The Compliance Guidelines contain University policies and procedures applicable to all Contractors and regarding safety, health, and environmental responsibilities at Columbia University and for work performed for Columbia University. It is the responsibility of all contractors and staff to participate, administer, and comply with all components of these Guidelines. Contractors must review with their employees the sections of these Guidelines that are appropriate to the work to be performed.

While these Guidelines outline some important health and safety policies and procedures, it does not replace existing site procedures, operational specifications, or federal, state, or local regulations. Approved site-specific procedures must be followed where applicable. The Compliance Guidelines do not relieve contractors of their responsibility for safety, health, and environmental compliance under law, code, ordinance, or statute, but intends to reinforce these.
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1. General Information.

1.1 Introduction.

Columbia University Medical Center (CUMC) is situated on a 20-acre campus in the Washington Heights community of Manhattan. The Campus is comprised of research labs, classrooms, medical and dental clinics, and housing for faculty and students. Columbia University's Medical Center provides world-class leadership in scientific research, health and medical education, and patient care.

These Compliance Guidelines (“Guidelines”) were developed by Environmental Health and Safety (EH&S), in conjunction with Capital Project Management and Facilities Management, to assist contractors in meeting and achieving safety and environmental performance standards that must be met during the execution of any project or job on any Columbia University campus or Columbia-owned, leased and/or managed property. In addition to summarizing many of the EH&S-related policies and procedures, the Guidelines are designed to reflect each of the program areas and initiatives.

All Contractors performing work at Columbia University must comply with all applicable federal, state, and local regulations. These Guidelines are not intended to replace the Contractors’ compliance responsibilities with any applicable regulation.

1.2 Scope and Definitions.

The information contained within these guidelines applies to Contractors working on Columbia University campuses or properties and specifically, those Contractors working on maintenance, construction, demolition, and renovation projects. All Contractors working at Columbia University must act in a safe and responsible manner. These guidelines provide the Project Manager and the Contractor with a framework for acting safely and responsibly.

Occasionally, projects will occur in New York Presbyterian Hospital (NYPH) spaces occupied by Columbia University staff. While the general principles of these Guidelines will apply, the Project Manager and Contractor is required to adhere to NYPH policies and procedures. The Project Manager must consult with NYPH Facilities prior to beginning any project to discuss any work with utilities and infection control procedures, if necessary.

Definitions.


“Capital Project Management (CPM)” refers to the Columbia University department that obtains the services needed to design, construct both renovation and new construction projects on Columbia University properties.

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“Contractor” refers to persons or firms directly hired by Columbia University or sub-Contractors hired by Contractors working for Columbia University. In addition, any reference henceforth to Columbia University will be applicable to work occurring on all Columbia University campuses, Columbia-owned properties, or properties under the management of Columbia University.

“Environmental Health and Safety (EH&S)” refers to the Columbia University department that is responsible for managing all programs related to environmental and workplace safety.

“Environmental Protection Agency (EPA)” refers to the federal agency that develops and enforces regulations designed to protect the environment. Some of the federal regulations the EPA is responsible for include the Clean Air Act (CAA), Clean Water Act (CWA), the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), the Resource Conservation and Recovery Act (RCRA), and the Toxic Substances Control Act (TSCA).

“Facilities” refers to Columbia University Facilities Management and all sub-departments under their direct management. Facilities Management is responsible for the management of all Columbia University infrastructure.

“FDNY” refers to the New York City Fire Department. Information regarding FDNY can be viewed in its entirety through the FDNY website located at web at www.nyc.gov/fdny.


“Safety Data Sheet (SDS)” refers to a document that contains information on the potential health effects of exposure to chemicals, or other potentially dangerous substances, and on safe working procedures when handling chemical products. An MSDS may be used in place of an SDS until December 1, 2015, as long as this is the most current document available from the manufacturer.

“New York State Department of Environmental Conservation (NYSDEC)” refers to the state agency that governs state programs designed to protect and enhance the environment. Information regarding NYSDEC can be found on the web at http://www.dec.ny.gov/.

“New York City Department of Environmental Protection (NYCDEP)” refers to the city agency that governs environmental compliance, water and wastewater operations, environmental planning and assessment, and administers the Environmental Control Board. Information regarding NYSDEC can be found on the web at http://www.nyc.gov/html/dep/html/home/home.shtml.

“Occupational Safety and Health Administration (OSHA)” refers to the federal agency that regulates work place safety.

“Project Manager” refers to representatives of Columbia University Capital Project Management or Facilities Management performing the overall management of the project.

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"Project Site" refers to the property owned, leased by or under the control of Columbia University on which the Contractor activities related to the project are being conducted. This includes contiguous areas entering the site and locations where Contractors may temporarily store materials related to the project. The project site must be delineated by the Project Manager prior to the commencement of work activities.

"Radiation Safety Office (RSO)" refers to the Columbia University department that ensures the implementation of all protective measures necessary to guarantee that doses from ionizing radiation to patients, visitors, students, faculty and staff on campus, as well as to the community at large.

"Worker" refers to persons hired by Columbia University, Contractors or sub-contractors performing work at the project site.

1.3 General Safety and Security Rules.

The Contractor is responsible for establishing and implementing a Health and Safety Plan (HASP) for their employees and for conducting regularly scheduled safety inspections to ensure conformance to the Plan. If requested by CUMC, contractors will submit a written copy, description of their company’s or a project specific HASP. The Contractor is responsible for completing any required regulatory trainings and certifications prior to the commencement of any Project and must furnish proof of completion of such trainings if required by Columbia University or any regulatory agency.

Safety Orientation and Training.

Contractors are required to attend a Contractor Safety Orientation and Training with CUMC prior to beginning work. The purpose of this training is to review the contents of the Compliance Guidelines and to ensure a clear understanding of the safety and compliance requirements prior to the work being performed. Contractors may be subject to periodic refresher training when major revisions of the Guidelines are instituted or if compliance issues directly related to contractor negligence are noted at project sites.

Contractor Self Certification.

Contractors may orient their employees and subcontractors on behalf of CUMC at the discretion of CUMC. Upon approval, CUMC will provide copies of the Compliance Guidelines for contractor’s use. Contractors must document training and submit copies of signed Acknowledgement Forms to CUMC as requested. A current list of orientation attendees will be maintained by CUMC and will serve as formal evidence of contractor training. All CUMC contractors must either attend the Safety Orientation or submit an acknowledgement form to the CUMC Facilities Office of Compliance.

Public Safety.

Contractors are required to wear ID badges in plain sight at all times while on CUMC premises. Personnel without a proper badge will be questioned regarding their presence and may be asked to leave the premises. ID badges for contractors, and their sub-contractors, engaged in construction/renovation work will be coordinated by the Project Manager and issued by the CUMC ID office. ID badges for contractors brought on site by the Facilities Operations team will be coordinated by a Facilities Manager.
and also issued by the CUMC ID office. The CUMC Project Manager and/or the Facilities Manager must be immediately notified of any visitors to the project site (e.g. Union representatives, regulatory inspectors). Visitors must be escorted at all times.

**Deliveries.**

Deliveries to CUMC must be coordinated with the CUMC Project Manager who will make all necessary arrangements with the respective departments for access to the loading dock, elevator usage, and clear entry to the project site. Contractors are not permitted to loiter in the public spaces of the facility. This includes the lobbies, corridors, lounges and grounds. Access is limited to areas designated as part of the project scope. Access to these areas can only be obtained through the CUMC Project Manager in concert with the department of Public Safety. Access to any floors in the facility after normally scheduled work hours must be scheduled in advance with the CUMC Project Manager. Public Safety reserves the right to deny access to anyone without prior authorization and identification.

**Investigation and Reporting of Accidents and Incidents**

All incidents and injuries, including near miss incidents, must be reported immediately to the Project Manager. A completed Incident Report Form (Appendix) must be completed by Facilities within 24 hours of the incident/injury. Incident investigation will begin promptly after the accident or incident. Facilities Management will maintain documentation of all contractor illnesses and injuries related to the contract.

As per 3310.8.2 (7) of the New York City Building Code, Site Safety Coordinators and Managers must immediately report incidents to the Buildings Department. The Site Safety Notification contact number is (212) 566 – 3199.

The following incidents must be reported:
- Any fatality
- Any injury or near miss to a member of the public
- Any worker injury requiring EMS treatment or hospitalization
- Any worker fall (except for slips and trips)
- Any property damage – public or private
- Any material failure or collapse
- Any falling material or debris

**Inspections and Auditing**

Contractors are responsible for continuous monitoring of their operations and equipment to ensure a safe, healthy, and environmentally sound work environment.

Project Managers are responsible for contractor oversight during the course of projects. They monitor their work quality and check for adherence to CUMC’s policies and procedures on an ongoing basis. Depending on the project schedule, Project Managers may arrange and hold frequent meetings with the contractor to discuss and view the work progress. This process will be formalized and any recommendations or concerns raised during these meetings must be documented formally.

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During the course of a project, safety inspections may be made of work in progress, depending on the size and scope of the project. Violations of any rule or practice will be reported to the contractor field supervisor and project manager for immediate correction. A serious safety violation may result in immediate work stoppage until the violation is corrected. If repeated safety violations occur, the progression of documented disciplinary actions will be instituted.

**Regulatory Inspections**

Regulatory agencies may occasionally arrive at project sites for regulatory inspections. A regulatory inspector is a “visitor” and must be escorted at all times while they are on Columbia University owned-properties. In the event that a regulatory inspector arrives at a project site, the contractor must immediately notify the project manager referencing the agency the inspector represents and the regulatory reason why the inspector is visiting the project site. Any and all violations must be reported to the project manager and written notices of violation must be submitted to the project manager within one business day of issuance. If a violation requires a court visit, the contractor is not permitted to be the primary representative for Columbia University.

Contractors and Consultants must report all visits from regulatory inspectors and agencies at active asbestos abatement sites, regardless of job type or size, in writing within 24-hours of the visit to the Asbestos Coordinator (information below). An additional notification is required within 24-hours of receipt of any violation or citation issued as the result of an inspection.

Notification may be sent to the Asbestos Coordinator for the following:

Morningside, Nevis, Lamont and Baker Field (Athletic Center) campuses: asbestoslead@columbia.edu

Medical Center campus: asbestoscumc@columbia.edu

The e-mail must include the following information:

1. Project Location (building address, floor, room)
2. Regulatory Agency or Inspector information
3. Focus of the inspection
4. A copy of the violation or citation, if applicable

**Disciplinary Action**

The progression of disciplinary action will be determined by the severity of incident and other mitigating factors following a thorough investigation with all necessary CUMC involved parties. However, as a general rule, non-compliance with safety or security requirements listed in these guidelines may result in work stoppage if an immediate threat to safety, health, and/or the environment exists.

Disciplinary action will progress as follows:

- Documented verbal warning issued by the Project Manager, Facilities Manager, or designee.
• Dismissal from CUMC premises for the duration of the project
• Exclusion from working at CUMC and contract termination.

Violations of any policies listed in these guidelines, including activities or behavior that is considered immediately dangerous to life and health, or repeat violations may result in the cessation of construction activities and potentially, the removal of the offending Contractor or worker(s). All project sites are subject to inspection for adherence to general safety and security rules at any time by authorized CUMC personnel.

While working on Columbia University project sites, Contractors must not:

• Possess or use alcoholic beverages, controlled substances, or narcotics.
• Possess or discharge explosives, firearms, ammunition, and other weapons.
• Smoke tobacco products at any Project Site or in any Columbia University building or other designated smoke-free area.
• Illegally dump, handle or dispose of hazardous materials or regulated wastes.
• Destroy or remove, without written permission, any property belonging to Columbia University, its students, faculty, employees or other Contractors.
• Misuse fire prevention/protection or safety equipment.
• Knowingly work in an unsafe manner.
• Participate in acts or threats of violence including any use of inappropriate language or physical violence.
• Participate in acts or threats of sexual harassment and discrimination towards co-workers or any member of the Columbia community.
• Violate any federal, state, local, or University, regulation, law, ordinance, or policy.

Smoking Policy.

Columbia University Medical Center (CUMC) is completely smoke-free environment “inside and out.” CUMC policy prohibits smoking on all CUMC property, both indoors and outdoors. Smoking, lighting or carrying any form of lit tobacco or other substance, including vapor devices such as e-cigarettes, is strictly prohibited in CUMC buildings, residences, entrances, grounds, gardens, courtyards, construction sites, parking facilities, shuttle buses, and Public Safety vehicles. Smoking will not be tolerated and any contractor found smoking on the project site or the premises will be dismissed immediately.

1.4 General Housekeeping.

Proper housekeeping at a project is required to reduce the potential for safety hazards and poor housekeeping may lead to an increased incidence of accidents and chemical spills. It is the responsibility of the Contractor to make every effort to protect the health and safety of Columbia University community as well as workers from any hazards than may result from work performed at the project site.

Specific requirements regarding housekeeping at construction sites can be found at Chapter 33 § BC 3303.4 of the Building Code and Chapter 14 of the Fire Code. This includes ensuring:
• All areas used by the public are free from debris, materials, projections, tools, and other items that may constitute a hazard. At Project Sites, this includes all hallways, walkways, stairs, and means of exit.
• The proper storage, security, and proper coverage of waste dumpsters, debris boxes or skip boxes.
• The proper storage of construction materials and equipment at Project Sites.
• That the storage of combustible material and equipment complies with the Fire Code.

1.5 Energy Efficiency and Pollution Prevention Directive.

Facilities Management is committed to providing services for the CUMC community in an environmentally responsible and energy efficient manner and seeks to incorporate impact mitigation programs that incorporate strategies, tools and technologies for reducing unnecessary emissions. Conscientious construction administration can minimize harm to the site and surrounding area. Along with the recent upgrades to the New York City Building Code and in an effort to sustain sustainable and energy efficient activities at CUMC, the Contractor is expected to take the following actions:

• Renovation and construction should be performed with the least possible disruption to both the community and the environment.
• Turn off non-critical lights and equipment when not in use and at the end of the day. Mercury, sodium vapor, metal halide, or any high-intensity-discharge (HID) lamps should be limited in used and turned off in areas that will not be used for more than 45 minutes and at the end of the day.
• Where possible, compact fluorescent bulbs (CFL’s) should be used for temporary construction lighting. Also, lighting for temporary walkways, foot bridges and sidewalk sheds should fully comply with NYC’s Local Law 51.
• Close building openings, such as doors and windows, as much as is reasonable to allow the building heating and cooling systems to operate efficiently, but specifically at the conclusion of the work day.
• Hold exterior doors open only during passage of occupants entering and leaving the building. Limit the number of entrances used during arrival and departure hours. Keep door closures in good repair; remove hold-open devices.
• Eliminate or reduce the use of toxic substances, whenever possible.
• Minimize waste wherever possible.
• Recycle all eligible material, including glass, paper (including magazines), plastic, aluminum, and cardboard to the maximum extent practical and deposit them in the proper recycling bins.
• If materials are not capable of being recycled at CUMC, please make every effort to recycle these materials off-site, including materials such as concrete and metal piping.
• Use only the necessary amount of water needed to complete the required tasks.

CUMC is committed to being better stewards of the environment and preserving our limited natural resources to help leave something for future generations, please help us work toward that goal.

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2. Fire Safety.

2.1 Certificates of Fitness.

The Contractor is responsible for obtaining all applicable Certificates of Fitness (COFs) prior to commencement of any work activities at Columbia University. The COF Holder for the applicable activity must carry the COF on their person and present card to the Project Manager or Facilities Manager prior to beginning any activity for which a COF is required. The most common examples of COFs that may be required for work at Columbia include “Torch Use of Flammable Gases for Cutting and Welding” (G-60) and “Fire Guard for Field Construction Sites/Fire Guard for Torch Operations” (F-60). More information regarding COFs can be found on the FDNY website at http://www.nyc.gov/html/fdny/html/c_of_f/coff.shtml.

2.2 Hot Work Permits.

Hot Work Permits are required by Chapter 26 of the Fire Code for all Contractors when welding, grinding, brazing, soldering, cutting or when using any heat, flame or spark producing equipment. Hot Work permits are valid for the day, the operation, and to the Torch Operator and Fire Guard TEAM for which they are issued. Jobs requiring more than one day require a separate permit for each day's work, unless otherwise authorized by the Facilities Compliance Team. The following steps must be taken when performing hot work at project sites:

- The Project Manager or the Contractor must notify Facilities Compliance at least 48 hours in advance of the intended Hot Work.
  - Hot Work Permits are issued by the Facilities Compliance Office in Black B-02.
    - For Residential Properties by the CUMC Housing Office in Bard Hall.

- The Contractor requesting a permit must have the proper, valid Certificate of Fitness issued by the FDNY. The Contractor is also required to provide a minimum of one certified Fire Guard/Fire Watch personnel holding a valid Certificate of Fitness from FDNY. Copies of the Certificate of Fitness for the Torch Operator(s) and Fire Guard(s) are reviewed and maintained on file by Facilities Compliance. The Contractor is responsible for providing any personal protective equipment that may be required for the activity.

- At time of issuance, the issuer of the permit must contact Facilities Compliance for fire protection device disablement.

- The Contractor must supply their own approved fire extinguisher, minimum 2-A: 20-B: C rating (one 2½ gallon pressurized extinguisher or one 10 lb. ABC dry chemical extinguisher) and are not permitted to use any Columbia owned and maintained fire extinguishers.

- All other appropriate safety precautions, such as signage, barricades, and fire extinguishers, must also be observed, to comply with Chapter 26 of the Fire Code. The Certified Fire Guard/Fire Watch personnel must be present on duty at all times during torch operations and must inspect the exposed areas to ensure the safety of the operation.

- At least once per day while the Permit is in effect, a review of the Hot Work area will be conducted by the Project Manager and/or a Facilities Manager or Fire Marshall. Issues noted during the review...
will be presented to the responsible person for immediate action. Hot Work will be terminated if deemed necessary.

- The Certified Fire Guard/Fire Watch personnel must have proper fire extinguishing equipment and be trained in its use. They must inspect the area before any hot work commences and at intervals of one-half hour and one hour later after completion of work for the purpose of detecting fire. The certified Fire Guard /Fire Watch must be on continuous duty during torch operations.
- The Certified Fire Guard/Fire Watch personnel must sign Hot Work permit upon final inspection and return the signed copy to the issuing Facilities Office at the end of the work day.

In an effort to prevent unnecessary fire alarm activations, a Facilities Compliance Manager must be contacted with information as to the location and duration of all hot work. No hot work must start until authorized by the Facilities Compliance Manager. The Facilities Compliance Manager must take appropriate actions, such as disable the smoke heads for the Project Site, to prevent the accidental activation of smoke detectors in the area of hot work.

2.3 Fire Protection Devices.

Any scheduled work that is going to be performed that requires fire alarm devices (smoke detector or water flow) to be disabled or the entire building taken offline must be requested 48 hours in advance to the Facilities Compliance Office. An email is acceptable for that request but it must be acknowledged by someone in Facilities Compliance. The Project Manager (PM) must also be sure to generate a Facilities service request 48 hours in advance for drains downs (both branch and risers). When any electrical work for fire alarm devices is completed and ready for connection to fire alarm panel the Electrical Contractor shall notify the Facilities Compliance office to schedule our Fire Alarm Vendor for Panel connection.

If emergency work must be performed after hours, a direct notification to Public Safety must be made to take a building offline prior to work being started. Facilities Compliance will also have to be notified to disable effected fire alarm points within the building.

Fire Alarm Testing.

Filing for the fire alarm test for FDNY Letter of Approval is submitted and arranged by the Electrical Contractor under the supervision of the Project Manager.

Pre-testing is mandatory at least two weeks prior to FDNY inspection and shall be witnessed by the Project Manager/designee. The Project Manager must alert the New York Presbyterian Fire Safety team for testing in any New York Presbyterian building (212.305.0014), and the Facilities Compliance office for a CUMC building/floor pre-test 48 hours in advance so signs can be posted and the building taken offline. The posting of signs will be coordinated by the Fire Safety Directors in Russ Berrie, ARB, 104 Haven and 51 Audubon, Residential Manager, Compliance Manager, or designee. The Project Manager should confirm sign posting prior to onset of test.

Depending on the building, consideration should be given for classes, seminars, midterms, finals or any other building functions that may be taking place. It is highly recommended that all testing be performed between 7am and 9am to minimize disruption to building occupants. It is recommended that Wednesday morning alarm tests are avoided in the Black and P&S buildings.
All testing, inspections and paperwork is handled by the Project Manager, Electrical Contractor and Fire Alarm Vendor and all should be present the day of inspection. It is important that Facilities be notified to provide personnel and equipment to drain sprinklers for water flow test, if necessary. Any remedy of pre-test deficiencies must be resolved prior to the fire alarm inspection.

2.4 Fire and Smoke Conditions,

All contractors have a role in a fire. In the event of a fire or smoke condition at a project site, all contractors are required to immediately discontinue any in progress work, listen to all announcements, and implement RACE procedures immediately. Contractors are to evacuate to CUMC areas of refuge, as directed, for assembly, head count, and further instruction from the Project Manager or authorized CUMC designee. If an employee is missing, the Project Manager must notify Public Safety immediately.

**In case of fire remember the acronym: RACE**

- **R**escue anyone in danger
- **A**larm activation
- **C**onfine fire or smoke condition by closing doors leading into affected area
- **E**xtinguish the fire or Evacuate from the area

2.5 Fire Extinguishers.

Extinguishers must be wall mounted in all construction project areas with a minimum of 1 extinguisher per 2500 sq. feet project area. These extinguishers must be visible throughout the area and clearly marked with prominent signage.

**Fire Classifications.**

- **A** fires involving ordinary combustible materials such as wood, cloth, paper, and plastics.
- **B** fires involving combustible or flammable liquids such as gasoline, kerosene, oils, grease, paints and chemicals.
- **C** fires involving energized electrical equipment such as appliances, including computers, microwave ovens, televisions, copiers, and fax machines.
Fires involving combustible metals such as magnesium, sodium and lithium.

2.6 Compressed Gas Storage.
All compressed gas use and storage must be in accordance with Chapters 30 (Compressed Gases), 35 (Flammable Gases), and 38 (Liquefied Petroleum Gases) of the Fire Code. Specifically:

- All cylinders of compressed gases used at Columbia University must be secured, in an upright fashion and stored a minimum of three feet away from any egress areas. Cylinders must not be secured to any plumbing or electrical conduits.
- All cylinders must be appropriately labeled with the container contents.
- All cylinders not in use must have the valves completely closed and valve protection caps secured.
- All cylinders must be stored in such a manner as to prevent incompatibles from coming in contact with each other or away from other potential hazards including:
  - Ledges, platforms, and elevators
  - Temperature extremes
  - Heating systems
  - Sources of ignition
  - Potential sources of leaks or corrosion
  - Falling objects
- The Project Manager must ensure that all cylinders related to project work are removed from the project site by the Contractor at the end of the project.

2.7 Gasoline Powered Equipment.
The Contractor must coordinate the use of gasoline powered equipment with the Fire Safety Officer. If such equipment must be used indoors, all requirements of Chapter 14 § FC 1416 of the Fire Code must be complied with. Concerns of carbon monoxide must always be considered with any gas operating equipment. Additionally, use of such equipment is only permitted with written approval from the Project Manager and the Fire Safety Officer. Care should be used in the use of this type of equipment outdoors so that the exhaust is not able to be drawn back into the building by means of air intakes. Gasoline must not be stored at Project Sites.

2.8 Portable Heating Equipment.
Portable heating equipment is generally discouraged on Columbia property. If it is absolutely necessary, the units must be approved by a recognized testing laboratory, must be used in accordance with Chapter 14 § FC 1403 of the Fire Code, and is only permitted with written approval from the Project Manager and the Fire Safety Officer. Fuel operated heaters are not permitted to be used at Columbia University. At a

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minimum, the following procedures must be adhered to when using portable heating equipment at a Project Site:

- The Contractor must ensure that the heating unit is stored at least three feet away from combustible material. The heater must not be stored in hallways, doorways, or any other walkway where it is has the potential for being bumped.
- There should be safety features incorporated into the heating unit to include an automatic shutoff if the unit tips over, and protection to the user from contacting the heating elements.

3. Research and Radiation Safety.

3.1 Laboratory Clearance Process.

Before any work begins in any laboratory or other space where biological, chemical or radioactive materials are used or were previously used, it is important to ensure that these spaces and equipment therein that has been designated for disposal are properly decontaminated, as applicable. This is accomplished through the issuance of “clearance” by EH&S on the affected spaces and equipment. Similarly, laboratory equipment that is being handled by a commercial mover must be certified free of contamination, and cleared by EH&S prior to moving. A flowchart illustrating the clearance process may be found in the Appendices to the Guidelines.

The Project Manager must determine, with the help of the vacating occupants and EH&S, whether or not the space or equipment needs to be cleared by EH&S. For example, if equipment was used in an office or has had no contact with chemical, biological, or radioactive materials, no clearance through EH&S is necessary. All other spaces or equipment, including chemical fume hoods, must be certified that they are free of contamination prior to the start of the project. The Project Manager will work with EH&S and the vacating occupants (“occupants”) of the space to ensure that all potentially contaminated spaces or equipment are properly decontaminated before clearance is issued. If the occupants are no longer in the space, the Project Manager is responsible for arranging for decontamination of the space. If equipment has been used with or exposed to any combination of radioactive, biological or chemical agents, the following steps must be taken:

Radiation Safety. The occupants must ensure that any radioactive equipment and surfaces where radioisotopes were used have been decontaminated with a suitable agent, and are cleared by EH&S. Requirements for clearance include a survey to ensure no residual contamination remains, removal of all markings to designate radioactive materials use areas, and removal of all waste and stock radioactive materials. All equipment containing radioactive sources must be cleared and disposed of through EH&S. Occupants may arrange clearance of radiation-related equipment and materials through their Research Safety Specialist or a Radiation Safety Technician.

Biological Safety. The occupants must ensure that any equipment or benches that have been used in experiments involving biological material are decontaminated with a disinfectant appropriate to the biological agents having been handled. In many cases this is a freshly prepared 10% bleach solution, although other disinfectants such as quaternary ammonium or chlorine dioxide-based disinfectants may also be suitable. All exposed surfaces, equipment, or contaminated furniture must be wiped down with the disinfectant solution. Additionally, all RMW must be collected in rigid containers lined with red bags imprinted with the infectious waste biohazard symbol. Any sharps or materials contaminated with
potentially infectious agents that may puncture a red bag must be deposited in a sharps disposal container.

**Chemical Safety.** The occupants must ensure that chemical contamination is removed through a thorough surface cleaning with a soap solution, mild detergent or other appropriate decontamination solution. If an item is too contaminated to perform any decontamination safely, arrangements will be made by EH&S for disposal through an appropriate vendor. Additionally, any hazardous chemical materials and/or hazardous wastes must be removed from the area and properly disposed of through EH&S prior to any work beginning at the Project Site.

**Environmental Safety.** The Project Manager and Facilities must ensure that any equipment containing refrigerants, such as air conditioners or refrigerators, or oils are drained prior to disposal. In the case of equipment with oils, the owner of the equipment must remove and properly dispose of the oil through EH&S prior to discarding the equipment. Refrigerant removal is managed by Facilities and the Project Manager must contact Facilities arrange for the safe removal of refrigerants.

EH&S (and the RSO if necessary) will issue a clearance document to the Project Manager after all of the above procedures have been completed. The clearance form is only valid for **ten days from the issuance date unless otherwise noted.** It is the responsibility of the Project Manager to ensure that the space is secured after clearance to prevent any work from taking place in the space which might re-contaminate the space. A walkthrough of Project Site by EH&S, the Project Manager, and the appropriate Contractor must take place before any work commences.

### 3.2. Radiation Safety.

The Radiation Safety Office (RSO) of Columbia University EH&S is responsible, in conjunction with the Radiation Safety Committees, for the implementation of the Radiation Safety Program. These departments manage radioactive materials usage under their respective radioactive materials licenses and permits obtained from the New York City Department of Health & Mental Hygiene (NYCDOHMH), New York State Department of Health (NYSDOH) and the U.S. Nuclear Regulatory Commission (NRC). Strict adherence to the RSO established guidelines and government regulations must be maintained when working at Columbia University.

**Principles of Radiation Safety.**

All areas, including laboratory spaces, where radioactive materials are used or stored must be cleared by a Research Safety Specialist or Technician prior to beginning work. However, during certain projects that may involve working in an active radioactive materials usage area where clearance cannot be issued, it is important to understand how to minimize exposure.

There are three types of particulate ionizing radiation: alpha, beta and neutron. There are two types of electromagnetic ionizing radiation including gamma waves and man-made X-rays. All of these types of ionizing radiation are present at Columbia. Exposure can be minimized through the use of proper personal protective equipment, education, and training. Following the **ALARA (As Low As Reasonably Achievable)** principle can minimize exposure potential. ALARA is achieved by three standard methods:

- Time (minimize time in radiation areas)
• Distance (double your distance, quarter your dose)
• Shielding (for use by RSO only)

Any questions or concerns that arise during a project that involves a radiation area should be brought to the attention of the RSO immediately and prior to working in the area. If work must take place at locations where radioactive materials are actively used, the RSO must be involved prior to the commencement of the Project.

Security.

A few important reminders when working on projects that may include access to areas that contain radioactive materials:

• Unauthorized entry into radiation areas is not permitted. Entrances to radiation areas are marked with appropriate signage, in accordance with the requirements of the New York City Health Code, Article 175.
• At the discretion of the RSO, doors of unoccupied restricted areas shall be locked, as shall windows where ingress by this means is possible.
• Laboratories situated within New York City are subject to provisions of the New York City Health Code, Article 175, "Radiation Control" and New York State Sanitary Code Chapter 1 - Part 16.

Management of Radioactive Materials Encountered at Project Sites.

While most of the smoke detectors at Columbia University are photoelectric (non-radioactive), Contractors may encounter ionizing (radioactive) smoke detectors. Ionizing smoke detectors used with low smoke fires contain approximately 1 to 5 microcuries (µCi) of $^{241}$Americium. The more common photoelectric smoke detectors do not contain any radioactive sources. In addition, photoluminescent “Exit” signs may contain approximately 20 Curies (Ci) of a gaseous, radioactive form of Hydrogen (Tritium or $^3$H). Devices containing radioactive materials are required to have a radiation label on the back or bottom of the device that lists the isotope, activity and radioactive warning or trefoil symbol.

• When removing smoke detectors or exit signs, Contractors must not tamper with these devices or attempt to dismantle them in any way.
• Any smoke detectors or exit signs that are removed may contain radioactive materials must be staged for RSO to examine, collect, and properly dispose.
• Upon review by the RSO, smoke detectors and exit signs containing radioactive sources may be returned to the manufacturer for recycling.
• If smoke detectors or exit signs are dismantled or tampered with in any way by a Contractor, the Contractor may be subject to disposal costs, which can be significantly expensive.

3.3 Biological Materials.

While working on University property, Contractors must adhere to the requirements of the OSHA Bloodborne Pathogens Standard (29 CFR 1910.1030), and all applicable University Policies. Regulated Medical Waste (RMW) refers to materials that may be contaminated with blood, bodily fluids, or other
potentially infectious materials and are often referred to as “potentially infectious” or “biohazardous” waste. Laboratory activities at Columbia University involving the use of potentially infectious biological materials, including human blood, tissues or cells; or potentially infectious microorganisms, such as bacteria or viruses, are regulated by the OSHA Bloodborne Pathogens Standard, NYS-DOH law and by University Policy. All the infectious agents handled in Columbia University labs that are accessible to contractors are acquired through direct contact, not through the air. Therefore maintaining a physical distance from the material will ensure safety. The international biohazard symbol is required to be posted on the door of labs that handle infectious material or contain red bags or sharps containers. This symbol is also found on red bags, red sharps containers, and large grey biological waste disposal bins themselves. Since most biomedical labs contain sharps containers the international biohazard symbol is posted on nearly every lab door, even if that lab does not handle infectious material. Therefore, it is not necessarily an overt indication of risk; more of hazard awareness. Nonetheless:

- Contractors must not enter a laboratory or area that is marked by the biohazard symbol without the consent of the lab manager or Principal Investigator.
- Contractors must not handle any biological materials unless it is part of the specifically contracted work to be performed.
- Contractors must not handle red bags, sharps, sharps containers, or large biological waste disposal bins, unless it is specifically part of the Contractor’s job description.
- Any Contractor who encounters a release or stock of suspected biological material must leave the area and contact EH&S.
- Contractors must take appropriate measures to protect their employees from exposure to bloodborne pathogens via the direct contact route.

While most of the materials commonly encountered in laboratories do not pose a hazard to healthy adults, exposure may occur through sustaining a cut or puncture wound, a direct splash to the eyes, nose or mouth. Awareness and appropriate precautions should be taken while working around these materials.

4. Environmental Safety.
Environmental Health and Safety (EH&S) is committed to maintaining close working relationships with Facilities Management and CPM to ensure projects are managed and completed in a safe and timely manner. With involvement in all phases of a project, EH&S works to promote and maintain a safe and environmentally complaint scope of work. EH&S has committed specialists from Biological Safety, Environmental Safety, Fire Safety, Laboratory Safety, and Occupational Safety directly involved with demolition, renovation, construction, and maintenance operations as to sustain a safety conscious work environment.

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4.1 Hazardous Materials Management.

In the course of any project, materials may be used that may be considered hazardous to people, wildlife or the environment. These include but are not limited to materials that Contractors use every day, such as oil based paints, chemical paint strippers, solvent based water proofing agents, and compressed gases, such as acetylene and aerosol cans. When feasible, Contractors should select less hazardous alternatives that produce similar results to the hazardous material. Contractors should strive to bring materials that are adequate to complete the job at hand with minimal environmental impact.

All containers and cylinders must be properly labeled and stored in a manner that prevents spills or releases. The Contractor must make available an SDS for each chemical and hazardous product used at a job site. The following general guidelines apply to working with hazardous materials at a project site:

- All containers must be stored upright and closed unless the material is actively being used. No product containers may be left open at a job site after the workday is complete. All cylinders must be properly secured at all times.
- When feasible, materials should be stored within secondary containment and away from drains and penetrations.
- In the event of a spill or release, all drains and/or penetrations in the area should be protected or covered by the contractor. Spills must be contained, reported to the Project Manager (by the Contractor) and to EH&S (by the Project Manager), and the spill procedures in the following paragraph should be followed. A hazardous waste determination of the spilled material must be made by EH&S to ensure proper disposal.
- Any malodorous materials should be mixed in a well-ventilated area, away from air intakes and in a fashion that prevents release. If possible, application of malodorous chemicals should be done at times where there is minimal impact to the Columbia community.
- Please consult the Occupational Safety Section of this manual when working with products or methods that might produce excessive dust, odors, or noise.

In the event of a spill of any hazardous materials, the following procedures must be followed:

1. The Contractor must immediately stop all work activities.
2. The Contractor must provide the Project Manager with all pertinent information (include: the name of involved/injured workers, location of work area, the name of the spilled material, estimated quantity of material spilled, a copy of the SDS) and be available to meet/speak directly with EH&S to review the situation.
3. The Contractor must isolate the area (e.g., close door, string caution tape, etc.) to prevent the suspect material from being disturbed and dispersed and exit the area. Efforts should be made by the Contractor to protect all penetrations and drains near the spill.
4. The Project Manager must contact EH&S to apprise them of the situation.
5. EH&S must assess the situation and discuss required actions with the Contractor and the Project Manager.
6. EH&S must coordinate any necessary remediation activities in the work area.
7. Work must not proceed until EH&S provides clearance for activities to commence.
8. The Contractor will consult with EH&S for guidance on disposal of spill material.
Finally, Contractors are responsible for adhering to all storage, use, and handling requirements required by the Building and Fire Codes.

4.2 Hazardous Waste.

Hazardous waste may be generated over the course of any construction or renovation project. Hazardous waste refers to a solid waste, as defined by 40 CFR 261.2, that meets the criteria listed in 40 CFR 261.2. It is the responsibility of the Contractor to determine if wastes are considered hazardous and to comply with all applicable federal, state, and local regulations regarding hazardous waste storage and disposal.

It is the responsibility of the Project Manager to ensure the Contractor removes such materials from the Project Site. The Project Manager and Contractor must make arrangements with EH&S prior to commencement of a Project to discuss any hazardous wastes that might be generated during the course of a Project. Any unused product brought in by contractors at the end of a Project is not considered by Columbia University to be a hazardous waste and it’s removal is the responsibility of the Contractor.

Hazardous waste generated at Columbia University must be stored in compatible containers, securely closed to prevent spills or releases when not in active use, and must be properly labeled with the words “Hazardous Waste” including the name of the waste material. Hazardous waste labels are available from EH&S upon request. The disposal of any hazardous waste generated during a Project shall be discussed on a case by case basis between the Project Manager, the Contractor, and EH&S.

Any shipment of regulated waste from Columbia University must be signed by a properly trained member of EH&S or approved representative of Columbia University. Hazardous wastes may not be transported by contractors to off-site destinations, waste disposal sites or relocated from the point of generation, unless the Contractor is properly certified to perform such actions. Copies of all shipping papers must be sent to EH&S for approval at a minimum of twenty-four hours in advance prior to the waste removal from Columbia sites. At no time may any EPA Identification Number be used or created for Columbia University without prior approval from EH&S. If any waste needs to be manifested on shipping papers other than a bill of lading, EH&S must be notified in advance of the shipment.

4.3 Universal Waste.

Contractors may be responsible for the handling and management of universal wastes as part of the project demolition phase. Universal Waste refers to a category of waste materials not designated as "hazardous waste", but containing materials that need to be prevented from free release into the environment. It is defined in 40 CFR Part 273, by the United States Environmental Protection Agency. Universal waste that Contractors may encounter at Project Sites includes fluorescent lamps, mercury containing equipment, and batteries. Universal waste is not permitted to be disposed of in regular trash.

Prior to demolition, the Project Manager must contact EH&S to communicate the type(s) of universal waste that are present at a project site and to arrange for properly labeled universal waste containers for such material. Fluorescent lamps are to be stored intact in fiber light tube container, which can be obtained through EH&S. Universal waste is not permitted to accumulate on floors and must be stored in
closed containers provided by EH&S. In addition, broken fluorescent lamps are considered hazardous waste and must be managed as such.

If a fluorescent lamp breaks, it must be cleaned up immediately and placed in a drum labeled “Hazardous Waste” and properly disposed of through EH&S. The following steps should be taken by the contractor to ensure proper cleanup and disposal of broken fluorescent lamps:

- Leave the immediate area for a few minutes to let dust settle.
- Pick up broken glass pieces and place in a container with a lid or in a plastic bag.
- Use durable tape to pick up any remaining glass fragments.
- Wipe area with wet cloth and place cloth in container with a lid or sealed bag when finished. All containers must be closed unless adding materials.
- If a container of bulbs falls and multiple bulbs break, the Contractor should contact the Project Manager, who will contact EH&S for assistance.

It is the responsibility of both the Contractor and the Project Manager to ensure that all universal waste generated at the job site is handled and disposed of in accordance with Federal, State, and local regulations.

4.4 Fluorescent Light Ballasts.

Fluorescent light ballasts manufactured before 1978 are known to contain polychlorinated biphenyls (PCBs) in the dielectric fluid or in the potting material in the ballast. All ballasts must be properly handled and managed when light fixture removal is part of a project.

PCB Containing Ballasts.
Ballasts containing PCBs (defined above) are managed at Columbia as a “regulated” waste under the Toxic Substances Control Act (TSCA). There are typically no markings on ballasts to indicate that they contain PCBs. Any ballast that does not contain a manufacturer’s label declaring that there are “no PCBs” in the ballast must be treated as PCB containing, unless it is known to contain no PCBs, such as electronic or magnetic ballasts manufactured after 1991.

Columbia University requires that all PCB containing ballasts removed from light fixtures must be placed in a pre-labeled collection container, provided by EH&S. The out-of-service date of the first ballast placed in the container must be clearly written on the drum and a label containing the words “Polychlorinated Biphenyls” label must appear on the container. Additionally, any ballast that is determined to contain DEHP may be disposed of with PCB ballasts.

Electronic or Magnetic Ballasts.
All light ballasts manufactured from 1978 to 1998 were required by the EPA to be marked by the manufacturer with the words "No PCB's". Modern electronic and magnetic ballasts can be assumed to contain no PCBs, even though they are not required to be labeled as not containing PCBs after 1998. These ballasts can be placed in drums labeled “Non-Hazardous Waste – Used Electronic/Magnetic Ballasts for Recycling.” Alternatively, the Project Manager may choose to recycle ballasts known to not contain PCBs with an approved scrap metal recycler. In this case, the ballast does not need to be removed from the light fixture. The scrap metal vendor must be approved by EH&S as a qualified recycler and must submit in writing all downstream facilities they may use to recycle any scrap metal. Ballasts are not permitted to be stored in non-labeled containers, thrown in the trash or accumulated on floors at any time. If ballasts are found to be leaking during removal, the Contractor must contact EH&S
for proper disposal. When closed ballast collection containers are full, the Project Manager must contact EH&S to coordinate removal and replacement of the container, if necessary.

4.5 Hazardous Scrap Metal and End-of-Life Electronic Equipment.

End-of-life electronic equipment and office equipment including, but not limited to, printers, copiers, CRT monitors and CPUs and construction debris may qualify as hazardous waste under the NYSDEC's RCRA hazardous waste regulations because of quantities of lead, mercury, cadmium or other toxic metals that may be present in the equipment. NYSDEC exempts such equipment from hazardous waste regulations, provided that the material will ultimately be recycled and proper notification is filed with NYSDEC. The scrap metal exemption [6 NYCRR 371.1(c)(7)] requires that all parties offering hazardous materials for recycling supply the company names and addresses of all downstream vendors through ultimate smelter(s) to NYSDEC. The notification to NYSDEC (c7 notification) must be submitted prior to offering materials to vendors for recycling.

The Project Manager and Contractor must provide EH&S the name and address of any vendor that they intend to offer construction debris for recycling in advance of the commencement of any Project. Any vendor being provided scrap metal recycling services must provide a receipt to the Project Manager upon delivery of the material to the vendor.

All electronics with data bearing elements, such as computer towers and laptops, must meet the University’s Data Sanitization Policy prior to disposal, with the hard drive either removed or erased to the specifications listed in the policy. This equipment is offered to approved vendors for recycling and managed by EH&S. Arrangements must be made between the Project Manager and Facilities for removal of used electronic equipment prior to the commencement of any project. Used electronic material staged for removal must be stored in a manner to prevent breakage and release of hazardous materials to the environment.

4.6 Spill Prevention Control and Countermeasures (SPCC).

Columbia University’s Spill Prevention Control and Countermeasures (SPCC) Program establishes University-wide procedures for the prevention, detection and reporting of spills and/or releases of oil. EPA interprets the definition of “oil” to include crude oil, petroleum and petroleum-refined products, as well as non-petroleum oils such as vegetable and animal oils. All oil containers must be properly labeled with the type of oil clearly written on the container. Used oil designated for disposal must be properly labeled as such. When working on University property, Contractors must adhere to SPCC protocols, including the following:

- Contractor must notify EH&S and Project Manager if oil will be stored or used on the site in quantities of 55-gallons or greater.
- Contractors that store or use oil in quantities of 55-gallons or greater must provide equipment (e.g., secondary containment pallets, absorbent pads, absorbent booms, speedi-dry) that is suitable and sufficient to control a potential spill/release. The Contractor is responsible for identifying conveyances to the environment (e.g., sumps, storm/floor drains, etc.) and minimizing spill potential to these areas.

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- Contractors must use appropriate protective procedures such as double containment, inspections, employee training, overflow protection, and other measures as part of activities involving the use, storage, or handling of petroleum products or on University property.
- Contractors must ensure that their employees are adequately trained in spill response and notification procedures.

**Spill Response for Petroleum.**

The Contractor is responsible for the proper management of petroleum spills including internal notifications, as well as, proper mitigation steps and clean-up to the satisfaction of EH&S and in accordance with regulatory guidelines. Schedule delays and cost over-runs resulting from Contractor caused spills are the responsibility of the Contractor. For the purposes of the Guidelines, a petroleum spill shall be defined as any amount of petroleum released at a Project Site. It should be noted that drips from normal maintenance activities are not considered spills, but must be addressed as they occur. In the event of petroleum spill, the Contractor must perform the following:

1. The Contractor must immediately notify the Project Manager to put the SPCC Emergency Action Plan into effect. The Contractor should be prepared to provide details about the including: date, time and location of spill; source of spill; cause of spill; type of material spilled; approximate quantity; estimated quantity released to navigable waters through drains (if applicable); description of the affected media (e.g., soil, pavement, water); damages or injuries; actions being used to stop or mitigate the spill.
2. The Project Manager must notify EH&S upon notification by the Contractor
3. The Contractor must attempt to stop or contain the spill at the source and to prevent the discharge of materials to drains, sumps, soil, or other media. The Contractor is responsible for the proper collection, storage and disposal of waste materials in compliance with regulations. All waste materials must be placed in a drum labeled “Non-Hazardous Waste” (Figure 2) while stored at the Project Site. If the Contractor does not have materials onsite to control the spill, they must contact Facilities Management for onsite spill supplies.
4. EH&S may obtain a spill response vendor or use campus staff/resources to assist with spill cleanup if the Contractor is unable to stop or contain the spill.
5. EH&S will prepare an incident report and determine if notification to the regulatory agencies is required.
6. Spills resulting from Contractor negligence are the responsibility of the Contractor, not the Project. This responsibility includes regulatory and financial responsibilities.

**4.7 Water Intrusion and Mold Recognition.**

Mold is a ubiquitous environmental condition caused by a combination of factors such as moisture, oxygen and fibrous materials. Leaks, floods or construction activities can cause building materials or furniture to become wet to the extent that removal or remediation is necessary. Contractors are responsible for preventing or avoiding the creation of such conditions. All water leaks either caused or encountered by Contractors are to be reported to a Project Manager and controlled immediately.
Contractors are responsible for ensuring that windows are shut and window openings are properly sealed off hours at Project sites.

The Contractor is responsible to identify in writing to the Project Manager and coordinate in the field any work that has the potential for leaks. The Contractor is responsible for associated means and methods related to the work and direct supervision of it. The Contractor is responsible to provide adequate, readily available spill/leak containment equipment in the immediate area of work should a leak occur. All work must be in compliance with approved Construction Documents and Columbia University Compliance Guidelines.

In situations where water intrusion has occurred, all affected porous materials must be promptly and completely dried within 48 hours or removed from the premises to avoid biological growth. Contractors who encounter mold or conditions suspected of being mold are advised to contact their Project Manager. Additional information on the management of specific materials for mold growth control can be found in the Appendices to the Guidelines.

4.8 Asbestos-Containing Materials.

Many of Columbia University’s buildings were built prior to the late 1970s when the use of asbestos in building materials was common. The identification and removal of asbestos is regulated by multiple federal, state, and local regulations and requires detailed coordination of Asbestos Coordinator, the Project Manager, and the Contractor. At Columbia University, the Office of Facilities Compliance functions as the Asbestos Coordinator.

To ensure that asbestos-containing building materials are not impacted during any repair, renovation or construction project, The Asbestos Coordinator will work with the Project Manager to ensure that asbestos-containing materials (ACM) in the project path are identified, quantified, and its condition is assessed through the use of an asbestos investigation or prior knowledge. Additionally, spray on fireproofing containing vermiculite must be identified, sampled, and analyzed by certified labs to determine asbestos content prior to the start of any project impacting such material. The Project Manager will ensure certified asbestos abatement Contractors remediate all asbestos that might otherwise be impacted during a project under the watch of an asbestos consultant.

- If asbestos-containing materials remain within the construction jobsite, The Project Manager must work closely with Asbestos Coordinator to ensure that any locations of concealed or inaccessible ACM or suspect ACM are clearly identified and subsequently properly handled by a certified asbestos abatement Contractor once access is permitted. It is the responsibility of the Contractor and its sub-Contractors to ensure that ACM or suspect ACM is not impacted during construction.
- The Contractor and its sub-contractors shall not disturb, damage, or otherwise handle any known or suspect asbestos-containing materials.
- Any known or suspect asbestos-containing material that is observed by the Contractor to be crushed, ripped, broken or in any way damaged, or that is revealed as a result of the Contractor’s work shall be immediately reported to the Project Manager.
• The Contractor shall not sweep, dust, vacuum or mop dust or debris that may be suspected ACM. The Contractor shall also not handle or dispose of any suspect asbestos-containing waste or trash. If material that is suspected to be asbestos-containing is unintentionally disturbed, the Contractor shall immediately evacuate and secure the work area and notify the Columbia University Project Manager. The Project Manager will assist EH&S in coordinating an appropriate response.

• If the Contractor is performing stripping of floor finishes from asbestos-containing flooring, all stripping shall be done using low abrasion pads at speeds lower than 300 rpm and wet methods shall be used. The Contractor shall take care not to over-strip floors and shall stop stripping immediately upon removal of the old surface coat. Sanding of suspect asbestos-containing flooring materials is strictly prohibited unless prior written approval from EH&S is provided to the Columbia University Project Manager.

• Asbestos contractors and consultants must adhere to federal, state, and local regulations pertaining to asbestos. Completed close out packages are required to be submitted to the Asbestos Coordinator after all investigations and abatements. Any regulatory inspections must be immediately reported to the asbestos coordinator as per the guidance in Section 1 of this manual.

All non-asbestos contractors on a demolition, renovation, remodeling, or repair project are responsible to notify the Project Manager or Asbestos Coordinator, upon discovery of asbestos or suspect asbestos containing material that has not been previously identified by an asbestos survey. The presence, location, and quantity of newly discovered material shall be conveyed within twenty-four (24) hours of discovery to the Asbestos Coordinator, as well as to all other employers at the work site.

4.9 Lead Based Paint and Stain.

Many Columbia University buildings, including residential properties, were built prior to the late 1970s, when lead based paint (LBP) and stain was still used to coat both interior and exterior surfaces. Lead paint is a hazard when it breaks down at friction and impact surfaces or just due to general age. The Project Manager and Contractor must adhere to the University’s Lead Paint Policy.

The Project Manager must determine if the Project Site contains LBP either through a specific lead-paint inspection report for the areas to be impacted at the Project Site or through prior knowledge, specifically, by determination of the age and history of the building. In addition, formal testing must be conducted prior to manipulating stained wood and/or other surfaces. If lead is determined to exist at the Project Site, a properly trained and authorized Contractor must perform work to mitigate or dispose of the lead. Specifically, if the Contractor’s work requires intrusive or dust-generating work on painted or stained surfaces (e.g., sanding, drilling, cutting, brazing, scraping, demolition), such work must be performed in accordance with OSHA’s Lead Safety Standard (29 CFR 1926.62). Any painted surfaces that have loose, flaking, chipping, or otherwise non-intact paint should not be impacted by the Contractor and should be reported to the Project Manager. Additionally, all painted windows must be tested for lead based paint prior to removal and disposal.

The Project Manager must ensure that Contractors are properly trained to perform lead-based paint abatement and are directly hired to perform such activities at Columbia University as per the Lead Paint Policy. The Project Manager will coordinate the specific requirements for lead-based paint abatement.
work, as per the Lead Paint Policy. In addition to the Lead Safety Standard, lead abatement contractors must be familiar and comply with:

- Title X of the Housing and Community Development Act of 1992, also known as the Residential Lead Based Paint Hazard Reduction Act.
- The Lead Renovation, Repair, and Painting Program (40 CFR Part 745)
- New York City’s Lead Paint Hazard Reduction Law, also known as “Local Law 1 of 2004.”
- The University’s Lead Paint Policy in Residential Buildings and Childcare Facilities.

For renovation projects occurring at child-occupied buildings, childcare facilities, or housing constructed before 1978 (target housing) containing LBP, 40 CFR Part 745 requires the contractor must be certified and provide proof of training of all workers at the jobsite. The contractor must train all onsite workers, direct their specific activities at the project site, and keep records of all workers trained.

Refer to the attached Lead Paint Policy and Section 2.3 of these guidelines on Hazardous Waste Management for guidelines on the proper disposal of lead-containing paint debris and waste.

4.10 Refrigerant Reclamation.

One of the major sources of ozone depleting substances (ODS) can be found in equipment containing refrigerants, such as chillers, air conditioners, freezers, and refrigerators. Section 608 of the Clean Air Act prohibits individuals from intentionally venting refrigerants, generally chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons (HCFCs) into the atmosphere while maintaining, servicing, repairing, or disposing of air conditioning or refrigeration equipment. Furthermore, the EPA established a set of certification levels for work performed on refrigerant containing equipment, which include the following:

- Technicians who service small appliances (5lbs or less of refrigerant) must be properly EPA certified as Type I technicians.
- Technicians who service medium-, high-, or very high-pressure appliances, must be properly EPA-certified as Type II technicians.
- Technicians service must be properly EPA-certified as Type III technicians.
- Technicians who service all of the above must be properly EPA-certified as Universal technicians.
- Technicians must provide a copy of their certification to Columbia University before any work can begin on refrigerant containing equipment. Additionally, technicians must carry a copy of their certification on their person while working on refrigerant equipment at Columbia University.

Additionally, the following work practices are required for work on appliances containing ODS:

- Technicians servicing appliances that contain 50 or more pounds of ODS must provide the owner with an invoice that indicates the amount of refrigerant added to the appliance. Proper records indicating any refrigerant recovery, additions, leak discoveries and repairs, leak verifications, and other maintenance for each unit serviced must be maintained and presented Facilities Management after service has been performed.
- Air-conditioning and refrigerant equipment must be evacuated to EPA-required vacuum levels prior to servicing. Refrigerant recovery equipment must be EPA-certified.
• All refrigerant containing equipment must have refrigerant recovered prior to disposal. Small equipment, such as window-based air conditioners, refrigerators, ice machines, or freezers must be tagged as refrigerant-free prior to disposal.

A service order form to be used by both Columbia staff and Contractors when servicing appliances or large units containing greater than 50 lbs. of refrigerants is included as an Appendix to these Guidelines. All refrigerant additions to and losses from all equipment must be documented on this form. Intentional venting of any refrigerant is strictly prohibited on any Columbia University owned property and is a violation of the Clean Air Act.

4.11 Mercury in Plumbing.

Mercury has been used in a variety of research equipment and consumer products, such as thermometers and thermostats, because of its precise reaction to temperature and pressure. In many older laboratories, mercury can sometimes collect over time in sink traps and similar plumbing. In addition, mercury may be found during laboratory renovations in drawers, behind benches and cabinets, and even under floor tiles.

The “Policy and Procedure for Managing Mercury during Custodial, Maintenance, Construction or Renovation Activities,” found in the Appendix to these Guidelines, must be followed while opening or removing pipes or sink traps or if mercury is encountered as a result of these activities. Mercury may be encountered on a Project Site when removing a sink trap or cutting pipes. Mercury spills are hazardous and must be cleaned up as soon as possible. Keep in mind that it is not just the liquid that is hazardous, but the vapor is non-detectable by smell and can be a source of exposure. The following guidelines should be followed when mercury is discovered in project areas:

When opening or removing plumbing pipes or traps in a laboratory building:

• Wear the appropriate Personal Protective Equipment (PPE), such as gloves and protective eyewear, for the particular work activity.
• Place a bucket or suitable container under the opening of the pipe or trap to collect any liquid.
• Collect all liquids and check for visible mercury, as well as needles and glass slides in the liquid. Also using a flashlight, check the interior surface of pipes and traps for visible mercury.
• If pipes, traps and liquid are free of visible mercury and/or needles and glass slides, drain dispose of the liquid and dispose of pipes and traps as general debris.
• If mercury and/or needles and glass slides are found, stop all work immediately and follow procedures for dealing with uncontained mercury as set forth below.
• The Project Manager should work with EH&S to ensure proper disposal of any collected mercury.

If mercury is uncontained or has spilled:

1. Contractor must immediately stop all work activities.
2. Contractor must isolate and secure the area (close door, string caution tape) to prevent the suspect material from being disturbed and dispersed and exit the area.
3. Contractor must not attempt to clean-up or dispose of the suspect material.

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4. Contractor must contact and provide Project Manager with all pertinent information (include: the name of involved workers, location of work area, type of fixture containing mercury, estimated quantity of mercury observed, whether the mercury spread from its original location) and be available to meet/speak directly with EH&S to review the situation.

5. The Project Manager must contact EH&S to apprise them of the situation.

6. EH&S must assess the situation and determine what action is required.

7. EH&S must coordinate all remediation activities in the work area.

8. Work must not proceed until EH&S provides clearance for activities to commence.

Cleanup of mercury spills must be left to qualified individuals with the appropriate materials, personal protective equipment, and knowledge to handle such a task. In an emergency, the Project Manager should contact EH&S during normal business hours or contact Public Safety after hours.

5. Occupational Safety.

5.1 Dust Control.

Dust is an inevitable product of Project activities that may affect the Columbia University community and its neighbors. While it may not represent an immediate hazard, it is a readily controllable nuisance. All Contractors must make reasonable efforts for controlling dust emissions on both indoor and outdoor Project Sites. These efforts may include the use of:

- Water or other environmentally safe dust suppressants on outdoor sites.
- Dust control mats outside of indoor work areas.
- Covering open bodied trucks containing soil or fill when in motion.
- Tarps or covers for stockpiles of dirt or fill on work sites.
- Dust suppression during demolition or construction activities including grinding, cutting, sweeping, and major demolition work.
- Negative pressure in indoor spaces.

Negative pressure is achieved through the use of exhaust fans. With the fans in place, more air is mechanically exhausted from a room than is mechanically supplied. The project site must be made as airtight as possible to prevent air from being pulled in through cracks and gaps, such as those around windows, light fixtures, and electrical outlets.

Project managers should ensure that neighboring areas are protected from dust related to project work. The Project Manager should develop a communication strategy for phases of any project that may contribute to increased levels of dust in the vicinity of adjacent occupied areas. The Project Manager and Contractor are responsible for addressing any mitigation and clean-up required from dust impacts in neighboring areas.

5.2 Noise.

Construction and demolition work often involves many tasks that produce excessive noise and vibration that may disturb the essential tasks required by the Columbia community. Staff, students, and visitors deserve consideration and the quiet enjoyment of their premises. Additionally, due to the nature of research occurring at the campus, excessive noise and vibration may affect sensitive equipment or
experiments occurring in neighboring spaces. Every effort should be taken to mitigate unwarranted and excessive noise at the project site. The following items must be considered when performing activities at the project site that may generate excessive noise:

- Engineering and administrative controls for noisy equipment or activities should be discussed and incorporated into a project before the commencement.
- All core drilling, chipping, and drilling should be done after routine business hours or a time determined by the Project or Facilities Manager.
- All work activity within occupied portions of the facility must be accomplished with minimal interruption to the Columbia community.

The Project Manager should develop a communication strategy for phases of any project that may contribute excessive noise or vibrations to neighboring areas of a project.

5.3 Nuisance Odors.

The Contractor shall carry out effective measures whenever and as often as necessary to prevent the discharge of nuisance odors from all project activities. Enclosure seals and forced ventilation may be necessary to prevent odor nuisance.

The Contractor shall notify the Project or Facilities Manager in advance when potential odor-causing activities are scheduled. Regular discussions must occur and be documented during project meetings so the Manager understands the potential impact on the CUMC community. All potential odor-causing activities must be conducted after routine business hours.

Additional factors the Contractor must consider prior to commencing potential odor-causing activities include HVAC equipment shutdowns; adherence to the Hazard Communication Standard via MSDS and PPE availability; and notification of key personnel in the affected and surrounding areas.

5.4 Air Emissions.

All Contractors are required to comply with all federal, state, and local regulations regarding operation of onsite equipment. Specifically, all Contractor vehicles are required to adhere to the NYC Administrative Code 24-163, which restricts idling of motor vehicles in New York City. Contractors must not cause or permit the engine of a motor vehicle to idle for longer than three minutes, when parking, stopping or standing. Emergency motor vehicles or motor vehicles where the engine is used to operate a loading, unloading or processing device are exempt from this regulation. This is specifically notable and important in loading docks, where exhaust odors may travel into the buildings and affect occupants.

Combustion equipment refers to equipment that use fuel to heat, produce energy, or incinerate, such as the boilers, generators, and the onsite incinerators. Contractors must inform Project Manager and EH&S if there are any changes to equipment that may affect overall air pollutant emissions resulting from:

- Fuel conversions
- Burner replacements
- Any other maintenance, repair, or replacement of equipment that could affect the maximum heat input or overall air emissions
Combustion equipment of any type is not permitted to operate inside or near any University building air intakes or open windows and care must be taken to operate such equipment in well ventilated areas. Additionally, the use of low sulfur diesel fuels, diesel particulate filters, or new fuel and emission efficient equipment is required at Project Sites. When possible, electric should be used from the university power sources rather than from fuel supplied generators.

5.5 Hazard Communication.

The Hazard Communication Standard (29 CFR 1910.1200) ensures that all workers are aware of:

- the hazardous chemicals that are present in the products they use
- the effects of overexposure to such hazardous materials and how to protect themselves from overexposure
- the correct fashion in which to handle such materials in the event of a spill or accidental release
- the means and method for this information to be communicated to workers in an area where such materials are used or stored.

Manufacturers, importers, or distributors of chemicals are required to assess the physical and health hazards of their products. This information must be recorded on the product label and included in a Safety Data Sheet (SDS). SDSs typically communicate the hazards associated with chemicals that are contained in a product, how to handle, store and dispose of the product, and what to do in case of overexposure or an unexpected release or spill of a product.

Columbia University is required under the Hazard Communication Standard to inform Contractors of potential hazards during their work at the University. This includes providing Contractors access to the written Hazard Communication Plan, inventories of hazardous materials that may be stored near the work area, and the SDSs for these materials.

The Contractor must keep an inventory of products containing hazardous chemicals and SDSs of these products onsite. In addition, the Contractor must provide the locations of the use and storage of such products to their employees and to Columbia University. Under no circumstances may the Contractor store chemicals and/or other hazardous products in areas outside of the project site. In addition, long term storage of products (beyond the duration of the specific project) is prohibited.

A pre-construction walkthrough of work areas should occur before the commencement of any demolition or construction activity, including a representative of EH&S, the Project Manager, and the Contractor (if applicable). All potential hazards (biological, chemical, and radiological) are typically removed from the work area as part of Columbia’s clearance process, unless the Contractor is performing hazardous materials removal (such as asbestos/lead abatement or hazardous chemical removal). The walkthrough will include:

- a physical examination of the work area for hazardous materials.
- a short explanation of the Contractor Safety Program.
- arrangements to remove any hazardous materials found in the workplace.

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5.6 Personal Protective Equipment.

It is the sole responsibility of the Contractor to provide appropriate personal protective equipment (PPE) to their employees and ensure its proper use (29 CRF Part 1910, Subpart 1). Hardhats are required on demolition projects and on Project Sites where there is a risk of a head injury.

Contractors must not create hazards for Columbia University employees, students, and visitors. Hazardous areas shall be properly secured and proper signage must be posted to identify PPE required and identify all hazards posed by activities at the Project Site. If non-Contractor personnel need to enter or pass directly through the work area, the Contractor shall provide appropriate PPE for such visitors at any time. The PPE to be made available is dependent on the hazards posed by construction activities. Typically, hard hats, steel toe boots, and safety glasses are recommended. All safety equipment supplied and used by Contractors shall comply with applicable OSHA requirements and ANSI standards.

5.7 Working at Heights.

Ladder Safety.

Working on and around ladders can be a major source of obstruction and injury in the workplace. While the ladder is a common tool used at many project sites, it is important that ladder safety be addressed, for the safety of the Contractor and for the Columbia community. The requirements for Ladder Safety in OSHA’s Construction Health and Safety Standard (29 CFR 1926.1053) include the following:

- Ladders must be inspected prior to every use, and any defective or unsafe ladders must be removed for repair or destruction. If not immediately destroyed or repaired, defective ladders must be labeled “Dangerous – Do Not Use”. Defective ladders are not to be used on any Project Site and may be removed by a Columbia University officer if not removed in a timely fashion.
- Ladder ANSI and OSHA Duty Ratings must be visible and appropriate for the task being used for.
- Ladder rungs must be parallel, level, and uniformly spaced when the ladder is in position for use.
- Short ladders shall not be spliced together to make longer ladders.
- Workers must always face forward when climbing or descending ladders, maintaining 3 points of contact with either two hands and one foot or two feet and one hand.
- Ladders must be properly secured before work begins and ladders must be tied off at all times.
- Ladders must not be used as scaffolding or a work platform in the horizontal position.
- Barricades must be set up to direct pedestrian traffic away from ladders in use. Ladders must be set up on level and stable ground.
- Areas around the bottom and the top of ladders must remain free and clear of debris.
- Ladders must be removed at the end of the shift and secured to prevent unauthorized access to elevated work areas.
- Portable stepladders longer than 20 feet are not allowed.
- Electrical wires must be prevented from coming near metal ladders.
- Wood ladders should only be used in electrical rooms. Wood ladders with defects must immediately be removed from the site.

Unsafe equipment noted at a project site will result in work shutdown and removal of such equipment from the project site at the direction of a Columbia University Officer.
Scaffolding.
Contractors whose work cannot be performed from ground level or from other solid construction must take precautions to ensure safe performance of such work. The Building Code specifies in Chapter 33 § BC 3314.2 that permits are required for all supported scaffolds 40 feet or more in height and suspension scaffolds, including all supports, fastenings, connections, and details. Exceptions to the permitting requirement are listed in this section of the Building Code. Copies of the permit and applicable signs must be posted at a conspicuous location and visible to the public and copies of the approved plans for the scaffolding must be maintained onsite.

Chapter 33 §3314 of the Building Code requires that workers who erect, repair, maintain, or modify supported scaffolds 40ft or more in height must complete an initial 32-hour scaffolding safety course and an 8-hour refresher every 4 years thereafter. Workers who use a supported scaffolding to complete their job tasks are required to complete a 4-hour scaffolding safety course and 4-hour refresher training every 4 years thereafter. Evidence of completion in the form of a dated certificate issued by the trainer of all trainings must be readily available while the worker is at a Project Site.

Where necessary, the use of scaffolding for this purpose must conform to 29 CFR 1910.28 and Chapter 33 § BC 3314 of the Building Code, including the following:
- Scaffolding shall be designed, constructed, and maintained in safe condition and shall not be moved or altered while in use.
- Scaffolding shall not be loaded in excess of its capacity.
- All materials used in the construction of scaffolding shall conform to the technical specifications of all applicable regulations.
- Proper devices will be used to secure all scaffolding to permanent structures.
- All necessary precautions shall be taken to prevent the fall of tools and other materials from scaffolding. Material and debris susceptible to dislodgement must not be stored on scaffolds while work is not being performed.
- Guardrails, toe boards and other fall prevention devices shall be properly installed and maintained.
- Appropriate fall protection must be utilized by all personnel working on scaffolding.
- All scaffolds, except for suspended scaffolds, must be inspected daily before each use by a competent person designated by the Contractor. Suspended scaffolds must be inspected before use by the licensed rigger, the foreman, or the superintendent of construction if the work is not performed by or under the supervision of a licensed rigger. Records of such inspections must be forwarded to the Project Manager and maintained at the Project Site.

Fall Protection.
All contract work done at Columbia University is subject to the standards set forth by OSHA in 29 CFR 1926 Subpart M for any work where fall protection may potentially be needed. In general, the rule sets a uniform threshold demanding protection in any area where a worker is more than 6 feet above a lower level, where there is a risk of falling into dangerous equipment, or where there is a hazard from falling objects.
Fall protection measures required by the type of work being performed must be provided by the Contractor. Examples of fall protection systems include guard rails, safety net systems, warning line systems, positioning device systems, and personal fall arrest systems. Fall arrest systems, which include body harnesses, lifelines, and associated equipment, must be used when other methods, such as safety nets and guard rails, cannot be relied upon for protection. Contractors must cover all holes, excavations,
trenches, and other areas into which workers or Columbia employees might fall, or otherwise block them off with guard rails, midrails, and toeboards. Additionally, Contractor employees must be trained in the use of fall protection measures pertinent to their work as mandated in 29 CFR 1926 subpart M. Contractors are responsible for thoroughly communicating fall hazards to all of their workers and sub-contractors and is responsible for meeting all requirements of this regulation.

5.8 Lockout / Tagout.

In order to ensure that energy hazards are properly controlled during the servicing and maintenance of machines and equipment, OSHA's Lockout/Tagout Standard (29 CFR 1910.147), must be followed on all project sites to prevent the uncontrolled release of hazardous energy.

The standard covers the servicing and maintenance of machines and equipment in which the unexpected energization, or start-up of the machines or equipment, or release of stored energy could cause injury. This energy can be in the form of electrical, hydraulic, pneumatic, or mechanical, however, it is important to remember that any form of energy can be a potential safety problem. This standard also applies to the control of energy prior to servicing and/or maintenance, including repair, adjustment or removal, of machines and equipment capable of generating or storing both kinetic and potential electrical, chemical, thermal, hydraulic and pneumatic and gravitational energy.

Contractors are responsible for complying with any written policies for lockout/tagout of specific devices as well as communicating their lockout/tagout policies to the Project Manager on behalf of Facilities Management.

Prior to any service interruption, the Contractor must verify with the Project Manager that Facilities Management has been informed, as the affected party, and may choose to assist with any required shut down pertinent to the Project. The Contractor must supply their own uniquely identifiable locks or tags for devices that require such. Upon completion of service of the lockout device, the Contractor must inform the Project Manager and Facilities Management of the removal of the Contractor lock or tag. Any previously placed locks or tags placed on devices by Facilities Management must not be removed by the Contractor. Failure to respect such procedures will result in immediate dismissal from the Project Site.

As a reminder, The Project Manager must work with Facilities Management on any project involving Columbia University infrastructure.

5.9 Machine Guards.

Any machine where machine parts, functions, or processes may expose an employee to injury must be guarded in accordance with OSHA Standard 29 CFR 1910 Subparts O and P, and Chapter 33 § BC 3303.1 of the Building Code. If standards for a specific device are not available, machine construction should prevent the operator from exposure to the danger zone during operation. When working at Columbia, it is strictly forbidden to override, bypass, disable, or ignore any machine guards. Any machine guard that is removed to repair equipment must be replaced at the end of the repair activity.

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Dangerous moving parts at the point of operation (point of work where work is performed on a material), moving components if the machine that supply power to the machine (flywheels, belts, cranks, rods), or any part of the machine that move while the machine is working require safeguarding. At a minimum safeguards must prevent worker from making contact with dangerous moving parts, create no interference that impedes a worker from performing a task, create no new hazards, and allow for maintenance of the machine.

Some examples of machines that require a guard at the point of operation, which is the point at which the material being manipulated is processed, include: guillotine cutters, shears, alligator shears, power presses, milling machines, power saws, and jointers. Regulations governing machines and guarding specific to certain industries are detailed in 29 CFR 1910 Subpart O. Regulations governing the use of hand and portable powered tools are detailed in 29 CFR 1910 Subpart P.

5.10 Confined Space Entry.

The OSHA Permit-Required Confined Spaces Standard, 29 CFR 1910.146, defines a “confined space” as:
- a space that is large enough to permit bodily entry and accommodate work;
- has limited means of entry or exit; and
- is not designed for extended occupancy.

Facilities has identified permit-required confined spaces at the campus and will communicate the location of any confined spaces at project sites to the Contractor prior to the commencement of work activities. Such locations are marked with signs indicating “Confined Space – Permit Required for Entry.”

The OSHA Permit-Required Confined Spaces Standard establishes requirements to ensure the protection of all personnel whose work requires entry to confined spaces. These requirements include the following:
- Evaluation to determine if the work is requires a confined space permit for entry
- Hazard communication, including sign postings and other information to prevent unauthorized entry into the space
- Air monitoring and forced air ventilation, when required.
- Designation of trained entry personnel, attendants, and emergency personnel prior to entry
- Completion and posting of a confined space entry permit.

It should be noted that CUMC has a separate designation for confined spaces that do not require a permit, but have the potential for permit required entry under certain circumstances. These spaces may be marked with signs indicating “Confined Space,” with no designation for permit entry. Interstitial spaces in the HHSC building specifically meet these designation and are commonly accessed spaces at the campus. The contractor must take care to ensure that hazardous atmospheres are not introduced into such spaces, thus requiring a permit for entry.

It is the Contractor’s responsibility to develop and implement confined space entry program, specific to the Project which meets or exceeds the guidelines mandated by OSHA. This program should be part of any Project specific Health and Safety Plan and must be provided to Facilities Management prior to the start of projects requiring such work.
5.11 Excavations.

Excavation activities present the potential to encounter multiple hazards such as: egress limitations, hazardous atmospheres, chemical or biological hazards, stability of adjacent structures, fall protection concerns, and cave-ins. In addition, underground utilities may be present in areas of excavation. NYS Code Rule 753 (16 NYCRR Part 753) establishes specific procedures to protect underground utilities from damage in order to assure public safety and to prevent damage to public and private property. This is accomplished by ensuring that all utilities are marked out prior to excavation.

Additionally, all Contractors performing excavation work must comply with the OSHA Excavation Standard (29 CFR 1926 Subpart P) and Chapter 33 § BC 3304 of the Building Code. Specific requirements regarding the design and maintenance of excavations contained within the Excavation Standard and the Building Code must be followed. All excavations must have a clear warning system as to protect workers, pedestrians, and traffic from falls, accidents, and injuries. The following steps must take place before beginning an excavation:

- The Project Manager must ensure that the Contractor performing the excavation notifies the NYC One Call Center (1-800-272-4480) from two to ten days prior to any excavation. A list of information required by the Call Center can be found on the web at http://www.nyclioneacall.com. Make note of ticket reference number and names of operators notice will be transmitted to.
- If possible, delineate the work area with white paint. No other color may be used to delineate the work area. No work may begin before the stated commencement date, unless there has been notification by every operator that they have no facilities in the work area.
- The Project Manager must ensure that each notified operator has either marked the work site or given an "all clear".
- The Contractor must preserve the paint/flags until no longer needed for safe excavation. It is recommended that these are removed once the excavation work is complete.
- Detailed information regarding utility mark outs can be found at the NYC One Call Center website listed above.

In the event that an underground storage tank is discovered during excavation, the Project Manager must immediately inform EH&S. At no point should the Contractor disturb any tank unless specifically given instruction or contracted by Columbia University to do so.

Columbia University is committed to creating and maintaining a safe and healthy work environment for all members of the Columbia community, including contractors working on projects at the university. The Contractor is responsible for adhering to all of the rules, regulations, and policies addressed in the Compliance Guidelines and should commit to a culture of safety and compliance while working at Columbia University. The Contractor should contact the Project Manager if they have any doubts or concerns about any project related task, including the material imparted in the Guidelines.
Columbia University Medical Center

_Compliance Guidelines_

ACKNOWLEDGEMENT

I, the undersigned have read and fully understand the educational material provided by CUMC on contractor safety and compliance. I understand that I am responsible for abiding by all defined policies, promoting safe work practices among my workforce, and for educating personnel at all levels on the project site.

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**BELOW FOR CUMC USE ONLY**

Signature of Reviewer

*Please return this form to the CUMC Project Manager or Facilities Manager.

**Copies will be maintained in the Facilities Compliance Office.

_Columbia University Medical Center_

_Compliance Guidelines_

_Revised May 2016_