



# EHS GUIDELINES FOR CONTRACTORS

**TABLE OF CONTENTS**

- I. INTRODUCTION.....4**
- II. ADMINISTRATIVE.....4**
  - A. CONTRACTOR ORIENTATION.....4
  - B. MIT EHS OFFICE CONSTRUCTION SAFETY LIAISON.....4
  - C. CONTRACTOR’S SAFETY REPRESENTATIVE.....4
  - D. TRAFFIC SAFETY AND PARKING.....4
  - E. TRAINING AND LICENSING.....5
  - F. SITE SPECIFIC SAFETY PLANS AND CONSTRUCTION MITIGATION PLANS.....5
  - G. POLICE DETAILS.....5
- III. ELECTRICAL SAFETY AND LOCKOUT/TAGOUT.....5**
  - A. ELECTRICAL SAFETY.....5
  - B. CONTROL OF HAZARDOUS ENERGY (LOCK-OUT/TAG-OUT).....6
- IV. EMERGENCY PREPAREDNESS.....6**
  - A. EYE WASH AND SAFETY SHOWERS.....6
  - B. EMERGENCY EQUIPMENT ACCESS.....6
  - C. NFPA 241 PLAN.....6
  - D. FIRST AID AND MEDICAL RESPONSE.....6
- V. ENVIRONMENTAL PROTECTION AND HAZARDOUS MATERIALS.....6**
  - A. ASBESTOS.....6
  - B. ENVIRONMENTAL PROTECTION.....7
  - C. CHEMICALS AND HAZARDOUS MATERIALS.....9
- VI. FIRE AND LIFE SAFETY.....9**
  - A. HOT WORK.....9
  - B. FIRE PROTECTION IMPAIRMENTS.....10
  - C. FIRE SAFETY/EMERGENCY PLANNING.....10
  - D. HOUSEKEEPING AND MAINTENANCE OF WORK AREA/SITE.....11
  - E. ENTRANCES AND EXITS.....11
  - F. INCIDENT REPORTING.....11
  - G. STORAGE AT JOB SITE.....11
- VI. HEAVY EQUIPMENT.....12**
  - A. POWERED INDUSTRIAL VEHICLES.....12
  - B. UTILITY VEHICLES.....12
  - C. CRANES AND HOISTS.....12
- VII. SPECIAL HAZARDS.....13**
  - A. CONFINED SPACE ENTRY.....13
  - B. EXCAVATION AND TRENCHING.....13
  - C. CONSTRUCTION AND RENOVATION PROJECTS IN MIT OCCUPIED BUILDINGS.....14
  - D. PERSONAL PROTECTIVE EQUIPMENT.....14
  - E. COMPETENT AND QUALIFIED PERSONS.....14
  - F. SERVICE INTERRUPTIONS WHILE WORKING IN OCCUPIED BUILDINGS.....14
- IX. TOOLS AND EQUIPMENT.....14**
  - A. COMBUSTION ENGINES– INDOORS.....14
  - B. COMPRESSED GAS CYLINDERS.....15
  - C. POWDER ACTUATED TOOLS.....15
  - D. TOOLS AND EQUIPMENT.....15
  - E. RADIOGRAPHY/RADIOACTIVE DEVICES.....15
  - F. CLASS IIIB OR IV LASERS.....15
- X. WORKING AT ELEVATIONS.....16**
  - A. LADDERS.....16
  - B. MOBILE EQUIPMENT/WORK PLATFORMS.....16

<b>C.</b>	<b>SCAFFOLDS</b> .....	<b>16</b>
<b>D.</b>	<b>WORKING AT HEIGHTS</b> .....	<b>17</b>
	<b>MIT EMERGENCY CONTACT LIST</b> .....	<b>18</b>

## I. INTRODUCTION

***This document is a summary of environment, health and safety (EHS) performance expectations. It is not intended to replace or limit the requirements of federal, state, or local regulations or standard industry practice. It is the contractor's (the "Contractor") obligation to meet applicable EHS requirements whether or not they are addressed in this document or the Contractor's site-specific safety program.***

MIT is committed to excellence in environment, health and safety stewardship on our campus, in the larger community of which we are a part, and globally. No one MIT priority is more important than providing a safe work place for everyone and operating in an environmentally sound manner.

One of the goals of this document is to communicate MIT's EHS philosophy and expectations to all construction contractors. While MIT shall communicate known hazards resulting from our operations, contractors are expected to manage EHS hazards, risks and programs for their employees and subcontractors.

In some cases, the MIT EHS guidelines may be more restrictive than government regulations. Regulatory compliance is a minimal expectation. Contractors shall, therefore, evaluate the contents of this document as it pertains to the work to be performed at MIT and shall ensure their employees and subcontractors understand these guidelines.

Before starting work at MIT, contractors shall contact the appropriate MIT Project Manager (PM) or supervisor. Contractors should plan to review any applicable MIT EHS guidelines and protocols with their MIT PM and/or the MIT EHS Office.

Many OSHA standards require that a program be developed and implemented by the employer. These programs include written employer-specific programs (including documentation and record keeping) employee training and program assessment including such programs include Fall Protection, Confined Spaces, Control of Hazardous Energy (Lock-Out), Hazard Communication, Blood borne Pathogens, Electrical Safety (particularly higher-voltage work), and certain contaminant-specific substances such as lead, asbestos, beryllium, and benzene. Wherever applicable, the contractor may be requested to produce evidence of these programs and its implementation with its on-site employees.

## II. ADMINISTRATIVE

### A. CONTRACTOR ORIENTATION

Contractors may be asked to attend an orientation session that includes a review of MIT's Contractor Safety expectations. Contractors may also request an orientation or contact the EHS Office through the Project Manager with questions.

### B. MIT EHS OFFICE CONSTRUCTION SAFETY LIAISON

The MIT EHS Office assigns a "construction safety liaison (CSL) to most projects as a resource for the MIT Project Manager (PM). The priority for the CSL is to represent MIT's interest in identifying and mitigating hazards associated with the project to which MIT employees, students or visitors may potentially be exposed.

### C. CONTRACTOR'S SAFETY REPRESENTATIVE

The Contractor's designated safety representative (the "Safety Representative") is expected to monitor compliance with applicable EHS requirements and to help ensure the safety of the contractor and subcontractor employees. The Contractor shall provide 24-hour, emergency contact numbers to the MIT PM or supervisor. For large projects, MIT may require Contractor to provide a dedicated Safety Representative and/or an OSHA "competent person" along with a copy of their safety program.

### D. TRAFFIC SAFETY AND PARKING

Contractors shall observe speed limits, stop signs, no parking signs, crosswalks and other traffic rules while working on-campus. Workers shall park in designated areas only. Vehicles parked in fire lanes, reserved areas or roadways may be subject to towing. Workers may not park on sidewalks or landscaped areas, unless permitted by the MIT project manager.

## **E. TRAINING AND LICENSING**

Contractors are responsible to provide site specific training for their employees assigned to work at MIT. As part of this training Contractors are expected to review the applicable requirements in this document with their employees and subcontractors.

When training is required by law or regulation (e.g., hazardous waste operations or asbestos workers), the Contractor shall ensure that only trained workers are assigned. In addition to meeting the regulatory requirements, it is MIT's expectation that all personnel shall be adequately trained in proper techniques to safely perform the job assigned to them. Contractor personnel may also be required to complete certain MIT-specific training prior to beginning work. Contact the MIT PM, supervisor or the MIT EHS Office for additional guidance. Contractors may be asked to provide evidence of employee training.

For any asbestos work the Contractor must be licensed by the State of Massachusetts and all workers must be properly trained and have a current Massachusetts certificate, For other hazardous materials work with regulatory requirements such as working in areas with lead paint or lead paint removal the contractor must have the applicable training and licensing.

## **F. SITE SPECIFIC SAFETY PLANS AND CONSTRUCTION MITIGATION PLANS**

A Site Specific Safety Program that covers all potential hazards associated with the project and meets or exceeds the requirements contained in this manual may be required by the Project Manager and/or EHS depending on the complexity and location of the project.

When work occurs that may affect the MIT community, visitors or surrounding abutters a Construction Mitigation Plan may be required. The construction mitigation program aims to minimize or eliminate negative impacts while allowing for an efficient approach to construction work.

## **G. POLICE DETAILS**

City of Cambridge or MIT police details may be required in those situations where it is not possible or practical to isolate work areas through the use of barriers, fences, or other means, and planned activities in the work area pose an imminent risk to pedestrian or vehicular traffic.

Some examples of such situations include:

- Crane/Hoisting Operations
- The Use of Bucket Trucks
- Scaffold/Staging erection
- Demolition of a building or structure
- Excavation/Trenching
- The outside installation/set-up/hoisting of large artwork, sculptures, structures or displays
- Work on building facades or windows
- Installation or removal of telephone poles and/or overhead wires
- Vehicular access points to and from major construction sites on MIT property

## **III. ELECTRICAL SAFETY AND LOCKOUT/TAGOUT**

### **A. ELECTRICAL SAFETY**

All electrical work shall be conducted by licensed electricians in accordance with all applicable OSHA regulations and the National Fire Protection Association NEC 70 and 70E. With regard to electrical arc-flash hazards, contractors must assess workplace hazards and train employees to recognize these hazards and take appropriate precautionary measures. Live electrical work is prohibited without a live electrical work permit, conformance with OSHA regulations and presence of a qualified person(s).

- Contractors shall either provide approved ground-fault circuit interrupters (GFCIs) for personnel protection or properly administer OSHA's "assured equipment grounding program" using designated "competent persons."

- Contractors shall comply with the OSHA Control of Hazardous Energy requirements when working with de-energized equipment or circuits. Contractors shall identify the switches that energize the affected circuits or equipment. Contact the MIT PM or supervisor for assistance in identifying the locations of energy isolating points or shut-downs.
- Contractors must properly safeguard exposed voltage in occupied areas, by both posting an attendant or appropriate signage and properly securing the area within an enclosed radius of three (3) feet. Panel covers shall be installed immediately once the work is complete or at the end of a shift.
- Electrical cables or wires that are placed across roadways, doors or aisles should be secured to the floor and protected from damage.

**B. CONTROL OF HAZARDOUS ENERGY (LOCK-OUT/TAG-OUT)**

The Contractor will assure proper isolation and control of hazardous energy on affected equipment, machinery and utilities. Contractors will comply with the OSHA Control of Hazardous Energy (Lockout/Tagout) standard, including training and equipping workers. Contractors are expected to maintain a written program and work cooperatively with MIT personnel for multiple lockouts. See the **Electrical Safety** section above.

**IV. EMERGENCY PREPAREDNESS**

For a list of emergency phone numbers, please refer to the Emergency Contact List on page 18 of this document. Check with the MIT project manager for additional numbers.

**A. EYE WASH and SAFETY SHOWERS**

Where the work involves the use of chemicals, it is important to have rinse/drench equipment available. Workers shall be trained in the use of this equipment and be made aware of the location of emergency showers and eyewash units. If no permanent unit is available, then a temporary unit should be provided and maintained by the contractor.

**B. EMERGENCY EQUIPMENT ACCESS**

Contractors may not block or obstruct access to MIT emergency equipment such as self-contained breathing apparatus, first aid kits, AEDs, fire extinguishing equipment, eyewash stations and/or safety showers. Contractors may not relocate, obstruct or disable emergency equipment without the prior permission of the MIT PM or supervisor and the MIT EHS Office.

**C. NFPA 241 PLAN**

All General Contractors are required to submit an independent, Project-Level NFPA 241 Plan for each project. Said Plan should reference and incorporate the policies and procedures included in the MIT 241 Program, while including specific fire protection, life safety, and safeguards that are appropriate for the scope of work at hand.

**D. FIRST AID and MEDICAL RESPONSE**

Contractors are responsible for ensuring that first aid and medical services are available for their employees. MIT is available to assist with emergency first aid, as necessary (call 617-253-1212). The contractor is responsible for recording injuries and illnesses as required by OSHA. See section VI (F) of this manual for details on incident reporting requirements.

**V. ENVIRONMENTAL PROTECTION and HAZARDOUS MATERIALS**

**A. ASBESTOS**

Contractors shall not disturb suspect or confirmed asbestos containing materials (ACM) associated with MIT facilities, unless licensed to do so and authorized by a MIT project manager, supervisor or the MIT EHS Office. All suspect materials are to be considered ACM until confirmed or proven otherwise, by analytical methods.

Examples of suspect materials include:

- Thermal System Insulation
- Surfacing Materials

- Gaskets
- Caulking, Sealants, Adhesives (including those found on windows.)
- Roofing Materials
- Flooring Materials and Mastics

Contact the MIT PM or MIT EHS Office for information pertaining to location of ACM's, sampling and/or analysis results.

## **B. ENVIRONMENTAL PROTECTION**

### Environmental Permits and Licenses

Contractors may be asked to work on behalf of the MIT PM or supervisor to secure environmental and/or local permits and licenses specific to the project. In some cases, the Contractor may submit the permit application. Contractors are always responsible for ensuring that any work that requires a specific license (e.g., refrigeration systems repair, asbestos/PCB abatement and removal, pesticide application, etc.) is only performed by individuals who are appropriately registered and/or licensed.

### Notification of Hazardous Materials Releases

In the event oil or a hazardous material is released to the environment during the course of work, the Contractor shall contact the MIT Operations Center at 617-253-1500 or MIT Police at (617) 253-1212 and request notification to the MIT EHS Office. MIT will assess the situation and determine whether the spill requires notification by the responsible party to state and/or local agencies.

### Hazardous Waste Management

Contractors are responsible for all hazardous wastes that they generate while at MIT. Hazardous and non-hazardous chemicals are not allowed to be poured into sinks or floor drains. Unused chemicals, including paints and oils, shall be removed by the contractor for use on another project rather than abandoned on campus for disposal. Any hazardous waste stream generated as a result of working on a project shall be managed through the MIT EHS Office by the contractor related to a campus project. Materials must be properly contained and labeled during generation and storage. The MIT PM can provide information related to MIT's preferred environmental vendors for disposal of hazardous wastes. Contractors and MIT Facilities personnel are NOT authorized to sign hazardous waste manifests, only designated EHS Office staff can sign on behalf of MIT.

Common hazardous wastes generated at MIT include:

- Used solvents;
- Waste oils and lubricants generated by a variety of operations including motor vehicles, elevators, plant maintenance, etc.;
- Unused chemicals and other hazardous substances, such as strong acids & bases, paints, aerosol cans, etc. that are no longer needed, do not meet specifications, are contaminated, have exceeded their storage life, or are otherwise unusable; including spill clean-up residues.
- Used ethylene glycol and other coolants;
- PCBs, batteries, lead paint and other miscellaneous materials including, contaminated rags and wipes, broken mercury-containing lamps (i.e., fluorescent lamps) and thermometers.
- **Polychlorinated Biphenyls (PCBs)**

It is the Contractor's responsibility to properly identify, label, and dispose of materials and equipment containing polychlorinated biphenyls (PCBs) in amounts greater than 50 parts per million (ppm) or 10ug/100cm<sup>2</sup>. The MIT EHS Office shall be utilized as a resource to assist in this effort. Any equipment containing concentrations of polychlorinated biphenyls (PCBs) in concentrations greater than 50 parts per million (ppm) shall be labeled with the yellow "CAUTION: Contains PCBs" tag per 40 CFR 761.

Equipment that is likely to contain PCBs includes:

- a) Equipment containing transformers and/or capacitors that was manufactured before July 2, 1979;
- b) Electrical equipment manufactured before July 2, 1979 that uses heat transfer, dielectric, or hydraulic

fluids where it is not known if the fluids have been replaced with non-PCB substitutes; and  
c) Ballasts not marked "non-PCB".

Equipment with an unknown date of manufacture and that utilizes transformers, capacitors, dielectric-, heat transfer- or hydraulic fluids shall be assumed to contain PCBs unless testing or other documentation demonstrates otherwise. PCB concentrations must be known at the time of disposal.

Transformers, electrical switches and capacitors that are part of the power distribution network or are used as part of high voltage research and that are removed as part of a building renovation shall be reviewed for PCB concentration status. Any equipment that has not been tested within the last 10 years and is being removed for disposal shall have the PCB concentration verified. Transformers and capacitors bearing the manufacturer's "Non-PCB" designation do not require testing, and can be assumed to be non-PCB. If the equipment is to be stored, and it is suspected the equipment may contain PCBs, the MIT EHS Office shall be contacted to ensure storage complies with the requirements of 40 CFR 761.

Contractors shall provide timely notification of removal of PCB-containing equipment to the MIT PM and directly to the MIT EHS Office, to keep MIT's PCB Inventory current. Serial numbers, manufacturer, and if known, date of manufacture shall all be provided to the MIT EHS Office. If waste disposal is not handled through MIT's hazardous waste contractor, then the name of the company transporting the waste and the manifest ID number shall also be provided to the MIT EHS Office.

In the expected rare instance of spills involving PCB materials, the MIT EHS Office must be contacted to ensure cleanup complies with the requirements of 40 CFR 761.

#### Recycling

MIT encourages contractors to use commercially reasonable efforts to recycle as much as possible, consistent with good practices and financial prudence. MIT encourages contractors to recycle, and in some cases is required by law at a minimum, the following materials:

- Corrugated Cardboard.
- Clean dimensional wood.
- Metals including, but not limited to, ductwork, piping, reinforcing steel (rebar), roofing, other trim, steel, iron, galvanized sheet steel, stainless steel, aluminum, copper, zinc, lead, brass, and bronze.
- Any other materials for which reuse, salvaging, or recycling results in a net cost that is equivalent to or less costly than landfill disposal or incineration.

Contractors should be aware that the Commonwealth of Massachusetts has banned certain waste streams that may change from time to time from in-state incineration or landfill disposal. Such items may not be included in waste destined for incineration or landfills, except in extremely small quantities, and may include, but is not limited to:

- Lead-acid batteries
- Leaves and Yard Waste
- Whole Tires
- White Goods (Appliances)
- Cathode Ray Tubes (CRTs) including computer monitors
- Metal, Plastic and Glass Containers
- Recyclable Paper and Cardboard
- Construction materials including asphalt pavement, brick and concrete, metal, wood, and clean gypsum wallboard are banned from Massachusetts landfills.

Contractors shall insure that universal wastes are segregated from trash/solid waste. Such wastes may include, but are not limited to mercury thermostats, rechargeable batteries, fluorescent light tubes, etc. It is the Contractor's responsibility to stay well-informed and compliant with any regulations or changes thereto, pertaining to the labeling, storage and disposal of these wastes. The PM must contact MIT



Recycling within Facilities to arrange for proper removal and disposal of universal waste materials related to a project.

### C. **CHEMICALS and HAZARDOUS MATERIALS**

- Chemicals and hazardous materials used at MIT shall be accompanied by a Safety Data Sheet (SDS.) Prior to use of the material(s), Contractors may be asked to provide an SDS to MIT's EHS Office. MIT may also request material substitutions to less hazardous products.
- Contractors and their employees shall comply with all regulatory requirements in the management of the chemical products and other hazardous materials they use at MIT. Contractor personnel should be thoroughly familiar with the information contained in the SDS. Containers of products with ingredients that include hazardous materials shall be clearly labeled. If the use of the material has the potential for exposure to MIT personnel (students, faculty, employees or residents), the contractors should notify the MIT PM or supervisor before starting the job and the contractor may be asked to conduct a job hazard analysis (JHA). An example of such potential exposure might be the application of epoxy-based floor finishes. MIT EHS will review the JHA and make recommendations to prevent potential exposures to student and/or MIT employees. Contractors should be aware that vapors and/or odors from chemicals can travel long distances.
- Contractors shall provide secure storage, sound containers, and spill control prevention measures for chemicals (including fuels and oils) stored on open ground or other areas lacking spill containment. See the **Environmental Protection** section of this document.
- Contractors shall immediately report any chemical spill or release to MIT Police Department, the MIT PM or MIT EHS Office. MIT may ask the Contractor to notify government agencies, if required by federal and state environmental laws governing spills and releases. MIT may make the notification on behalf of the Contractor. See the **Environmental Protection** section of this document.
- Contractors are fully responsible for responding to oil and/or hazardous material spills resulting from their actions or from their failure to provide adequate safeguards, including without limitation, the full cost of such response. Following the cleanup, the MIT PM or supervisor, working with the MIT EHS Office, will assist the Contractor in providing proper waste removal.
- Contractors shall remove any remaining chemicals or hazardous material products as soon as reasonably possible after their completed use on a project.
- MIT contractors who generate waste materials will comply with all regulatory requirements and MIT policies. Contractors may not discharge chemicals or wastewater to drains. See the **Environmental Protection** section of this document.
- Contractors should use the smallest size chemical containers necessary to perform the day's work. In general, portable containers should not exceed a five-gallon capacity.
- Special precautions should be observed prior to using any chemicals or hazardous materials in mechanical or electrical rooms and near HVAC systems including air intakes. The MIT PM or supervisor should be notified prior to use of chemicals in these areas.

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).

## VI. **FIRE AND LIFE SAFETY**

### A. **HOT WORK**

MIT utilizes and enforces a permit system to help minimize the risk associated with Hot Work. We encourage contractors to consider alternative methods to avoid Hot Work.

If Hot Work is required, it is MIT's expectation that contractors conduct a job-specific hazard assessment. All flammable and combustible materials should be removed from the area. The hazard assessment should also include evaluating nearby work that has the potential to create a hazard.

- Contractors shall contact the PM to obtain an MIT Hot Work Permit for any operation generating open flames or sparks. This includes but is not limited to, welding, cutting, grinding, brazing, and torch-applied roofing. A City of Cambridge Fire Department Cutting and Welding Permit is required to store fuel gases and perform these activities). In order to obtain the permit, contractors shall present a copy of the MIT Hot Work Permit to the Cambridge Fire Department.
- The Hot Work Permit should be valid for only one job on one shift, unless other arrangements have been agreed upon.
- Completion of a state-approved hot work training program is required for most hot work conducted in Massachusetts. The MIT Hot Work Permit has a space for this information.
- Fire protection equipment and protective materials (fire blankets, portable exhaust ventilation etc.) shall be stored at the Hot Work site before the work begins.
- A designated fire watch is required during Hot Work. The Contractor must hire a Cambridge Fire Department fire fighter detail for this purpose (plumber's soldering is exempt from this requirement.) If the fire watch observes unsafe conditions during the Hot Work operation, he/she shall stop the work until the hazard is eliminated.

**B. FIRE PROTECTION IMPAIRMENTS**

- Contractors shall take precautions to prevent damage to fire protection systems. Report damage immediately to the MIT PM or supervisor. Call 617-253-1500 immediately.
- Contractors shall not operate any fire protection valve/device without prior approval of the MIT PM or supervisor.
- Contractors who need to disable a fire protection system should contact the MIT PM or supervisor. Notify the PM of any planned fire protection impairment at least five days in advance to obtain an approval to shut down. This notification applies to sprinklers, fire mains, fire pumps, and fire alarm system components. This should be undertaken in coordination with the Project NFPA 241 plan
- During fire protection equipment impairments, all operations that present a fire hazard should be minimized. Fire protection systems should be restored as soon as possible by the end of the workday. Fire watch personnel may be required during fire system impairments.
- Contractors shall not suspend materials or equipment on sprinkler pipes, valves or supports.

**C. FIRE SAFETY/EMERGENCY PLANNING**

- MIT prohibits smoking in its facilities.
- Contractors 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. Contractors shall not obstruct access to exits, exit routes or fire equipment or prop open stairwell doors.
- All fires must be reported by activating the nearest fire alarm station, followed by dialing the appropriate MIT EMERGENCY NUMBER. Dial 100 from an MIT phone or 617-253-1212 from a cellphone.
- Contractor-supplied portable fire extinguishers shall be clearly marked and have a current inspection tag. Contractors shall provide their own portable fire extinguishers for any hot work.
- Contractors shall obtain proper authorization from the MIT Department of Facilities before opening a fire hydrant or standpipe. Contractors may not use MIT fire hoses unless prior approval has been obtained from the MIT PM or supervisor.

- Proposed temporary alterations to exit paths or exit discharges shall be reviewed and approved by the project architect, MIT PM and MIT EHS. Posting of temporary Emergency Route Diagrams (ERD's) may be required.

#### **D. HOUSEKEEPING and MAINTENANCE OF WORK AREA/SITE**

- Temporary power cords, hoses or piping should be supported at least six feet above the floor when routed across aisles accessible to the MIT public. If this is not possible, they should be secured to the floor by some other temporary means, to prevent trip hazards. The area should be properly marked with appropriate warning signs or traffic cones to alert pedestrian traffic.
- Workers shall place waste materials in proper containers. The contractor will keep work areas clear of form and scrap lumber and other debris. Contractors will remove all waste materials and debris daily.
- Contractors will place equipment and materials so as not to block exits, aisles, doors, stairs, ladder ways, emergency equipment or electrical panels.
- Upon completion of certain projects, contractors may be required to provide the MIT PM or supervisor with documentation which indicates the amount of material recycled or disposed of.

#### **E. ENTRANCES and EXITS**

Contractors may use only those entrances and exits designated for the work area. MIT posts emergency exits with appropriate signs and often equips them with exit alarms to discourage unauthorized use. Contractors who need to disable door alarms shall obtain prior approval from the MIT PM or supervisor. Means of egress shall not be blocked. Fire doors must not be propped open.

#### **F. INCIDENT REPORTING**

In order to maintain a safe and secure work environment, Contractors should report any incidents or observations that may affect the safety of their employees, MIT employees, MIT students, or visitors.

**Accidents, Injuries, Near-Miss** - Within 24 hours of an accident or injury requiring medical attention, contractors shall report details of all such incidents to the MIT PM or supervisor and/or MIT EHS Office. The Contractor will document an accident investigation on all injuries other than first aid cases as defined by OSHA Record Keeping Guidelines. The Contractor will submit a copy of the accident investigation and corrective actions to the MIT PM, supervisor and the MIT EHS Office within 48 hours of the incident.

**Reporting Emergencies** - Contractors should be familiar with emergency reporting guidelines. When reporting emergencies by telephone, include the building, exact location, room number, the type of emergency, callback name and telephone number. Stay on the line until the emergency operator ends the call. The Contractor should remain available to provide information to the emergency responders, as needed. Contractors are responsible for implementing their own system for accounting for employees during an emergency. Contractors shall ensure that a system is in place to safeguard its employees during a campus emergency that requires either evacuation or shelter-in-place. This system may require input or support from MIT PMs or MIT EHS Office.

**Security Issues** - Notify any MIT police officer or call the Facilities Operations Center to report any issue causing security concern by calling 617-253-1500. Security issues might include, but is not limited to, theft, threats or acts of violence, malfunctioning or disabled security devices and violations of security policies or procedures.

**OSHA Visits or Complaints**- the Contractor shall immediately notify the MIT Construction Liaison, MIT Project Manager, supervisor or MIT EHS Office of any visit or complaint by an OSHA representative.

#### **G. STORAGE AT JOB SITE**

Generally, 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 MIT PM or supervisor, after an evaluation of security and environmental issues, including secondary containment

requirements, storm water runoff concerns, etc. Mechanical and electrical equipment rooms may not be used for storage.

## **VI. HEAVY EQUIPMENT**

### **A. POWERED INDUSTRIAL VEHICLES**

- Industrial powered vehicles (more commonly known as Powered Industrial Vehicles or PIVs) include vehicles such as forklifts, powered pallet jacks, manned rail or wire-guided equipment or other vehicles that allow operators to move large or heavy loads. The contractor shall ensure its employees and subcontractors, if applicable, have had training for the operation of PIVs, in compliance with OSHA standards. Workers may not use MIT owned or leased PIV's.
- Workers operating PIVs should conduct and document daily pre-use equipment inspections, to assure that such equipment is in safe operating condition. The documentation shall include the vehicle inspected, date of inspection and specific safety items or other features inspected. Vehicles with malfunctioning safety features shall be removed from service until repairs are completed.
- Battery charging shall be performed in areas designated by MIT. Appropriate PPE should be used during all battery charging operations. Refueling must be performed in areas with adequate ventilation. Workers shall not refuel a vehicle while the engine is running.

### **B. UTILITY VEHICLES**

Utility vehicles include vehicles such as golf carts, three wheelers and all-terrain vehicles or other vehicles intended for transport of personnel, small amounts of equipment and tools. Contractor personnel shall be trained and have a valid motor vehicle driver's license prior to operating utility vehicles on MIT property. The contractor may not use MIT owned or leased utility vehicles.

- Contractors operating utility vehicles shall conduct and document daily pre-use equipment inspections to assure that it is in safe operating condition. The documentation shall include the vehicle inspected, day of inspection and specific safety items inspected. Vehicles with malfunctioning safety features will be removed from service until repairs are completed.
- All utility vehicles shall be equipped with: horn, backup alarm, strobe (unless prohibited due to use in flammable storage environments) light, off/on switch, and front and rear lights, if the vehicle will be operated outdoors at night.
- Battery charging shall be performed in areas designated by MIT. Refueling shall be performed in areas with adequate ventilation. Contractors may not refuel a vehicle while the engine is running.
- Contractors shall operate utility vehicles in designated aisles, areas or paths. When vehicles are operated on roadways to perform work, the Contractor should provide warning signs or personnel to alert oncoming traffic. The use of diesel, gasoline or propane powered utility vehicles is NOT permitted inside MIT facilities. These types of vehicles may only be operated outdoors, unless authorized by the MIT PM or supervisor and indoor controls, such as barriers, exhaust ventilation, and/or off-hour scheduling are implemented.

### **C. CRANES and HOISTS**

- The Contractor shall not use MIT owned or leased crane or hoisting equipment. In cases where there is no alternative to using MIT equipment, contact the MIT PM or EHS Office for assistance in obtaining a waiver from the Insurance Office.
- Crane operators and riggers shall be thoroughly trained and competent in the use of such equipment. The Contractor shall provide a "qualified person" (as required by OSHA) to oversee and/or perform lifting operations. When required, operators shall possess the appropriate Massachusetts issued Hoisting License.
- Contractors shall establish a restricted work area, using barricades and other appropriate controls, to minimize the hazards to personnel from swinging or falling objects. See the WORKING AT

HEIGHTS section of this document for details. Hoisting plans should be completed for all lifts and a copy given to the MIT PM. MIT EHS will review all plans where the lift is over occupied buildings

## **VII. SPECIAL HAZARDS**

### **A. CONFINED SPACE ENTRY**

Contractors who may need to enter a confined space at MIT shall conduct entry under a Permit-Required Confined Space (PRCS) program at least as stringent as that required by OSHA 1910.146 or OSHA 1926.1201. Permit-required confined spaces may include, but are not limited to, storage tanks, in-ground vaults, boilers, trenches, manholes, lift stations, and valve pits.

Prior to conducting work in or around PRCS, contractors shall notify the MIT Project Manager. Upon this notification, MIT will provide the Contractor with any known information regarding the hazards of the space. A Contractor EHS Representative should conduct an independent assessment of the confined space. Upon completion of the confined space entry, the Contractor will notify the MIT and provide information on any unexpected hazards that were encountered.

The Contractor shall provide/arrange all rescue services, safety and personal protective equipment, including atmospheric testing equipment, protective clothing, hard hats, respirators, life-lines, ventilation equipment and safety harnesses, etc. The Contractor shall ensure its workers have received training in the use of applicable equipment before they enter the space. A list of all known Permit-Required Confined Spaces at MIT is available by contacting the MIT EHS Office.

### **B. EXCAVATION and TRENCHING**

- Prior to excavating or trenching, Contractor shall be responsible for utility marking, signage and barricades, shoring, and following applicable confined space entry procedures. Contact the MIT PM or supervisor before beginning any excavation work.
- The Contractor shall mark locations of underground utilities before digging and contact DIGSAFE (1-888-DIGSAFE.). This procedure is necessary to prevent service interruption or hazards from damaged utility lines.
- The Contractor will place warning signage and barriers on all sides of a trench or excavation to prevent pedestrians, bike, and vehicular traffic from approaching too closely.
- The Contractor shall comply with applicable trenching and excavation regulatory requirements including use of trench boxes. The Contractor will provide a "competent person", as required by OSHA to inspect the excavation area and protective systems.
- Contractors will backfill as soon as possible, once the work has been completed. To the extent possible, Contractors will backfill by the end of each workday to avoid the hazards of open excavations, particularly at night. For projects that cannot be back-filled by the end of the day, the Contractor will barricade the excavation and/or provide steel plate covers. Plate cover edges should be secured with cold patch for vehicular use to prevent movement.
- The Contractor should stop work in the area and notify the MIT PM and the EHS Office during excavation when soils indicate an unusual odor, color, texture. These conditions could be attributable to contamination in the area.
- The Contractor will contact the MIT PM and the EHS Office should soils be removed from the site for disposal. The arrangements for shipment of off-site soils for disposal requires specialty services hired by the MIT PM and this process can take multiple months. Note: there are no MIT campus facilities for storage, use or disposal of soils.
- Soils and landscape materials are required to be tested prior to import to the MIT campus. Contractors will contact the MIT PM for testing details and data submission.

- The MIT campus has several locations known as AUL (or Activity Use Limitation) sites where contamination may reside after previous projects. Should the excavation site be located on an MIT AUL, the Contractor is required to hire a LSP (License Site Professional) to prepare a site HASP plan and all employees must be trained on the contaminants of concern, PPE, etc.
- An MIT police detail may be required for excavating and trenching. Contact the MIT PM.

### **C. CONSTRUCTION and RENOVATION PROJECTS IN MIT OCCUPIED BUILDINGS**

Contractors are required to post construction work areas with Emergency Phone numbers, key contacts, and all permits.

### **D. PERSONAL PROTECTIVE EQUIPMENT**

- Contractors are responsible for assessing hazards and for selecting, maintaining and providing to its employees: 1) Personal Protective Equipment (PPE) appropriate to the task at hand, and 2) adequate training on the inspection and use of PPE.
- The MIT PM, supervisor or MIT EHS Office may choose to stop work if appropriate PPE is not being used.

### **E. COMPETENT AND QUALIFIED PERSONS**

Regulations require that an identified qualified and competent person be represented for work such as crane operations, electrical safety, excavations, fall protection, and scaffolds.

- **Qualified person-** one who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated his/her ability to solve or resolve problems related to the subject matter, the work, or the project.
- **Competent person-** one who is capable of identifying existing and predictable hazards in the surroundings or working conditions, which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

MIT expects (where applicable) contractors to have trained competent and qualified persons.

### **F. SERVICE INTERRUPTIONS WHILE WORKING IN OCCUPIED BUILDINGS**

The MIT PM or supervisor will coordinate service interruptions with affected MIT customers. Contractors shall notify the MIT PM or supervisor as early as possible in advance of any planned service interruptions (i.e., electricity, air conditioning, water, phone/data). Accidental or unscheduled interruptions shall be reported immediately to the emergency site telephone number and the MIT PM or supervisor.

## **IX. TOOLS and EQUIPMENT**

### **A. COMBUSTION ENGINES– INDOORS**

- Contractors shall not operate combustion engines such as those in vehicles, compressors, generators, welding machines and power tools inside buildings unless they connect the exhaust to an approved venting system.
- Contractors shall store fuel (gasoline, diesel and/or LPG) outside MIT buildings
- In most instances, MIT prohibits the use of propane-fueled vehicles inside buildings. The lifting tasks of some projects, however, may require propane-fueled lift equipment. In such cases, the Contractor shall consult with the MIT PM and MIT EHS Office.

## **B. COMPRESSED GAS CYLINDERS**

- Cylinders must be labeled or marked to identify contents and properly secured.
- Workers shall close valves when cylinders are idle, empty or moved. Valve protection caps shall be in place when cylinders are moved or stored.
- Contractors shall keep cylinders a safe distance or shielded from Hot Work. Contractors shall comply with OSHA requirements on the separation of cylinders containing incompatible gases. A Hot Work Permit from the City of Cambridge is required to use or store fuel gases.
- Regulators, hoses and torch assemblies shall be in working order and checked for leaks prior to initial use or installation. If a leak develops, remove the cylinder to a safe location outside the building. Notify the MIT PM.
- Compressed gas cylinders shall not be stored in job/tool boxes.
- Compressed gases should be stored in a locked area. Incompatible gases should be segregated in storage.

## **C. POWDER ACTUATED TOOLS**

- Contractors should ensure powder-actuated tools are: 1) used only by trained and, if required, licensed personnel 2) not left unattended or accessible to unauthorized persons; and 3) not used in explosive or flammable atmospheres.
- Explosive-actuated tools shall meet the American National Standard Institute "Safety Requirements for Explosive Actuated Fastening Tools" and all other regulatory and applicable agency standards. (Workers may not use any tool that does not meet appropriate design standards.)

## **D. TOOLS AND EQUIPMENT**

- In general, Contractors should provide their own tools, equipment and secure storage for valuable tools. Contractors may not use tools owned by MIT.
- Contractors shall use non-sparking tools in areas where flammable liquids are stored or dispensed.
- Portable electrical power tools, hand tools, machinery and equipment shall be approved by the appropriate agency, double insulated or have an approved grounding system. Ground Fault Circuit Interrupters (GFCI) shall be used in wet areas.

## **E. RADIOGRAPHY/RADIOACTIVE DEVICES**

Contractors performing radiographic work utilizing either a radioactive source or an x-ray source must notify the MIT Radiation Protection Program (RPP) prior to performing the work. Notification is accomplished through the assigned project manager and should include the date of proposed work, the location of the work, and information about the physical size of the restricted area required to meet general public radiation exposure levels. The project/contractor may be responsible for providing sentries to restricted areas during radiographic work. Contractors performing work that includes equipment housing a radioactive source such as soil density measurements or lead paint analysis measurements must notify the RPP prior to bringing the devices on campus. All contractors utilizing radioactive source on MIT property must be licensed or registered with the Massachusetts radiation Control Program or the Nuclear Regulatory Commission and shall use such devices in accordance with all applicable regulations. Contractors may be required to provide evidence of current licenses and registrations for workers. Contact the MIT EHS Office for assistance.

## **F. CLASS IIIB or IV LASERS**

Contractors using Class 3b or Class 4 laser on MIT campus must notify the MIT Radiation Protection Program (RPP) prior to performing the work. All contractors utilizing lasers must be licensed or registered with the Massachusetts Radiation Control Program and shall use such devices in accordance with all applicable regulations. Contractors may be required to provide evidence of current registrations or exemptions for laser use.

Contact the MIT EHS Office for assistance.

Note: Contractors shall not enter spaces/laboratories where “LASER ON” signs are illuminated.

## **X. WORKING AT ELEVATIONS**

### **A. LADDERS**

- Ladders are intended for access to heights only. With the exception of properly deployed stepladders, ladders are not suitable working platforms. If an elevated platform is necessary, MIT expects Contractors to provide a suitable platform with guardrails, such as a ladder stand, a scaffold, or an aerial work platform.
- Contractors are required to develop a ladder safety program, specific to the project, which meets or exceeds applicable regulatory standards.
- Contractors shall identify a Competent Person to ensure that all Employees potentially exposed to hazards associated with ladders possess the knowledge and skill required to perform the duties for which they are assigned. In addition, pre-task planning shall be completed prior to any operation, any hazards shall be clearly identified, and hazard controls defined. The pre-task plan shall be reviewed with all ladder users prior to the start of work, and where conditions change.
- Portable ladders shall be Type IA (300 pound), minimum. Job-made ladders shall be constructed in accordance with appropriate ANSI standards.
- A competent person shall inspect ladders daily prior to use by the employee using the ladder. Ladders used by the general workforce (i.e., access ladders and job-made ladders) shall be inspected by the General Contractor or owner of the ladder. Ladders shall be inspected for damage, defects, wear, and cracks. Damaged or defective ladders shall be tagged or marked as such, and shall be removed from service by the inspector. Contractors shall not place ladders in door swing areas unless the door is locked or otherwise blocked from striking the ladder.
- When workers use ladders to reach elevated levels, such as a deck on a scaffold, the top of the ladder shall extend at least three feet above the work level and be secured (tied off) at the top.

### **B. MOBILE EQUIPMENT/WORK PLATFORMS**

- Contractors may not use MIT-owned or leased aerial mobile equipment/work platforms. In cases where there is no alternative to using MIT equipment, contact the MIT PM or EHS Office for assistance in obtaining a waiver from the Insurance Office.
- Contractors shall assure trained personnel operate mobile equipment, such as extensible boom lifts, scissors-type lifts, and cranes. The contractor shall provide trained personnel to assist the operator in clearing building fixtures or other obstructions when raising, lowering or advancing the equipment.
- Contractors shall conduct a documented inspection of equipment prior to each day’s use to assure it is in safe operating condition. Workers should replace or repair defective equipment before bringing it on site.
- For outdoor projects, it is not recommended that workers operate cranes, aerial platforms or similar equipment near -overhead utilities, unless the contractor’s “competent person” has reviewed and approved the work.

### **C. SCAFFOLDS**

- MIT expects scaffold erectors and users to comply with regulations and standard industry practices.
- Scaffold erectors hired by the Contractor shall work under the supervision of a “competent person” as defined by OSHA Scaffolding Standards. The “competent person” shall oversee the scaffold erecting operation.
- Contractors shall use scaffold equipment according to manufacturer’s specifications. Contractors shall not mix different brands of scaffolds. The Contractor shall ensure scaffold equipment is



inspected before use and deteriorated or damaged components are removed from service.

- Platforms shall be fully planked. Wood planks shall be graded for scaffold use by an approved agency. Planks shall be free of holes, saw cuts, and other defects. The Contractor will provide and install toe boards, screens, or other suitable guards around the perimeter of elevated work surfaces to prevent falling objects from striking personnel below.
- Scaffold erectors or dismantlers shall tag any incomplete scaffold assembly as “Incomplete - Do Not Use” or other similar form of posted warning.

#### **D. WORKING AT HEIGHTS**

- Contractors shall protect workers from falls when performing elevated work above 6 feet or within 15 feet of the edge of a roof or skylight. Typical exposures may include aerial platforms; scaffold and rack erection; elevated conveyor installation and maintenance; utility work; and, building exterior maintenance.
- Contractors should employ at least one form of conventional fall protection, such as guardrails, nets, guarded work platforms, or personal fall arrest systems.
- Workers shall wear personal fall arrest equipment, as required when working from aerial work platforms, when working from a suspended platform, such as those used for window washing; or when working from a scaffold or other elevated platform with incomplete guardrails or decking. Fall protection equipment shall be used in these situations as outlined by the equipment manufacturers.
- Contractors are responsible for training affected workers in the proper use and care of fall arrest equipment. Users shall perform a documented inspection of their equipment before each use.
- The Contractor shall guard floor and roof openings by providing suitable barriers, guardrails, or covers and securing them to prevent accidental removal or displacement. Toe boards, screens or other suitable guards shall be installed around the perimeter of floor or roof openings to prevent falling objects from striking personnel below.
- Contractors may not perform overhead work when there is a danger of falling objects striking a person below. Contractors shall isolate such work areas to protect persons from falling objects. The Contractor will barricade and monitor an area of fifteen (15) feet minimum radius from the work area, to prevent unauthorized personnel from entering the hazard area. If the Contractor cannot establish this secure area due to operational constraints, then the work shall be scheduled during off-shift hours. Workers shall raise and lower tools and equipment to overhead work areas through the use of aerial work platforms or ropes and tethers. Throwing or dropping tools and equipment is prohibited.
- Workers assigned to work on roofs shall notify the MIT PM or supervisor prior to starting work each day. For Central Utility Plant roof work, the control room personnel must also be notified.

## MIT EMERGENCY CONTACT LIST

**For *any* type of emergency (fire, medical, chemical spill, etc.)**

Call 617-253-1212

or

Dial 100 from any MIT telephone

**MIT Department of Facilities Operations Center** (shutdowns etc.)

Call 617-253-1500

**MIT Environment, Health and Safety Office** (general business,  
reporting accidents)

Call 617-452-3477

**Cambridge Fire Department** (permits, details, non-emergency)

Call 617-349-4918

**MIT Police Department** (general business, details, non-  
emergency)

Call 617-253-299