

Clean Air Device

Primary Containment Device

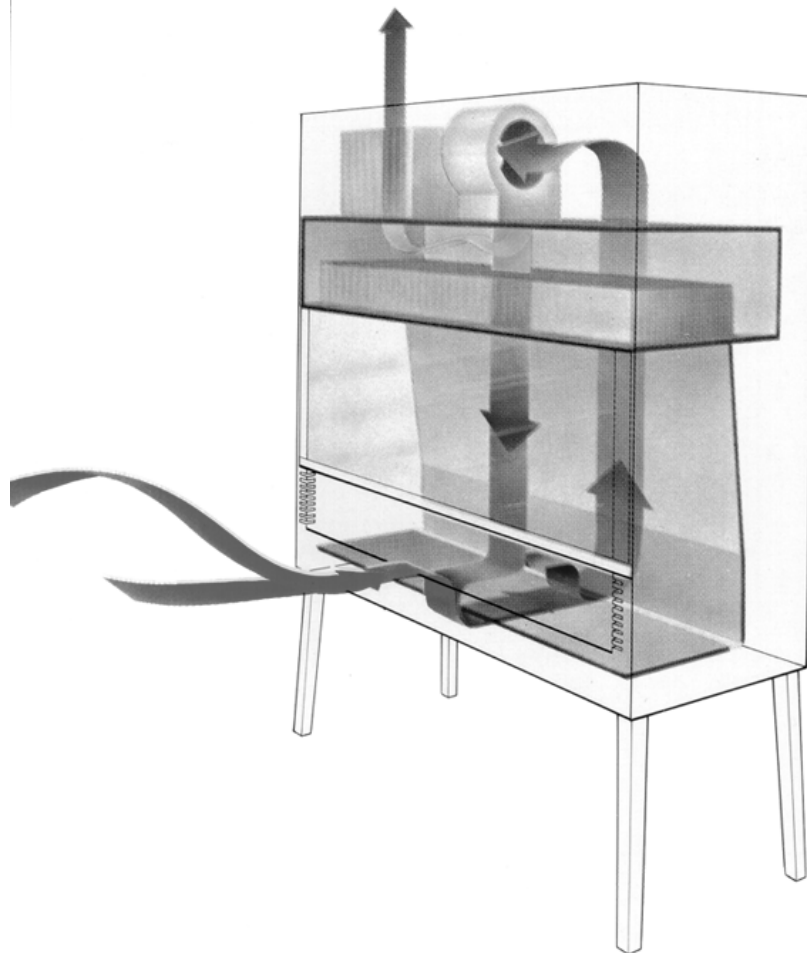


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Section 1.0 Introduction

This booklet was designed to describe the Office of Environmental Health and Safety's Clean Air Device (CAD) Program. The CAD Program was established over 15 years ago to ensure the health and safety of Yale employees. The program initially conformed to guidelines established by the National Institutes of Health (NIH). The same functions have been incorporated into the Centers for Disease Control and Prevention (CDC) guidelines and the Occupational Safety and Health Administration's (OSHA) Bloodborne Pathogens regulation. This program also protects research materials and prevents environmental release of infectious materials.

The CAD Program monitors the performance of Biological Safety Cabinets (BSCs), Horizontal Laminar Flow Benches and Vertical Laminar Flow Benches (LFBs). Each unit is monitored and adjusted to assure it meets standards of the National Sanitation Foundation (NSF 49), the manufacturer or the Institute for Environmental Sciences Recommended Practice for Laminar Flow Clean Air Devices (IES-RP-CC-002-86).

BSCs and LFBs used properly provide a "clean" work environment for your research or patient care activities. BSCs have the added advantage of providing personnel and environmental protection. The efficacy of BSCs and LFBs depends upon the behavior of the operator and the unit's orientation in the facility.

The Office of Environmental Health and Safety is continually working behind the scenes to improve this program and to control its cost. Direct any questions or suggestions to the Occupational Health and Safety Section at 785-3550.

The following procedures are intended to facilitate services. Your cooperation will improve service efficiency, reduce downtime and reduce costs. Notify the Occupational Health and Safety Section (737-2125) of any status change regarding your unit. This will help prevent being charged for services not appropriate or necessary.

Section 2.0 Clean Air Devices

2.1 Biological Safety Cabinet (BSC)

A Biological Safety Cabinet offers personnel, product, and environmental protection. The BSC provides primary containment for infectious materials.

Biohazards are isolated by confining the infectious contaminant within the BSC. The BSC removes contaminants from the air through High Efficiency Particulate Air (HEPA) filters. The intake air is filtered through a HEPA filter before flowing into the BSC work area. The exhaust air is also filtered by a HEPA filter. Aerosols generated within the cabinet work area are contained within the BSC.

2.2 Horizontal Laminar Flow Bench (HLFB) or Clean Bench

The HLFB offers only product protection. Air entering the unit is filtered through a HEPA filter before it blows across the work space toward the operator into the room. Standing or sitting in the air path results in contaminated air blowing in the direction of the operator.

Objects in the HLFB interrupt the airflow and may enable contaminated particulates to enter the work area. The term "backwash" refers to the entry of organisms shed by the operator or unfiltered room air into the work zone. Backwash may be induced by microscopes or other equipment in the HLFB.

2.3 Germicidal Ultraviolet Lamps

Many BSCs are equipped with germicidal ultraviolet (UV) lamps. The germicidal effect of the UV lamp is affected by time of exposure, distance, presence of dust or debris and the UV lamp intensity. Even though a UV lamp maintains a blue-violet visible glow, this does not mean it still has a germicidal effect.

UV lamps require periodic maintenance. The UV lamp intensity must be monitored and the UV lamp must be cleaned periodically to remove dust and debris. Microorganisms covered by materials or not in the direct path of the UV light will not be destroyed. Relying on the germicidal effectiveness of UV lamps can lead to a false sense of security.

Presently there is no written policy concerning the use of ultraviolet (UV) lamps. The Office of Environmental Health and Safety has recommended the practice of routine surface decontamination instead of using UV lamps in BSCs or LFBs. Routine surface decontamination of the BSC is more effective than the use of UV lamps.

Prolonged exposure to UV light may cause burns, reddening of the skin, or eye irritation. UV lamps must be turned off when occupying the room or working in the BSC since UV light is reflected from the stainless steel surfaces of the BSC. Even though there is no direct exposure to the UV lamp, it is still capable of causing eye injury.

2.4 Formaldehyde Decontamination

The formaldehyde decontamination process decontaminates the BSC's inner walls, plenums and filters. This process prevents contaminated air from being released into the workplace when the unit is disassembled, moved or repaired. The formaldehyde decontamination policy protects the welfare of people in the facility, as well as those who handle, move or repair BSCs. All BSCs shall be professionally formaldehyde decontaminated before a unit is relocated, placed in storage, serviced (interior) or discarded.

The formaldehyde decontamination (decon) process takes two days.

On the first day, the certifier may request the room be vacated. This is due to the potential for formaldehyde gas to leak from the BSC. The certifier will prepare the BSC, then generate formaldehyde gas in the sealed BSC. This may take up to three hours. The gas will then be slowly neutralized from the BSC overnight after the decontamination of internal surfaces.

On day two, the certifier will return to remove the decon equipment from the BSC and place an approval sticker on the viewscreen or some other conspicuous area. The approval sticker indicates that the unit is safe to be moved or repaired.

2.4.1 Decon for relocation

Once the approval sticker is on the BSC the utilities (gas, vacuum) may be disconnected and the BSC moved. The lab must make arrangements with physical plant to have the utilities disconnected from the BSC. After the BSC is relocated and connected to the utilities call Occupational Health and Safety at 737-2125 to have the unit recertified. The unit must be recertified before use.

2.4.2 Decon for repairs

The repairs will be started on day two. Once repairs are completed and the unit is recertified, the certifier will remove the approval sticker.

2.5 Recertification after Relocation or Major Repair Work

Recertification assures the integrity of the unit has not been compromised. Moving a unit may damage internal parts such as filters, motors, or plenums.

2.6 Clean Air Device Users Petition (Form P)

The Clean Air Device Users Petition (Form P) was designed to prevent the inappropriate use of equipment and save laboratories money. This petition must be completed and submitted to Occupational Health and Safety when a Biological Safety Cabinet (BSC) or Laminar Flow Bench (LFB) will be:

- ◆ purchased

- ◆ newly installed
- ◆ reactivated from storage
- ◆ relocated
- ◆ transferred to a new owner
- ◆ placed into storage
- ◆ discarded

The Clean Air Device Users Petition (Form P) is available at your Department's Business Office or from the Occupational Health and Safety Section (737-2121). A copy of the petition is in Appendix III.

Section 3.0 Policy Information

All BSCs and LFBs in use shall be placed on the Certification Service Contract and certified at least annually. Any BSC or LFB not under the Certification Service Contract shall be placed in storage status and disabled.

Occupational Health and Safety shall be notified whenever BSCs or LFBs need service or repair (e.g. replacing fluorescent lamps, switches, etc.).

Yale has a long standing policy to actively discourage the purchase and use of LFBs. The Biological Safety Committee and Occupational Health and Safety Section recognize LFBs do not provide personnel or environmental protection from infectious or potentially infectious agents, allergens, chemicals or radioactive materials. In the recent past, unauthorized LFBs were returned to the manufacturer, causing delays in research and additional costs.

Notify the Occupational Health and Safety Section in advance when you plan to have BSCs or LFBs moved, placed into storage, ownership transferred, discarded, removed from Yale or received from another institution or manufacturer.

BSCs and LFBs shall be certified after installation and before use, after relocation and on an annual basis.

BSCs shall be professionally formaldehyde decontaminated before a unit is relocated, placed in storage, serviced (interior) or discarded.

The Occupational Health and Safety Section reviews all BSC and LFB purchase requests.

A Clean Air Device Users Petition (Form P) shall be submitted to the Occupational Health and Safety Section for the purchase, activation, reactivation from storage, placing into storage, relocating, or transferring ownership of BSCs and LFBs.

Section 4.0 Certification Service Contract Information

The Certification Service Contract year coincides with the University's fiscal year.

The contract includes annual certification, labor performed during certification and repair, and some replacement parts.

4.1 Cost of the Certification Service Contract

For contract cost please see attached letter or call 785-3550.

4.2 Charges which are not covered by the contract

Certain replacement parts

- ◆ Formaldehyde decontamination of BSCs in preparation for repair or relocation.
- ◆ Labor for repairs caused by misuse.
- ◆ Labor for service calls performed after normal working hours.

- ◆ Labor involved in restoring modified or damaged equipment to NSF or manufacturer's certifiable standards.
- ◆ Labor for excessive waiting time during a service call.
- ◆ BSCs and LFBs in use and not under contract are charged for labor, all replacement parts and travel time. Units not on contract result in increased costs for the investigator.

4.3 Responsibilities of the Office of Environmental Health and Safety

- ◆ Schedule annual certification of all units on the contract
- ◆ Expedite service requests
- ◆ Document concerns or problems related to the certification company's performance. Your input is very important in terms of the contract renewal and negotiation process. Your experiences enable the Office of Environmental Health and Safety to monitor certifier performance more closely and prevent multiple/repeat problems from occurring.
- ◆ The Occupational Health and Safety Section will send contract information to each Principle Investigator with a CAD after each new contract. If you have any questions, please call 737-2125.

4.4 Special Considerations

- ◆ A unit used with radioisotopes must be inspected and cleared by the Radiation Safety Section before major repair services can be performed. Radiation Safety may require a staff member to be present during certain repair procedures.
- ◆ Your departmental business office, principal investigator or authorized representative is responsible for providing the certification company with the necessary billing information for emergency service call charges. The company may require billing information prior to performing any emergency services.
- ◆ Most emergency services will be performed within 48 hours after the certifier is notified. Response time depends on the availability of replacement parts and supplies necessary to perform the service. Decontamination service requires at least 72 hours lead time after the certifier is notified.
- ◆ Departments whose service contracts are billed through the Howard Hughes Medical Institute should contact the Howard Hughes business office to obtain information or arrange to have equipment added to the certification service contract. Please call 737-2125 to schedule service.
- ◆ Departments whose service contracts are billed through the Yale Purchasing Department should call 737-2125 to schedule service. Call 737-2125 to obtain information or arrange to have equipment added to the certification service contract.

Section 5.0 Clean Air Device Procedures

5.1 Requesting Service or Repair

Call the Occupational health and Safety Section at 785-3550 when your BSC or LFB needs service or repair. When calling include the following information:

- ◆ Make
- ◆ Model
- ◆ Serial #
- ◆ Location of the unit
- ◆ Contact person and telephone #

This information expedites the response time and lessens the down time of your unit and, therefore, your work.

5.2 Purchasing a BSC or LFB

- ◆ Mail or facsimile (785-7588) a Clean Air Device Users Petition (Form P) to the Occupational Health and Safety Section.
- ◆ The petition will be reviewed and returned to you with either an approved or denied response.
- ◆ If the unit is approved, attach the petition to the Purchase Order. The Purchasing Department will not accept purchase orders for BSCs or LFBs without the petition or approval from the Occupational Health and Safety Section.
- ◆ If the Petition is denied, the unit cannot be used or purchased.

Note: In the case of LFBs, it is extremely important to describe the intended use, and why the use of a BSC is not feasible or possible. The justification must include a description of the types of activities to be performed in the LFB.

5.3 Arrival of a BSC or LFB

Contact the Occupational Health and Safety Section (737-2125) when your facility receives a Biological Safety Cabinet or Laminar Flow Bench (a purchase or transfer from another institution). A certification will be scheduled prior to use of the unit. Before the unit is certified, place it on the Certification Service Contract.

5.4 Placing Your BSC or LFB on the Certification Service Contract

- ◆ Submit a Purchase Requisition to the Purchasing Department.
- ◆ Indicate the unit is to be added to the Certification Service Contract.
- ◆ Include the following information on the Purchase Requisition:
 - Make
 - Model
 - Serial #
 - Location of the unit
 - Principal Investigator
- ◆ Once a unit is on the contract it will be automatically renewed until placed in storage or discarded.

5.5 Relocation

5.5.1 Biological Safety Cabinet

All BSCs must be formaldehyde decontaminated by the current certifier prior to relocation. After a BSC has been professionally decontaminated and relocated the unit must be recertified before use.

Before a BSC is Relocated:

- ◆ Mail or facsimile a Clean Air Device Users Petition (Form P) to the Occupational Health and Safety Section or call (785-3550).
- ◆ Provide the following information to schedule service for a formaldehyde decontamination:
 - Make/Model
 - Serial #
 - Location of unit
 - Name of Contact Person and Telephone #
- ◆ Occupational Health and Safety will confirm a suitable date and time.
- ◆ After relocation, the unit must be recertified before use. Call the Occupational Health and Safety Section at 785-3550 to schedule certification.

5.5.2 Horizontal or Vertical Laminar Flow Bench

- ◆ Mail or facsimile (785-7588) a Clean Air Device Users Petition (Form P) to the Occupational Health and Safety Section before the unit is relocated.

- ◆ The petition will be reviewed and returned to with either an approved or denied response.
- ◆ All LFBs must be surface decontaminated prior to relocation. The laboratory must wipe the work surfaces with 70% ethanol or another appropriate disinfectant. Place a tag on the unit indicating the date of the surface decontamination, product used and name/telephone number of the person who did the surface decontamination. Tags are available through the Office of Environmental Health and Safety by calling 737-2121.
- ◆ Call the Occupational Health and Safety Section at 785-3550 when the unit has been relocated to schedule recertification before using the LFB.

5.6 Storage, Discard or Transfer to Another Institution

5.6.1 Biological Safety Cabinet

All BSCs must be formaldehyde decontaminated by the current certifier prior to being placed in storage, or before being discarded or transferred to another institution.

- ◆ Mail or facsimile (785-7588) a Clean Air Device Users Petition (Form P) to the Occupational Health and Safety Section or call (785-3550).
- ◆ Provide the following information to schedule a formaldehyde decontamination:
 - Make/Model
 - Serial #
 - Location of unit
 - Name of Contact Person and Telephone #
- ◆ Occupational Health and Safety will confirm a suitable date and time.
- ◆ After the BSC is formaldehyde decontaminated, the certifier will place a sticker on the viewscreen or some other conspicuous area indicating the unit was formaldehyde decontaminated. The sticker indicates the unit is safe to move, disassemble or repair.
- ◆ Notify the Occupational Health and Safety Section (785-3550) on the day the unit was placed into storage, discarded or shipped to another institution. The unit will be removed from the Certification Service Contract to discontinue future billing.

5.6.2 Horizontal or Vertical Laminar Flow Bench

- ◆ Mail or facsimile (785-7588) a Clean Air Device Users Petition (Form P) to the Occupational Health and Safety Section before the unit is put into storage, discarded or transferred to another institution.
- ◆ All LFBs must be surface decontaminated prior to storage, discard or transfer to another institution. Laboratory personnel must wipe the work surfaces with 70% ethanol or another appropriate disinfectant. Place a tag on the unit indicating the date of the surface decontamination, product used and name/telephone number of the person who did the surface decontamination. Tags are available through the Office of Environmental Health and Safety by calling 737-2121.
- ◆ Notify the Occupational Health and Safety Section (785-3550) on the day the unit was placed into storage, discarded or shipped to another institution. The unit will be removed from the Certification Service Contract to discontinue future billing.

5.7 Reactivation of a BSC or LFB

To reactivate a BSC or LFB from storage status, it is important to notify the Occupational Health and Safety Section.

- ◆ Mail or facsimile (785-7588) a Clean Air Device Users Petition (Form P) to the Occupational Health and Safety Section.
- ◆ The petition will be reviewed and returned with either an approved or denied response.
- ◆ If approved for use, submit a Purchase Requisition to the Purchasing Department to have your unit added to the Certification Service Contract. Include the following information on the Purchase Requisition:
 - Make

- Model
 - Serial #
 - Location of the unit
 - Principal Investigator
- ◆ When the paper work is received by Purchasing, Purchasing will notify the Occupational Health and Safety Section.
 - ◆ Occupational Health and Safety will then make arrangements to have the unit certified as soon as possible after installation.
 - ◆ If denied for use, the unit must remain in storage.

Note: In the case of LFBs, it is extremely important to describe the intended use, and to explain why the use of a BSC is not feasible or possible. The justification must include a description of the types of activities to be performed or planned to be performed in the LFB.

5.8 Transfer of Ownership

- ◆ Mail or facsimile (785-7588) a Clean Air Device Users Petition (Form P) to the Occupational Health and Safety Section regarding your BSC or LFB.
- ◆ The petition will be reviewed and returned to you with a response.

Note: LFBs may be denied depending on the intended use. It is extremely important to describe the intended use, and to explain why the use of a BSC is not feasible or possible. The justification must include a description of the types of activities to be performed in the HLFB.

Appendix I Proper Use of Class II Biological Safety Cabinets

A properly balanced and properly used Biological Safety Cabinet (BSC) will do an excellent job of controlling airborne contaminants only if appropriate contamination control procedures and aseptic techniques are also employed.

- ◆ Position the BSC away from doorways, high traffic areas, room ventilation systems, air conditioners, and low ceilings. Common room air currents can disrupt the protective air barrier of a BSC. The minimum distance from the top of the BSC to the ceiling is ten inches; this will allow for proper airflow and repairs when needed.
- ◆ All BSCs shall be professionally certified at the time of installation and annually thereafter. If a BSC is to be moved, it shall be professionally formaldehyde decontaminated before moving, and recertified before work commences. Contact the Occupational Health and Safety Section (737-2125) for assistance with professional certification and decontamination. All service, repairs, and certifications must be performed by the vendor contracted by Yale University,
- ◆ Keep the insides and tops of BSCs free of unnecessary equipment or supplies. Clutter inside and on top of the BSC may effect proper air flow or damage the exhaust HEPA filter.
- ◆ Some BSCs are equipped with ultraviolet (UV) lights. If good procedures are followed, UV lights are not needed. All UV lights shall be turned off whenever the laboratory is occupied.
- ◆ Infectious agents assigned to Biosafety Level 4 shall not be used on campus or in this type of cabinet.
- ◆ Avoid using toxic, explosive, flammable, or radioactive substances unless a safety professional has approved them for work in your BSC.
- ◆ To begin the BSC operation, turn on the fluorescent lights, confirm the air intake and exhaust grills are clear, and turn on the blower. If a drain valve is present, make certain it is closed.
- ◆ Wash hands and arms with germicidal soap before and after work in the BSC. Operators shall wear long sleeved gowns with tight fitting cuffs, and gloves. This measure protects the operator's hands and arms from contamination, and minimizes the shedding of skin flora into the work area.
- ◆ Disinfect interior surfaces of the work area using freshly prepared 70% ethanol or another appropriate disinfectant.
- ◆ Everything needed for the procedure shall be placed in the BSC before starting work. Nothing shall pass in or out through the air barrier until the procedure is completed. Place a pan containing an appropriate disinfectant into the BSC for discarding contaminated materials. Avoid overloading the work area, and thereby compromising the efficacy of the BSC.
- ◆ Work supplies are best arranged to segregate clean from dirty materials.
- ◆ Set the view screen at the proper height, if it is an adjustable viewscreen.
- ◆ Wait five minutes after all materials have been placed in the BSC before beginning work. This will enable the BSC to purge airborne contaminants from the work area.
- ◆ Work as far to the back of the BSC workspace as possible. The front intake grill must not be blocked with research notes, discarded plastic wrappers, pipetting devices, etc.
- ◆ Always use mechanical pipetting aids.
- ◆ Avoid using open flames inside BSCs. If a flame must be present, use a burner with a pilot light and place it to the rear of the work space. Flames disrupt the unidirectional airflow and contribute to the heat load inside the BSC. Flames have shortened the lifetime of HEPA filters, burned holes through HEPA filters and have caused explosions in BSCs.
- ◆ Do not work in a BSC while a warning light or alarm is signaling.
- ◆ After completion of work, enclose or cover all equipment and materials. Wipe down items such as flasks and bottles with an appropriate disinfectant prior to removal from the BSC. Allow the BSC to run for five minutes to purge airborne contaminants from the work area.
- ◆ Decontaminate interior surfaces with freshly prepared 70% ethanol or another appropriate disinfectant after removal of all materials, cultures and apparatus.

- ◆ Periodically decontaminate under work grills and work surfaces if these parts are removable.
- ◆ When the blower is shut off, the air barrier is destroyed. Within seconds, the inside of the cabinet becomes contaminated with microorganisms from the laboratory. For this reason, some manufacturers recommend that BSCs be left operating continuously (24 hours a day).

ACCIDENTS OR SPILLS: In the event of a spill, all surfaces and items shall be surface decontaminated before being removed from the BSC. If the spill results in puddles, flood the area with an appropriate disinfectant for a sufficient time (20 - 30 minutes) to achieve a complete kill. If a drain system is involved, consult the BSC manufacturer's specific instructions regarding decontamination. After a spill is decontaminated, the area shall be thoroughly cleaned and dried. Residual materials can support the growth and multiplication of microorganisms, and can jeopardize the product protection normally provided by BSCs.

Appendix II Proper Use of Horizontal Laminar Flow Benches

A HORIZONTAL LAMINAR FLOW BENCH (HLFB) DOES NOT PROVIDE PERSONNEL OR ENVIRONMENTAL PROTECTION FROM INFECTIOUS AGENTS, ALLERGENS, CHEMICALS, OR RADIOACTIVE MATERIALS. Use of HLFBS is actively discouraged at Yale University. Investigators planning to purchase a HLFB must receive prior authorization from Occupational Health and Safety. Call 737-2125 for further information.

- ◆ Position the HLFB away from doorways, high traffic areas, room ventilation systems, and low ceilings. Normal room air currents can disrupt the air flow and jeopardize product protection.
- ◆ All HLFBS shall be professionally certified at the time of installation and annually, thereafter. When a HLFB is to be moved, it shall be surface decontaminated before moving and professionally recertified before work commences. Call the Occupational Health and Safety (737-2125) for assistance with professional certification.
- ◆ Keep HLFB air intakes and insides free of equipment and supplies when not in use.
- ◆ Infectious, toxic, explosive, radioactive or sensitizing materials shall not be used in a HLFB.
- ◆ Hands and arms shall be washed with germicidal soap before and after work. HLFB operators shall wear long-sleeved gowns with tight fitting cuffs, surgical gloves, eye protection and surgical masks. Avoid the use of contact lenses in the laboratory.
- ◆ To begin HLFB operation, confirm air intake and exhaust grills are clear and turn on the blower.
- ◆ Disinfect HLFB interior work surfaces with freshly prepared 70% ETOH or another appropriate disinfectant.
- ◆ Avoid overloading the work area. Work as far to the back of the HLFB work space as possible. Too much clutter can obstruct the air flow. Objects toward the front of the cabinet can cause back drafts. Both situations can jeopardize product protection.
- ◆ Wait five minutes after all materials have been placed in the HLFB before beginning work. This will enable the HLFB to purge airborne contaminants from the work area.
- ◆ Always use mechanical pipetting aids.
- ◆ Avoid using open flames inside a HLFB. Flames disrupt the unidirectional air flow. If a flame must be present, use a burner with a pilot light.
- ◆ After completion of work, decontaminate HLFB interior surfaces with freshly prepared 70% ETOH or another appropriate disinfectant.

ACCIDENTS OR SPILLS: In the event of a spill, the area shall be thoroughly cleaned and dried. Residual materials can support the growth and multiplication of microorganisms, and may jeopardize the product protection normally provided by a HLFB.

Appendix III Biological Safety Cabinet Installation

The minimum clearance required from the top of the biological safety cabinet (BSC) to the ceiling is ten inches. This will allow for proper exhaust airflow and repair of the BSC when necessary. A minimum three-inch clearance on each side and 1.5 inch clearance in the back are recommended.

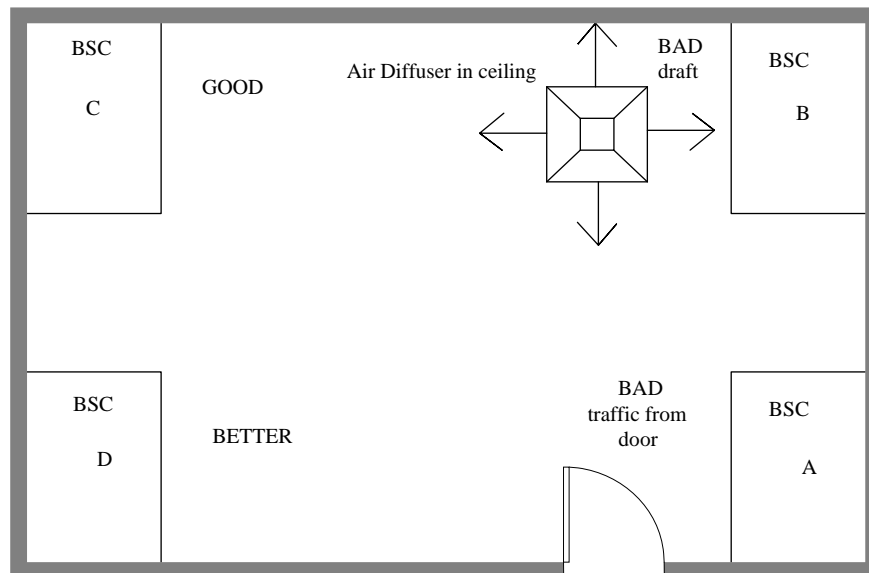
BSCs must be placed away from doors as well as ventilation supply and exhaust vents to reduce air currents around the BSC.

The electrical outlet for a BSC must be a 20amp dedicated circuit that is readily accessible for service and electrical safety testing.

If a BSC is to be connected to a gas supply a flexible connector will be used. The connector must comply with the Standard for Connectors for Moveable Appliances, ANSI Z21.69. A quick-disconnect device is not recommended. An accessible manual shutoff valve must be installed at the outlet of the gas supply piping system upstream of the connector, as required by ANSI Z21.69.

If a BSC is to be connected to vacuum, an appropriate flexible connection should be used.

Evaluation of Proposed Biological Safety Cabinet Locations



Biological safety cabinets can be located easily in most facilities. BSCs should be located away from drafts, convection currents, diffusers, and traffic paths.

For further information or assistance, contact the Occupational Health and Safety Section at 785-3550

Appendix IV Clean Air Device User's Petition

FORMP

Number: _____

Return to: Occupational Health and Safety, 135 College Street, Suite 100
Phone: 737-2125 Fax: 785-7588

Date: _____

Clean Air Device - Users Petition

Please check the appropriate categories and supply as much information as possible.

Transfer of ownership: _____ New to Yale: _____ Reactivation from storage: _____

Relocation: _____ Purchase: _____ Discard: _____ Storage: _____

Biological Safety Cabinet (BSC) _____ Horizontal Laminar Flow Bench (HLFB) _____ Other _____

Make _____ Model _____ Serial# _____ Vendor _____

Location(Bldg/Rm) _____ Department _____

Petitioner _____ Telephone # _____

Proposed Location _____ Multiuser facility? Yes _____ No _____

Radioisotope to be used in unit? Yes _____ No _____ Maybe _____

Principal Investigator(s) _____

University Policy actively discourages the use or purchase of Horizontal Laminar Flow Benches.

From the CDC/NIH:

Horizontal Laminar Flow "Clean Bench"

Horizontal laminar flow "clean benches" are not Biological Safety Cabinets (BSCs). These pieces of equipment discharge HEPA-filtered air from the back of the cabinet across the work surface and toward the user. These devices only provide product protection. They can be used for certain clean activities, such as the dust-free assembly of sterile equipment or electronic devices. Clean benches should never be used when handling cell culture materials or drug formulations, or when manipulating potentially infectious materials. The worker will be exposed to the materials being manipulated on the clean bench potentially resulting in hypersensitivity, toxicity or infection depending on the materials being handled. Horizontal airflow "clean benches" must never be used as a substitute for a biological safety cabinet. Users must be aware of the differences between these two devices.

Vertical Laminar Flow "Clean Bench"

Vertical laminar flow clean benches also are not BSCs. They may be useful, for example, in hospital pharmacies when a clean area is needed for preparation of intravenous solutions. While these units generally have a sash, the air is usually discharged into the room under the sash, resulting in the same potential problems presented by the horizontal laminar flow clean benches. These benches should never be used for the manipulation of potentially infectious or toxic materials.

Use the following space to describe the intended uses. Explain why a BSC with/without a microscope modification cannot be used. You may request a meeting with the Biological Safety Committee to appeal a denied petition.

Reviewed by: _____ Date: _____ Approved: _____ Denied: _____

FORM P Revised 01/2010