

 **COLUMBIA UNIVERSITY**
IN THE CITY OF NEW YORK

Contractor Compliance Guideline



The Contractor Compliance Guideline contains safety, health, and environmental policies and procedures for all Contractors working at and for Columbia University. It is the responsibility of all Contractors, their staff, and subcontractors to comply with all components of this Guideline.

While this Guideline outlines some health and safety policies and procedures, it does not relieve the Contractor of the responsibility for following federal, state, or local regulations or industry best practice. Approved site-specific procedures supersede this Guideline.

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GLOSSARY OF TERMS – ACRONYMS & DEFINITIONS

Acronyms

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| ACM: | ASBESTOS CONTAINING MATERIAL |
| ANSI: | AMERICAN NATIONAL STANDARDS INSTITUTE |
| CAA: | CLEAN AIR ACT |
| CERCLA: | COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT |
| CFR: | CODE OF FEDERAL REGULATIONS |
| CUFO: | COLUMBIA UNIVERSITY FACILITIES & OPERATIONS (Morningside & Manhattanville) |
| CWA: | CLEAN WATER ACT |
| DOB: | NEW YORK CITY DEPARTMENT OF BUILDINGS |
| DOT: | NEW YORK CITY DEPARTMENT OF TRANSPORTATION |
| HASP: | HEALTH AND SAFETY PLAN |
| HVAC: | HEATING VENTILATING AND AIR CONDITIONING SYSTEM |
| LBP: | LEAD BASED PAINT |
| NEC: | NATIONAL ELECTRICAL CODE |
| NIOSH: | NATIONAL INSTITUTES OF OCCUPATIONAL SAFETY AND HEALTH |
| NFPA: | NATIONAL FIRE PROTECTION ASSOCIATION |
| NYCDOHMH: | NEW YORK CITY DEPARTMENT OF HEALTH AND MENTAL HYGIENE |
| ODS: | OZONE DEPLETING SUBSTANCE |
| PACM: | PRESUMED ASBESTOS CONTAINING MATERIALS |
| PCB: | POLYCHLORINATED BIPHENYL |
| PPE: | PERSONAL PROTECTIVE EQUIPMENT |
| RCRA: | RESOURCE CONSERVATION AND RECOVERY ACT |
| RMW: | REGULATED MEDICAL WASTE |
| SDS: | SAFETY DATA SHEET |
| SPCC: | SPILL PREVENTION CONTROL AND COUNTERMEASURES |
| TSCA: | TOXIC SUBSTANCES CONTROL ACT |

Definitions

“Building Code” refers to the New York City Building Code, Title 28 of the New York City Administrative Code. The New York City Building Code can be viewed in its entirety through the NYC Department of Buildings (DOB) website.

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

“Campus Life Safety & Regulatory Compliance” refers to the compliance team located at Columbia University Irving Medical Center.

“Contractor” refers to persons or firms directly hired by Columbia University or subcontractors 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 laboratory and research 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 Operations (CUFO) at the Morningside and Manhattanville campuses and all sub-departments under its direct management. This group is responsible for the management of Columbia University infrastructures at the designated campuses.

“Facilities Compliance” refers to a unit that provides technical assistance, consulting, and regulatory compliance support pertaining to environmental protection, occupational safety and fire prevention across all of Columbia.

“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.

“Fire Code” refers to the New York City Fire Code, Title 29 of the New York City Administrative Code.

“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 Representative” refers to representatives of Columbia University performing the overall management of the project.

“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 Representative 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.

“Safety Data Sheets” 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.

“Worker(s)” refers to persons hired by Columbia University, Contractors or subcontractors performing work at the project site.

1.0 General Information

Columbia University is dedicated to supporting its core educational and research missions by maintaining a safe, beautiful, and functional campus environment. Columbia University is comprised mainly of laboratories, classrooms, studios, medical and dental clinics, offices, and housing for faculty and students.

The Contractor Compliance Guideline (“Guideline”) applies to any work at Columbia University, or Columbia-owned, leased and/or managed property.

All Contractors performing work at Columbia University must comply with all applicable federal, state, and local regulations. This Guideline is not intended to replace the Contractor’s compliance responsibilities with any applicable regulation.

The Contractor should contact their Project Representative if they have any doubts or concerns about any project related task, including the material imparted in this Guideline.

1.1 Inspections

Contractor work areas may be observed and inspected at any time. Any deficiencies noted during the inspection must be corrected immediately. Violations may result in dismissal from University property and exclusion from future projects.

2.0 Contractor Receipt Acknowledgement Form

Contractors shall evaluate the contents of this document as it pertains to the work to be performed on Columbia properties. Contractors shall ensure that their employees and subcontractors understand these requirements. The information in this document should be communicated and jointly enforced by Columbia personnel, Contractors and subcontractors. In addition, Contractors shall implement a documented disciplinary process for all violations.

An authorized Contractor representative must complete the online acknowledgement section of this document to verify having attended a training in person, received an electronic version of this document, and acknowledge their responsibility to disseminate all information contained within to all employees and subcontractors. No Contractors will be authorized to perform work until completing the digital verification.

2.1 Safety Orientation and Training

Contractors are required to attend periodic Columbia University training. When training is required by law or regulation (e.g. oil handling personnel, hazardous waste operations or asbestos Workers), the Contractor shall ensure that only trained Workers are assigned to work. Contractor personnel may be required to complete certain University-specific training prior to beginning work. Evidence of training shall be submitted along with the Health and Safety Plan (HASP) to the Project Representative prior to commencing contract work. Contractors are responsible for continuous monitoring of their operations and equipment to ensure a safe, healthy, and environmentally sound work environment. A current list of orientation attendees will be maintained by the Project Representative and will serve as formal evidence of Contractor training.

3.0 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 with

the Plan. The Contractor will submit a written or electronic copy of their company's HASP to the Project Representative. 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.

3.1 Security

Contractors are always required to wear ID badges in plain sight while on Columbia University premises. Personnel without a proper badge will be questioned regarding their presence and may be asked to leave the premises. The Project Representative must be immediately notified of any visitors to the project site. Visitors must always be escorted.

3.2 Prohibited Items

Columbia University prohibits the possession, sale, or use of the following:

- alcoholic beverages
- illegal drugs
- firearms, ammunition and other weapons.

Columbia may refuse entry to any person possessing such items or suspected of being under the influence of alcohol or drugs. The taking of prescription medication in the manner prescribed by a physician is an exception provided it does not impair a person's ability to perform his/her job.

3.3 Housekeeping/Maintenance

Contractors are responsible for maintaining high standards of cleanliness and orderliness. Debris removal must be addressed daily.

Specific requirements include, but are not limited to the following:

- Support temporary cords or hoses at least 8 feet above the floor when routed across aisles. If this is not possible, cords and hoses shall be secured to the floor and protected from damage to eliminate trip hazards. The area shall be properly marked with appropriate warning signs or traffic cones to alert pedestrian traffic.
- Place waste materials in proper containers. The Contractor will keep work areas clear of all debris. Contractors will remove all waste materials and debris daily.
- Place equipment and materials so as not to block exits, aisles, doors, stairs, ladder ways, emergency equipment or electrical panels.
- Remove nails and other sharp objects protruding from surfaces and sweep up loose nails and screws.
- Do not store tools and equipment above work areas. Workers shall not leave materials in plenum spaces or utility rooms.

3.4 Protecting Building Occupants from Construction Activities

Contractors conducting construction/renovation activities shall ensure that the health and safety of the faculty, staff, students and visitors is not adversely affected. Exposure to physical and health hazards shall be minimized using engineering controls. Containment barriers, barricades, signs and localized exhaust ventilation shall be used.

Since the hazards associated with construction and renovation often change as a project progresses, the Contractor must conduct periodic hazard assessments to anticipate and plan for these changes.

Whenever it is necessary to maintain public use of work areas (such as sidewalks, ramps, entrances to buildings, lobbies, corridors, or stairways), the public shall be protected with appropriate guardrails,

barricades, temporary fences, overhead protection, or temporary partitions. The public must also be adequately protected from any work created hazards, such as excavation. Appropriate warnings, signs, warning lights and instructional safety signs shall be conspicuously posted and placed where necessary.

The Contractor must cover all holes, excavations, trenches, and other areas into which anyone might fall.

Student-Occupied Spaces

Entering a student room without prior approval and without an escort from a designated University official is prohibited. In occupied residence halls, the student union, student commons, dining halls, and other facilities where students gather, Contractors must be sensitive to the fact that the safety and comfort of hundreds of students and staff can be affected by seemingly minor actions.

3.5 Smoking

Smoking is prohibited in any indoor area, on all campus grounds, and in all University vehicles. "Smoking" refers to the use of cigarettes, electronic cigarettes, vaping devices, cigars, pipes and similar products. Consult your Project Representative for your campus' specific requirements.

3.6 Traffic Safety and Parking

Contractors shall observe speed limits, traffic signs, and other traffic rules. Contractors shall park in areas designated by the Project Representative. Vehicles parked in fire lanes, reserved areas, or roadways are subject to towing. Contractors may not park or drive on sidewalks or landscaped areas unless permitted by the Project Representative. Columbia University is not responsible for Contractor vehicles or their contents. Due to limited parking at Columbia, non-essential vehicular traffic must be minimized.

Service vehicles, material delivery, and construction equipment needed on site must be coordinated in advance with the Project Representative.

Contractors that are provided a permit to park their vehicles on campus walkways and pedestrian thoroughfares are required to place safety cones around the vehicle to increase visibility and protect pedestrians.

No riders are permitted on moving equipment, rigging, or loads.

3.7 Storage at Job Site

It is the responsibility of the Contractor to secure any materials or equipment at the job site. Industrial and construction materials to be stored outside shall be approved by the Project Representative, after evaluation of security and environmental issues, including secondary containment requirements, storm water runoff concerns, potential for water damage or mold growth on construction materials, etc. The Project Representative may designate a storage area for industrial and construction materials or project-specific storage limitations. Mechanical and electrical equipment rooms may not be used for storage. The Project Representative shall approve storage areas in advance of materials being stored.

3.8 Falling Object Protection

Contractors shall provide adequate protection where there is a potential for endangering persons below an elevated work site. Such work areas shall be isolated to protect persons from falling objects. In addition, the Contractor shall barricade and monitor a work area of twenty-five (25) feet minimum radius, to prevent unauthorized personnel from entering the hazardous area. If the Contractor cannot establish this secure area due to operational constraints, then the work must be scheduled during off-hours.

4.0 Emergency Management

In any emergency, all Contractor personnel must know how to protect themselves and provide immediate notification to emergency response organizations (fire, police, medical, etc.). The Project Representative will notify the Contractor of any University wide alerts.

In the event of an emergency, the Contractor must immediately report the emergency by calling 911, Public Safety, and the Project Representative. When reporting an emergency, provide the following:

- Your name, phone number and location
- The location of the incident (building name, floor and room number)
- Nature and extent of the incident (injury, accident, spill, smoke/fire, damage, etc.)
- The name and amount of the material spilled (if applicable)
- The safest route to the spill (if applicable)

The Contractor shall wait at the nearest location deemed safe until emergency response personnel arrive

4.1 Investigation and Reporting of Accidents and Incidents

In order to maintain a safe and secure work environment, Contractors shall report any incidents or observations that may affect the safety of their personnel, Columbia employees, or Columbia students. All incidents and injuries, including near miss incidents, must be reported immediately to the Project Representative. An Incident Report Form must be completed and submitted to the Project Representative within 24 hours of the incident/injury. Incident investigation may begin promptly after the accident or incident.

Site Safety Coordinators and Managers must immediately report applicable incidents to the Department of Buildings.

5.0 Fire Safety

The Contractor should be familiar with the location of fire alarm activation devices (pull stations), portable fire extinguishers and at least two exit routes from the work area. In the event of a fire, Contractors shall activate the nearest fire alarm station and call Public Safety.

Contractor-supplied fire extinguishers shall be clearly marked and have current inspection.

Only the Fire Department shall open a fire hydrant or standpipe. Contractors may not use fire hoses.

In the event of a fire or a smoke condition at a project site, Contractors are required to immediately stop all work activities, listen to all announcements, and follow instructions. Contractors are to evacuate to Columbia University's areas of refuge for assembly, head count, and further instructions from the Project Representative or authorized Columbia University designee. If a Contractor is missing, the Project Representative will notify Public Safety immediately.

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

Rescue anyone in danger

Alarm activation

Confine fire or smoke condition by closing doors leading into affected area

Extinguish the fire or Evacuate from the area

5.1 Certificates of Fitness

The Contractor is responsible for obtaining all applicable FDNY Certificates of Fitness (COF) prior to commencement of any work activities at Columbia University. The COF holder for the applicable activity must carry the COF on their person.

5.2 Hot Work Permits

For all Contractors using welding or cutting equipment, or other flame or spark producing equipment a hot work permit is required. Contractors must refer to campus specific procedures related to hot work.

5.3 Compressed Gas Storage

All compressed gas use and storage must be in accordance with NYC 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 the valve protection caps secured.
- All cylinders must be stored in such a manner as to prevent incompatibles from coming in contact with each other. Cylinders should be stored 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

5.4 Gasoline Powered Equipment

Use of gasoline powered and portable heating equipment requires written approval from the Project Representative and the campus Fire Safety Officer. Care should be taken when using this type of equipment outdoors, so that the exhaust does not return into the building by means of air intakes. Gasoline must not be stored at the project site.

6.0 Laboratory Safety

Columbia University is committed to ensuring compliance with laboratory regulations, standards, and best practices.

6.1 Laboratory Clearance Process

Columbia University EH&S oversees the lab clearance process prior to any work beginning in any laboratory or other space where biological, chemical or radioactive materials are used or were previously used. Completion of clearance is evidenced by signs and stickers posted on doors and equipment.

Columbia University Clearance Process

Equipment designated for relocation or disposal must be properly decontaminated before any work is performed. Similarly, laboratory equipment that is being handled by a commercial mover must be certified free of contamination. An EH&S clearance sticker is valid for a limited duration from the issuance date.

The Project Representative must determine, with the help of the vacating “occupants” and EH&S, if the space or equipment needs to be cleared. For example, if equipment was used in an office and has no exposure to chemical, biological, or radioactive materials, then clearance is not necessary.

If the laboratory equipment has been used with or exposed to any combination of radioactive, biological or chemical agents, the following steps must be taken:

Radiation Safety: Occupants must ensure that any equipment or surfaces used with or potentially contaminated with radioactive materials are decontaminated and cleared. All equipment containing radioactive sources must be cleared and disposed of through EH&S’s Radiation Safety Team.

Biological Safety: Occupants must ensure that any equipment or surfaces used with or potentially contaminated with biological material are decontaminated with a freshly prepared 10% bleach solution. All exposed surfaces of the equipment or contaminated furniture must be wiped down with the bleach solution. All Regulated Medical Waste (RMW) must be collected in rigid containers lined with red bags imprinted with the universal infectious waste biohazard symbol. Any sharps or materials contaminated with potentially infectious agents that may puncture a red bag must be deposited in a sharp’s disposal container. All decontamination procedures and physical removal of biological materials and waste must occur prior to clearance being issued.

Chemical Safety: 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, or if decontamination cannot be performed safely on the equipment. A University-approved Contractor will assist with decontamination. Any hazardous materials 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. All decontamination procedures and physical removal of chemicals and waste must occur prior to clearance being issued.

Environmental Safety: The Project Representative and Facilities will ensure that any equipment containing refrigerants, such as air conditioners or refrigerators 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. The Project Representative will contact Facilities to arrange for refrigerant recovery.

Under no circumstances shall a Contractor use a material in an application that is banned under the Toxic Substances Control Act (40 CFR 700-799).

6.2 Radiation Safety

Contractors who propose to use equipment that emits radiation must request approval from EH&S prior to bringing such equipment to any project site.

Any questions or concerns that arise during a project that involves a radiation area should be brought to the attention of the Project Representative immediately.

Radioactive Materials Security

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

- Unauthorized entry into radiation use areas is not permitted. Entrances to radiation use areas are marked with appropriate signage.
- Doors of unoccupied restricted areas shall be locked, as shall windows where ingress by this means is possible.

Management of Radioactive Materials Encountered at Project Sites

Most of the smoke detectors at Columbia University are photoelectric (non-radioactive), however Contractors may encounter ionizing (radioactive) smoke detectors. In addition, photo-luminescent “Exit” signs may contain radioactive material. Devices containing radioactive materials are required to have a radiation label. The Project Representative will coordinate with EH&S for disposal.

6.3 Biological Materials

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 “biohazardous,” “potentially infectious” or “regulated medical” 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 and by University Policy. The presence of these materials in a laboratory or other area is indicated by the universal biohazard symbol. This symbol may be found on red bags, red sharps containers, or large grey biological waste disposal bins. While working on University property, Contractors must adhere to the requirements of the Bloodborne Pathogens Standard and all applicable University Policies, including:

- Contractors must not enter a laboratory or area that is marked by the biohazard symbol or 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 scope of work.
- Any Contractor who unexpectedly encounters biological materials on a project site must exit the project site and contact the Project Representative and EH&S.
- Contractors must take appropriate measures to protect their employees from exposure to bloodborne pathogens by advising them to avoid contact with all materials in and around research laboratories.

While most of the materials commonly encountered in laboratories do not pose a hazard when handled appropriately, exposure may occur through a spill/release, a direct splash to the eyes, nose or mouth, or sustaining a cut or puncture wound. Awareness and appropriate precautions should be taken while working in areas where hazardous materials are/were used or stored.

6.4 Laser Safety

Laser-emitting tools and equipment are common to many work situations. Lasers in construction tools are generally lower powered and designed to be safe, but when they are misused or handled improperly, they can pose a hazard. OSHA Regulations specify generalized rules for the safe use of lasers in the construction industry. These include user training, posting and labeling requirements, laser safety goggles, and maximum exposure intensities.

- Contractors should review any type of process or equipment using lasers with their Project Representative
- Contractor use of Class 3b and 4 laser systems at Columbia University must be approved by EH&S.
- Contractors must post laser use signage at the project site.
- Contractor evidence of laser safety training on the specific laser being used on a project must be furnished to the Project Representative upon request.
- Lasers should never be directed towards eyes or near reflective surfaces that may redirect lasers towards eyes.

- Product warning labels on the laser device must not be removed or obscured in any way while working on a project site.

7.0 Environmental Safety

Columbia University is committed to ensuring compliance with environmental regulations, standards, and best practices.

7.1 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.

All containers and cylinders must be properly labeled and stored in a manner that prevents spills or releases. The Contractor must make available a Safety Data Sheet (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. Spills must be contained and reported to the Project Representative.
- Any malodorous materials should be mixed in a well-ventilated area, away from air intakes and in a fashion that prevents release. The use of such materials must be coordinated in advance with the Project Representative to ensure adjacent occupants are not affected.

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, isolate the area (e.g. close door, string caution tape, etc.) to prevent the spilled material from being dispersed and exit the area. All penetrations and drains near the spill must be protected.
2. The Contractor must provide the Project Representative with a detailed incident report.
3. The Project Representative must assess the situation and determine what action is required and coordinate all remediation activities in the work area.
4. The Contractor must not attempt to dispose of the spilled material.

7.2 Hazardous Waste

Hazardous waste generated at Columbia University must be stored in compatible containers, properly labeled, and securely closed when not in active use. Disposal of hazardous waste generated during a project shall be determined by the Project Representative, the Contractor, and Facilities Compliance.

Any shipment of regulated waste from Columbia University must be signed by a designated Columbia University representative. Hazardous waste may not be transported by the Contractor or relocated from the point of generation, unless the Contractor is specifically hired to perform such actions. EPA Identification Numbers may only be assigned by EH&S.

7.3 Universal Waste

The Contractor may be responsible for the handling and management of universal wastes as part of the project demolition phase. Universal waste that a Contractor can expect to encounter at project sites

may include fluorescent lamps, mercury containing equipment, and batteries. Universal waste is a category of waste materials not designated as "hazardous waste" but containing materials that need to be prevented from free release into the environment. Universal waste may not be disposed of in regular trash.

Prior to demolition, the Project Representative determines what type of universal waste may be present at a project site and ensures that properly labeled universal waste containers are available. Fluorescent lamps are to be stored intact in a fiber light tube container, which can be obtained through a Columbia University approved vendor. Universal waste is not permitted to accumulate on floors and must be stored in closed containers. A broken fluorescent lamp is considered hazardous waste and must be managed as such. If a fluorescent lamp breaks, contact the Project Representative immediately.

7.4 Fluorescent Light Ballasts

Fluorescent light ballasts manufactured before 1978 are known to contain polychlorinated biphenyls (PCBs). All ballasts must be properly handled and managed when light fixture removal is part of a project.

Ballasts containing PCBs are managed as, "regulated" waste under the Toxic Substances Control Act (TSCA). Any unmarked ballast must be treated as PCB containing. Columbia University requires that all PCB containing ballasts removed from light fixtures be placed in a pre-labeled collection container.

For ballasts known to not contain PCBs the Project Representative may choose to recycle ballasts with Columbia University approved scrap metal recycler.

7.5 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 may qualify as hazardous waste. This equipment is sent to an approved vendor for recycling. Arrange with the Project Representative for removal of used electronic equipment prior to the commencement of any project.

7.6 Spill Prevention Control and Countermeasures (SPCC)

A Columbia University Spill Prevention Control and Countermeasures (SPCC) Program establishes University-wide procedures for the prevention, detection and reporting of spills and/or releases of petroleum and oil. When working on Columbia University property, a Contractor must adhere to SPCC protocols, including the following:

- Notify the Project Representative if oil will be stored or used on the site in quantities of 55-gallons or greater.
- Provide equipment (e.g., secondary containment pallets, absorbent pads, absorbent booms, and speedi-dry) that is suitable and sufficient to control a potential spill/release.
- Use appropriate protective measures such as double containment, inspections, employee training, overflow protection, during the use, storage, or handling of petroleum products.
- Adequately train Workers in spill response and notification procedures.
- Complete detailed incident report.

7.7 Water Intrusion and Mold Recognition

Contractors are responsible for preventing water intrusions. All water leaks either caused or encountered by Contractors are to be reported to the Project Representative and controlled immediately. **Contractors are responsible for ensuring that windows are shut, and window openings are properly sealed off hours.**

In situations where water intrusion has occurred, all affected materials must be promptly and completely dried or removed from the premises. Contractors who encounter mold or conditions

suspected of being mold shall contact the Project Representative.

7.8 Asbestos-Containing Materials

Prior to the commencement of a renovation project, the Project Representative will have a certified asbestos abatement contractor abate all asbestos. However, it is not uncommon for ACM to be concealed behind walls, above ceilings, under carpets and floor tiles, or be otherwise undetected for abatement prior to the commencement of a construction project. If presumed ACM is uncovered during the work of a project, stop work immediately and contact the Project Representative.

7.9 Lead Based Paint and Stain

Prior to the commencement of a renovation project, testing will be conducted by the Project Representative. If lead is determined to exist at the project site, a Columbia University authorized Contractor will perform work to mitigate or remove. If the Contractor's work requires intrusive or dust-generating work on painted or stained surfaces that are not being removed (e.g., sanding, drilling, cutting, brazing, scraping, demolition), such work must be performed in accordance with OSHA's Lead Safety Standard.

For renovation projects occurring in child-occupied buildings or housing constructed before 1978 containing LBP, the Contractor must be certified and must provide proof of training of all Workers at the jobsite.

7.10 Refrigerant

EPA Regulations require four types of certification for refrigerant handling and recovery.

- Type I technicians: for servicing small appliances
- Type II technicians: for servicing or disposing of high or very high-pressure appliances
- Type III technicians: for servicing or disposing of low-pressure appliances
- Universal technicians: for servicing all types of equipment

Technicians must provide a copy of their certification before any work can begin on refrigerant containing equipment.

Technicians servicing appliances that contain 50 or more pounds of Ozone Depleting Substances (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 presented to Project Representative after service has been performed.

Consult with your Project Representative for campus specific procedures.

7.11 Mercury in Plumbing

Mercury may be encountered on project sites when removing a sink trap or cutting pipes. Mercury spills are hazardous and must be cleaned up immediately.

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 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. Use a flashlight to 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, 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 campus specific procedures for dealing with uncontained mercury as set forth below.

If mercury is uncontained or has spilled:

Cleanup of mercury spills is to be performed by qualified individuals with the appropriate materials, PPE, and training to handle such a task.

1. Immediately stop all work activities.
2. Isolate and secure the area (close door, string caution tape) to prevent the suspect material from being disturbed and dispersed.
3. Exit the area.
4. Contact the Project Representative to complete incident report and provide all pertinent information.
5. Do not attempt to clean-up or dispose of the suspect material.

7.12 Air Emissions

Combustion equipment refers to equipment that uses fuel to heat, produce energy, or incinerate such as boilers, generators, and incinerators. The Contractor must inform the Project Representative if there are any changes to equipment that may affect overall air pollutant emissions resulting from fuel conversions, burner replacements, or any other maintenance, repair, or replacement of equipment that could impact overall air emissions.

Combustion equipment of any type is not permitted to operate inside or near any Columbia University building air intake and care must be taken to operate such equipment in well ventilated areas. The use of low sulfur diesel fuels, diesel particulate filters, or fuel-efficient equipment is required at project sites. When possible, electric should be used from Columbia University power sources rather than from fuel supplied generators.

Contractors must not cause or permit the engine of a motor vehicle to idle for longer than three minutes, when parking, stopping or standing.

7.13 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 Representative in advance when potential odor-causing activities are scheduled. All potential odor-causing activities must be conducted after routine business hours.

The Contractor shall provide air monitoring equipment, ventilation equipment, and engineering controls to document and maintain acceptable indoor air quality. Materials of concern include products that emit high volatile organic compounds (for example, solvents), certain glycol ethers that are considered reproductive hazards, epoxy-based products, byproducts of combustion, and isocyanates.

If suitable indoor air quality cannot be achieved, the Contractor shall schedule activities outside of normal working hours and protect their employees with an OSHA compliant Respiratory Protection Program.

7.14 Dust Control

The Contractor shall 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 suppressant on outdoor sites.
- Dust control mats outside of indoor work areas.

- Negative pressure in indoor spaces.

8.0 Occupational Safety

Occupational Safety related to the standards and best practices of the Occupational Safety and Health Administration. (OSHA)

8.1 Hazard Communication

The Hazard Communication Standard requires 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 methods by which this information will be communicated to Workers.

Columbia University is required under the Hazard Communication Standard to inform Contractors of existing potential hazards during their work at the University.

The Contractor must keep an inventory of products containing hazardous chemicals and keep safety data sheets (SDSs) of these products onsite. 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. Long term storage of products (beyond the duration of the specific project) is prohibited.

8.2 Personal Protective Equipment (PPE)

It is the sole responsibility of the Contractor to provide appropriate PPE to their employees and ensure its proper use. Hardhats are required on demolition projects and on project sites where there is a risk of a head injury.

Hazardous areas shall be properly secured and proper signage posted to identify PPE required at the project sites and hazards posed by activities therein. 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. Typically, hard hats and safety glasses are recommended.

8.3 Ladder Safety

Working on and around ladders is a major source of obstruction and injury in the workplace.

Defective and inappropriate ladders are not to be used on any project sites. All ladders must be in good condition and free of any broken or defective parts. Any ladders with broken or split rails, rungs, steps, or any defective parts must be removed from the property. Unsafe equipment noted at a project site will result in work shutdown and removal of such equipment from the project site.

8.4 Lockout / Tagout

To ensure that energy hazards are properly controlled during construction and servicing/maintenance of machines and equipment the OSHA Lockout/Tagout Standard is enforced.

Prior to any service interruption, the Contractor is to coordinate with the Project Representative to ensure that Columbia University understands the impact to infrastructure.

Contractor shall perform Lock-Out/Tagout procedures in conjunction with a Facilities employee who is also placing a lock. Contractors must supply their own identifiable locks and indicate on the tag the date the lock was placed, company name and contact information.

8.5 Electrical Safety

All permanent and temporary electrical work shall be done in accordance with the National Electric Code, OSHA and other applicable standards.

8.6 Confined Space Entry

The Project Representative will identify any permit-required confined spaces at the project site prior to the commencement of work activities.

The Contractor shall develop and implement a confined space entry and rescue program, specific to the project which meets or exceeds the OSHA Guideline. The Contractor shall be responsible for maintaining all permits.

The Contractor's Confined Space Entry and Rescue Program must include:

- Description of the nature of the work
- Potential hazards and associated methods to eliminate or control the hazards
- List of Contractor's personnel assigned to perform work and their role: authorized entrant, entry attendant, fire watch, rescue
- Evidence of training of contractor's employees for Confined Space Entry
- Safety data sheets for all products being used

8.7 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. All scaffolding, staging, and work platforms must satisfy the applicable DOB and OSHA regulations and manufacturer's erection requirements. The use of site built staging or scaffolding is not allowed unless prior approval is obtained from the Project Representative.

The Building Code specifies that permits are required for all supported scaffolds 40 feet or more in height. Copies of the permit and applicable signs must be posted at a conspicuous location and must be visible to the public. Copies of the approved plans and all Worker training records for the scaffolding must be maintained onsite.

8.8 Fall Protection

All contract work done at Columbia University, is subject to the fall protection standards set forth by OSHA as follows:

- 4 feet above a lower level, where there is a risk of falling into dangerous equipment, or where there is a hazard from falling objects. (General industry)
- 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. (Construction)

The fall protection measures must be appropriate to the type of work being performed.

8.9 Machine Guards

Any machine where machine parts, functions, or processes may expose an employee to injury must be guarded. 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.

When working at Columbia University, it is strictly forbidden to override, bypass, disable, or ignore any

machine guards.

8.10 Excavation

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. Underground utilities may be present in areas of excavation. To protect underground utilities and assure public safety, mark out all utilities prior to excavation. 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:

- Contractor shall notify the One-Call Notification System (NYC 811) 48 hours prior to any excavation
- Make a note of the ticket reference number and the names of operators that the notice will be transmitted to.
- Delineate the work area with white paint. No other color may be used to delineate the work area
- Detailed information regarding utility mark outs can be found at the One-Call Notification System

If an underground storage tank is discovered during excavation stop work and notify the Project Representative.

8.11 Noise

Construction and demolition work often involve many tasks that produce excessive noise that may disturb the essential tasks required by the Columbia community. 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
- Perform all core drilling, chipping, and drilling after routine business hours or at a time determined by the Project Representative

8.12 Respiratory Protection

Contractors shall comply with the respiratory protection requirements of OSHA.

8.13 Mobile Equipment/Work Platforms

Unless permitted by the Project Representative, Contractors shall not use CU owned or leased aerial work platforms. Contractors shall ensure that only trained and authorized personnel operate mobile equipment.

For more information or questions contact your campus representative:

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