

Inspection Checklist for BSL-3Ag Laboratories (9 CFR 121; 42 CFR 73; BMBL 5th Edition- Appendix D)

Entity Name:
Inspection Date:
Street Address:
City, State, Zip:
RO:
ARO(s):

Lead Inspector:
Other Inspectors:

Building/Room(s):

PI(s):

HHS Agents:

Overlap Agents:

USDA Agents:

When information is entered in this form, the form is to be considered Sensitive Select Agent Information.

Entity Name:		Inspection Date:			
Reference	Statement	Yes	No	N/A	Comments
CFR: Section 12(a)	An individual or entity required to register under this part must develop and implement a written biosafety (biocontainment) plan that is commensurate with the risk of the select agent or toxin, given its intended use.				
CFR: Section 12(a)	The biosafety (biocontainment) plan must contain sufficient information and documentation to describe the biosafety and containment procedures for the select agent or toxin, including any animals (including arthropods) or plants intentionally or accidentally exposed to or infected with a select agent.				
CFR: Section 12(b)	The biosafety and containment procedures must be sufficient to contain the select agent or toxin (e.g., physical structure and features of the entity, and operational and procedural safeguards).				
CFR: Section 12 (c)(1)	In developing a biosafety plan, an individual or entity should consider: The CDC/NIH publication, "Biosafety in Microbiological and Biomedical Laboratories." This document is available on the National Select Agent Registry website at http://www.selectagents.gov/ .				
CFR: Section 12 (c)(2)	The Occupational Safety and Health Administration (OSHA) regulations in 29 CFR 1910.1200 and 1910.1450.				
CFR: Section 12 (c)(3)	The "NIH Guidelines for Research Involving Recombinant and Synthetic Molecules." This document is available on the Internet at http://www.aphis.usda.gov/programs/ag_selectagent/index.html ; or http://www.cdc.gov/				

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CFR: Section 12(d)	In developing a biosafety plan, an individual or entity: the biosafety plan must include an occupational health program for individuals with access to Tier 1 select agents and toxins, and those individuals must be enrolled in the occupational health program.				
CFR: Section 12(e)	The plan must be reviewed annually and revised as necessary.				
CFR: Section 12(e)	Drills or exercises must be conducted at least annually to test and evaluate the effectiveness of the plan.				
CFR: Section 12(e)	The plan must be reviewed and revised, as necessary, after any drill or exercise and after any incident.				
42 CFR 73: Section 13 (a)	An individual or entity may not conduct or possess products (i.e., select agents that are not known to acquire the resistance naturally, if such acquisition could compromise the control of disease agents in humans, veterinary medicine, or agriculture, or recombinant and/or synthetic nucleic acids containing genes for the biosynthesis of select toxins lethal for vertebrates at an LD[50] < 100 ng/kg body weight) resulting from, a restricted experiment with a HHS select agent or toxin unless approved by and conducted in accordance with any conditions prescribed by the HHS Secretary.				
42 CFR 73: Section 13 (a)	In addition, an individual or entity may not conduct or possess products (i.e., select agents that are not known to acquire the resistance naturally, if such acquisition could compromise the control of disease agents in humans, veterinary medicine, or agriculture, or recombinant and/or synthetic nucleic acids containing genes for the biosynthesis of select toxins lethal for vertebrates at an LD[50] < 100 ng/kg body weight) resulting from, a restricted experiment with an overlap select agent or toxin unless approved by and conducted in accordance with any conditions prescribed by the HHS Secretary, after consultation with Administrator.				

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9 CFR 121: Section13(a)	An individual or entity may not conduct or possess products (i.e., select agents that are not known to acquire the resistance naturally, if such acquisition could compromise the control of disease agents in humans, veterinary medicine, or agriculture, or recombinant and/or synthetic nucleic acids containing genes for the biosynthesis of select toxins lethal for vertebrates at an LD[50] < 100 ng/kg body weight) resulting from, the following experiments unless approved by and conducted in accordance with the conditions prescribed by the Administrator:				
Special biocontainment features are required for certain types of research where the room provides the primary containment. This inspection checklist is to be used in conjunction with the ABSL-3 Inspection Checklist involving a BSL-3Ag facility.					
Section A	Standard Microbiological Practices				
A-1	Personnel are advised of potential and special hazards, and are required to read and follow instructions on practices and procedures. Consideration should be given to specific biohazards unique to the animal species and animal care and use protocol in place related to their work environment.				
A-2	The need for an animal allergy prevention program should be considered. Facility supervisors should ensure that occupational health staff is informed of potential occupational hazards within the animal facility, to include those associated with research, animal husbandry duties, animal care and manipulations.				
A-3	Personal health status may impact an individual's susceptibility to infection, ability to receive immunizations or prophylactic interventions. Therefore, all personnel should be provided information regarding immune competence and conditions that may predispose them to infection. Individuals having these conditions should be encouraged to self-identify to the institution's healthcare provider for appropriate counseling and guidance.				
A-4	Identification of specific infectious agents is recommended by room or cage/pen when more than one infectious agent is being used within a facility or room.				
Section B	Special Practices				
B-1	When a procedure cannot be performed within a biosafety cabinet, a combination of personal protective equipment and other containment devices must be used to minimize spread of contamination. Consideration should be given to the use of restraint devices and practices that reduce the risk of exposure during animal manipulations (e.g., physical restraint devices, chemical restraint medications, etc.).				

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B-2	Decontaminate all potential infectious materials (including animal tissues*, carcasses*, contaminated bedding*, unused feed, sharps, and other refuse) before removal from the areas where infectious materials and/or animals are housed or are manipulated by an appropriate method. It is recommended that animal bedding and waste be decontaminated prior to manipulation and before removal from the areas where infectious materials and/or animals are housed or are manipulated. <i>*Large animal carcasses and/or large volumes of animal tissues or bedding are placed into properly sealed containers if transported to a separate area (within containment) for disposal. Transport container is surfaced decontaminated prior to exiting the animal room.</i>				
B-3	Animal tissue samples removed for further analysis will be placed in primary leak proof container, surface disinfected and placed into a secondary leak tight container. Each secondary leak tight container will be surface decontaminated prior to removal from containment space.				
Section C	Primary Barriers: BMBL 5th Edition- Appendix D				
BMBL: Appendix DII	All BSL-3Ag containment spaces must be designed, constructed and verified to function as a primary containment barrier. [See E-1, E-2, E-3, E-4 and E-5 for additional criteria].				
	Separate stand-alone facility (building)				
	Isolated zone within a facility (building) operating at a lower biosafety level <i>(check all that apply)</i>				
	ABSL-3				
	ABSL-2				
	BSL-3				

Entity Name:		Inspection Date:			
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	BSL-2				
	Isolated zones have access controls (<i>Specify</i>)				
Section C-1	Personal Protective Equipment: BMBL 5th Edition- Appendix D				
BMBL: Appendix DII(1)	Require all personal clothing, rings, watches, etc. be removed before entering. Complete animal facility clothing (including undergarments, pants and shirts or jump suits, and shoes and gloves) is provided in the “clean” change rooms, and put on by personnel before entering the research area.				
	Immediately after leaving high risk animal space, all personnel are required to remove “dirty” lab clothing, including gloves, shower, put on “clean” lab clothing and gloves before going to any other part of the BSL-Ag facility [isolated zones]. Gloves must not be worn outside the animal rooms if moving to clean areas.				
	Soiled clothing worn in a BSL-3Ag space is autoclaved before being laundered.				
Section D	Secondary Barriers: BMBL 5th Edition- Appendix D				
BMBL: Appendix DII(1)	The facility is arranged so that personnel ingress and egress are only through a series of rooms consisting of: [See E-6 and E-7 for additional criteria].				
	a ventilated vestibule with compressible or inflatable gaskets on doors between the clean and dirty barrier;				
	a clean change room outside containment;				
	a shower room at the non-containment/containment boundary;				
	a dirty change room within containment.				

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	Showers:				
	Personnel change and shower rooms that provide for the separation of laboratory clothing from animal facility clothing and that there is controlled access to the containment spaces.				
	When leaving the animal space that contain large volumes of aerosols containing highly infectious agents require showering out.				
	When leaving the facility (building) a second shower is required at the access control shower when applicable.				
BMBL: Appendix DII(2), DII(10) and DII(11)	Doors:				
	Access doors are self closing and lockable. [See E-7 for additional criteria].				
	Emergency exit doors are provided, but locked on the outside against unauthorized use.				
	The hinges and latch/knob areas of all APR (Air Pressure Resistance) doors shall be sealed to airtight requirements (pressure decay tested).				
	All airlock doors shall have air inflated or compressible gaskets. The compressed air lines to the air inflated gaskets shall be provided with HEPA filters and check valves.				
BMBL: Appendix DII(3)	Supplies, materials and equipment enter the BSL-3Ag space only through an airlock, fumigation chamber, an interlocked and double-door autoclave.				
BMBL: Appendix DII(4) and DII(14)	Autoclaves and Incineration:				
	All pass through double-door autoclaves are situated through an exterior wall of the containment area, with the autoclave unit forming an airtight seal with the barrier wall and the bulk of the autoclave situated outside the containment space so that autoclave maintenance can be performed conveniently. [See E-8 for additional criteria].				
	A gas sterilizer, pass-through liquid dunk tank, or a cold gas decontamination chamber must be provided for safe removal of materials and equipment that are steam or temperature sensitive.				

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	Disposable materials must be decontaminated through autoclaving or other verifiable decontamination method followed by incineration or other approved means.				
	Pathological incinerators, or other approved means, must be provided for the safe disposal of the large carcasses of infected animals. Redundancy and the use of multiple technologies need to be considered and evaluated. [See E-9, E-10 and E-11 for additional criteria].				
BMBL: Appendix DII(5), DII(6), DII(9) and DII(15)	Supply/Exhaust Air, Containment Integrity, and HEPA filters:				
	Air handling systems must provide 100% outside conditioned air to the containment spaces.				
	Dedicated, single pass, directional, and pressure gradient ventilation systems must be used. [See E-12 for additional criteria].				
	All BSL-3Ag facilities have independent air supply and exhaust systems that are operated to provide directional airflow and a negative air pressure within the containment space.				
	All ductwork serving BSL-3Ag spaces shall be airtight (pressure tested- entity to provide testing and certification details). [See F-3 additional criteria].				
	The directional airflow within the containment spaces moves from areas of least hazard potential towards areas of greatest hazard potential. [See E-13 for additional criteria].				
	A visible means of displaying pressure differentials is provided.				
	The pressure differential display/gauge can be seen inside and/or outside of the containment space, and/or an alarm sounds when the preset pressure differential is not maintained.				
The air supply and exhaust systems must be interlocked to prevent reversal of the directional airflow and positive pressurization of containment spaces in the event of an exhaust system failure. Supply side should be equipped with a fast acting damper to minimize airflow reversal events. [See E-14 for additional criteria].					

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	An alarm system should be considered to notify personnel of ventilation and HVAC system failure. Audible alarms are acceptable as long as they are not installed within the animal rooms. A visual indicator inside the animal rooms that is tied into the alarm system should be considered. All alarm devices must register/report to a central monitoring station, or similar remote location. [See E-15 for additional criteria].				
	Exhaust air is discharged in such a manner that it cannot be drawn into outside air supply intakes.				
HEPA Filters:					
	Supply and exhaust air to, and from the containment space, is HEPA filtered [minimum rating of 99.97% efficiency]. [See E-16 for additional criteria].				
	The supply and exhaust air systems should be equipped with pre-filters (80-90% efficient) to prolong life of the HEPA filters.				
	All HEPA filters are located as near as practical to the areas where infectious materials and/or animals are housed or are manipulated in order to minimize the length of potentially contaminated ductwork. All HEPA filters must be tested and certified annually.				
	The HEPA filters and housings are fabricated to permit scan testing of the filters in place after installation, and to permit filter decontamination before removal. [See E-17 for additional criteria].				
	For high level biocontainment facilities include two HEPA filters arranged in series or with consideration of parallel system on the exhaust side serving high risk areas where large amounts of aerosols containing BSL-3Ag agents could be expected (e.g., animal rooms, contaminated corridors, necropsy areas, carcass disposal facilities, etc.) based on risk assessment. [See E-18 for additional criteria].				
	HEPA filters must be installed on all atmospheric vents serving plumbing traps, as near as possible to the point of use, or to the service cock, of central or local vacuum systems, and on the return lines of compressed air systems.				

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BMBL: Appendix DII(7)	Effluents:				
	Liquid effluents from BSL-3Ag areas must be collected and decontaminated in a central liquid waste sterilization system before disposal into the sanitary sewers. Typically, a heat decontamination system is utilized in these facilities and equipment must be provided to process, heat and hold the contaminated liquid effluents to temperatures, pressures and times sufficient to inactivate all biohazardous materials. [See E-19 for additional criteria].				
	Liquid wastes from shower rooms and toilets must be decontaminated prior to discharge to a public sewer system. [See E-20 for additional criteria].				
	Floor drains must be maintained and filled with an appropriate disinfectant to prevent the migration of vermin and gases.				
	For waste piping that is not readily accessible nor inspected (underground, walls, etc.), double containment piping systems with leak alarms and annular space decontaminating capability must be considered. [See E-5 for additional criteria].				
	Effluents from laboratory sinks, cabinets, floors and autoclaves are sterilized by heat or chemical treatment.				
	Liquid wastes from shower rooms and toilets may be decontaminated by chemical treatment systems if not connected to a central Effluent Decontamination System (EDS).				
Facilities must be constructed with appropriate basements or piping tunnels to allow for inspection of plumbing systems. [See E-21 for additional criteria].					
BMBL: Appendix DII(8)	Containment Space and Decontamination:				
	Each BSL-3Ag containment space shall have its interior surfaces (walls, floors, and ceilings) and penetrations sealed to create a functional area capable of passing a pressure decay test and being certified as airtight. [See E-2 for additional criteria].				
	All walls are constructed slab-to-slab, and all penetrations, of whatever type, are sealed airtight to prevent escape of contained agents and to allow gaseous fumigation for biological decontamination.				

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	Exterior windows and vision panels, if required, are breakage-resistant and sealed.				
	Decontamination of an entire animal room must occur when there has been gross contamination of the space, significant changes in usage, for major renovations, or maintenance shut downs.				
	Only necessary equipment and supplies should be taken inside the animal room or necropsy. All equipment and supplies taken inside the animal facility or support areas must be decontaminated before removal. Consideration should be given to means for decontaminating routine husbandry equipment and sensitive electronic and medical equipment. [See E-22 for additional criteria].				
	A gas sterilizer, pass-through liquid dunk tank, or a cold gas decontamination chamber must be provided for safe removal of materials and equipment from the facility that are steam sensitive. Other methods such as an anteroom for routine disinfectant fogging or vapor/gas decontamination for materials and equipment that remain in the facility. [See E-23 for additional criteria].				
	Disposable materials must be decontaminated through autoclaving or other validated decontamination method followed by incineration or other valid terminal disposal method.				
Cages:					
	Cages are washed in a mechanical cage washer.				
	The mechanical cage washer has a final rinse temperature of at least 180°F.				
	Cages should be autoclaved (at a time and temperature verified to be effective) or otherwise decontaminated prior to removal from BSL-3Ag space. Alternatively, disposable cages may be used and properly decontaminated and disposed of following use.				
	The cage wash facility should be designed and constructed to accommodate high pressure spray systems, humidity, strong chemical disinfectants and 180°F water temperatures, during the cage cleaning process.				

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BMBL: Appendix DII(12)	Humane restraining devices shall be provided in large animal rooms as needed.				
BMBL: Appendix DII(13)	Necropsy rooms shall be sized and equipped to accommodate large farm animals. [See E-9, E-10 and E-11 for additional criteria].				
BMBL: Appendix DII(15)	All traps and drains are filled with liquid disinfectant, if no EDS is present.				
BMBL: Appendix DII(16)	Biosafety Cabinets:				
	If BSCs are installed they should be located such that their operation is not adversely affected by air circulation and foot traffic. [See E-24 for additional criteria].				
	Class II BSCs use HEPA filters to treat their supply and exhaust air. Selection of the appropriate type of Class II BSC will be dependent upon the proposed procedures and type of reagents utilized. BSC selection should be made with input from a knowledgeable safety professional well versed on operational limitations of a Class II biohazardous cabinetry. [Verify and confirm if applicable]. [See E-25 for additional criteria].				
	Supply air to a Class III cabinet is HEPA filtered, and the exhaust air must be double filtered (through a cabinet HEPA and then through a HEPA in a dedicated building exhaust system) before being discharged to the atmosphere. [Verify and confirm if applicable].				
E	The following statements provide additional clarification for the primary containment criteria:				
E-1	The BSL-3Ag facility can be a separate building, but, more often, it is an isolated zone contained within a facility operating at a lower biosafety level, usually a BSL-3. This isolated zone has strictly controlled access, and special physical security measures, and functions on the “box within a box” principle. See F-2 and G-1 for additional criteria.				

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E-2	Walls, floors, and ceilings of the BSL3 Ag laboratory must be constructed to form a sealed internal shell to facilitate fumigation and prohibit animal and insect intrusion. The internal surfaces of this shell must be resistant to liquids and chemicals used for cleaning and decontamination of the area. Floors must be monolithic, sealed and coved. All penetrations in the internal shell of the laboratory and the inner (dirty) change room must be sealed to prevent air leaks. The facility must be pressure decay tested for leaks during the initial commissioning process using criteria given in ARS 242.1.				
E-3	The BSL 3 Ag facility design parameters and operational procedures must be documented. The facility must be tested to verify that the design and operational parameters have been met prior to operation. Facilities must also be re-verified. Verification criteria should be modified as necessary by operational experience.				
E-4	If multiple containment zones exist within the facility, ensure that sequentially more negative pressure differentials are established so that the more contaminated spaces are maintained at a negative pressure with respect to less contaminated areas. Air flow should be from clean hallway to anteroom to shower to animal room. Animal rooms and necropsy should be the most negative spaces. (Verify with smoke.)				
E-5	The room(s) containing single wall pipe or the effluent decontamination system must be designed, constructed, and maintained to facilitate cleaning, decontamination, housekeeping and have leak detection devices. All penetrations in floors, walls and ceiling surfaces are sealed, to include openings around ducts, doors and door frames, to facilitate pest control, proper cleaning and decontamination.				
E-6	The facility is arranged so that personnel egress from the laboratory containment area(s) into non-containment space is achieved through a series of rooms arranged to ensure sequential passage from the laboratory through an inner (dirty) change area, a personal shower, and then by passage into an outer (clean) change room. Exit from the clean change room completes the egress process.				

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E-7	Entry into the BSL3Ag laboratory must be through an airlock fitted with airtight doors. These airlock doors must be located at the exit leading from the laboratory into the inner (dirty) change area and at the exit leading from the inner (dirty) change room into the personal body shower and must function as a primary containment barrier. Additional airtight doors may be located at other locations including the exit from the outer (clean) change room or between different zones within the containment space.				
E-8	A double-door, pass through autoclave(s) must be provided for decontaminating materials passing out of the laboratory. Autoclaves that open outside of the laboratory must have a functioning bioseal around the wall through which the autoclave passes. This bioseal must be durable and airtight. The autoclave doors must be interlocked so that only one can be opened at any time and be automatically controlled so that the outside door to the autoclave can only be opened after the decontamination cycle has been completed. The size of the autoclave should be sufficient to accommodate the intended use.				
E-9	For destruction of large amounts of biomass (animal carcasses), a terminal destruction method must be adjacent to the BSL-3Ag space (e.g. incinerator, digester, render etc.). The procedures must have been demonstrated to be efficacious for the pathogens being studied.				
E-10	The charging head for the device must be within containment and the remaining body of the equipment outside of containment for easy servicing and emptying. The loading assembly between charging head and destruction chamber must be sealed (e.g. incinerator chute). Destruction records, indicating operation within normal parameters, must be verified.				
E-11	The room(s) containing destruction devices must be designed, constructed, and maintained to facilitate cleaning, decontamination and housekeeping. All penetrations in floors, walls and ceiling surfaces capable of being sealed, to include openings around ducts, doors and door frames, to facilitate pest control, proper cleaning and decontamination.				
E-12	A dedicated non-recirculating ventilation system must be provided. Only laboratories with the same HVAC requirements (i.e., other BSL-4 labs, ABSL-4, BSL-3-Ag labs) may share ventilation systems but only if gas tight dampers and HEPA filters isolate each individual laboratory system.				
E-13	The supply and exhaust components of the ventilation system must be designed to maintain the BSL3 Ag laboratory at negative pressure to surrounding areas and provide correct differential pressure between adjacent areas within the laboratory.				

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E-14	Redundant supply fans are recommended. Redundant exhaust fans are required. Supply and exhaust fans must be interlocked to prevent positive pressurization of the laboratory.				
E-15	The ventilation system must be monitored and alarmed to indicate malfunction or deviation from design parameters. A visual monitoring device must be installed near the clean change room so proper differential pressures within the laboratory may be verified.				
E-16	Supply air to the BSL3 Ag laboratory, including the inner (dirty) change room, must pass through a HEPA filter. All exhaust air from the laboratory, shower and fumigation or decontamination chambers must pass through two HEPA filters, in series before discharge to the outside. The exhaust air discharge must be located away from occupied spaces and air intakes.				
E-17	The HEPA filter housings are designed to allow for in situ decontamination and validation of the filter prior to removal. The design of the HEPA filter housing must have gas-tight isolation dampers; decontamination ports; and ability to scan each filter assembly for leaks.				
E-18	Central vacuum filtration systems are not recommended. If, however, there is a central filtration vacuum system, it must not serve areas outside the BSL3Ag laboratory. Two in-line HEPA filters must be placed near each use point. Filters must be installed to permit in-place decontamination and replacement.				
E-19	Drains, if present, in the laboratory floor must be connected directly to the liquid waste decontamination system. Sewer vents and other service lines must be protected by HEPA filtration and have protection against insect and animal intrusion. A heat and/or chemical [with appropriate pH and contact time] decontamination system is utilized in these facilities and equipment must be provided to process, heat and hold the contaminated liquid effluents to temperatures, pressures and times sufficient to inactivate all biohazardous materials.				
E-20	Liquid effluents from showers, sinks, floor drains, and other sources within the laboratory be decontaminated, if needed, by a proven method.				
E-21	Services and plumbing that penetrate the laboratory walls, floors, or ceiling must be installed to ensure that no backflow from the laboratory occurs. These penetrations must be fitted with two (in series) backflow prevention devices. Consideration should be given to locating these devices outside of containment. Atmospheric venting systems must be provided with at least one HEPA filter.				

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E-22	Decontamination of all liquid wastes must be documented. The decontamination process for liquid wastes must be verified physically and biologically. Biological verification must be performed annually or more often as required by institutional policy.				
E-23	Pass through dunk tanks, fumigation chambers, or equivalent decontamination methods must be provided so that materials and equipment that cannot be decontaminated in the autoclave can be safely removed from the BSL3 Ag laboratory.				
E-24	BSCs must be installed so that fluctuations of the room air supply and exhaust do not interfere with proper ventilation system operations. BSCs should be located away from doors, heavily traveled laboratory areas, and other possible airflow disruptions.				
E-25	HEPA filtered exhaust air from a Class II BSC can be safely re-circulated back into the laboratory environment if the cabinet is tested and certified at least annually and operated according to the manufacturer's recommendations. Biological safety cabinets can also be connected to the laboratory exhaust system by either a thimble (canopy) connection or through a direct (hard) ducted connection. Proper safety cabinet performance and air system operation must be verified.				
F	Review the commissioning report and physical features of new facilities to ensure the following:				
F-1	Verification of security systems, interlocks, alarms, intrusion protection.				
F-2	Verification of the animal room envelop integrity through pressure decay testing.				
F-3	Pressure test results of duct work between the source of contaminated air and the HEPA filters.				
F-4	Verification of pressure differentials across spaces to prescribed set points in the facility specifications.				
F-5	Exhaust and supply fan failure tests (single and multiple) in all facility spaces. Ensure interlocks are functional and alarms work (local and central). No sustained reversal of air flow in any facility space.				

Entity Name:		Inspection Date:			
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F-6	Verification of all HVAC alarm functionality.				
F-7	Pressure testing results of liquid effluent piping.				
F-8	Verification of liquid effluent treatment system.				
F-9	Verification of autoclave function.				
F-10	Verification of solid waste (carcass) destruction technology.				
F-11	Verification of back up power supply for the facility.				
F-12	Verification that power loss to Building Automation Systems results in return to normal function following power restoration.				
F-13	Verification that power loss to HVAC systems results in return to normal function following power restoration. No sustained reversal of air flow in any facility space.				
F-14	Certification of all biosafety cabinets or other primary containment devices.				
F-15	In situ certification of all HEPA filters (supply, exhaust, atmospheric vents serving plumbing traps, pressure reference lines, central or local vacuum systems, return lines of compressed air systems, room by-pass filters).				
F-16	Emergency light testing.				

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F-17	Testing of leak detection alarm systems, including annular leak detection in double walled piping where applicable.				
F-18	Verification of all communication device functionality.				
G	Review the following annual testing results for existing facilities:				
G-1	Verification of the animal room envelop integrity by soap bubble test or equivalent procedure - all penetrations (dunk tank, autoclave, door gaskets, pass box, windows, ductwork, conduits, etc.)				
G-2	Verification of pressure differentials across spaces to prescribed set points in the facility specifications.				
G-3	Exhaust and supply fan failure tests (single and multiple) in all facility spaces. Ensure interlocks are functional and alarms work (local and central). No sustained reversal of air flow in any facility space.				
G-4	Verification of all HVAC alarm functionality.				
G-5	Verification of liquid effluent treatment system.				
G-6	Verification of autoclave function.				
G-7	Verification of solid waste (carcass) destruction technology.				
G-8	Verification of back up power supply for the facility.				
G-9	Testing of all Building Automation System uninterrupted power supply (UPS) units.				

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G-10	Verification that power loss to Building Automation Systems results in return to normal function following power restoration.				
G-11	Verification that power loss to HVAC systems results in return to normal function following power restoration. No reversal of air flow in any facility space.				
G-12	Certification of all biosafety cabinets or other primary containment devices annually.				
G-13	In situ certification of all HEPA filters (supply, exhaust, atmospheric vents serving plumbing traps, pressure reference lines, central or local vacuum systems, return lines of compressed air systems, room by-pass filters).				
G-14	Emergency light testing.				
G-15	Testing of leak detection alarm systems, including annular leak detection in double walled piping where applicable.				
G-16	Verification of all communication device functionality.				

Comments continued:

Inspector summary and comments:

Lead inspector:

Date:

Other inspectors present:

Date:

Lead inspector signature: _____

Date: _____