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VIRGINIA POLYTECHNIC INSTITUTE
AND STATE UNIVERSITY

Safety Requirements for Contractors and Subcontractors



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Occupational Safety Division
540-231-5985**

Safety Requirements for Contractors and Subcontractors

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SAFETY REQUIREMENTS FOR CONTRACTORS AND SUBCONTRACTORS

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SAFETY REQUIREMENTS FOR CONTRACTORS AND SUBCONTRACTORS

Introduction

EHSS Information

The mission of Environmental Health and Safety Services (EHSS) is to:

- Work toward providing a safe and healthful living, learning, and working environment for every member of the greater university community by assuring safe work practices through educating, training, and assisting individuals and departments;
- Help individuals and departments achieve compliance with all health and safety state and federal regulations and university policies as economically as possible; and
- Act as liaison with external regulatory agencies, and to monitor university compliance with mandatory health and safety standards where necessary.

Purpose

The university developed *Safety Requirements for Contractors and Subcontractors* to assure the safety of university employees and the public who may be in proximity to renovation, construction, demolition, installation, or maintenance operations performed by Contractors or Subcontractors.

Multi-employer worksite rules apply to construction sites where more than one employer may be citable for a hazardous condition that violates an OSHA standard. If an employer meets the criteria of a creating, controlling, exposing, or correcting employer, or any combination thereof, it has safety and health obligations under OSHA's regulations. When serving in the host employer capacity, the university has a responsibility to provide information about hazards, controls, safety and health rules, and emergency procedures to all employers at the workplace, and ensure that safety and health responsibilities are assigned as appropriate to other employers at the workplace.

Application

Each department that coordinates or uses the services of a Contractor to perform maintenance, repair, installation, renovation or construction-related operations is expected to designate one or more persons to coordinate this program within his or her department. These coordinators are expected to assure that the Contractor is:

- Informed of the presence of hazards in or near the work area.
- Informed about Virginia Tech's requirements related to asbestos, lead, confined space entry, electrical, lockout/tagout, hot work, and excavation operations.
- Aware of the university's expectations regarding safety compliance and the control of worksite hazards.

Scope

This program applies to all Virginia Tech properties, and to all work performed by Contractors, Subcontractors, Architect/Engineering firms and Virginia Tech employees in or on property owned, leased or occupied by Virginia Tech. For agencies and firms with no contractual relationship with Virginia Tech, such as media crews or regulatory agencies, see requirements specified in "Agencies/Firms with No Contractual Relationship with Virginia Tech" of this program.

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General Requirements

Contractual Obligations

A copy of this document shall be made available upon request to prospective bidders/offerors at the pre-bid/pre-proposal conferences for the work. This document shall be either included with, or referenced in, the contract documents.

Contractors performing building, facilities or equipment-related construction, repair, installation, renovation or maintenance activities shall attend a safety orientation as follows:

- On capital projects, this orientation will be conducted during the pre-construction conference or as determined by the university Project Manager. University Planning, Design, and Construction shall notify EHSS at 231-2341 or 231-5985 of upcoming pre-construction meetings so that a representative may be present to provide a copy of this program to contractor representatives and discuss pertinent safety issues.
- For non-capital construction/renovation work, the university Project Coordinator shall arrange the safety orientation with EHSS and the Contractor prior to the start of work by contacting EHSS at 231-2341. Contractors retained on a term contract need only attend one safety orientation held prior to the award of the first project under that contract.

The Contractor shall provide the university Project Manager/Coordinator with emergency contact phone number(s), usable 24 hours a day, for the Contractor's representative. These phone numbers shall be provided to the Virginia Tech Police Department.

The Contractor bears sole responsibility for the safety of his or her employees. The Contractor is expected to take all steps necessary to protect the safety and health of university employees, students, and visitors during the performance of their work by establishing, administering, and enforcing safety rules that meet the regulatory requirements of the Virginia Department of Labor and Industry (VDLI) and the Occupational Safety and Health Administration (OSHA). These regulations include, but are not limited to:

- Title 29 of the Code of Federal Regulations (CFR) Parts 1910, Occupational Safety and Health Administration (OSHA) Standards for General Industry,
- Title 29 of the Code of Federal Regulations (CFR) Parts 1926, Occupational Safety and Health Administration (OSHA) Standards for the Construction Industry,
- Virginia Statewide Fire Prevention Code, as currently adopted by the Commonwealth of Virginia, and
- Virginia Uniform Building Code, as currently adopted in the Commonwealth of Virginia

Each Contractor that coordinates the work of Subcontractors shall assure that they abide by the requirements outlined herein. The Contractor bears sole responsibility for communication of safety-related information and requirements to its' Subcontractors.

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Submittals

Submittals, where required from the Contractor by this document, shall be made in writing directly to the university Project Manager/Coordinator and available to EHSS upon request. Submittals shall be made sufficiently in advance to avoid delay of the project. Where review, approval, or coordination of submittals is required, submittals shall be made at least ten (10) working days prior to the start of the project unless prior arrangements have been made. Post-job submittals, where required as outlined in this document, shall be made no later than fifteen (15) working days after completion of the project or as specified herein.

Worksite Access

The Contractor shall establish controls to restrict unauthorized access to the work zone and ensure that requirements for entry are clearly posted at all access points. Signs should clearly indicate required personal protective equipment that must be worn in the restricted area.

Control of Fugitive Emissions

The Contractor shall take all reasonable precautions necessary to control fugitive emissions from the job site. Fugitive emissions include, but are not limited to: nuisance dust, chemical odors/vapors/gases, hazardous materials (such as lead dust or asbestos), and noise.

Where the product(s) or material(s) to be used by the Contractor has a permissible exposure limit (PEL) established by OSHA or VDLL, and where university employees or the public may be exposed to the product or material, the Contractor shall take all reasonable steps to maintain exposures below the PEL where an exposure condition during use exceeding the PEL could reasonably be anticipated.

In such instances, the Contractor shall monitor, or shall contract to have monitored, work area exposure conditions. Monitoring shall occur, at a minimum, during the start of work and whenever there is a change in procedure, process, or chemical or material used. If it is deemed not practicable to maintain exposures below the PEL, the Contractor shall restrict access to all areas where exposures exceed the PEL to authorized personnel only.

Accidental Spills and Releases

In the event of an accidental release or spill of chemicals or other hazardous materials by the Contractor, the Contractor shall:

- Immediately take action as appropriate to contain the spill if this action can be taken without jeopardizing the health or safety of employees,
- Notify the rescue squad, fire department, or other entities as needed or required,
- Contact EHSS, and
- Contact the university Project Manager/Coordinator.

All university costs associated with responding to or remediation of a chemical or hazardous material spill or release may be assessed to the Contractor.

The following phone numbers may be used in the event of an emergency during normal working hours:

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	Blacksburg	On-Campus
Blacksburg Fire Department	911	911
Virginia Tech Rescue Squad	231-6411	911
Virginia Tech Police	231-6411	911
Blacksburg Police	911	911
Environmental, Health and Safety Services	231-3600	1-3600
Facilities Customer Service Center	231-4300	1-4300

Note: EHSS emergency response personnel may be reached after normal working hours by contacting the Virginia Tech Police Department at 231-6411.

Fire Protection and Suppression Systems

The Contractor shall not conduct any work that disables or alters the functionality or technical specifications of fire protection and suppression systems without prior approval of the university Project Manager/Coordinator. EHSS must be notified and will secure any external approvals, as required. These systems include, but are not limited to, fire rated assemblies and enclosures, smoke barriers and partitions, fire alarm panels, exit signs and emergency lighting, sprinkler and other suppression systems, heat and smoke detection, fire hydrants, fire department access, and fire pumps. Contact EHSS at 231-9068 for more information.

Means of Egress

The Contractor shall not conduct work or operations that obstruct exits or the means of egress from an occupied building without the prior approval of EHSS and the university Project Manager/Coordinator. Equipment and materials are not to be stored in exits or exit stairwells at any time, and may not be stored in the means of egress without prior approval. Fire-rated doors shall not be chocked or blocked open except temporarily and while constantly supervised; such chocks/blocks must be immediately removed in the event of a building fire alarm or similar emergency. Contact EHSS at 231-9068 for more information.

Building Alarms

In the event of a fire, sound the alarm and/or notify other building occupants immediately. Contractor personnel shall respond appropriately to all alarms by exiting the building immediately and remaining at least 50 feet from the building to allow for emergency response access. Call 911 (or 231-6411 for cell phones) and report as much information as possible to the dispatcher.

Signs

The Contractor shall abide by the requirements of any sign posted in a building that requires the use of specific personal protective equipment, that restricts access to qualified or authorized persons only, or that establishes other requirements for entry.

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Compressed Gases

Compressed gases shall be stored, used and transported in accordance with the requirements of the Virginia Statewide Fire Prevention Code (SFPC). New compressed gas installations shall comply with the SFPC.

Temporary Structures

All tents, stages and temporary structures shall comply with the requirements of the Virginia Uniform Statewide Building Code (VUSBC) and university policy 5406, and a permit shall be obtained where required by this policy.

University Equipment

Contractors shall not use university equipment or vehicles nor shall the Contractor allow university employees to use the Contractors' equipment or vehicles without the approval of Risk Management and EHSS. If an employee of a Contractor needs to use specialized equipment owned by Virginia Tech, such as powered industrial trucks, the Contractor must provide suitable documentation that the employee has been trained and certified (if required) to use such equipment.

Explosives

The storage and use of explosives, blasting agents, and pyrotechnic devices is strictly regulated and shall comply with the SFPC. A fee, blasters certification and background check may be required to obtain a permit. For additional information, please see http://www.dhcd.virginia.gov/State_Fire_Marshal/Explosives.htm. Also, the indoor display of pyrotechnic devices is strictly controlled and shall comply with university policy; please contact EHSS at (540) 231-9068 for guidance on these requirements.

Roof Access

If work will be conducted on the roof of a building, the university Project Coordinator shall coordinate access with Facilities, the departments within the building, and EHSS as necessary to assure that if fume hood exhausts are located on the roof, access shall be in accordance with EHSS's Roof Access Procedure:

- Fume hoods within, or adjacent to, the work area may be shut down if necessary. A minimum of three (3) days advance notice to EHSS is generally required to coordinate fume hood shutdowns. In emergency situations, the Contractor may access these roof areas if appropriate personal protective equipment is used. Contact EHSS at 231-7611 for more information.
- No experiments are in-progress that would generate toxic or hazardous airborne contaminants, and that all chemicals stored within the fume hoods are capped or otherwise sealed if the Contractor will be performing work on these systems,
- The Contractor is informed in writing of any special precautions that must be taken to prevent employee exposure to hazardous chemicals,
- The Contractor is provided a copy of Virginia Tech's Roof Access Procedure which outlines the precautions that should be taken to protect employees while conducting such work. The information can be obtained by contacting EHSS at 231-7611.

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Fall Protection Systems

The university Project Coordinator shall inform the Contractor of any fall protection system installed on the roof, or of the absence of such systems so that temporary controls may be considered. Anchor points installed on university properties may be used only for the purpose and manner for which they were designed (i.e. personal fall arrest). This information is available from Facilities Safety at 231-4255.

The Contractor is responsible for providing employee protection, in accordance with OSHA 29 CFR 1926.502 on unguarded roofs, open-sided floors, loading areas, etc.

First Aid Services

The Contractor shall make all arrangements necessary to assure adequate first aid/CPR response to the jobsite as required by VDLI. The Virginia Tech Rescue Squad will provide emergency medical response to construction projects; however, the Rescue Squad cannot guarantee a minimum response time and may not be named in lieu of the Contractor providing adequately trained personnel on site.

Specific Program Requirements

Asbestos and Suspect Asbestos Containing Building Materials

It is the responsibility of the Contractor to provide Asbestos Awareness training for their employees. This shall include, but is not limited to, information contained in this section as well as the OSHA Asbestos Standard for the Construction, (29 CFR 1926.1101). Verification that this training has been conducted shall be supplied to the university upon request.

Contractors employed by the university to perform building or facilities-related maintenance, repair or renovation shall be informed by the university Project Coordinator of the location of suspect and known asbestos-containing materials (ACM) in the work area(s) to which they are assigned by one of the following means:

- The university Project Coordinator shall provide the Contractor with a copy of a completed "Work Order Review Form" or an asbestos inspection report specific to their work and the materials that are to be disturbed, or
- Where the construction documents for a project clearly detail asbestos material locations within the work area, these documents may serve in lieu of the "Work Order Review Form" or inspection report. The Contractor may obtain information within a worksite from the designated Departmental Safety Coordinator.

The "Work Order Review Form" is used internally at the university to document that the proposed scope of work has been reviewed for the presence of suspect or known ACM. The "Work Order Review Form" will be completed by the designated Departmental Safety Coordinator (as applicable). An asbestos inspection report may, at the discretion of the Contracting Department, be prepared by an asbestos consultant licensed in Virginia to perform the duties of Asbestos Inspector and Asbestos Management Planner. This report shall be copied to EHSS and Facilities Safety upon receipt. The requirements related to the performance of asbestos inspections by consultants are outlined in *Virginia Tech's Asbestos Operations and Maintenance Program, section 2.3*.

Contractors shall, under no circumstances, damage or disturb suspect or known *friable* ACM unless they are a licensed Virginia Asbestos Abatement Contractor and have been specifically employed to perform asbestos repair or removal. If suspect asbestos materials are discovered during the course of the work, the Contractor shall stop work immediately and notify the University Project Coordinator or other person as indicated in the contract documents.

The Contractor shall not proceed with any change in work which requires a material to be disturbed that the "Work Order Review Form", asbestos inspection report, or construction documents show has not previously been tested (e.g. "suspect" ACM). If a change in the scope of work becomes necessary, the revised scope of work shall be reviewed and pre-approved by the designated Departmental Safety Coordinator.

Asbestos materials may not be used or installed in university facilities.

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Lead-containing Building Materials

Contractors employed by the university to perform building or facilities-related maintenance, repair or renovation work shall be informed by the university Project Coordinator of the location of lead-containing building materials in the work area(s) to which they are assigned by one of the following means:

- The university Project Coordinator shall provide the Contractor with a copy of the completed "Work Order Review Form" or a lead inspection report specific to their work and the materials that are to be disturbed, or
- Where the construction documents for a project clearly detail the location of lead-containing building materials within the work area, these documents may serve in lieu of the "Work Order Review Form" or inspection report.

The university Project Coordinator may obtain information regarding the location of lead materials within a work site from the designated Departmental Safety Representative. A lead inspection report may, at the discretion of the Contracting Department, be prepared by a lead consultant licensed in Virginia to perform the duties of Lead Inspector. This report shall be copied to the designated Departmental Safety Representative upon receipt.

Contractors who will disturb lead-containing building materials during the course of work shall take all necessary precautions to protect university employees and the public from exposure to lead dust or contamination. These measures shall conform, at a minimum, to the OSHA requirements detailed in 29 CFR 1926.62 and applicable local, state and federal regulations related to health, safety, transportation, and disposal of lead-containing building materials. The Contractor shall submit a copy of his or her lead compliance program, as required by 29 CFR 1926.62(e), for review and approval by either the Departmental Safety Representative or EHSS upon request. This submittal shall be made sufficiently in advance of construction to avoid delay of the project.

Where the Contractor is engaged in work in child-occupied facilities (as defined by 40 CFR Part 745), such work shall be performed in accordance with 40 CFR Part 745, and clearance testing shall be performed by the Departmental Safety Representative, EHSS, or a licensed consultant at the conclusion of the project in accordance with the requirements of this regulation.

A copy of the analytical report(s) for any personal air samples taken during the course of the work shall be provided to EHSS.

The Contractor shall not proceed with any change in work that requires a material be disturbed that the "Work Order Review Form", lead inspection report, or construction documents shows has not previously been tested unless the revised scope of work has been reviewed and approved by the designated Departmental Safety Coordinator.

On projects where lead-containing materials will be disturbed or removed during the course of work, the waste stream shall be TCLP-tested and the university Project Coordinator shall contact the EHSS Hazardous Waste Coordinator at 231-2982 to determine disposal requirements. Lead-containing materials may constitute a hazardous waste and disposal of these materials shall be coordinated with EHSS. The disposal requirements must be established during the design of the project in coordination with EHSS' Hazardous Material Program Manager at 231-2982.

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Biological Safety Hazards

Biohazards are used in research on the Virginia Tech campus. In general, manipulation of biohazardous materials or animals inoculated with biohazardous materials is conducted within a Class II Biosafety Cabinet which is HEPA-filtered and not exhausted to the roof. There are some cabinets that are exhausted to the roof after HEPA-filtration, but these are not common on campus.

Although the use of biosafety cabinets is standard practice, HEPA-filtration of general room exhaust air from labs or animal facilities where biohazards are in use is not standard practice. Therefore, if a spill occurs outside of a biosafety cabinet, there is the potential for release of biohazardous materials into the general room exhaust system.

If the work will be conducted inside a lab or animal facility, the university Project Coordinator, after documented consultation with the lab or animal facility manager and EHSS if needed, shall inform the Contractor of the following:

- Known biological hazards and any required safety procedures that must be followed in the Contractor's work area;
- PPE required to be worn while working in the area; and
- Emergency procedures that the Contractor is to follow in the event of accidental exposures or releases of biohazardous materials during the course of work.

In addition, the university Project Coordinator shall coordinate with the Departmental Principal Investigator and Lab Manager to ensure that no active manipulation of biohazardous materials will occur during the course of the work.

If the work will be conducted on the roof systems of a building where biological research occurs, the university Project Coordinator shall coordinate access with Facilities, the departments and/or facility managers within the building, and EHSS as necessary to ensure that:

- No experiments are in-progress that would generate toxic or infectious airborne contaminants and that all biohazardous materials are contained while the Contractor will be performing work on these systems;
- The Contractor is informed of any special precautions that must be taken to prevent employee exposure to biohazards;
- The Contractor is informed of emergency procedures that the Contractor is to follow in the event of accidental exposures during the course of work; and
- The Contractor is provided a copy of Virginia Tech's Roof Access Procedure which outlines the precautions that should be taken to protect his or her employees while conducting such work. This information may be obtained by contacting EHSS at 231-7611.

Chemical Hazards

The Contractor shall maintain, on-site, Material Safety Data Sheets (MSDSs) for all chemicals used or stored at the job site as required by VDLI/OSHA regulations and the contract documents. The Contractor shall provide copies of MSDSs to the university Project Coordinator and EHSS upon request.

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Chemicals are used extensively on the Virginia Tech campus. Given the number of chemicals used, and changing work within chemical laboratories, it is impractical for the university to provide the Contractor with a MSDS for any chemical potentially in-use within any given laboratory. However, MSDSs are required to be maintained and to be accessible to employees in each work area, and MSDSs for all chemicals may be obtained from EHSS. Chemical use and/or storage is routine in, but is not limited to, laboratories, fume hood exhausts on the roofs of laboratory buildings, chemical stock rooms, chemical waste accumulation areas, Facilities and Student Programs paint and chemical storage areas, and custodial closets.

When work will be performed in areas with chemical hazards, the university Project Coordinator shall inform the Contractor of the following:

- Known hazards and any required safety procedures that must be followed in the Contractor's work area.
- Methods for obtaining access to Material Safety Data Sheets (MSDS) for hazardous chemicals present in the Contractor's work area.
- Information about the labeling system used in the work area.
- Emergency procedures that the Contractor is to follow in the event of accidental exposures or releases of hazardous chemicals.

Where the Contractor has secured air samples documenting employee exposure to airborne chemical or particulate hazards during the course of his or her work, a copy of all air sample results shall be provided to EHSS within 24-hours of receipt by the Contractor.

Access to building roofs with fume hood exhausts must be in accordance with EHSS's Roof Access Procedure. This information may be obtained by contacting EHSS at 231-7611.

Confined Spaces

When the university arranges to have a Contractor perform work that involves entry into a confined space, the university Project Coordinator shall:

- Inform the Contractor that the workplace contains confined spaces and that entry is allowed only through compliance, at a minimum, with a confined space program meeting the requirements set forth by VDLI Chapter 140, *Virginia Confined Space Standard for the Construction Industry*.
- Apprise the Contractor of the elements, including the hazard(s) identified and the university's experience with the space.
- Apprise the Contractor of any precautions or procedures that the university has implemented for the protection of university employees in or near confined spaces where contractor personnel will be working.
- Notify EHSS at 231-2341 when Contractor and university personnel will be working in or near confined spaces so entry precautions and procedures are coordinated.
- Debrief the Contractor at the conclusion of the entry operations regarding any hazards confronted or created in confined spaces during entry operations.

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- Provide a copy of Virginia Tech's Confined Space Entry Program to the Contractor upon request. Information on Virginia Tech's Confined Space Program and on specific confined spaces on Virginia Tech properties may be obtained by contacting EHSS at 231-2341.

Each Contractor who is retained to perform work that will require confined space entry operations shall:

- Provide at least 24-hours advance notice to the university Project Coordinator when both university personnel and the Contractor's personnel will be working in or near confined spaces.
- Coordinate entry operations with the university Project Coordinator and EHSS when both the Contractor and university personnel will be working in or near confined spaces;
- Inform the university Project Coordinator in writing of the confined space program the Contractor will follow;
- Inform the university Project Coordinator of any hazards confronted or created in confined spaces during entry operations;
- Provide a copy of the Contractor's Confined Space Program to the university upon request;
- Inform the university Project Coordinator in writing of the rescue services/team they will be using during permit entry; and,
- Provide a copy of the canceled permit(s) to the university Project Coordinator and EHSS upon request.

Where both Contractor and Virginia Tech personnel will be entering the same confined space, each shall **independently** assess, test and issue permits for confined space entry; neither entity shall rely upon the other to perform required assessments or tests.

Hazardous Waste

The Contractor shall assure that all hazardous chemicals or materials are handled and disposed of in accordance with federal and state regulations. The Contractor shall not ship any "hazardous" or "universal" wastes without EHSS notification and approval. EHSS must be notified to ensure that the proper paperwork with the correct EPA identification number, addresses, and emergency contact information is used. Where a hazardous waste disposal manifest is required by these regulations, the Contractor shall contact the Hazardous Material Program Manager at EHSS at 231-2982 to assure that manifesting, storage, and the proposed disposal method and disposal site meet university requirements. Bills of Lading, Manifests, and LDRs must also be signed by a Hazardous Material Program Manager, or designated representative, for all shipments of "hazardous" or "universal" waste, excluding asbestos. All "hazardous" and "universal" waste shall be handled using applicable Federal and State laws, including EPA regulations codified in 40 CFR. For assistance, contact EHSS.

Hazardous waste includes such items as:

- Bulbs: The following procedure is to be used for 4- and 8-foot fluorescent bulbs, High Density Discharge Bulbs (mercury bulbs), and U-Tubes:

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- Bulbs should be placed in manufactured boxes.
- When the first bulb is put in the box, a Universal Waste Label shall be placed on the outside of the box. Fill in contents and date.
- When not actively putting bulbs in the box, the lid shall be closed and sealed.
- Keep boxes inside, in a dry location away from water.
- EHSS will not approve the use of a fluorescent bulb crusher.
- Mercury-Contaminated Materials
 - All mercury-contaminated materials must be treated as hazardous waste and disposed of according to State and Federal regulations. All sink traps located within research buildings are suspected to be contaminated with some mercury. Immediately contact EHSS if these items are discovered.
- Ballasts: PCB and Non-PCB Ballasts
 - PCB ballasts shall be placed into UN-approved 55-gallon drums for disposal and shipped on a Hazardous Waste Manifest. The lid on the drum shall be secured unless actively adding to the drum. There is a one-year time limit to dispose of the drum, beginning when the first ballast went into it. Ballasts are considered to be PCB ballasts if the label says it is, or the label does not say “No PCBs”.
 - Non-PCB ballasts will have “No PCBs” written on the ballast. These should be placed in a separate drum (UN-approved), for recycling.
- Broken Fluorescent Tubes
 - Fluorescent bulbs, HIDs, or U-Tubes that are unintentionally broken shall be placed into an UN-approved poly drum. These may be considered “hazardous” waste and should be treated as such due to the possible release of mercury vapors. When not actively adding to the drum, the lid shall be on and secure. The drum must be labeled “Broken Fluorescent Bulbs”, along with the date the first bulb was placed in the drum. The one-year time limit for disposal applies to this waste as well.
- Asbestos - See the construction specifications on Asbestos Abatement.
- Lead Paint
 - Lead Paint waste from scraping, grinding, or peeling is considered hazardous waste and shall be stored in a UN approved drum with the lid securely fastened. This drum must be labeled as Lead Paint Chips and locked in an area away from public access.
 - Core samples from suspected Lead Based Paint containing materials such as walls, doors, and door casings shall be taken prior to demolition and sent for TCLP analysis. An EHS representative shall be present for any sampling activities.

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- All sampling results shall be sent to EHS for proper waste disposal determination.
- Miscellaneous chemicals
 - Any chemicals found during demolition shall be handled as hazardous waste. Examples include: cylinders, bottles, cans with liquid, spill clean-ups etc.

When in doubt, contact EHSS' Hazardous Material Program Manager at 231-2982 or imperato@vt.edu, 231-2510, 231-6321, or 231-3220.

Electrical Safety

When the Contractor will be performing work that involves existing electrical systems and/or equipment, work must be effectively coordinated and pertinent information shared with all involved parties. Where pre-job site inspections are conducted, the university Project Coordinator shall ensure that an electrical qualified person has established the Limited Approach Boundary for exposed energized electrical components and that unqualified personnel do not cross this boundary. The Contractor shall also be informed if the worksite contains energized electrical systems over 600 volts during the pre-bid process so that qualified personnel and appropriate protective equipment can be considered in the bidding process.

Once the Contractor is awarded the contract and access to the site is granted, the university Project Coordinator shall:

- Coordinate access to the worksite, work scheduling, pre-planning for outages, and safety requirements between the Contractor/Subcontractor and university personnel, where appropriate.
- Coordinate a walk-through of the worksite for the Contractor and Virginia Tech Electric Services, Facilities Electro/Mechanical Services, and EHSS prior to granting access to the worksite so that the scope of work to be performed by each entity can be reviewed and unlabeled equipment can be identified.
- Coordinate Contractor requests for shutdowns with the department affected, Virginia Tech Electric Services and/or Facilities Electro/Mechanical Services, and EHSS, as appropriate.
- Provide a copy of Virginia Tech's Electrical Safety Program to the Contractor upon request.

Each Contractor who is retained to perform work that will involve work on or near energized electrical systems or equipment greater than 50 volts shall:

- Coordinate all work activities with the university Project Coordinator prior to starting work.
- Ensure the "Limited Approach Boundary" for energized electrical equipment is established and that the area is restricted to authorized personnel only.
- Coordinate requests for shutdown of existing electrical systems in occupied buildings with the university Project Coordinator by providing at least two weeks' notice so that arrangements can be made for temporary power, work can

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be scheduled with university electrical services, and departments can make arrangements to be without power for the defined period of time.

- Inform the university Project Coordinator and EHSS of electrical safety practices to be used when work must be performed on or near energized systems which could result in unexpected power outages should work not go according to plan.

Lockout/Tagout

If university employees will be present on the Contractors worksite, and employees of either Virginia Tech and/or the Contractor will be performing work that requires the use of lockout/tagout devices, the following requirements shall apply:

The university Project Coordinator shall:

- Inform the Contractor of Virginia Tech's lockout/tagout procedures and provide a copy of Virginia Tech's Lockout/Tagout Program upon request.
- Inform any university personnel present at the project site of energy control procedures that are to be followed.
 - The Project Manager and/or Field Engineer will coordinate with the EHSS representative to assure that university personnel understand the energy control procedures that are to be followed on the project site.

The Contractor shall:

- Provide a copy of their Lockout/Tagout Program to the university upon request.
- Assure that its personnel understand the energy control procedures that are to be followed on the project site.

Trenching and Excavations

The design of sloping and benching systems, support systems, shield systems or other protective systems shall conform, at a minimum, to VDLI requirements specified in *1926.650 Virginia Excavation Standard, Construction Industry*.

The Contractor shall:

- Coordinate trenching and excavation work with the university Project Coordinator and Miss Utility to assure the coordination of work and shutdown of utilities, if necessary.
- Notify the university Project Coordinator of the name of the individual who is to serve as the Contractor's competent person as defined by this program and the VDLI regulations.
- The Contractor's designated competent person shall conduct daily inspections of the excavation, the adjacent areas, and protective systems for evidence of a situation that could result in possible cave-ins, indications of failure of protective systems, hazardous atmospheres, or other hazardous conditions.
- Where evidence of such situations is detected, the Contractor shall removed exposed employees from the hazardous area until necessary precautions have been taken to ensure their safety.

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- Where the Contractor maintains a written log of inspection and conditions, it shall be made available to the university upon request.
- Where the design of a sloping and benching system, support system, shield systems or other protective systems requires review and approval by a registered professional engineer, the Contractor shall make a copy of the completed review available to the university Project Coordinator and EHSS.

Where university personnel must enter a Contractor's excavation, the university Project Coordinator shall:

- Coordinate a pre-inspection of the excavation with Facilities Safety or EHSS prior to university personnel entering.

Hot Work

Contractors performing hot work, such as welding/cutting or torch-applied roofing, shall maintain a Hot Work Permit Program and employee-training program that meets the OSHA requirements found in 29 CFR 1926.352 and ANSI Z49.1-88 and NFPA 51B. Examples of hot work include, but are not limited to, use of open flames, compressed gases or supplied fuel burning, brazing, cutting, grinding, soldering, thawing pipe, torch applied roofing, and welding.

A copy of the canceled permit(s) shall be provided to the university Project Coordinator and EHSS upon request.

Scaffolding

Where university personnel must access Contractor scaffolding for purposes of inspection or work activities, the university Project Coordinator (or university personnel requesting access and use) must contact Facilities Safety at 231-4255 or EHSS at 231-2341 for pre-inspection and recommendations. University personnel accessing scaffolding (regardless of who erected it or owns it) must attend awareness level training before use.

Mobile Cranes

A Notice of Proposed Construction or Alteration may be required for cranes located in the vicinity of the Virginia Tech Airport, or where the type of structure exceeds a certain height. It is the property owner's responsibility to complete this form and return it to the FAA at least 48 hours before the start of the construction or alteration work activities. For more information on this requirement, visit the Federal Aviation Administration's website at <http://www.faa.gov/forms/index.cfm/go/document.list/parentTopicID/223>.

The university Project Coordinator shall:

- Coordinate temporary removal of personnel from occupied offices/spaces located beneath the load during lifting operations where there is a risk of the object being handled entering the building envelope if it is mishandled or dropped.
- Assure that the area around the crane and its lift path is adequately barricaded to protect university personnel and the public.
- Coordinate who will provide notice to the FAA, where applicable.

The Contractor shall:

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- Assure that notification to the FAA is filed in a timely manner, if applicable.
- Coordinate activities involving mobile cranes with the university Project Coordinator where work will involve occupied buildings and/or public spaces.
- Provide a copy of the annual and/or monthly crane inspections to EHSS upon request.
- Barricade the accessible area within the swing radius of the rear of the rotating structure of the crane in such a manner as to prevent personnel from being struck or crushed by the crane.
- Barricade the lift path of the crane to keep personnel clear of loads about to be lifted, and of suspended loads.

Agencies/Firms with No Contractual Relationship with Virginia Tech

All agencies/firms conducting work on Virginia Tech property shall comply with the requirements of VDLI, OSHA and this program, even where no formal contractual relationship exists between Virginia Tech and the agency/firm. The agency/firm shall maintain appropriate insurance, including general liability, auto liability and workers compensation insurance. Verification of insurance shall be coordinated with Virginia Tech's Director of Risk Management, who may be reached at 231-7439, prior to the start of work. Such agencies/firms shall not, without prior written approval of EHSS:

- Use a product(s) or material(s) that has a permissible exposure limit (PEL) established by OSHA or VDLI,
- Perform work on Virginia Tech property that may damage or disturb known or suspect asbestos materials,
- Perform work on Virginia Tech property that may damage or disturb known or suspect lead-containing materials,
- Perform work on Virginia Tech property that involves entry into a permit-required confined space,
- Perform work on any electrical system or utility,
- Construct nor enter excavations,
- Perform hot work, nor
- Access roofs of buildings.

When hazardous conditions are identified by EHSS related to work performed by agencies/firms conducting work on Virginia Tech property where no formal contractual relationship exists between Virginia Tech and the agency/firm, the hazardous condition shall be immediately corrected. If the hazardous condition cannot be immediately corrected, the agency/firm shall stop work and shall take effective steps to isolate the hazardous condition from personnel and the public. Repeat safety violations of a similar nature or willful disregard for the VDLI/ OSHA requirements or the requirements outlined in this program will result in immediate removal from Virginia Tech property.

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Work Site Inspections

Work site inspections may be conducted by EHSS or other designated university personnel. These inspections are conducted solely for the benefit of the university, and shall not relieve the contractor of responsibility for enforcement of, and compliance with, VDLI and the OSHA regulations.

In the event that work site conditions exist that potentially impact the safety of university employees, students, or the public, the university inspector shall issue a verbal or written warning to the Contractor and shall notify the university Project Coordinator/Field Engineer. If the unsafe conditions cannot be immediately corrected and represent a danger or have the potential to harm university employees, students or the public, then the university inspector will:

- Assure that other university personnel, students, or the public present onsite are warned to avoid the area of the hazardous condition.
- Detail the VDLI and/or OSHA violations that were noted, and explain the potential impact upon university employees, students or the public, and
- Require that the university Project Coordinator have the Contractor either stop work or implement measures to isolate the hazardous condition until the unsafe condition can be mitigated.

A formal written report of the violation(s) may be issued to the Contractor. This report shall be copied to the university Project Coordinator/Field Engineer.

Non-capital Projects

Reports of deficiencies may be factored into the evaluation of the contract by the university, and may be included in a vendor complaint file that is available for review by other state agencies. Repeat safety violations of a similar nature and/or a single serious, willful safety violation by a Contractor may warrant review and termination of the contract.

Capital Projects

The provisions of all rules and regulations governing health and safety as issued by VDLI under Title 40.1 of the Code of Virginia apply to all work performed on capital projects. The Contractor shall be solely responsible for health and safety precautions and programs for workers and others in connection with the work as outlined in the *General Conditions of the Construction Contract* (G.S. E&B CO-7).

Inspections conducted by EHSS and/or regulatory agencies (e.g. Virginia Occupational Health and Safety Administration) shall be coordinated with the university Field Engineer and/or Project Manager.

In the event that work site conditions exist that present an imminent danger to life or health for the Contractors personnel, EHSS may order the cessation of hazardous activity until the danger from such a condition is abated or adequate measures have been taken. The Contractor shall take prompt action to correct the hazardous condition as required by the *General Conditions of the Construction Contract*.

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Definitions

Capital Project: A capital project is one whose total project cost exceeds \$1,000,000.

Competent Person: As related to excavation, trenching or shoring work, the Contractor's "competent person" means one who is capable of identifying existing and predictable hazards in the surroundings, or working conditions which are unsanitary, hazardous or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

Confined Space: A confined space is a space that is large enough for a person to enter, that has limited means for entry or exit, and that is not designed for continuous occupancy. Examples include tanks, silos, storage bins or hoppers, utility vaults, and pits.

Contracting Department: The Department at the university that has contracted for work to be performed by a Contractor. In regards to agencies/firms conducting work on Virginia Tech property, where no formal contractual relationship exists between Virginia Tech and the agency/firm, the department that is coordinating or approving the work of the agency/firm is the Contracting Department.

Contractor: An entity or agency employed by the university to perform the installation or maintenance of equipment, or the renovation or construction of a building, room or space on university property, or that provides services to the university on university property including, but not limited to, vending and the supply and erection of tents.

Field Engineer: The representative from Virginia Tech's Facilities department that oversees capital construction and/or renovation activities.

Friable Asbestos: Any material containing greater than 1% asbestos that is capable of being reduced to powder by hand pressure when dry, or a nonfriable asbestos material that is subject to grinding, sanding, cutting or abrading or that is otherwise rendered friable by other means.

Lockout/Tagout: A program used to ensure that employees are protected from sources of potentially hazardous energy. The program requires that hazardous energy sources be identified and locked and/or tagged-out before work is done on the system(s).

Non-Capital Project: A non-capital project is one whose total project cost is less than \$1,000,000.

Permit-required confined space: A permit-required confined space is a confined space that contains potential or known safety hazards that must be dealt with prior to or during entry to assure the safety of those employees performing the work.

Regulated Asbestos-Containing Material (RACM): Means (a) friable asbestos material, (b) Category I non-friable ACM that has become friable, (c) Category I non-friable ACM that will be, or has been, subjected to sanding, grinding, cutting, or abrading, or (d) Category II non-friable ACM that has a high probability of becoming, or has become, crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations.

Serious, willful safety violation: "Serious, willful safety violation" is defined, for the purposes of this program, as a work activity with a substantial probability that death or serious physical harm could result and where the hazard was known or should have been known, but where the work activity was continued regardless of the existence of the safety hazard.

University Project Coordinator: The individual(s) within a Department that has been assigned duties related to oversight or coordination of work performed by a Contractor as defined in this program.

University Project Manager: The representative from Virginia Tech's Facilities department that coordinates the work of the Project Coordinator, Field Engineer and the Architect/Engineer related to capital construction and/or renovation projects.

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Appendix A

The following checklist is provided to assist the Project Manager/Coordinator with complying with the requirements outlined in this program.

VT Project Manager/ Coordinator:	
Work Site(s) and Location(s):	
Applicable Date(s):	
Contractor Name:	
Contractors Representative:	
24-hour phone number:	

Action Required	<input checked="" type="checkbox"/>
1. EHSS/Contractor Safety Orientation required? • Pre-construction (or other) meeting scheduled for _____(date/time).	Yes <input type="checkbox"/> No <input type="checkbox"/>
2. Asbestos/lead review required? • If yes, provide completed “Work Order Review Form” or inspection report to Contractor or assure that the construction documents detail the location(s) of asbestos or lead-containing materials within the work area. Contact Facilities Safety at 231-4255 as needed. (If no is checked, work cannot proceed.)	Yes <input type="checkbox"/> No <input type="checkbox"/>
3. Substantial fencing and barricades erected and maintained? • If no, correct immediately.	Yes <input type="checkbox"/> No <input type="checkbox"/>
4. Will the work require entry into a confined space? • If yes, inform the Contractor about known hazards and entry history for each space that they will enter. _____ • Contractor must have, and enter under, its own Confined Space Program. (If the Contractor does not have a program and permit system, entry is not authorized.) • Note: University personnel entering the confined space(s) must enter under Virginia Tech’s Confined Space Program.	Yes <input type="checkbox"/> No <input type="checkbox"/>
5. Will hazardous chemicals be present? • Will the work area be in university laboratories, storage areas, etc. where hazardous chemicals are present? If yes, coordinate access and safety procedures to be followed with the department. • Will the Contractor be using hazardous chemicals in occupied buildings/spaces or in public areas? If yes, ensure that MSDS’s for all chemicals that the Contractor will be using are available upon request.	Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>
6. Will work involve fall hazards? • If yes, inform the Contractor of existing personal fall arrest systems installed. Contact Facilities Safety at 231-4255 or EHSS at 231-2341 for assistance as necessary.	Yes <input type="checkbox"/> No <input type="checkbox"/>

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<p>7. Will work be conducted on the roof of a building?</p> <ul style="list-style-type: none"> If yes, coordinate access with Facilities, EHSS and the department to ensure that fume hoods in the work area are shut down. Inform the Contractor of any precautions that should be taken. Provide a copy of the Roof Access Policy. 	Yes <input type="checkbox"/> No <input type="checkbox"/>
<p>8. Will work involve electrical or mechanical systems in existing facilities?</p> <ul style="list-style-type: none"> If yes, inform Contractor of electrical hazards and coordinate work involving university personnel (e.g. VTES and Electro/Mechanical), as applicable. Will the electrical work require a power outage for the department? If yes, coordinate the outage with the Contractor and department involved. Will university and Contractor personnel both be involved in lockout/tagout activities? If yes, each group should inform the other of their respective program and coordinate lockout activities. 	Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>
<p>9. Will Hot Work be performed in existing facilities/occupied buildings?</p> <ul style="list-style-type: none"> If yes, Contractor must have, and implement, a Hot Work Permit Program. (Contractors are not to use university permits on a continual basis.) 	Yes <input type="checkbox"/> No <input type="checkbox"/>
<p>10. Will the project generate any hazardous waste?</p> <ul style="list-style-type: none"> If yes, coordinate prior approval for the disposal method and disposal site. Contact EHSS at 231-2510 or 231-2982 to coordinate waste containers (dumpsters, drums, etc.) as needed. 	Yes <input type="checkbox"/> No <input type="checkbox"/>
<p>11. Will excavation/trenching work be performed by the Contractor?</p> <ul style="list-style-type: none"> If yes, who will be the designated competent person? _____ 	Yes <input type="checkbox"/> No <input type="checkbox"/>
<p>12. Will work involve a mobile crane?</p> <ul style="list-style-type: none"> If yes, the property owner is responsible for submitting a Notice of Proposed Construction or Alteration form to the FAA, if required. Who is the property owner? _____ If the crane will be lifting substantial loads over occupied buildings and/or public areas, the lift path must be barricaded and where the object being handled may enter the building envelope, personnel in the immediate area below lift site shall be temporarily evacuated. 	Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>
<p>13. Will work involve scaffolding erected by Contractor that must be accessed by VT personnel for any reason?</p> <ul style="list-style-type: none"> If yes, contact Facilities Safety at 231-4255 or EHSs at 231-2341 for pre-inspection of scaffold prior to initial use by university personnel. 	Yes <input type="checkbox"/> No <input type="checkbox"/>
<p>14. Will fire detection and/or suppression systems in occupied buildings be disabled or altered?</p> <ul style="list-style-type: none"> If yes, must obtain prior approval of the university Project Manger and coordinate external approvals with EHSS Fire Safety Engineer. 	Yes <input type="checkbox"/> No <input type="checkbox"/>
<p>15. Will work be performed in a building/space where biological research is being conducted?</p> <ul style="list-style-type: none"> If yes, work must be coordinated between the department and EHSS at 231-5864 as necessary. 	Yes <input type="checkbox"/> No <input type="checkbox"/>
<p>16. Has the Contractor made arrangements to ensure that personnel trained in first aid and CPR are available on the jobsite for each contractor/subcontractor?</p> <ul style="list-style-type: none"> If no, inform the Contractor that VTRS will respond to the site, but will not be responsible for fulfilling this responsibility for the Contractor/Subcontractor. 	Yes <input type="checkbox"/> No <input type="checkbox"/>