handling contact lenses, applying cosmetics, and storing food or drink for human consumption is not permitted in laboratory areas. Appliances (refrigerators, microwaves, freezers, etc.) that are inte***		*30*
	Personnel eat, drink, smoke, handle contact lenses, apply cosmetics, or store food or drink for human consumption in the laboratory.	Set up a location outside the laboratory for the storage of food or drink.; Set up a location outside the laboratory for eating or drinking.; Train all personnel that smoking is not allowed in Penn State buildings.; Appliances are labeled "For Food Use Only" or "For Chemical/Biohazard Use Only".	
General Safety and Housekeeping			
24	***Handwashing sink is present in the work area where hazardous materials are used.***		*30*
	A sink is not present in the laboratory / work area where hazardous materials are used.; Soap and/or paper towels are not present in the laboratory/work area.	Work with your safety officer or facility coordinator to have a sink for handwashing installed in the laboratory/work area.; Restock soap and/or paper towels at the handwashing sink.	
25	***All personnel wash their hands after working with potentially hazardous materials, after removing gloves, and before leaving the laboratory / work area.***		*30*
	Personnel do not wash their hands after working with hazardous materials.; Personnel do not wash their hands after removing gloves.; Personnel do not wash their hands before leaving the laboratory / work area.	Train personnel to wash their hands after working with hazardous materials.; Train personnel to wash their hands after removing gloves.; Train personnel to wash their hands before leaving the laboratory / work area.	

Sort Order	Checklist Question / Findings Template	Corrective Action Template	Days To Correct
General Safety and Housekeeping			
26	***All personnel restrain long hair so that it cannot contact hands, hazardous materials, specimens, containers, or equipment.***		*30*
	Long hair is not restrained in the laboratory/work area.	Train personnel to restrain long hair while working in the laboratory/work area.	
Emergency Preparedness			
27	***Personnel who work with hazardous materials are trained to clean up simple laboratory spills.***		*30*
	Personnel are not trained to clean up spills of hazardous materials (chemical, biological or radiological).	Train personnel on appropriate clean up procedures for the hazardous materials (chemical, biological or radiological) that are handled in the laboratory.	
28	***A spill kit, or materials sufficient to clean up spills, is available.***		*30*
	A spill kit is not available.; Appropriate materials to clean up spills are not available.	Assemble a spill kit appropriate for cleaning up biological spills.; Assemble materials that are appropriate for cleaning up biological spills.	
29	***Mechanical means are used to clean up broken glassware, such as brush and dustpan, tongs, or forceps.***		*30*
	Mechanical means are not used to clean up broken glassware, such as brush and dustpan, tongs, or forceps.	Purchase equipment to manage clean up of broken glassware and inform personnel of its location.; Train personnel on appropriate procedures to clean up broken glassware.	

Sort Order	Checklist Question / Findings Template	Corrective Action Template	Days To Correct
Incidents and Accidents			
30	***Exposure, or potential exposure, to biohazardous materials are reported promptly to the Biosafety Officer and PI, and reported per the correct accident reporting mechanism. Personnel are encouraged to seek medical care, especially for***		*30*
	Exposures, or potential exposures, to biohazardous materials are not reported.; Laboratory personnel do not know how to report exposures.; Personnel are not encouraged to seek medical care.; Personnel do not know medical care is available.	Inform personnel of what constitutes an exposure and how to report one.; Inform personnel of how and where medical care is available to them (UP: students – University Health Services, employees – Occupational Medicine, all – Mount Nittany Medical Center Emergency Room. CC: campus nurse, local occupational medicine physician, local emergency room or urgent care).; Discuss with department safety officer correct process for filing a FROI per SY04 (paid personnel) or reporting injuries of unpaid personnel to Risk Management per SY03.	
Occupational Medicine			
31	***All personnel have been informed about immune competence and conditions which may make them more susceptible to infection. They have been encouraged to self-identify to Occupational Medicine for appropriate counseling and guidance.***		*30*
	Personnel are not informed about conditions that could make them more susceptible to infection.; Personnel are not encouraged to self-identify to Occupational Medicine.	Inform personnel about conditions that could make them more susceptible to infection from the materials handled in the lab.; Share contact information for Occupational Medicine (814-863-8492) with personnel in the lab.	
Bloodborne Pathogens			
32	***All personnel working with blood or other potentially infectious materials (OPIM) are familiar with the Exposure Control Plan, know how to find it, and are trained on its contents.***		*30*
	Personnel working with blood or OPIM are not familiar with the Exposure Control Plan.; Personnel working with blood or OPIM are not trained according to the Exposure Control Plan.; Personnel working with blood or OPIM have not completed Bloodborne Pathogen training.	Have PI or responsible person share Exposure Control Plan with the group via paper copy kept in laboratory or electronically.; Have personnel working with blood or OPIM complete Bloodborne Pathogen training.	

Sort Order	Checklist Question / Findings Template	Corrective Action Template	Days To Correct
Bloodborne Pathogens			
33	***All personnel who work with blood or OPIM have consulted with Occupational Medicine about Hepatitis B vaccination.***		*30*
	Personnel work with blood or OPIM and have not completed an Immunization Determination Form.; Personnel work with blood or OPIM and have not sent an Immunization Determination Form to Occupational Medicine.; Personnel work with blood or OPIM and have not consulted with Occupational Medicine about Hepatitis B vaccination.	Ensure all personnel working with blood or OPIM complete an Immunization Determination Form and that the form is sent to Occupational Medicine.; Ensure personnel consult with Occupational Medicine about their vaccination status.	
Personal Protective Equipment			
34	***Protective laboratory coats, gowns, or uniforms designated for laboratory use are worn while working with hazardous materials. This PPE is appropriately sized and suitable for the anticipated hazards in the lab.***		*30*
	Appropriate protective body PPE is not worn while working with hazardous materials (e.g., biological, chemical or radiological).	Perform a hazard assessment to determine what type of body protective PPE is appropriate for the materials handled and associated procedures.; Purchase body protective PPE in sizes appropriate for personnel.; Train personnel to wear appropriate PPE while working with hazardous materials.	
35	***Personnel are prohibited from taking their laboratory coats home for laundering.***		*30*
	Personnel take laboratory coats home for laundering.	At University Park, work with Laundry Services or another laundry service provider to establish a laboratory coat laundering schedule.; At Commonwealth Campuses, work with a laundry service provider to establish a laboratory coat laundering schedule.	
36	***Gloves are worn to protect hands from exposure to hazardous materials (e.g., biological, chemical or radiological).***		*30*
	Gloves are not worn when working with hazardous materials (e.g., biological, chemical or radiological).	Train personnel to wear gloves while working with hazardous materials.; Purchase gloves in sizes appropriate for personnel in the laboratory and ensure they remain stocked.; Gloves should be made of a material that is suitable for the anticipated hazard.	

Sort Order	Checklist Question / Findings Template	Corrective Action Template	Days To Correct
Personal Protective Equipment			
37	***Eye and face protection is worn by personnel when the potential for splashes or sprays exist.***		*30*
	Eye or face protection is not worn by personnel for splash or spray producing procedures.	Train personnel to wear eye or face protection while performing procedures that could produce splashes or sprays.; Perform a risk assessment to determine the appropriate eye or face protection that is necessary for procedures that could potentially produce splashes or sprays.; Purchase eye or face protection in sizes appropriate for personnel conducting this operation.	
38	***PPE is removed prior to leaving the work area.***		*30*
	PPE is removed prior to leaving the work area.	Train personnel to remove PPE prior to leaving the laboratory / work area.; Set up a location inside the laboratory / work area to remove PPE with appropriate storage locations (e.g., coat hooks) or disposal containers for PPE.	
39	***Contaminated PPE is disposed of or decontaminated after use. Contaminated laboratory clothing, such as laboratory coats, are disposed of or decontaminated prior to laundering.***		*30*
	Contaminated PPE is not disposed of.; Contaminated PPE is not decontaminated after use.; Contaminated laboratory clothing is not decontaminated prior to laundering.	Train personnel to dispose of contaminated PPE and ensure appropriate replacements are purchased.; Train personnel on appropriate decontamination procedures for PPE.; Develop an SOP for decontaminating laboratory clothing prior to laundering.	
Biosafety Cabinet			
40	***BSCs are installed in appropriate locations, away from doors, windows, and heavily traveled areas. They are installed so that fluctuations of the room air supply and exhaust does not interfere with proper operation.***		*30*
	A BSC is present in the laboratory and it is installed in an inappropriate location.	Work with your safety officer or facility coordinator to relocate the BSC to an appropriate location in the lab. After the BSC is relocated, ensure the BSC is recertified.	
41	***BSCs have been certified within the past year.***		*30*
	A BSC is present in the laboratory and it has not been certified within the past year.	A BSC is present in the laboratory and it has not been certified within the past year.	

Sort Order	Checklist Question / Findings Template	Corrective Action Template	Days To Correct
Biosafety Cabinet			
42	***BSCs are free from excess equipment or supplies that can block the air grills and disrupt airflow.***		*30*
	A BSC is present in the laboratory and it has excess equipment or supplies in it.; A BSC is present in the laboratory and the air grills are blocked.; A BSC is present in the laboratory and materials present disrupt the airflow.	A BSC is present in the laboratory and it has excess equipment or supplies in it.; A BSC is present in the laboratory and the air grills are blocked.; A BSC is present in the laboratory and materials present disrupt the airflow.	
43	***The use of Bunsen burners has been prohibited in BSCs. Other flame producing devices used in a BSC have been evaluated for safe use.***		*30*
	A Bunsen burner is used in the BSC and hooked up to a natural gas line.; A Bunsen burner is used in the BSC and hooked up to another source of natural gas.; Other flame producing devices are used, but they have not been evaluated for safe use in a BSC.	Remove Bunsen burners from the BSC.; Put in a work order to have natural gas lines disconnected from the BSC.; Perform a risk assessment on the safe use of flame producing devices in BSCs.; Follow the BSC manufacturer's guidance on the use of flame producing devices in the BSC.	
Sharps			
44	***Personnel have been trained that needles must not be bent, sheared, broken, recapped, removed from disposable syringes, or otherwise manipulated by hand before disposal.***		*30*
	Personnel bend, shear, break, recap, remove disposable syringes, or otherwise manipulate needles by hand prior to disposal.	Train personnel to not bend, shear, break, recap, remove disposable syringes, or otherwise manipulate needles by hand prior to disposal.; Purchase resheathing needles, or other safety engineered solutions, for procedures that were previously performed by recapping a needle.	
45	***The use of needles and syringes or other sharp instruments is limited in the laboratory. The use of sharps is restricted to situations where there is no alternative.***		*30*
	Needles and syringes are used freely in the laboratory and not limited to situations where there is no alternative.	Purchase alternative equipment that can be used in place of needles and syringes or other sharp instruments (safety engineered sharps).; Train personnel to use safety engineered sharps in place of needles and syringes or other sharp instruments.; Modify procedures to eliminate or minimize the need for needles and syringes or other sharp instruments.	

Sort Order	Checklist Question / Findings Template	Corrective Action Template	Days To Correct
Sharps			
46	***Non-disposable sharps are placed in a hard-walled container for transport to a processing area for decontamination, preferably by autoclaving.***		*30*
	Non-disposable sharps are not placed in a hard-walled container for transport.; Non-disposable sharps are not decontaminated.	Purchase a hard-walled container for transporting contaminated non-disposable sharps.; Develop a procedure to decontaminate non-disposable sharps.; Modify procedures to eliminate the need for non-disposable sharps that must be decontaminated.	
47	***Only needle-locking syringes or disposable syringe-needle units (i.e., needle is integral to the syringe) are used.***		*30*
	Syringes are used that do not lock the needle in place.	Purchase luer-lock/needle-locking syringes or units where the needle is integral to the syringe.	
Regulated Medical Waste Management			
48	***Sharps contaminated with biohazardous materials are disposed of in red, red-orange, or orange rigid puncture-resistant, leakproof containers that have a closeable lid.***		*30*
	Sharps are disposed of in containers that are an inappropriate color.; Sharps are disposed of in containers that are inappropriate (can leak, are not puncture proof, do not have a lid, or the lid cannot close).	Purchase sharps containers that are red, red-orange, or orange.; Purchase containers that are designed for the appropriate storage and disposal of sharps.	
49	***Sharps containers are not overfilled (not exceed ¾ full, or only up to the marked fill line from the manufacturer).***		*30*
	Sharps containers are allowed to become overfilled.	Dispose of sharps containers before they become overfilled.; Train personnel to not overfill sharps containers.	
50	***Sturdy autoclave-rated red, red-orange, or orange bags are used for solid non-sharps RMW.***		*30*
	Inappropriate colored bags are used for solid waste.; Bags are not appropriate for autoclaving.; Bags that fail, develop holes, or are torn are placed in white barrel after autoclaving without being double bagged.	Purchase bags that are red, red-orange, or orange and intended for autoclave use.; Train personnel to place bags that are torn/damaged into a second bag prior to disposal.	
51	***RMW bags that contain waste are stored in leakproof secondary containers for storage and transport.***		*30*
	Bags are not stored in leakproof secondary containers for storage and transport.	Purchase leakproof secondary containers for storage and transport of RMW.	

Sort Order	Checklist Question / Findings Template	Corrective Action Template	Days To Correct
Regulated Medical Waste Management			
52	***RMW bags and containers are properly vented for autoclaving.***		*30*
	Bags and containers are not vented properly for autoclaving.	Train personnel to appropriately vent bags and containers prior to autoclaving.	
53	***For RMW that will not be autoclaved, bags and containers ready for disposal are tightly closed.***		*30*
	Bags and containers ready for disposal are not tightly closed.	Train personnel to tightly close bags and containers that are ready for disposal.	
54	***RMW is segregated from other types of waste.***		*30*
	RMW is not segregated from other types of waste.	Segregate RMW from other types of waste in the lab.	
55	***RMW containers are closed during storage.***		*30*
	RMW containers are not closed in between uses.	Train personnel to close RMW containers between use.	
56	***All RMW is decontaminated before disposal using an effective method.***		*30*
	At University Park, bagged RMW is not autoclaved prior to placing in white barrel for disposal.; Liquid RMW is not bleached or autoclaved before disposal. At Commonwealth campuses, RMW is not prepared in line with vendor requirements.	Train personnel to autoclave bagged RMW prior to disposal.; If an autoclave is not available, develop an appropriate handling procedure in coordination with the biosafety officer.; Train personnel to add bleach to 10% to liquid RMW, and use the appropriate incubation time before drain disposal with copious amounts of water.	
57	***Generation of RMW that cannot be bleached or autoclaved is discussed with EHS prior to being generated. A plan is in place for appropriate disposal of this mixed waste.***		*30*
	Mixed RMW is inappropriately disposed of.; Mixed RMW was generated without a plan in place for appropriate disposal.; RMW was combined with other waste streams.	Develop a plan with EHS for appropriate disposal of mixed RMW.; Determine if the procedure can be modified to separated RMW from other types of waste (chemical or radioactive).; Train personnel to keep waste streams separate.	