NYULMC Safety Policies

Title	Policy No.	Revision Date
Asbestos Management Program	159	May 29, 2012
Cellular and Mobile Phones, Personal Computers and Laptops, Use of	212 (includes Appendix A)	April 23, 2012
Chemical Waste Minimization and Disposal program	108	December 2013
Confined Space Entry Program	138 (includes Appendices A, B and C)	April 24, 2012 (policy) April 23, 2012 (Appendices A, B and C)
Construction Contractor Safety Requirements	120 (includes Appendix A)	October 2013
Electrical Safety	157	September 23, 2013
Fall Prevention and Protection Program	160	May 1, 2012
Fire Incident Protocol	111	April 16, 2012
Fire Prevention	122	September 20, 2013
Fire Safety Requirements for Interior Finish Materials	126	April 2012
Fire Sprinkler/Standpipe System Impairment	131	January 2014
Hazard Communication Program	121	November 2013
Hazardous Waste From Contractors (Construction and Building Maintenance)	108a	December 2013
Hot Work Program	143 (includes Appendices A and B)	April 20, 2012
Installation and Testing of New Medical Gas Outlets/Piping	133	September 2006
Interim Life Safety Program	145 (includes Appendix A and B)	September 30, 2013
Ladders, Scaffolds and Aerial Lifts	163	August 2013
Lead Management Program	144 (includes Appendix A)	May 23, 2012
Penetrations in Fire/Smoke Barriers	147 (includes Appendices A and B)	December 2009
Powered Industrial Truck Program	149 (includes Appendices A, B and C)	April 13, 2012
Tobacco Free Facilities	104	October 2013

APPLICATION

NYU Langone Medical Center (NYULMC)

PURPOSE

- To establish a Program for managing asbestos containing materials (ACM) in a way that minimizes or eliminates the potential hazard to patients, employees, vendors, and visitors.
- To comply with federal, state, and local regulations for ACM.

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1.0 Policy

Purchase or installation of ACM (greater than 0.1% asbestos) is prohibited.

If it is necessary to disturb existing suspect ACM, the work shall be done only by licensed asbestos vendors, approved by Environmental Health and Safety, under controlled conditions, in accordance with all applicable regulations.

2.0 Scope and application

This program applies to:

- All NYULMC facilities and all activity within those facilities.
  - ACM has been found in a variety of building materials and installed equipment throughout NYULMC facilities. A list of common suspect materials is included as Appendix A. Though more prevalent in buildings constructed prior to 1980, ACM can be present in some new materials.
- All employees of NYU Hospitals Center and NYU School of Medicine.
- All other personnel, including contractors, who could disturb suspect ACM during the course of their work.

The primary departments and divisions impacted by the program are:

- Building Services (housekeeping group) and HJD Environmental Services
- Environmental Services (main campus, buildings and grounds group)
- Facilities Operations
- Information Technology (cable management group)
- Real Estate
- RED+F Design and Construction

3.0 Program availability

Copies of this document are available upon request to all employees of New York University (NYU) School of Medicine, NYU Hospitals Center, and their designated representatives.

4.0 Background

Asbestos is a naturally occurring mineral that exhibits the following characteristics: good insulating properties, heat resistance, chemical resistance, flexibility, and durability. As such, asbestos was incorporated into many building materials and installed during new construction. However, scientific studies have shown associations between exposure to airborne asbestos and pulmonary diseases such as lung cancer, asbestosis, and mesothelioma. The occurrence of these diseases is influenced by the type of asbestos mineral fiber, the size of the mineral fiber, as well as the concentration and duration of airborne asbestos exposure. Asbestos-related disease does not develop immediately after inhalation of asbestos fibers; it may take 20 or more years for symptoms of disease to appear. As a result of the many studies conducted, asbestos is classified as a human carcinogen. Several federal, state and local agencies have promulgated regulations to protect workers and the general public.

The mere presence of asbestos in a building does not mean that the building occupants are endangered. Intact and undisturbed ACM does not pose a health risk. This policy describes the program NYULMC has implemented to prevent potential exposure and comply with regulatory requirements.

5.0 Regulatory Summary

In New York City (NYC), multiple regulatory agencies have jurisdiction over ACM in buildings. They include the NYC Department of Environmental Protection, (DEP), New York State (NYS) Department of Labor (DOL), the U.S. Occupational Safety and Health Administration (OSHA), and the U.S. Environmental Protection Agency (EPA). Each agency has promulgated regulations that address various aspects of maintenance and handling of ACM in order to protect building occupants from asbestos exposure and to protect the ambient air. In general, where regulations overlap, the more stringent apply.

5.1 **NYC DEP:** NYC's asbestos abatement law was originally established in 1985 by Local Law 76. The rules and regulations which guide the implementation of this law are found in Title 15 Chapter 1. These regulations address the proper

identification, handling, abatement, and disposal of ACM in public and commercial buildings, and the certification of asbestos professionals.

5.2 The **NYS DOL** adopted Industrial Code Rule 56 (ICR-56) to address the proper identification, handling, abatement, and disposal of ACM in public and commercial buildings. In NYC, when regulations overlap, the DEP regulations apply.

5.3 **OSHA** regulations address both in-house and contractor worker protection and notification. The *OSHA Final Rule on Occupational Exposure to Asbestos*, OSHA standards 29 CFR 1910.1001 and 29 CFR 1926.1101, address management of in-place asbestos, as well as requirements for control of asbestos that will be disturbed during the course of construction, renovation or repair activities.

5.4 The **EPA** has promulgated regulations under the Toxic Substances Control Act (TSCA) Asbestos Hazard Emergency Response Act (AHERA), 40 CFR Part763 Subpart E. Additionally, asbestos is regulated under the National Emissions Standards for Hazardous Air Pollutant regulations (NESHAPS) 40 CFR Part 61 Subpart M. The AHERA regulations address specific training requirements for asbestos-related activities, as well as defining requirements for certain asbestos investigations, sampling and analyses. AHERA was originally designed to address asbestos exposure in school buildings, but Congress extended the training requirements to all buildings. Investigation and analytical techniques described in AHERA comprise much of the industry standard used in asbestos-related work. EPA NESHAPS regulations prohibit "visible emissions" of asbestos and specify off-site disposal procedures to be used.

6.0 Definitions

Abatement means all procedures physically taken to control fiber release from ACM. This includes removal, encapsulation, enclosure, cleanup and repair.

ACM refers to asbestos-containing material and means asbestos or any material containing more than 1% percent asbestos.

Asbestos means any hydrated mineral silicate separable into commercially usable fibers, including but not limited to chrysotile (serpentine), amosite (cumingtonite-grunerite), crocidolite (riebeckite), tremolite, anthophyllite and actinolite.

Asbestos Project Notification refers to submission of Form ACP-7 to the DEP. *Note:* for any project involving more than 160 linear feet or 260 square feet of friable ACM, the DOL must also be notified 10 calendar days and the EPA 10 working days in advance of project start.

Asbestos survey means a complete assessment of an area and all potentially impacted suspect ACM within the designated area, by a licensed asbestos investigator, following procedures specified by the DEP and the EPA. It may require destructive sampling.

Asbestos vendor means a consultant, contractor, or waste hauler that is licensed to work with asbestos and approved for work at NYULMC.

Clearance air monitoring refers to air monitoring performed after the completion of abatement, to determine if the space can be reoccupied.

Decontamination enclosure system means a series of connected rooms, separated from the work area and from each other by air locks, for the decontamination of workers, materials, waste containers, and equipment.

Demolition means the dismantling, razing, or removal of all of a building or structure, or removal of structural members, floors, interior bearing walls, and/or exterior walls or portions thereof, including all operations incident thereto.

DEP refers to the NYC Department of Environmental Protection.

DOB refers to the NYC Department of Buildings.

DOL refers to the NYC Department of Labor.

Enclosure means the construction of airtight walls and ceilings between ACM and the facility environment, or around surfaces coated with ACM, or any other appropriate procedure which prevents the release of asbestos fibers.

Encapsulant refers to a liquid material which can be applied to ACM which controls the possible release of asbestos fibers from the material or surface.

EPA refers to the United States Environmental Protection Agency.

Glovebag refers to a method for removing ACM material from heating, ventilation and air conditioning (HVAC) ducts, short piping runs, valves, joints, elbows, and other non-

planar surfaces. The glovebag is constructed and installed in such a manner that it surrounds the object or area to be decontaminated and contains all asbestos fibers released during the removal process.

HEPA filter refers to a high efficiency particulate air filter, capable of trapping and retaining 99.97 percent of particles with a diameter of 0.3 microns.

HEPA filtered vacuum refers to a vacuum specifically designed for asbestos abatement and equipped with a HEPA filter.

OSHA refers to the United States Occupational Safety and Health Administration.

Plasticize means to cover floors, walls, ceilings, equipment, and objects with fire retardant plastic sheeting.

Removal means the stripping of any ACM from surfaces or components of a facility or taking out structural components in accordance with 40 CFR 61 Subparts A and M.

Surface barriers means the plasticizing of walls, floors, and fixed objects within the work area to prevent contamination from subsequent work.

Visible emissions mean any emissions containing particulate material that are visually detectable without the aid of instruments.

Waste manifest means waste shipment records that accompany all asbestos waste from the site of origin (NYULMC) to the final destination landfill, and all transfer points in between. The waste shipment record must be signed by each party handling the material, and the final destination facility must sign the manifest and return a copy to NYULMC within 35 days.

Work area means designated rooms, spaces, or areas of the building or structure where asbestos abatement activities take place. For glovebag procedures, the work area also includes the areas contiguous to where the procedure takes place

7.0 Responsibilities

This section summarizes the responsibilities of key personnel involved in developing, implementing, and evaluating the Asbestos Management Program (the Program).

Asbestos has one of the highest public profiles of any environmental contaminant and is subject to intense federal, state, and local regulation. Due to the serious potential adverse health effects of exposure and liability if the regulations are not followed, NYULMC's Corporate Officers have overall responsibility for the Program

7.1 The **Corporate Officers** are responsible for:

- Allocating the resources necessary to implement the Program and to comply with the pertinent regulations discussed therein; and
- Ensuring that Vice Presidents and Directors meet their responsibilities for implementing and maintaining the Program.

The key to successful management of asbestos in buildings is strong oversight by knowledgeable professionals whose primary mission is to minimize health consequences and to maximize regulatory compliance. In recognition of this, the Corporate Officers have assigned the responsibility for managing the Program and asbestos vendors to Environmental Health and Safety. This enables NYULMC to respond knowledgeably and credibly to concerns about asbestos from members of the medical center community, regulators, and the general public.

7.2 **Environmental Health and Safety (EH&S)** is responsible for:

- Developing the Program and collaborating with others to implement and maintain it.
- Providing the Corporate Officers and Vice Presidents with information needed to support decisions about ACM.
- Serving as a liaison to the regulatory community.
- Managing asbestos vendors.
  - Evaluating qualifications.
  - Working with legal counsel to develop and maintain Master Agreements. Reviewing contract language.
  - Serving as a liaison between RED+F Project Managers (PMs) and asbestos vendors.

- Evaluating the technical nature of the work being done by asbestos vendors and ensuring that safety and compliance are primary in the conduct of the work.
- Coordinating asbestos surveys, abatement projects, and third-party monitoring with asbestos vendors.
- Ensuring asbestos filings are prepared and submitted in accordance with regulatory requirements.

Note: In order to facilitate coordination among contractors, on a case-by-case basis EH&S evaluates whether the asbestos abatement contractor should work for a General Contractor, a Construction Manager, or another (e.g, masonry) contractor.

- Posting Notices of Asbestos Abatement, in accordance with DEP requirements.
- Coordinating posting of asbestos signs and labels, in accordance with OSHA requirements.
- Providing annual asbestos awareness training to employees whose work activities could disturb suspect ACM. This includes employees in:
  - Building Services (housekeeping group) and HJD Environmental Services
  - Environmental Services (main campus, buildings and grounds group)
  - Facilities Operations
  - Information Technology (cable management group)
  - Real Estate
  - RED+F Design and Construction
- Responding promptly to questions (e.g., from PMs) and concerns (e.g., from staff and students) about suspect ACM.
- Managing the response to emergencies involving suspect ACM.

- Preparing the annual FIN47 report. This report presents an estimate of the quantity of ACM in owned facilities and the cost to abate that ACM. Providing copies to PMs for use in preparing project budgets.
- Preparing and distributing a monthly Asbestos Project Status Report summarizing the status of open projects for Project Managers.
- Maintaining documentation for asbestos surveys and assessments, abatement projects, air monitoring, waste disposal, regulatory filings and correspondence, and exposure assessments for NYULMC personnel.

7.3 The **Vice Presidents and Directors of Building Services, Environmental Services, Facilities Operations, Information Technology, Real Estate, and RED+F Design and Construction** are responsible for compliance within their departments and divisions. Their responsibilities include, but are not limited to:

- Ensuring all their employees, contractors, and other vendors whose work activities could disturb suspect ACM:
  - Are familiar with this policy.
  - Receive information about suspect ACM at NYULMC.
  - Attend annual asbestos awareness training.
  - Understand that they must request an asbestos survey prior to conducting any work that could impact suspect ACM.
  - Avoid contact with and disturbance of suspect ACM.
  - Avoid storing materials against potentially friable suspect ACM.
  - Avoid damaging suspect ACM while moving objects.

7.4 The **RED+F Program Directors** and **Project Executives** are responsible for compliance on their projects.

7.5 **Managers and Project Managers (PMs) (e.g., design, construction, renovation, operations, maintenance, and cable management)** are responsible for implementing and maintaining the Program on their projects. The Managers' and PMs' responsibilities include, but are not limited to:

- Attending annual asbestos awareness training.
- Ensuring all personnel (e.g., employees, contractors, and other vendors) who are working on the project and whose work activities could disturb suspect ACM:
  - Are familiar with this policy.
  - Receive information about suspect ACM at NYULMC.
  - Understand that they must request an asbestos survey prior to conducting any work that could impact suspect ACM.
  - Avoid contact with and disturbance of suspect ACM.
  - Avoid storing materials against potentially friable suspect ACM.
  - Avoid damaging suspect ACM while moving objects.
- Contacting EH&S in writing and requesting an asbestos survey prior to conducting work that may impact suspect ACM. (In an actual emergency, EH&S may waive some of the following requirements).
  - Defining the scope of the project, including all impacted areas. Providing complete drawings. Ensuring paths of all utility connections (e.g., plumbing, IT, electrical and HVAC) are clearly identified.
  - Coordinating a pre-survey walkthrough with EH&S and the asbestos consultant; including the architect and engineer for major projects.
  - Reviewing the consultant's report.
  - Notifying EH&S if changes have been made to the plans since the survey, which may necessitate additional investigation.
- Managing the project.

- Coordinating with EH&S all work that requires asbestos vendors.
- Preparing and managing the asbestos budget. Preparing Purchase Requisitions and Change Order Requests. Approving invoices.
- Preparing the project schedule. Confirming with EH&S that there is sufficient time for asbestos-related activity.
- For leased facilities, coordinating with Real Estate and/or the building owner.
- Notifying and coordinating with occupants.
- Arranging access for the asbestos vendors to the project site.
- Confirming that the written scope of abatement is accurate and meets the needs of the project.
- Providing all drawings needed to finalize the abatement plan.
- Coordinating the schedule with other contractors (e.g., demolition).
- Preparing the space for abatement.
- Coordinating utility requirements (e.g., HVAC shutdowns, electrical connections, plumbing requirements, notification of IT).
- For locations that are not part of the superblock, arranging a secure location for the asbestos waste dumpster.
- Working with EH&S to ensure proper interim life safety measures (e.g., emergency egress and fire watches) are implemented.
- Participating in a pre-abatement walkthrough.
- Obtaining any DOB permit needed for pre-abatement work.
- Finalizing abatement schedule and phasing.

7.6 **Real Estate** is responsible for:

- Coordinating all activities that might impact suspect ACM with the building owner and/or building management company.

7.7 **Environmental Services** (main campus) is responsible for:

- Verifying that the cleaning contractor follows OSHA requirements when cleaning suspect ACM floor tile.

7.8 **Building Services** and **HJD Environmental Services** are responsible for:

- Instructing their staff on OSHA requirements for cleaning suspect ACM floor tile, documenting the training, and verifying that staff follow the procedures.

7.9 **Employees who reasonably have the potential to disturb suspect ACM** are responsible for:

- Attending annual asbestos awareness training.
- Avoiding contact with and disturbance of suspect ACM.
- Requesting an asbestos survey prior to conducting any work that could impact suspect ACM.
- Avoiding storing materials against potentially friable suspect ACM.
- Avoiding damaging suspect ACM while moving objects.
- Notifying their supervisors of any observations related to damaged suspect ACM.
- Notifying their supervisors of potential exposures and of any pertinent problems.

8.0 **Master Contracts and Work Orders for asbestos vendors**

8.1 EH&S maintains Master Contracts for approved asbestos consultants and abatement contractors. A Work Order is used to initiate work under these contracts.

8.2 An asbestos consultant or abatement contractor may not begin work until they have

a fully-executed project-specific Contract or Work Order.

- The Director of EH&S is authorized to sign Work Orders for work that will be charged to Blanket Orders for asbestos emergencies.
- The Senior VP for Facilities Management must sign Contracts and Work Orders for all other projects.

9.0 Asbestos Control Program

9.1 Identification of suspect ACM

- To the extent feasible, warning signs are posted in areas where suspect ACM is known to be present (e.g., mechanical rooms; MSB cellar corridor).
- PMs provide contractors with information on suspect ACM and instruct them that they may not disturb suspect ACM.

9.2 Annual asbestos awareness training

- Each department/division must ensure that personnel who may work near ACM, or may be responsible for projects that may impact ACM and receive annual asbestos awareness training.
- EH&S offers training to the following departments/divisions:
  - Building Services (housekeeping group) and HJD Environmental Services
  - Environmental Services (main campus, buildings and grounds group)
  - Facilities Operations
  - Information Technology (cable management group)
  - Real Estate
  - RED+F Design and Construction

- **Content**
  - Health effects of asbestos.
  - Relation between smoking and asbestos exposure.
  - Locations and types of ACM in the facility.
  - Recognition of damage and deterioration.
  - Prohibition on dusting, vacuuming, or sweeping dust, debris, or waste in areas containing suspect ACM.
  - Procedures for reporting asbestos problems and concerns.
  - Response to accidental disturbance of ACM.
  - The following additional requirements are addressed with personnel who clean suspect ACM floors:
    - Sanding of suspect ACM floors is prohibited.
    - Stripping of finishes shall be conducted using low abrasion pads at speeds lower than 300 rpm and wet methods.
    - Burnishing or dry buffing may be performed only on flooring which has sufficient finish so that the pad cannot contact suspect ACM.

9.3 Inspections for damaged ACM

- EH&S coordinates periodic inspection for damaged ACM in high risk areas, such as machine rooms and the MSB cellar corridor.

9.4 Planned construction, renovation and maintenance projects

- **Asbestos survey**
  - EH&S ensures that all surveys are conducted safely and in accordance with the DEP, DOL, OSHA, and EPA asbestos regulations.

- PMs anticipating maintenance, renovation or construction work activities submit a request for an asbestos survey to EH&S prior to initiating activities that could disturb suspect ACM. The PM provides all necessary documentation to detail the scope of the planned work. Such documentation includes design plans and drawings indicating all areas that will be impacted, and a schedule for the work. For minor projects, hand-drawn drawings are acceptable.

- EH&S reviews departmental files and forwards relevant information about ACM to the PM.

    - This does not eliminate the need for an asbestos survey. Consultants generally cannot issue an ACP-5 based on past negative sample results or past gut renovations.

- The PM meets with EH&S and the consultant to review the work activities and to identify the materials to be sampled.

- Upon approval to proceed, EH&S prepares a Work Order for the survey, obtains the consultants signature, and forwards the Work Order to the PM.

- The PM prepares a Purchase Requisition, attaches the Work Order, and processes it.

- The PM arranges access for the consultant to all areas that need to be surveyed.

- The consultant provides a DEP-certified asbestos investigator. The investigator obtains and processes samples, and the consultant prepares a report. EH&S provides QA for the process and forwards the final report to the PM.

- Upon receiving 100% construction drawings, the PM and EH&S evaluate the need for additional samples. If conditions have changed since the survey was conducted or areas were inaccessible at the time of the survey, additional samples may be required.

- **Contractor selection**
  - The PM, consultant, and EH&S define the scope of abatement based on the results of the survey and final plans for the project.
  - The consultant prepares a bid package. EH&S provides QA for the process.
  - The PM schedules a bid walkthrough and ensures that appropriate individuals (e.g., the PM, architect, and engineer) attend so all questions can be answered. EH&S identifies and invites appropriate pre-qualified contractors.
  - EH&S reviews the bids, addresses all discrepancies, and recommends a contractor.
- **Preparation for asbestos abatement**
  - EH&S reviews and forwards the consultant's monitoring proposal to the PM.
  - The PM prepares and processes a Purchase Request for the contractor and a Change Order Request for the consultant.
  - If soft demolition is needed to facilitate abatement, the PM forwards drawings to EH&S and EH&S obtains an ACP-5 from the consultant. The PM coordinates DOB filings and obtains necessary DOB permits.
  - EH&S posts the written Notice of Asbestos Abatement in and adjacent to areas where asbestos will be abated, as required by the DEP.
  - The abatement contractor prepares and submits the DEP Asbestos Project Notification, any variances or other required DEP filings, and any required DOL or EPA notifications. EH&S provides QA for the process.
  - The PM provides notification of the project to personnel who may be impacted.
  - The PM coordinates moves and relocations.
  - The PM manages relocation of all movable items in the work area.

- The PM manages logistics, including shutdown of HVAC, plumbing and electrical connections for the abatement contractor, emergency egress, and fire and life safety issues.

- **Asbestos abatement**

  - EH&S manages all abatement projects in accordance with DEP, DOL, OSHA, and EPA asbestos regulations.

  - The contractor isolates the work area by installing surface barriers, plasticizing all surfaces to prevent asbestos contamination, and maintaining the area under negative pressure using HEPA-filtered blowers and/or vacuums. For minor projects, the contractor may use tents and/or glovebags under certain circumstances, if allowed by regulation. Decontamination areas are constructed to decontaminate personnel, materials and equipment as they are moved out of the asbestos abatement work area. Wet removal techniques are used. After cleaning, a thin coat of lockdown encapsulant is applied to all surfaces in the work area which were not the subject of removal or abatement, including cleaned surface barriers, but excluding sprinklers, standpipes, and other active elements of the fire suppression system.

  - The consultant provides a project monitor, who holds a valid Project Monitor Certificate issued by the DOL. The monitor validates that the contractor and all workers have current licenses. The monitor collects air samples throughout the project and conducts inspections for compliance with the scope of work and applicable asbestos regulations. The monitor conducts a final visual inspection and clearance air monitoring to confirm that the work has been successfully completed and the area is cleared for reoccupancy.

  - When the monitor has confirmed that the space can be reoccupied, EH&S notifies the PM.

  - For work filed with the DOB, the abatement contractor enters notification of project completion into the DEP's web application. The DEP notifies the consultant, who approves the information and submits an ACP-15 to the DEP. The DEP subsequently issues an ACP-20 or ACP-21.

- The PM restores the area.

9.5 Emergency response

- Under no circumstance are NYULMC personnel or contractors (other than approved asbestos contractors) permitted to intentionally disturb ACM, even to facilitate emergency repairs. EH&S maintains contracts with approved asbestos contractors for emergency response.
- In the case of an unexpected event, such as accidental disturbance of ACM or a pipe break, precautions are taken to prevent exposure to asbestos. Facilities Management and EH&S work jointly to contain and abate the hazard.
- As a rule, Facilities isolates the area, assesses the potential for presence of ACM, and immediately relays findings to EH&S.
- Personnel must vacate the affected area until EH&S notifies them that the area has been cleared for re-occupancy.
- EH&S determines if samples of suspect materials are required. If asbestos vendors are needed, EH&S coordinates all asbestos vendors' activities, including any required regulatory notifications.
- Facilities personnel provide access to the location and are responsible for required utility shutdowns, and for repairs/restoration once potential hazards have been assessed and abated.

9.6 Waste disposal

- EH&S contracts with a licensed asbestos waste hauler for the transport and disposal of ACM waste.
- The waste hauler provides dumpsters for ACM waste.
- Contractors properly package, label, and place all ACM waste in locked dumpsters.
- The waste hauler transports the dumpsters of ACM waste to an approved landfill with the required waste manifest. EH&S maintains and tracks waste

manifests to ensure that waste is received by the landfill within the required time period (35 days).

10.0 Recordkeeping

10.1 EH&S maintains documentation for all asbestos surveys, abatement projects, air monitoring, and exposure monitoring.

10.2 Training records are kept by the respective departments and may also be kept by EH&S.

- Training records are maintained for a minimum of one year following the last day of employment.

11.0 Access to records

NYULMC training records and personal exposure monitoring records are available to employees, employee representatives, OSHA and NIOSH in accordance with 29 CFR 1910.20.

12.0 Program evaluation

EH&S conducts an annual evaluation of the program as part of the annual evaluation of NYUHC's Hazardous Materials and Wastes Management Plan.

Appendix A	List of Common Suspect Asbestos-Containing Materials

Issue date	5/29/12
Replaces	4/12
Reviewed by	J. Goldberg, Environmental Health and Safety P. Aquilar, Building Services R. Cohen, Facilities Operations B. Everett, Real Estate A. Holder, Environmental Services T. Howard, RED+F Construction R. Maffia, RED+F Construction E. Tautel, IT Cable Management P. Schwabacher, Facilities Management NYUHC Environment of Care Committee

Appendix A
Suspect Asbestos Containing Material

The following is a list of materials found in medical center facilities that may contain asbestos. This list is not all-inclusive, and additional materials may be present:

Surfacing Materials

Sprayed-on fireproofing
Ceiling and wall plaster
Acoustical and decorative plasters (i.e.popcorn ceilings)

Thermal System Insulation

Air handler and duct insulation
Pipe, Pipe fittings, flanges
Boiler & Tank insulation
Covering over fiberglass insulation

Miscellaneous Materials

Adhesives (e.g., wall panel, floor molding, wall mirrors and panels)
Ceiling tile
Ceramic tile backing
Ceramic tile grout
Cove base molding
Drywall
Drywall Joint Compound
Duct caulk
Electrical wire insulation
Elevator brake shoes
Expansion joints
Exterior caulks or mastic
Fire blankets
Fire block/fire stopping material
Fire doors
Floor drain materials
Floor leveling compound
Floor tile
Gaskets
Lab benches/tops
Lab hoods
Linoleum and vinyl flooring
Mastic/glue (floor tile, carpet, ceiling tiles)
Pitch/tar
Roof flashing
Roofing
Sealants and caulks on equipment
Shingles
Tar paper
Terrazzo
Transite panels
Transite piping
Vapor barrier
Vermiculite insulation
Vibration cloth/damper
Wallboard
Waterproofing (membrane, tar, mastic)
Window caulk or chinking
Window glazing

APPLICATION

NYU Hospitals Center (NYUHC)

POLICY

The use of wireless devices shall be regulated as follows:

1. **Cell Phone** use is permitted in *almost all* areas of the NYUHC without restrictions. Cell phone use is restricted in the following areas:

   - **Tisch NICU/PICU:** If a cellular phone is brought into these areas, it must be turned OFF and not left in the standby mode. This is due to the sensitivity of the patient population and the fact that many cell phones transmit a polling signal to the network while in standby.

   - **OR Services - Tisch 6 and 10, HCC 2, Labor and Delivery ORs, and HJD C1 and C2 ORs:** The use of cell phones in operating rooms facilitates communication which can significantly improve the quality of healthcare. Therefore staff are permitted to use cell phones in these locations under the following conditions:
     - They are educated about the small potential for cell phones to interfere with energized medical devices, and to report all incidents involving the malfunction of medical devices to Clinical Engineering promptly for evaluation. See Appendix A for Supplemental Educational Materials.

2. **Two-way Radios** may be used *in the receive mode only* in all patient areas.

   Procedures for Emergency Use of Two-Way Radios in Restricted Areas

   Whenever maintenance staff, security officers, EMS personnel, Life Flight employees, or other personnel with two-way radios are in a patient care unit and an emergency occurs which requires the use of their radio, they should make their best effort to adhere to the following guidelines, which are listed in order of preferred compliance:
   - Leave the patient care unit to use the two-way radio. (Interference created by RF devices is minimized as the distance between the RF device and the affected equipment is increased.)
   - Keep the two-way radio at least ten (10) feet from any energized medical device.
   - If output levels are adjustable, use the lowest setting possible that still facilitates acceptable communications.

- If any equipment in the vicinity of the radio user should malfunction while the radio is in use, terminate use of the radio immediately. Any further use should be conducted from the visitor waiting area or a non-patient care unit.

3. **Laptops and Notebooks** must undergo ad-hoc testing against the major medical equipment to ensure that they do not cause any interference.

RATIONALE FOR POLICY

It was previously the policy of NYUHC to prohibit the use of cellular telephones, two-way beepers, and wireless devices in all patient care areas because of concerns that medical devices may be susceptible to electromagnetic interference (EMI) from wireless communications devices. At the request of the Medical Board this policy was reevaluated in the summer of 2007 and again in the spring of 2009. A summary of the issues discussed follows:

1. **Evaluation of Risk**
   Risk of patient harm is believed to be extremely low, but not zero.
   - Recent articles have suggested that the risks associated with EMI from cell phones is a diminishing concern because newer cell phone technology produces lower EMI and newer medical devices have improved electromagnetic compatibility. Most notably, a study of use of cellular telephones in the hospital environment, published by the Mayo Clinic in March 2007, was designed to determine whether cellular telephones used in a normal way would cause interference with medical devices located in patient care areas of hospitals. The authors' conclusion was that "when cellular telephones are used in a normal way no noticeable interference or interactions occurred with the medical devices." It is important to note that this study did not include the PICU and OR suites. The restrictions in this policy are recommended because the areas are deemed to be at higher risk than or different from those included in the Mayo Clinic study.
   - Ad hoc testing by the Clinical Engineering department found no EMI interference between BlackBerry devices and a wide sample of medical equipment used at NYUHC.
   - Despite apparent widespread non-compliance with the previous cell phone policy, there were no reported incidents of suspected medical device failure associated with EMI from cell phones at NYUHC from 2007 to 2009. In 2006, one potential incident was reported; however it is believed that this was more likely user error as the pump setting was reported to have spontaneously changed from 0.4 to 1.4 cc/hour.
   - The following cautionary guidance is provided by ECRI in a December 2006 article: "While the risks may have diminished somewhat, they have not disappeared, so continuing to enforce certain restrictions is justified. And, in fact, there are some well-documented reports of cell phones affecting medical devices. Therefore, we urge

hospitals to modify cell phone use policies only with a full understanding of the facts, and we strongly recommend against lifting cell phone restrictions entirely."

2. **Evaluation of Past Policy**

Enforcement of a more restrictive policy proved to be very difficult and ineffective. Very frequent reminders were required and overall compliance was low. Most people did not actually turn off their phones; they "complied" by not speaking on their cell phones or placing them in silent mode while keeping them turned on. Phones that are powered on still emit a polling signal even when not in use. For these reasons, the reviewers felt that a restrictive policy had limited efficacy in reducing the potential risk of EMI.

3. **Benefit of a Less Restrictive Policy**

Uncertainty and concern with regard to EMI have acted as major obstacles to the full deployment of wireless technology in many facilities. Proper application of wireless technology has the potential to increase productivity, decrease costs, and generally improve the quality of healthcare. Cell phone use may provide clinical benefits by providing a fast, convenient way for doctors and other parties to communicate. This is supported in an article in the February 2006 issue of *Anesthesia and Analgesia* (Soto et al.) that concluded that cell phone use offers clinical benefits that outweigh the risks of EMI.

In the past, Nursing staff reported that caregivers spent significant time and effort in an effort to make patients and visitors comply with restrictions. They believe relieving this enforcement responsibility facilitates patient/family satisfaction and reduces avoidable conflict.

PROCEDURES

1. **Signage:** Signage will be posted at the entrances to the NICU and PICU: "CELLULAR PHONES **MUST** BE TURNED **OFF** BEYOND THIS POINT."

2. **Electromagnetic Compatibility (EMC):** The Purchasing Department will incorporate language in future bid requests and contracts to require manufacturers to certify the electromagnetic compatibility of the requested medical device(s) as defined by international EMC standards. For example, NFPA 99, Standards for Health Care Facilities, paragraph 9-2.1.6.4, states, "All appliances shall be designed so that they are capable of operating in a radio frequency electromagnetic environment where limits are established by IEC 60601-1-2". The Center for Devices and Radiological Health (CDRH), a division of the FDA, in cooperation with the Association for the Advancement of Medical Instrumentation (AAMI)

has also developed guidance standards for medical device manufacturers seeking pre-market approval.

3. **Incident Reporting:** Any suspected incidents of medical device electromagnetic interference must be reported to the Department of Clinical Engineering. The Department of Clinical Engineering will investigate each incident, develop recommendations, and report findings to the Patient Safety Officer, Risk Management, the Clinical Safety Committee and/or the EOC Committee as appropriate.

4. **Special Cases**
   - **Implanted Devices**: Patients and staff with implanted devices such as pacemakers; defibrillators, etc. must exercise caution when carrying and using wireless devices. Recommended procedures, as delineated by the medical device manufacturer must be followed.
   - **Emergency Vehicles**: Operators of Hospital emergency vehicles, which transport patients with sensitive medical devices, and their supervisors, must be cognizant of the fact that two-way radios / beepers and cell phones can cause electromagnetic interference at close range. Medical devices used in these applications must be carefully selected for this demanding application.

5. **Review and Exceptions:** The Department of Clinical Engineering should be called for any questions about the applicability of using and enforcing the use of wireless devices.
   - **Review**: Clinical Engineering will continue to review technical publications and standards for trends and updates relating to this issue and communicate noteworthy advances to the NYUHC Clinical Safety Committee. Clinical staff will contact Clinical Engineering (phone 35021) if they suspect that the function of a medical device has been affected by an EMI generating device. All such incidents will be followed up by Clinical Engineering and reported to Risk Management.
   - **Exceptions to the Policy**: Exceptions to this policy must be approved by the Clinical Safety Committee. **NOTE:** Air waves are unprotected and conversations may be intercepted by other telephones. Refrain from the disclosure of protected health information during cellular phone conversations to prevent the breach of a patient's right to confidentiality.

6. **Effective Period for Policy:** This policy is effective immediately and will remain active until it is changed or deemed unnecessary by the NYUHC Clinical Safety Committee. Any questions pertaining to this issue should be directed to NYUHC Clinical Engineering at 212-263-5021.

Appendix A	Supplemental Educational Material Considerations for Working with Cell Phones in Operating Rooms

Issue date	04/12
Replaces	05/09
Reviewed by	R. Kishun, Clinical Engineering J. Goldberg, Environmental Health and Safety M. Keyes, Risk Management M. Simon, Chief Regulatory Officer NYUHC Environment of Care Committee

NYU Hospitals Center
Safety Policy 212 – Appendix A
Supplemental Educational Material
Considerations for Working with Cell Phones in Operating Rooms

- The undisciplined use of cellular devices in the OR—whether for telephone, e-mail, or data communication, and whether by the surgeon or by other members of the surgical team—may pose a distraction and may compromise patient care.

- Surgeons should be considerate of the duties of personnel in the OR suite and refrain from engaging them unnecessarily in activities, including assistance in cellular communication, that might divert attention from the patient or the conduct of the procedure.

- Cellular phones must not interfere with patient monitoring devices or with other technologies required for patient care.

- Whenever possible, members of the OR team, including the operating surgeon, should only engage in urgent or emergent outside communication during surgery. Personal and routine calls should be minimized. Calls should be kept as brief as possible.

- Whenever possible, incoming calls should be forwarded to the OR desk or to the hardwired telephone in the OR to minimize the potential distraction of cellular phones.

- Whenever possible, cellular telephone calls and data transmissions should be forwarded to voice mail or to memory. The ring tone should be silenced. An inaudible signal may be employed.

- Whenever possible, a distinct signal for urgent or emergent calls should be enabled. This signal may be implemented via a "page" option in most cellular telephones. Callers should be advised to use this function only for urgent and emergent calls if the phone is unanswered.

- The use of cellular devices or their accessories (such as earphones or keyboards) must not compromise the integrity of the sterile field. Special care should be taken to avoid sensitive communication within the hearing of awake or sedated patients.

- Communication using hardwired phones in the operating room is subject to the same discipline as communication using cellular technology.

- The use of cellular devices to take and transmit photographs should be governed by hospital policy on photography of patients and by government regulations pertaining to patient privacy and confidentiality.

Reprinted from **Bulletin of the American College of Surgeons**
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APPLICATION

NYU Langone Medical Center (NYULMC)

PURPOSE

- To protect human health and the environment through the proper management and disposal of hazardous chemical waste.
- To reduce the quantity and toxicity of the medical center's chemical waste.
- To comply with all applicable federal, state and local laws and regulations.

POLICY AND GENERAL INFORMATION

1.0 **Policy:** NYU Hospitals Center and NYU School of Medicine (collectively NYULMC) are committed to collecting, storing, labeling, transporting and discarding hazardous chemical waste in accordance with all applicable federal, state and local laws and regulations. All hazardous chemical waste is transported to permitted hazardous waste disposal facilities for disposal.

2.0 **Definitions**

Accumulation area: A location designated for storage of hazardous chemical waste.

- **Main accumulation area:** A location where personnel can store more than 1 quart of acutely hazardous waste or more than 55 gallons of hazardous chemical waste.
- **Satellite accumulation area**: A location where personnel store less than 1 quart of acutely hazardous waste and less than a total of 55 gallons of hazardous chemical waste.

Hazardous chemical wasteis any chemical waste that is 1) listed, 2) characteristic, or 3) otherwise hazardous as described below. For evaluation of specific waste streams, contact Environmental Health and Safety (EH&S).

- **Listed waste** contains chemicals that are listed by the Environmental Protection Agency (EPA) on the F-list (40 CFR 261.31), K-list (40 CFR 261.32) or P- and U-lists (40 CFR 261.33).

- **Acutely hazardous waste**contains chemicals that are listed by the EPA on the P-list because they can cause irreversible damage to humans or animals at low doses.

- **Characteristic waste** exhibits one or more of the following characteristics.
  - **Ignitable**: Solids, liquids or compressed gases that burn readily. Liquids with flash points below 140° F are included in this category.
  - **Corrosive**: Solids or liquids that dissolve metals, other materials, or burn the skin, eyes and other mucus membranes. Acids with a pH below 2 and bases with a pH above 12.5 are included in this category.
  - **Reactive**: Wastes which are unstable or undergo rapid or violent chemical reaction with water or air. Potentially explosive materials and materials containing cyanide and sulfide are included in this category.
  - **Toxic**: Wastes that contain any of 40 specific contaminants in concentrations above thresholds identified in the EPA regulations.

- **Other hazardous waste** is chemical waste that is not specifically regulated but meets one of the following criteria:
  - **Carcinogenic**: Contains 0.01% or more of a confirmed human or animal carcinogen or a suspected human carcinogen.
  - **Highly toxic**: Contains 0.1% or more of a compound (excluding biological toxins)which:
    - has an oral LD50 (rat) toxicity of less than 50 milligrams per kilogram;
    - has an inhalation LC50 (rat) toxicity of less than 2 milligrams per liter; or
    - has a dermal LD50 (rabbit) toxicity of less than 200 milligrams per kilogram.
  - **Other**: Other chemical waste in quantities and/or concentrations that would result in any of the following adverse effects if it were discarded as regular trash or down the drain:
    - death, serious illness or physical injury to humans
    - a hazard to the environment
    - a demonstrated threat to biological life cycles

3.0 Responsibilities

3.1 **Environmental Health and Safety (EH&S)** and **Environmental Services** at the HJD campus are responsible for:

- developing and managing the Chemical Waste Disposal Program (the Program)
- assisting departments in implementing the Program
- providing training on all elements of the Program
- periodically evaluating the effectiveness of the Program
- maintaining chemical waste disposal records and filing governmental reports

3.2 **Departmental heads** or their designee(s) are responsible for compliance with the Program within their departments. Their responsibilities include, but are not limited to:

- ensuring all employees who work with hazardous chemicals receive information and training about the Program
- ensuring waste is collected in appropriate containers, stored and labeled properly, and removed on a regular basis

3.3 **Employees who work with hazardous chemicals** are responsible for:

- being familiar with the hazardous properties of chemicals they use
- collecting, storing, labeling, and transporting waste in accordance with the Program
- notifying their supervisors of exposures, spills, and of any pertinent problems

4.0 Waste minimization

4.1 Consider replacing toxic chemicals and products with less toxic substitutes.

4.2 Purchase chemicals in small quantities that can be used within a reasonable period of time. Don't stockpile chemicals.

4.3 Conduct experiments on the smallest scale possible, generating the least amount of waste.

4.4 Redistribute unused surplus chemicals to other chemical users at NYULMC.

4.5 If you generate waste that can be neutralized, consult with EH&S for guidance on how to do so in a safe and compliant manner. The regulations permit on-site neutralization of certain wastes.

5.0 Drain disposal

5.1 Do not discard solids, oil or other viscous substances into the sewer system.

5.2 Dilute water-soluble laboratory chemicals which **are not** flammable, explosive, reactive, corrosive ($5 < pH < 9.5$), toxic or malodorous with large volumes of water when discarding them into the New York City sewer system.

6.0 Containers and waste collection

6.1 Collect waste in containers that are leak-proof, capable of being sealed tightly and in good condition.

- As a rule, collect waste in a container similar to the one in which the chemical was purchased.
- Obtain polyethylene pails and other specialty containers from EH&S, or Environmental Services at the HJD campus.

6.2 When using old reagent containers for waste collection, remove or deface the original label.

6.3 Place waste containers in secondary containment, especially if they are made of glass or are near sinks or drains.

6.4 Do not collect waste in a container if it could cause the container to rupture, leak, corrode or otherwise fail.

6.5 Do not collect wastes that could react to cause fires, leaks or other releases in the same container.

6.6 Fill each waste container to approximately 90% of its capacity.

6.7 Keep containers securely closed except when adding waste.

6.8 Inspect containers at least once a week for leaks, labeling and tightness of closure.

6.9 Collect halogenated and non-halogenated solvents in separate containers, to facilitate recycling.

6.10 Do not mix heavy metals such as mercury salts with other wastes.

6.11 Do not transport waste between satellite accumulation areas, e.g., from one lab to another.

7.0 Labels

7.1 Place an orange School of Medicine label or a green Hospital label on each container before you begin using the container.

- List every significant (> 1%) constituent of the waste on label. Do not use generic categories, such as organic waste, aromatic hydrocarbons or flammable solvents.

Satellite accumulation areas (SAAs)

- Do not date the label until the container is ready for removal from the SAA.

Main accumulation areas (MAAs)

- Date the label as soon as waste is added to the container (if the container is being filled in the MAA) or the container is accepted at the main accumulation area (if an undated container is transported there from another location).

8.0 Spills

8.1 Keep spill clean-up supplies near areas where chemicals are stored or used, and where waste is generated or stored. Obtain kits from EH&S. Ensure personnel are trained to use them.

8.2 Clean up spills immediately.

8.3 Wear appropriate protective clothing, such as gloves, lab coats and eye protection during clean up.

8.4 Contact EH&S for any spill which creates an inhalation hazard. Respirators must be worn during these clean-ups, in accordance with the medical center's Respiratory Protection Program (Safety Policy 109).

8.5 Following spill clean-up, wash surfaces thoroughly with a detergent solution and rinse with clean water.

8.6 Discard all contaminated absorbents and other materials used to clean up chemical spills as hazardous chemical waste.

9.0 **Removing waste from satellite accumulation areas**

- *Superblock*: When containers are approximately 90% full, contact EH&S to coordinate pick-up and disposal of hazardous waste.
- *HJD campus*: When containers become full, contact the chemical waste contractor for removal.
- *Nelson labs*: When containers are approximately 85% full, contact the site safety coordinator at to coordinate pick-up and disposal of hazardous waste. Waste is generally accepted at the main accumulation storage area on Wednesdays from 11:00-11:30 am and can be stored there for up to 179 days.
- *Other off-site locations*: When containers are approximately 90% full, contact EH&S to coordinate pick-up and disposal of hazardous waste..
- *Lab clean-outs at all facilities*: Contact EH&S to arrange for the removal of large quantities of waste. Two weeks notice is required.

10.0 **Transporting waste from a satellite to a main accumulation area**

10.1 If there is a main accumulation area available, transfer waste to itwhen the container is approximately 90% full.

10.2 Do not transport shock sensitive materials (see Appendix A) or unknown chemicals within NYULMC facilities. Make arrangements with EH&S, or the chemical waste contractor at the HJD campus for removal.

10.3 Do not transport waste unless you have attended chemical waste training in the past year and are familiar with the procedures to follow in the event of a spill.

10.4 Wear protective gloves when handling waste containers.

10.5 Transport waste containers on carts with sides to prevent the containers from falling off. For single containers, use a safety carrier such as a rubber bucket.

10.6 If possible, plan travel routes so as not to travel through clinical or public areas.

11.0 **Managing a main accumulation area**

11.1 Place all containers in secondary containment.

11.2 Segregate incompatible wastes, using secondary containment.

11.3 Inspect containers weekly and maintain an inspection log.

11.4 Ensure a copy of the EH&S Emergency Response Plan (main campus) is readily available.

12.0 **Specific wastes**

12.1 **Batteries**

See Safety Policy 108c: Universal Waste Management Plan.

12.2 **Controlled drugs**

Return controlled drugs to the vendor or the Pharmacy. Additional information on controlled substances may be obtained from the NYS Bureau of Narcotic Enforcement.

12.3 **Gas cylinders**

- Where feasible, return empty compressed gases cylinders to the vendor. Removal of non-returnable cylinders is difficult to arrange and costly.
- Contact EH&S for vendor contact information.

12.4 **Hazardous drug and chemical waste from patient care**

See Safety Policy 108b: Drug and Chemical Waste from Patient Care.

12.5 **Lead pigs**: Some radioisotopes are packaged in plastic-covered lead cases for shielding.

- Survey each lead pig with a Geiger counter or scintillation counter, depending on which isotope was present, to ensure it is not contaminated with a radioactive material.
- Remove the lead from the plastic cover using pliers. Deface the radioactive symbol on the plastic cover using a felt pen. Discard the plastic cover in the regular trash.

- Place the lead in a box or a similar container. Contact a Nuclear Medicine Department Supervisor to inform them of your delivery. Transport the lead to Nuclear Medicine.
- At Bellevue, after separating the lead from the plastic covers, contact EH&S for removal. Do not send lead fromBellevue to Nuclear Medicine at Tisch Hospital.
- All lead generated from lead pigs shall be recycled through a licensed contractor.

12.6 **Light bulbs**

See Safety Policy 108c: Universal Waste Management Plan.

12.7 **Mixed chemical/infectious waste**

- Make arrangements in advance with EH&S for removal of mixed chemical/infectious waste.

12.8 **Organic peroxides**

- Do not transport organic peroxides because they may be shock sensitive.
- Contact EH&S for removal.
- Store in an explosion-proof refrigerator until removal.

12.9 **Polychlorinated biphenyls (PCBs)**

- Make arrangements in advance with EH&S before removing items that could contain PCBs, such as old transformers, condensers or ballasts.

12.10 **Radioactive waste and mixed chemical/radioactive waste**

- Contact Radiation Safety.

12.11 **Shock sensitive materials**

- Do not open or move containers which may contain shock-sensitive or explosive materials (see Appendix A). Contact EH&S for removal.

12.12 **Silver halide process wastewater and used film**

- Do not discharge wastewater that contains silver directly into the plumbing system. This includes wastewater from photography film developers, fixers, bleach-fix stabilizers, low flow washes, rinse waters, other washes, or functionally similar solutions.

- Contact EH&S to coordinate installation of a silver recovery system and for used film disposal.

12.13 **Unknown chemicals**

- Do not move unknown chemicals because they may be shock sensitive. Try to locate responsible personnel and to obtain as much information as possible. Communicate this information to EH&S.

13.0 **Related Safety Policies**

106: Hazardous Drugs (Including Chemotherapeutic Drugs)

108a: Hazardous Waste from Contractors

108b: Hazardous Waste from Patient Care Areas

108c: Universal Waste

Environmental Health and Safety Emergency Response Plan

Appendix A	Chemicals Which May Deteriorate to a Hazardous Condition
Appendix B	Waste Disposal Procedures for Carpenters
Appendix C	Waste Disposal Procedures for Painters

Issue date	12/13
Replaces	02/10
Reviewed by	J. Kang, Environmental Health and Safety L. Ayres, Radiation Safety P. Aguilar, Building Services T. Fascianella, HJD Loss Prevention T. Harper, HJD Environmental Services NYUHC Environment of Care Committee

Chemicals Which May Deteriorate to a Hazardous Condition

The following is a selection of chemicals which can deteriorate to a dangerous condition with age, under common storage conditions. The degree of the hazard varies considerably with age and the exact situation.

acetal[3]
acetaldehyde diethyl acetal[3]
2-acetyl furan[3]
acetyl peroxide[1]
ammonium dichromate[4]
anethole[3]
anisaldehyde[3]
anisole[3]
benzoyl peroxide[1]
2-butoxyethyl acetate[3]
t-butyl hydroperoxide[4]
iso-butyl ether[3]
n-butyl ether[3]
n-butyl glycidyl ether[3]
cellosolve[3]
chromium trioxide[4]
cumene[3]
cyclohexene[3]
cyclopentadiene[3]
cyclopentene[3]
decahydronaphthalene[3]
decalin[3]
di-allyl ether[3]
di-iso-amyl ether[3]
dibenzyl ether[3]
di-iso-butyl ether[2]
di-n-butyl ether[3]
dicyclojpentadiene[3]
1,1-diethoxyethane[3]
diethylacetal[3]
diethyl azidoformate[4]
diethylazodicarboxylate[1]
diethylene glycol dimethyl ether[3]
diethyl ether[3]
diglyme[3]
dihydropyran[3]
1,2-dimethoxyethane[3]
dimethoxymethane[3]
2,4-dinitrophenol[1]
2,4-dinitrophenylhydrazine[1]
1,4-dioxane[3]
diphenyl ether[3]
di-iso-propyl ether[2]
di-n-propyl ether[3]
ether[3]
ethyl cellosolve[3]
ethylene glycol dimethyl ether[3]
ethylene glycol ethyl ether acetate[3]
ethylene glycol monobutyl ether[3]
ethylene glycol monoethyl ether[3]
ethylene glycol monomethyl ether[3]
ethyl ether[3]
2-ethoxyethanol[3]
2-ethoxyethyl acetate[3]
ethyl vinyl ether[2]
furan[3]
glycidyl n-butyl ether[3]
glyme[3]
iodine pentoxide[4]
isoamyl ether[3]
isobutyl ether[2]
isopentyl ether[3]
isopropyl alcohol[3]
isopropyl ether[2]
isopropyl benzene[3]
magnesium perchlorate[4]
mercury fulminate[1]
2-methoxyethanol[3]
methylal[3]
methyl cellosolve[3]
methyl iso-butyl ketone
methyl ethyl ketone peroxide[1]
methyl vinyl ketone[3]
nitromethane[1]
peracetic acid[1,4]
perchloric acid[4]
picric acid[1]
picryl chloride[1]
picrylsulphonic acid[1]
potassium (metal)[1]
potassium amide[1]
potassium chlorate[4]
potassium perchlorate[4]
propan-2-ol[3]
propargyl bromide[1]
propargyl chloride[1]
sodamide[1]
sodium amide[1]
sodium chlorate[4]
sodium chlorite[4]

sodium metal dispersions[1]
sodium perchlorate[4]
styrene[3]
tetrahydrofuran[3]
tetralin[3]
trinitrobenzene[1]
trinitrobenzenesulphonic acid[1]
urea nitrate[4]
vinyl acetate[3]
vinylidene chloride[1]
vinyl pyridine[3]

1 Can deteriorate to a shock-sensitive explosive. Take exceptional care if there is evidence of drying out, crystallization or contamination. It may be very dangerous to attempt to open the container.

2 Forms peroxides, especially on exposure to air and light, making the material liable to explode. Material more than one year old should be discarded, even if unopened. Containers should not be opened if there is solid visible around the closure or evidence of crystals inside.

3 Also form peroxides. If very old or obviously in poor condition treat as 2 (above).

4 High energy materials which are sensitive to the presence of dust. Clean the outside of containers before opening. If in doubt, do not open. Mixtures of the material with dust, paper or organics may ignite or detonate when exposed to friction (e.g. unscrewing the top of the container).

Waste Disposal Procedures for Carpenters

Regular Trash

1. Used rags.
2. Empty solvent and paint thinner cans.
   - Note: Do not pour any solvent or paint thinner down any drain. Use a 5-gallon pail to collect (see 2 under Hazardous Waste).
   - A container is empty if it contains less than 3% of the original product. Cans with fluids greater than 3% must be labeled with a "Hazardous Waste" label and disposed of as hazardous waste.

Hazardous Waste Containers

1. General Notes
   - Hazardous waste containers are available from EH&S.
   - Place a "Hazardous Waste" label on the container, and write the name of the product on the label, before you put waste in it.
   - Keep containers closed when not in use.
   - Keep containers in a protected location, to prevent accidental spills.
   - When containers are full, contact EH&S to arrange for pick-up.

2. Waste paint thinner and solvent
   - The name of the waste is "Paint Thinner and Solvent" or the product names (example: Top Grip 107 and 207).
   - Collect in a 5-gallon pail for flammable solvents (available from EH&S
   - When containers are full, contact EH&S to arrange for pick-up.

3. Aerosol cans
   - The name of the waste is "Used Aerosol Cans".
   - Collect in the red flammable waste container.
   - When the waste container is full, transfer the used cans to a box. Make sure the box is properly labeled "Used Aerosol Cans".
   - When containers are full, contact EH&S to arrange for pick-up.

4. Discarded dirty paint brushes
   - The name of the waste is "Paint Brushes with Paint Thinners and Solvents". You can write the name of the product (e.g. Top Grip 107 & 207) instead of "paint thinners and solvents".
   - Collect in a screw top 5-gallon pail (available from EH&S)
   - When containers are full, contact EH&S to arrange for pick-up.

Waste Disposal Procedures for Painters

Regular Trash

1. Used rags
2. Latex paint: Check the label on the container. Paint that **does not** contain heavy metal pigments (e.g. lead, cadmium, chromium) and has dried-up can be disposed of in regular trash. If the paint is not dry, wait until is dries or add a solidifier before putting it in the trash.
3. Empty cans (paint, paint thinner and solvent) may be disposed into regular trash.
   - Note: **Do not** pour any oil-based paint, paint with heavy metal pigments, paint thinner or solvent down any drain. If you have waste product, pout into a 5-gallon pail (see 2 and 3 under Hazardous Waste).
   - A container is considered empty if it contains less than 3% of the original product.
   - Cans of oil-based paints, paint thinners and solvents that are more than 3% full must be labeled with a "Hazardous Waste" label. Contact EH&S for pick-up.

Hazardous Waste Container

1. General Notes
   - Hazardous waste containers are available from EH&S.
   - Place a "Hazardous Waste" label on the container, and write the name of the product on the label, before you put waste in it.
   - Keep containers closed when not in use.
   - Keep containers in a protected location, to prevent accidental spills.
   - When containers are full, contact EH&S to arrange for pick-up.

2. Waste oil-based paints, paint thinner and solvent
   - The name of the waste is "Paint, Paint Thinner and Solvent" or the product names (example: Benjamin Moore Paint and benzene).
   - Collect in a 5-gallon pail for flammable solvents (available from EH&S).
   - When containers are full, contact EH&S to arrange for pick-up.

3. Latex–based paints that contain heavy metal pigments (e.g. chromium, cadmium, lead)
   - The name of the waste is "Pigmented Latex Paint" or the product names.
   - Collect in a 5-gallon steel or poly pail (available from EH&S).
   - When containers are full, contact EH&S to arrange for pick-up.

4. Aerosol cans
   - The name of the waste is "Used Aerosol Cans".
   - Collect in the red flammable waste container.
   - When the waste container is full, transfer the used cans to a box. Make sure the box is properly labeled "Used Aerosol Cans".
   - When containers are full, contact EH&S to arrange for pick-up.

5. Discarded paint brushes and rollers that haven't been cleaned
   - The name of the waste is "Paint Brushes with Paint". You can write the name of the product (e.g. Benjamin Moore Paint and benzene) instead of "paint".
   - Collect in a screw top 5-gallon pail (available from EH&S).
   - When containers are full, contact EH&S to arrange for pick-up.

APPLICATION

NYU Langone Medical Center (NYULMC)

PURPOSE

To protect personnel who enter permit-required confined spaces from potential hazards.

To comply with the Occupational Safety and Health Administration (OSHA) standard on Confined Space Entry (29 CFR 1910.146).

POLICY AND GENERAL INFORMATION

1.0 Application

This program applies to:

- All indoor and outdoor areas of all NYULMC facilities.
- All employees of NYU Hospitals Center and NYU School of Medicine. The primary departments and divisions impacted by the program are:
  - Facilities Operations and HJD Facilities Engineering (collectively Facilities)
  - Real Estate and Housing
  - RED+F Design and Construction
- All contractors and subcontractors.

2.0 Definitions

Confined space means a space that:

- Is large enough and so configured that a person can bodily enter and perform assigned work; and
- Has limited or restricted means for entry or exit (e.g., tanks, vessels, silos, storage bins, vaults, sewers and pits); and
- Is not designed for continuous occupancy.

Confined space entry permit (Permit) means NYULMC's pre-numbered two-copy form that incorporates the information in Appendix A and is completed in accordance with Appendix B.

Permit-required confined space means a confined space that:

- Contains or may contain a hazardous atmosphere; or
- Contains a material that can engulf an entrant; or
- Has an internal configuration that can trap or asphyxiate an entrant; or
- Has any other serious health or safety hazard.

3.0 Responsibilities

3.1 **Environmental Health and Safety (EH&S)** is responsible for:

- Developing the Confined Space Entry Program (the Program) and collaborating with others to implement and maintain it.
- Training relevant groups, including Facilities, Real Estate and Housing, and RED+F Design and Construction, on:
  - The requirements of the Program.
  - The use of equipment for pre-entry atmospheric checks.
  - The use of personal protective equipment.
- Functioning as a consultant on an as needed basis for confined space entry issues, such as work with or around hazardous chemicals.
- Evaluating the effectiveness of the Program and recommending changes as needed.

3.2 **Facilities** is responsible for:

- Managing the Program and the permitting process.
- Ensuring that all permit-required confined spaces are identified and included in the Program.

3.3 The **Vice Presidents** and **Directors** of **Facilities, Real Estate and Housing** and **RED+F Design and Construction** are responsible for compliance within their departments and divisions. Their responsibilities include, but are not limited to:

- Implementing the Program within their departments and divisions.
- Ensuring all requirements of this policy are followed.
- Ensuring all confined space work is identified and included in the Program.
- Ensuring all personnel who are covered by the Program are trained in confined space entry and the use of personal protective equipment.
- Ensuring that personal protective, testing and rescue/retrieval equipment are available to all personnel who are included in the Program.
- Ensuring contractors comply with this policy.

3.4 **Foremen, managers and project managers (PMs)** (e.g., design, construction, renovation, operations, and maintenance), are responsible for:

- Implementing and maintaining the Program on their projects.
- Ensuring their employees and contractors comply with this policy.
  - Incorporating the requirements of the policy into the specifications for the work.
  - Informing contractors about the requirements of this policy during the bidding process.
  - Discussing the Permit, training requirements, required safety equipment, air monitoring results, and work area preparation with employees and contractors.

3.5 **Contractors** are responsible for:

- Complying with all provisions of the OSHA Confined Space Entry Standard and the requirements of this policy.

3.6 **Workers who enter permit-required confined spaces** are responsible for:

- Attending training on confined space entry.
- Requesting a Permit prior to entering any permit-required confined space.
- Following the requirements of the Permit.
- Notifying their supervisors of any pertinent problems.

4.0 **Permit-required confined spaces**

Facilities identifies all permit-required confined spaces and installs signs on or stencils each space reading DANGER - PERMIT-REQUIRED CONFINED SPACE - DO NOT ENTER. A list of permit-required confined spaces on the superblock is included as Appendix C.

5.0 **Confined space entry procedures**

5.1 Prior to working in a confined space, personnel shall evaluate all potential hazards e.g., slips, trips and falls, and implement appropriate controls.

5.2 Prior to working in a permit-required confined space, personnel shall obtain a Permit from Facilities and complete it. A sample Permit is included as Appendix A. Instructions for completing the Permit are included as Appendix B.

- For in-house work, the foreman shall:
  - Prepare the work area for confined space entry.
  - Have the appropriate manager conduct the pre-entry atmospheric test.
  - Assign workers to enter the confined space and an attendant to watch from outside it.
  - Ensure the workers have appropriate personal protective and safety equipment.
  - Complete Section 1-4 of the Permit and sign it.
  - Have the appropriate manager sign and authorize the work.
- For work done by contractors, the PM shall initiate the Permit.

- The PM shall coordinate the work with the appropriate Facilities manager.
- The PM and contractor supervisor shall jointly complete and sign the Permit following the steps listed above (under in-house work).

5.3 A completed and authorized Permit shall be valid until:

- The end of the workers' work shift or the work is completed, whichever comes first; or
- There is an emergency involving or affecting the work area.

5.4 The hard copy of the signed Permit shall be posted in the work area until the Permit is no longer valid or the work is completed. The manager or PM keeps the soft copy.

5.5 During the work, the foreman shall stay in radio contact with the attendant. The attendant shall call the foreman when the work is complete or in case of an emergency.

5.6 The foreman, manager, and/or PM shall inspect the work area periodically during the work to ensure that the conditions of the Permit are maintained.

5.7 The manager or PM shall debrief the employees or contractor who completed the work regarding any challenges encountered during the work. The results of the debriefing will be communicated to EH&S.

5.8 When the work is completed and workers have left the confined space, all systems shall be returned to their original condition. The Facilities manager shall check the work area and authorize systems to be put back into service.

5.9 The foreman or PM shall return the Permit to the Facilities office.

- For in-house work, the foreman returns the hard copy to the office. The manager who signed the Permit puts the two copies together.
- For work done by contractors, the contractor returns the hard copy to the PM. The PM puts the two copies together and returns them to Facilities.

5.10 Facilities managers shall forward Permits for completed work to EH&S on a daily basis.

5.11 EH&S shall evaluate Permits received to ensure compliance with this policy and make recommendations for changes as necessary.

6.0 Training

6.1 Managers and contractors shall train workers who enter permit-required confined spaces on the:

- Requirements of this policy.
- Proper preparation of a confined space for entry.
- Use of safety equipment.
- Emergency procedures (such as employee injury protocols)

6.2 EH&S will assist with training of employees, e.g., on the use of air monitoring equipment and personal protective equipment.

6.3 Training shall be conducted:

- Before a worker is first assigned to confined space entry.
- Before a worker is assigned new confined space entry tasks.
- Whenever there is a change in procedures or new hazards are introduced.
- Whenever there are deviations from the requirements of the policy, or there are inadequacies in a worker's knowledge or use of these procedures.

6.4 Each department/division shall maintain training records for its employees.

- Records shall include the dates of training, subjects covered, names of employees trained and name and signature of the trainer.
- Records shall be maintained for 1 year past the last day of employment.
- Copies of records shall be provided to EH&S upon request.

7.0 Program evaluation

EH&S conducts an annual evaluation of the Program as part of the annual evaluation of NYUHC's Environmental Safety Management Plan.

Appendix A	Sample Confined Space Entry Permit
Appendix B	Instructions for Preparing a Confined Space for Entry and Completing the Permit
Appendix C	List of Permit-Required Confined Spaces in Facilities Owned by NYULMC

Issue date	4/12
Replaces	4/09
Reviewed by	J. Goldberg, Environmental Health and Safety R. Cohen, Facilities Operations B. Everett, Real Estate and Housing T. Howard, RED+F Construction R. Maffia, RED+F Construction D. Rubbo, HJD Engineering P. Schwabacher, Facilities Management NYUHC Environment of Care Committee

Sample Confined Space Entry Permit

SECTION 1: Entry Permit (valid for 8 hours only)			
Date:	Start time: AM/PM	Expiration time: AM/PM	
Building:	Location:		
Job supervisor:	Equipment to be worked on:		
Work to be done:			
Location of nearest fire alarm pull station:		Nearest telephone:	
Communication procedures:			
Rescue procedures:			

SECTION 2: Confined Space Preparation			
Pre-entry atmospheric checks			
Time:	Tester's signature:		
Date calibration expires:	Oxygen (should be 19.5-23.5%):		
Explosive:	CO:		
H2S:	Other:		
Area Preparation	**Yes**	**No**	**N/A**
Lockout/tagout complete?			
Equipment empty and clean?			
All lines disconnected, blanked, or plugged?			
Ventilation modification? (if yes, redo atmospheric check)			
Barriers			

SECTION 3: Safety Equipment		
Basic Equipment (Circle equipment required)		Lighting
Chemical splash goggles	Continuous air monitor	Hoisting equipment
Impervious boots	Radio for attendant	Safety harnesses/lifelines
Other Equipment (Circle equipment required)		
Face shield	Impervious suit	Ladder
Impervious gloves	Respiratory protection	Fire extinguisher

SECTION 4: Entry Authorization	
Workers entering confined space	Attendants

All training requirements have been met ☐ (Permit cannot be authorized if this box is unchecked)

I have reviewed the work authorized by this permit and the information contained here-in. Written instructions and safety procedures have been received and are understood. Entry cannot be approved if any questions have been answered "No." This permit is not valid unless all appropriate items are completed.

Foreman's signature:	Date:	Time:
Manager's signature:	Date:	Time:

Revised: April 23, 2012

Instructions for Preparing a Confined Space for Entry and Completing the Permit

SECTION 1

When it is determined that a permit-required confined space must be entered to do work, the foreman will complete Section 1 of the Permit. The DATE, START TIME, EQUIPMENT NO., BUILDING and LOCATION will be filled in. The EQUIPMENT PREVIOUSLY CONTAINED section should state what was in the confined space (e.g., No. 2 fuel oil tank). The WORK TO BE DONE section should state the work that workers will do in the confined space (e.g., welding).

SECTION 2

Pre-entry atmospheric checks

Personnel will use a continuous air monitor to do a pre-entry atmospheric check in the confined space for oxygen deficiency and percent of the lower flammable limit (L.F.L.). Additional test for toxicity (for any chemical that was contained or maybe contained in the confined space) may also be done. These tests are done using a monitor that has a current calibration. The percent oxygen should be 19.5-23.5%. The L.F.L. should be less than 10%. For toxicity, EH&S should be contacted to determine the appropriate levels not to be exceeded. The person conducting the test will sign next to the results for the pre-entry atmospheric checks when the levels are within the prescribed limits.

If any of these tests are not in the prescribed range, forced ventilation into the confined space should be used until the required levels are met. The source of the air for forced ventilation should be from a location that is not contaminated with pollutants.

Lockout/Tagout

OSHA-compliant lockout/tagout procedures should be followed. If there is no equipment requiring lockout/tagout N/A should be checked.

Equipment empty and clean

The confined space to be entered should be empty of its contents and cleaned if necessary as to not cause any hazard to the workers that will be entering it. If the confined space contained chemicals or chemicals are used to clean the confined space, EH&S should be contacted for disposal of these chemicals, cleaning solution and any rinse water that may contain chemical contaminants. If no cleaning is necessary, N/A should be checked. If the equipment cannot be cleaned, EH&S should be contacted for any special procedures that may be necessary.

Revised: April 23, 2012

Instructions for Preparing a Confined Space for Entry and Completing the Permit

All lines disconnected, blanked or plugged

All pipelines that are connected to a confined space must be disconnected, blanked or plugged so that no contaminants will enter the confined space during entry. In the case of confined spaces that cannot be completely isolated (e.g., sewers), as much isolation as possible should be done to reduce the possibility of any contaminants or sudden flooding.

Ventilation

Forced air ventilation into the confined space is necessary if the atmospheric checks indicate that there is an oxygen deficiency, the L.E.L exceeds 10% or there may be a toxic chemical in the confined space. If the atmospheric checks cannot be maintained within the required levels continuous forced air ventilation should be used. If continuous forced air ventilation does not meet the required levels respirators may be necessary. EH&S should be contacted before using respirators.

Barriers

Barriers to keep pedestrians away from the confined space should be installed as necessary.

SECTION 3

Basic Safety Equipment Necessary

Workers entering a confined space must be given the following safety equipment:

Chemical Splash Goggles
Impervious Boots
Safety Harness/Lifeline

In addition, lighting should be provided to illuminate the work area inside the confined space. A radio for the attendant should be provided to be used in case of an emergency requiring rescue of an injured worker(s) in a confined space. A continuous air monitor should be on at all times during the confined space entry to determine if the atmosphere inside the confined space changes during the entry operation.

Other Equipment that may be necessary

The foreman should circle on the Permit any other equipment that the workers may need to enter the confined space. This may include:

Instructions for Preparing a Confined Space for Entry and Completing the Permit

Face Shield	Impervious Gloves	Impervious Suits
Respiratory Protection	Fire Extinguisher	Ladder

SECTION 4

The foreman will list the workers that will enter the confined space. The foreman will also write the name of the attendant that will be monitoring the workers inside the confined space, informing the workers of any change in the continuous air monitor, and using the radio for keeping the foreman informed or for calling for rescue. The foreman should review the Permit and procedures to be used in the confined space with the worker(s) and attendant. The foreman will contact the manager for authorization to enter the confined space. The foreman and manager will sign and enter the date and time on the Permit.

The hard copy of the Permit remains at the confined space. The manager keeps the soft copy. After the work is done or the Permit is no longer valid, the hard copy is returned to the office and matched up with the soft copy. Both copies are sent to EH&S on a daily basis.

EMERGENCY PROCEDURES

In case of worker injury, the attendant should contact the foreman on the radio and request assistance. The attendant should never try to enter a confined space to assist an injured worker(s). The attendant should only hold the lifeline and try to assist the injured worker to exit the confined space. If other workers are in the area of the confined space, their assistance should be requested. If the worker (s) are not able to leave the confined space and no other workers can assist the attendant, the foreman should pull the nearest fire alarm and contact the Communications Department (33-911) to indicate that a Fire Department rescue is necessary. NYULMC employees who respond should assist in trying to retrieve the workers in the confined space but should NEVER enter a confined space. Communications should inform the NYC Fire Department about the nature of the emergency.

Instructions for Preparing a Confined Space for Entry and Completing the Permit

POST CONFINED SPACE ENTRY PROCEDURES

After the confined space entry work is completed, the space should be returned to its original condition. All lines should be reconnected, unblanked or unplugged. Facilities electrical safety procedures shall be followed. The manager should check and authorize the confined space to be put back into service.

All equipment that was used in the confined space entry should be cleaned and returned to storage for future use. All personal protective equipment (e.g., goggles, suits, and boots) should also be cleaned and stored for future use. If disposable personal protective equipment was used and contaminated with chemicals, it should be put in a container and sent to the chemical waste vault for disposal (as per Safety Policy No. 108, Hazardous Waste Disposal).

If necessary, showers should be provided to workers after the confined space entry operation is completed.

List of Permit-required Confined Spaces in Facilities Owned by NYULMC

Superblock

Domestic water tanks
660 First Avenue roof
Medical Science Building 10 (2 tanks)
Rubin Hall (2 tanks)
Skirball 25 upper bulkhead (2 tanks)
Tisch 20 (2 tanks)

Hot water tanks
Medical Science Building C-07 (4 tanks)
Perelman cellar (2 tanks)
Rubin Hall C-89A
Rusk south MER (2 tanks)
Tisch 7 west MER (2 tanks)

Acid neutralizing tanks
Coles G-100
Health Care Center garage
Medical Science Building 1, Medical Library
Perelman cellar locksmith shop
Skirball 1 (2 tanks)
Smilow cellar/ground
Tisch cellar exchange cart area

Fuel oil vaults
Medical Science Building ground
Skirball G-037 and G-047 (2 vaults)
Smilow cellar
Tisch Receiving parking area

Reverse osmosis tank
Skirball 6

Vacuum and air tanks
Medical Science Building, lab vacuum and air (2 tanks)

Sump pits (greater than 4 feet deep)
Greenberg SC2 (2 pits)
HCC C-9A (2 pits)
HCC C-52 west
MSB C-06
MSB C35
MSB C-85A
Perelman cellar
Rusk south cellar
Rubin Hall
Schwartz East
Schwartz west
Skirball (3 pits)
Smilow (5 pits)
Tisch HC-132A
Tisch 160

660 First Avenue

Domestic water tank, roof

Clinical Cancer Center

Domestic water tank, roof

HJD

Cold water tank, C1
Hot water tanks, C1 (2 tanks)
Fuel oil tank, SC3
Sewer/ejector pit, SC3, C-304
Sewer/ejector pit, SC3, C-316
Storm pit, SC3, C-304
Storm pit, SC3, C-316

Revised: April 23, 2012

APPLICATION

NYU Langone Medical Center (NYULMC)

PURPOSE

To ensure the safety of patients, staff, visitors and construction personnel whenever work is being performed by construction contractors for NYU Hospitals Center or NYU School of Medicine.

POLICY AND GENERAL INFORMATION

1.0 General Requirements

The contractor shall comply with all federal, state and local regulations, the provisions of National Fire Protection Association (NFPA) Standard 241 (latest version), and all referenced NYULMC Safety Policies.

The contract documents or specifications for work for NYU Hospitals Center or NYU School of Medicine include a provision that contractors meet minimum safety, health and equipment requirements, including provisions for protecting patients, visitors and NYULMC personnel. The contract requirements and this policy must be strictly adhered to by all contractors, their employees, subcontractors and agents.

2.0 Required NYULMC Permits and Compliance Plans

Contractor shall obtain copies of all applicable NYULMC permits and compliance plans before performing any work, including:

- Confined Space Permit
- Construction/Interim Life Safety (ILS) Permit
- Universal and Hazardous Waste Compliance Plan
- Hot Work Permit
- Infection Control Risk Assessment (ICRA) Permit
- Penetrations Permit

3.0 Pre-commencement Conference and Pre-planning

3.1 A pre-commencement conference shall be held between contractor's supervisory personnel, the NYULMC Project Manger(s), representative(s) of the affected operating department(s) and an NYULMC Environmental Health and Safety (EH&S) representative. If the job impacts a patient care area, a representative of Infection Prevention and Control shall be present.

3.2 The pre-commencement conference shall acquaint the contractor's representatives with NYULMC safety procedures, and any special safety equipment that shall be required due to the hazards of the operation.

3.3 Contractor shall pre-plan and coordinate all work with the NYULMC Project Manager to ensure that it is conducted in a safe manner.

4.0 Security and Orientation

4.1 In accordance with New York City Local Law 41 of 2008, all construction personnel shall present evidence of having attended an OSHA 1926 10-hour class within the last 5 years.

4.2 Contractor shall provide all construction personnel with an orientation prior to the start of work. This orientation shall cover the site-specific rules established by the contractor for the project, NYULMC safety policies, and emergency evacuation procedures for the work site. During this orientation, contractor shall advise workers that failure to comply with all rules and regulations will result in dismissal from NYULMC.

4.3 Following orientation, all construction personnel shall receive an I.D. badge issued by the NYULMC Security Department which shall be worn at all times.

4.4 Contractor shall protect the entrance(s) to each job site against unauthorized entry both during work and off hours.

4.5 Contractor shall enclose outdoor work areas by a solid, 8 foot construction fence in accordance with New York City law, to keep unauthorized personnel out. This fence shall be constructed of fire-retardant or non-combustible materials. The gate for this fence, which must not swing outward, shall be kept locked when personnel are not present.

4.6 Contractor shall give NYULMC Security Department advance notice of all work to be performed after hours, work that needs to be performed in controlled or restricted areas, and any work that may adversely affect patients, staff or the public.

5.0 First Aid

5.1 Contractor shall be responsible for providing first aid treatment for its personnel. In case of severe injury, personnel may use the NYUHC Emergency Department located on the Ground Floor of Tisch Hospital.

5.2 Contractor shall immediately report any incident which involves treatment beyond first aid to the NYULMC Project Manager.

6.0 Public Protection

6.1 Contractor shall ensure personnel use cell phones, mobile phones, and 2-way radios in accordance with the requirements set forth in the following NYULMC Safety Policy:

212: Use of Cellular, Mobile Phones, Personal Computers and Laptops

6.2 Contractor shall schedule the work to minimize the impact of noise and vibration on patients and staff.

6.3 Contractor shall minimize to the fullest extent possible, interactions with patients, staff, visitors and tenants. Where feasible, an elevator shall be dedicated to the demolition/construction project and, if possible, this elevator shall be programmed to stop only on floors where the work is occurring. If possible, tenant elevators shall be programmed not to stop on demolition/construction floors.

6.4 Contractor shall use a separate building entrance for material deliveries and debris removal, where feasible. If no separate entrance is available, contractor shall schedule debris removal and material deliveries for times when patient, staff, visitor and tenant interaction is minimal, factoring in the noise it creates. Contractor shall assign an escort for all material deliveries and debris removal to protect pedestrians.

6.5 Contractor shall protect windows against physical damage. The materials used to accomplish this shall be fire-retardant or non-combustible.

6.6 Contractor shall protect patients, staff, tenants and visitors from construction and demolition operations through the use of appropriate construction partitions, fences, barricades, sidewalk sheds, controlled access zones and other protective measures. Posting of proper warning and directional signage is required.

6.7 Temporary pedestrian walkways shall be at least five (5) feet in width, artificially lit and kept free of tripping and other hazards. Where pedestrians are directed into a roadway, the barrier separating pedestrians from vehicular traffic shall be properly pinned concrete jersey barriers with flashing lights at 15 foot intervals. All walkway and lane changes/closures, shall be set up in accordance with the NYC Department of Transportation approved plan.

6.8 Contractor shall install sidewalk shed(s) and/or other protective measures for the benefit of the public and the workers where required by code or otherwise deemed necessary.

6.9 Contractor shall protect elevated leading edges and work platforms against falling objects by installing toe boards and vertical netting.

6.10 Contractor shall provide an adequate number of flagmen to direct pedestrian and vehicular traffic wherever construction operations, trucks and equipment transverse into public areas.

6.11 Contractor shall not pick loads over people or moving vehicles. Where loads must be picked over an occupied building, the top 2 floors of the building shall be vacated or overhead protection provided with a design live load of 300 pounds per square foot.

6.12 Contractor shall ensure that workers at height tether their tools to keep them from falling to a lower level.

6.13 Contractor shall secure construction materials and debris against displacement by winds. Cranes, hoists and suspended scaffolds shall not to be operated when wind speeds exceed the limit set forth by the manufacturer or the City of New York, whichever is less.

7.0 **Fire Safety**

7.1 Contractor shall comply with the requirements set forth in the site-specific Interim Life Safety (ILS) or Construction Safety Permit issued for the work and the following NYULMC Safety Policies:

104: Tobacco Free Facilities

111: Fire Incident Protocol

122: Fire Prevention

126: Fire Safety Requirements for Interior Finish Materials

131: Fire Sprinkler/Standpipe System Impairment

143: Hot Work

145: Interim Life Safety Program

147: Penetration of Fire/Smoke Barrier

7.2 Contractor shall ensure that compressed gas cylinders are handled, used and stored in accordance with OSHA 1926 subpart J, the New York City Fire Code and NYULMC Safety Policy 143: Hot Work.

8.0 **Utility Safety**

8.1 Contractor shall obtain specific authorization from NYULMC Facilities Operations prior to performing any work on existing systems, including, but not limited to, HVAC, electrical, fire suppression, steam, medical and natural gas, and water.

8.2 Contractor shall comply with the requirements set forth in the following NYULMC Safety Policies:

133: Installation and Testing of New Medical Gas Outlets/Piping

157: Electrical Safety

8.3 No work shall be performed on energized utilities, systems or equipment unless pre-planned in coordination with the NYULMC Project Manager, Facilities Operations, and EH&S. Work on live electrical systems shall be performed in accordance with all requirements set forth in NFPA 70e.

8.4 Contractor shall contact Dig Safely New York City and comply with their requirements prior to starting any excavation work.

8.5 Contractor shall employ ground penetrating radar (GPR) or equivalent technology to locate and mark underground utilities prior to the start of excavation. When the excavation reaches the approximate location of a utility, contractor personnel shall hand dig to avoid striking or otherwise damaging it. The utility shall be protected/supported and/or relocated for the benefit of the workers and to reduce the likelihood of damage.

8.6 Where interior work requires penetrating floors, contractor shall use GPR to ensure no striking of in-slab utilities.

9.0 Control of Hazardous Materials and Air Contaminants

9.1 Contractor shall comply with all requirements set forth in the site-specific Infection Control Risk Assessment (ICRA) permit for the project.

9.2 Contractor shall comply with the requirements set forth in the following NYULMC Safety Policies:

108a: Hazardous Waste from Contractors

121: Hazard Communication

144: Lead Management Program

159: Asbestos Management Program

9.3 Contractor shall be knowledgeable about suspect asbestos-containing material (ACM) at NYULMC and shall not disturb suspect ACM. An asbestos survey shall be completed prior to undertaking any work that may disturb suspect ACM. If suspect ACM is found at any point during the course of the project, the work is to cease and the NYULMC Project Manager immediately notified.

9.4 Contractor shall employ appropriate engineering controls (e.g. exhaust ventilation, power tools with vacuum attachments, or wet methods) when performing dust and fume producing work indoors and outdoors.

9.5 Contractor shall pre-plan and coordinate with NYULMC Facilities Operations all work performed in close proximity to or which may otherwise negatively impact air intakes, to ensure proper controls are in place.

9.6 Where dust or fume producing work is to be performed indoors, contractor shall place a smoke-tight seal over penetrations and return air registers and shall maintain the work area under negative pressure at all times, with air exhausted outdoors. Where exhausting air outdoors is not feasible, contractor shall obtain approval from EH&S via the NYULMC Project Manager prior to the start of work.

9.7 Contractor shall ensure all chemicals and products used are no or low Volatile Organic Compound (VOC) unless approved by EH&S.

9.8 Contractor shall ensure that welding is done only with an operable smoke eater at the point of the work.

9.9 Where feasible, power tools and equipment shall be electric-powered. Where diesel-powered equipment represents the only feasible alternative, it shall be equipped with a diesel particulate filter approved by EH&S.

9.10 All debris containers shall be moistened and capped with plastic prior to leaving indoor work areas.

10.0 Fall Prevention and Protection including Ladders, Scaffolds and Aerial Lifts

10.1 Contractor shall comply with the requirements set forth in the following NYULMC Safety Policies:

160: Fall Prevention and Protection

163: Ladders, Scaffolds and Aerial Lifts.

11.0 Demolition

11.1 Contractor shall pre-plan and conduct all demolition work in accordance with OSHA 1926 subpart T, the New York City Building Code, all local laws and all provisions of NFPA 241.

11.2 Contractor shall schedule a "Time out" with the Project Manager and a representative of EH&S immediately prior to the start of demolition to ensure all necessary controls are in place.

12.0 Excavation, Foundation and Erection

12.1 For excavations greater than 4 feet in depth, contractor shall ensure ladder access at 25 foot intervals for the workers. Contractor shall ensure that excavations 5 feet or greater in depth are properly sloped, benched or protected by an engineer-designed shoring system. Excavations shall be inspected daily for hazards by the contractor's designated competent person.

12.2 Contractor shall protect the excavation perimeter (topside) with a guard rail system (top rail, mid rail, toe board).

12.3 Contractor shall install shoring and concrete formwork in accordance with the manufacturer's specifications and the NYS design professional's stamped drawings.

12.4 Contractor shall protect rebar which poses an impalement hazard. Rebar shall not be used as a fence post.

13.0 Power Tools and Equipment

13.1 Contractor shall comply with the requirements set forth in the following NYULMC Safety Policy:

161: Power Tools and Equipment.

14.0 Cranes, Hoists, Powered Mobile Equipment and Industrial Trucks

14.1 Contractor shall comply with the requirements set forth in the following NYULMC Safety Policies:

149: Powered Industrial Truck Program

162: Cranes, Hoists and Powered Mobile Equipment

15.0 **Confined Space Entry**

15.1 Contractor shall pre-plan with EH&S, at least 2 weeks in advance, any work to be performed in a confined space and shall conduct such work in accordance with OSHA 1910.146 and with the requirements set forth in the following NYULMC Safety Policy:

138: Confined Space Entry

16.0 **Personal Protective Equipment**

16.1 Contractor shall comply with OSHA Standard 1926 Subpart E: Personal Protective and Life Saving Equipment.

16.2 Construction personnel shall wear work boots, long pants and a short sleeve shirt.

16.3 Hard hats shall be worn where an impact, overhead, falling/flying object or electrical hazard exists.

16.4 Construction personnel shall use all necessary task-specific personal protective equipment and clothing, including but not limited to:

- Safety glasses and face shields
- Hearing protection
- Dust mask
- Cut-resistant and fire-retardant gloves
- Welding helmet and jacket

16.5 Construction personnel shall wear reflective vests when directing traffic and working in close proximity to trucks and powered-mobile equipment.

16.6 Contractor shall complete a pre-task assessment in coordination with EH&S prior to undertaking any work which requires construction personnel to use respirators. Contractors whose personnel utilize respirators shall provide their written respiratory protection plan to NYULMC's project manager. All personnel shall present evidence of fit testing and must be trained in the proper use and maintenance of respirators. Engineering controls (e.g. ventilation, wet methods, etc.) shall be employed to minimize airborne contaminants or chemical exposure for patients, staff and other construction personnel.

Appendix A	Related NYULMC Safety Policies
Issue date	10/13
Replaces	04/12
Reviewed by	J. Goldberg, Environmental Health and Safety T. Howard, RED+F Construction R. Maffia, RED+F Construction R. Cohen, Facilities Operations P. Schwabacher, Facilities Management NYUHC Environment of Care Committee

Related NYULMC Safety Policies

104: Tobacco Free Facilities

108a: Hazardous Waste from Contractors

111: Fire Incident Protocol

121: Hazard Communication Program

122: Fire Prevention

126: Fire Safety Requirements for Interior Finish Materials

131: Fire Sprinkler/Standpipe System Impairment

133: Installation and Testing of New Medical Gas Outlets/Piping

138: Confined Space Entry

143: Hot Work

144: Lead Management Program

145: Interim Life Safety Measures

147: Penetrations of Fire/Smoke Barriers

149: Powered Industrial Truck Program

157: Electrical Safety

159: Asbestos Management Program

160: Fall Prevention and Protection

161: Power Tools and Equipment

162: Cranes, Hoists and Powered Mobile Equipment

163: Ladders, Scaffolds and Aerial Lifts

212: Use of Cellular, Mobile Phones, Personal Computers and Laptops

APPLICATION

NYU Langone Medical Center (NYULMC)

PURPOSE

- To protect employees, patients, visitors, and contractor personnel from electrical hazards.
- To minimize the possibility of electrical shock, electrocution, or fire from the use of inadequate current-bearing wiring.
- To comply with the following:
  - National Fire Protection Association (NFPA) *National Electrical Code (NEC)*, known as NFPA 70
  - NFPA 70E *Standard for Electrical Safety in the Workplace*
  - NFPA 101 *Life Safety Code*
  - NFPA 99 *Health Care Facilities Code*
  - New York City *Electrical Code*
  - Joint Commission standards
- To provide a written plan of action for personnel to follow in the event of an accident where a person has received an electric shock.

POLICY AND GENERAL INFORMATION

1.0 Scope

This policy covers:

- the design, installation, and maintenance of electrical wiring and wiring components, including temporary and permanent wiring, pull boxes, junction boxes, fittings, switch boards, panel boards, switches, conductors, light sockets, and flexible cords and cables in all NYULMC facilities
- proper usage of extension cords
- emergency procedure for electric shock

2.0 Responsibilities

2.1 **Environmental Health and Safety (EH&S)** is responsible for:

- developing the policy and updating it as needed
- conducting semi-annual quality assurance (QA) inspections for electrical hazards and distributing summary reports

2.2 **Departments that coordinate work involving electrical wiring and wiring components** are responsible for compliance with the policy. Their responsibilities include:

- ensuring that every project manager is trained on and familiar with the requirements of this policy
- including the requirements of this policy in bid documents
- ensuring that contractors are appropriately trained and informed about the policy
- ensuring that the policy is implemented and all requirements are followed

2.3 **Project managers** are responsible for implementing the policy on their projects. Their responsibilities include, but are not limited to:

- ensuring that work involving electrical wiring and wiring components is filed, inspected, and closed out with the NYC Department of Buildings
- ensuring that contractors and employees install and maintain wiring and wiring components in accordance with this policy
- conducting (or coordinating) daily inspections during the project duration and following up on identified issues
- coordinating close-out inspections by licensed electricians from Facilities Operations (main campus) or Hospital for Joint Diseases (HJD) Facilities Engineering (HJD campus)
- ensuring that contractors correct the identified deficiencies, and withholding final payment until every deficiency is corrected

3.0 Electrical wiring and wiring components

3.1 All employees and contractor personnel who engage in work that involves electrical wiring or wiring components shall:

- install and maintain the wiring and components in accordance with the current editions of the *NEC* and the New York City *Electrical Code*
- perform work above 50 volts only under the supervision of a New York City licensed electrician
- perform work on live systems in excess of 50 volts in accordance with the requirements set forth in the NFPA 70E *Standard for Electrical Safety in the Workplace*

3.2 Any contractor failing to conform to this policy shall be prohibited from working at NYULMC.

3.3 Electrical equipment to be employed outdoors or otherwise exposed to water, liquids or other hazards shall be protected within the proper National Electrical Manufacturers Association (NEMA) rated enclosure.

3.4 Live electrical wiring shall not be exposed. All electrical wiring shall be protected against chafing.

3.5 Temporary wiring shall be elevated off the ground in accordance with OSHA standard 29 CFR 1926, Subpart K.

3.6 Electrical panels and rooms shall be kept locked. Electrical panels and junction boxes shall be covered with an appropriate manufactured cover and trim when not being serviced.

3.7 Contractor personnel shall maintain all temporary electrical power in construction areas under an assured equipment grounding conductor program in accordance with OSHA 1926.404(b)(1)(iii).

3.8 Lighting shall comply with NYULMC Safety Policy No. 122, Fire Prevention.

4.0 **Close-out inspection**

4.1 Upon completion of a construction/renovation project, the project manager shall coordinate an inspection by the licensed electrician who filed the application with the NYC Department of Buildings.

4.2 The electrician shall inspect all wiring and wiring components for code-compliance and shall inform the project manager of all deficiencies.

4.3 The project manager shall notify the Facilities Operations electrical shop (main campus) or HJD Facilities Engineering (HJD campus) when deficiencies have been corrected.

4.4 As a rule, a licensed electrician from Facilities Operations (main campus) or HJD Facilities Engineering (HJD campus) shall re-inspect the project to confirm that electrical deficiencies have been corrected.

5.0 Electrical extension cords

5.1 Electrical extension cords are prohibited in all patient care areas. Exceptions to this policy must be approved by the Environment of Care (EOC) Committee, except in emergencies as summarized below.

5.2 Extension cords may be used during an emergency to prevent the loss of life or property without prior approval from the EOC committee.

5.3 Designated extension cords, located at the nurse's station on each patient floor, may be used during loss of electrical power (see Safety Policy 117, *Emergency Power*).

5.4 Extension cords approved for use or used in an emergency must be:

- Underwriters Laboratories (UL) listed, double insulated, with grounded cords, or
- manufactured by the staff electricians, under direction of the Manager of Electrical Systems.

5.5 Extension cords used in wet areas must be Ground Fault Circuit Interrupter (GFCI) protected. These extension cords must be specially ordered by the department that needs them. A limited number are available in the Facilities Department stockroom and the electrical shop.

6.0 Performance monitoring

EH&S shall conduct semi-annual QA inspections for electrical deficiencies in conjunction with QA inspections for penetrations.

7.0 Emergency procedures for electrical shock

7.1 If someone appears to be receiving electrical shock and is still in contact with the current, do NOT touch the person with your bare hands.

7.2 Shut off the current if possible. Stay away from high-voltage wires until the power is turned off.

7.3 If shutting off the current is not possible, use an insulator to cautiously remove contact from the victim while staying as far away as possible. An insulator is any dry, non-conducting object, such as a heavy rubber hose or a hand inside a glass beaker. Push the victim or current source aside to remove contact from the victim. A dry towel will not suffice.

7.4 If someone appears to have been a victim of electrical shock, do not move the person unless they are in immediate danger.

7.5 Dial the emergency phone number for your location:

- 33-911 – Main Campus
- 3-911 – HJD
- 911 - Offsite

Related policies:
120: Contractor Safety Requirements
122: Fire Prevention
145: Interim Life Safety Measures
156: Installation & Maintenance of Dispensers for Alcohol-based Hand Sanitizer
203: Electrical Equipment – Privately Owned
207: Portable Space Heaters

Issue date	10/13
Replaces	08/13
Reviewed by	R. Cohen, Facilities Operations S. Haney, Environmental Health and Safety T. Howard, Facilities Construction B. Maffia, Facilities Construction D. Rubbo, HJD Engineering NYUHC Environment of Care Committee

APPLICATION

NYU Langone Medical Center ("NYULMC")

PURPOSE

- To prevent employees and construction personnel from falling off, onto, or through surfaces;
- To protect patients, staff, and the public from being struck by falling objects; and
- To comply with Occupational Safety and Health Administration ("OSHA") fall protection standards, including 29 CFR 1910 subpart D and F and 1926 subpart M.

POLICY AND GENERAL INFORMATION

1.0 Policy

All employees shall be protected against falls from heights greater than 4 feet at all times in accordance with OSHA 1910 subpart D and F and the American National Standards Institute ("ANSI") Z359 (latest version).

All construction personnel, including scaffold erectors and ironworkers, shall be protected against falls from heights greater than 6 feet at all times in accordance with the OSHA 1926 subpart M only (not subparts L or R).

Use of active fall protection systems is limited to situations where elimination and passive fall protection systems cannot provide adequate protection or are not feasible.

Personnel shall not use active fall protection systems without written approval from Environmental Health and Safety ("EH&S").

2.0 Application

This program applies to:

- All indoor and outdoor areas of all NYULMC-owned facilities, and all areas under the control of NYULMC in leased facilities;

- All employees of NYU Hospitals Center and New York University School of Medicine, an administrative unit of New York University; and
- All contractors and subcontractors.

The primary departments and divisions impacted by this program are:

- Environmental Services;
- Facilities Operations and HJD Facilities Engineering (collectively "Facilities");
- Real Estate and Housing; and
- Real Estate Development and Facilities ("RED+F") Design and Construction.

3.0 Definitions

"Authorized person" means an employee assigned by his/her employer to perform duties at a location where that employee will be exposed to a fall hazard. Authorized persons are responsible for inspecting their fall protection equipment prior to each use and for properly storing and maintaining it.

"Competent person" means an individual who, through training and knowledge, is capable of identifying, evaluating and addressing existing and potential fall hazards, and who has the authority to take prompt corrective action with regard to such hazards. Competent persons are responsible for supervising the selection and use of structural anchorage and fall protection system components, conducting inspections of structural anchorage and all fall protection system components prior to each use, and immediately removing damaged equipment from service.

"Fall protection hierarchy" refers to the following fall prevention and protection methods in the following order:

- **"Elimination"** refers to pre-fabricating components and lifting them into place or utilizing tools and equipment that avoid placing a worker at height.
- **"Passive fall protection system"** refers to systems that do not require the wearing or use of personal fall protection equipment (e.g., installation of stationary guardrail (and catwalk) systems; guardrail systems present on scaffolds and aerial lifts;

engineered vertical fall protection systems; proper protection of floor openings; and use of engineered and tested horizontal personnel netting systems).

- **"Active fall protection system"** refers to systems that require authorized persons to wear or use fall protection equipment and attend fall protection training, and include fall or travel restraint systems or a personal fall arrest systems, as defined below.
  - **"Fall or travel restraint system"** means a fall protection system requiring an authorized person to wear a body harness and a lanyard (secured to a proper anchorage point) short enough to prevent him/her from reaching a fall hazard.
  - **"Personal fall arrest system"** means a system used to arrest an authorized person's fall. It consists of an anchorage, connectors, and a body harness and may include a lanyard, deceleration device (e.g., grab rope or self-retracting lifeline), lifeline or combination of these.

"Qualified person" means a person with a recognized degree or professional certificate and extensive knowledge, training and experience in fall protection and rescue. Qualified persons are responsible for supervising the design, installation and inspection of fall protection equipment and non-structural anchorage products/devices.

4.0 Responsibilities

4.1 **EH&S** is responsible for:

- Developing the Fall Prevention and Protection Program (the "Program") and collaborating with others to implement and maintain it;
- Providing senior leadership within RED+F with information needed to support decisions about fall protection;
- Training RED+F managers and project managers on the requirements of the Program;
- Maintaining a list of consultants who can provide competent persons and qualified persons;
- Responding promptly to questions and concerns about fall protection; and

- Monitoring the effectiveness of the fall protection program and providing recommendations for improving it.

4.2 **Vice Presidents** and **Directors** are responsible for implementing the Program within their departments and divisions. Their responsibilities include, but are not limited to, communicating the requirements of this policy to their employees and contractors.

4.3 **RED+F Program Directors** and **Project Executives** are responsible for working with the Project Managers ("PMs") assigned to their projects to implement the Program.

4.4 **Managers** and **PMs (e.g., design, construction, renovation, operations, maintenance, and cable management)** are responsible for implementing and maintaining the Program on their projects. The Managers' and PMs' responsibilities include, but are not limited to:

- Communicating the requirements of this policy to their employees and contractors;
- Assessing the need for fall protection during the design phase of a new project and for existing day-to-day tasks. For anticipated work at heights, working with a competent person to select fall protection and develop specifications based on consideration of the fall protection hierarchy;
- Ensuring a competent person supervises the use of engineered horizontal or vertical fall protection systems and active fall protection systems;
- Coordinating pre-planning sessions with appropriate personnel, including a qualified person, at least one week in advance of any work that involves active fall protection systems; and
- Conducting routine inspections of their projects for proper use of fall protection and immediately following-up on identified issues.

4.5 **Contractors** whose personnel work at heights are responsible for:

- Ensuring workers tether their tools to prevent them from falling to a lower level;

- Reporting all incidents involving fall of persons, material, equipment or debris, regardless of how minor, to NYULMC's manager or PM and EH&S;
- Implementing fall protection in accordance with the fall protection hierarchy;
- Providing the right equipment for working at heights and ensuring workers are properly trained to use it;
- Obtaining written approval from NYULMC for all active fall protection systems; and
- If NYULMC approves an active fall protection system:
  - Providing a written site-specific fall protection program;
  - Identifying and providing evidence of training for the competent person and authorized persons who will be engaged in the work;
  - Providing a detailed plan for prompt rescue if a worker falls and remains suspended;
  - Scheduling a pre-planning meeting, at least 1 week in advance, with NYULMC's PM and EH&S to ensure that all necessary equipment and protective measures are in place; and
  - If contractor's rescue plan relies solely on rescue by outside agencies (e.g., FDNY or NYPD), formally notifying the agencies at least one week in advance and coordinating with them..

4.6 **Employees** who work at heights are responsible for:

- Tethering their tools to prevent them from falling to a lower level;
- Using all required fall protection;
- Inspecting active fall protection system components and anchorage they are authorized to use prior to each use; and
- Notifying their supervisors of any pertinent problems.

5.0 **Requirements for passive fall protection systems**

5.1 Vertical and horizontal fall protection systems shall be designed and installed in accordance with the manufacturers' instructions under the supervision of a qualified person. Horizontal personnel netting systems shall be drop-tested prior to use in accordance with the requirements in OSHA 1926.502.

5.2 Guardrail systems shall be constructed and installed in accordance with the requirements in OSHA 1926.502 and Chapter 33 of the New York City Building Code.

5.3 Openings in floors, roofs and other walking surfaces shall be covered with material capable of supporting twice the maximum anticipated load (e.g., aerial lift) on the floor. These covers shall be marked "hole" or "cover." Openings greater than 4 feet by 4 feet shall be protected with a proper guardrail system, not a cover.

5.4 Personnel shall not remove passive fall protection systems (e.g., guardrail, scaffold, aerial lift, vertical protection system), or raise their work level above them, without notifying their competent person. Where the work requires this, an assessment shall be undertaken by the competent person to determine what additional fall protection measures shall be implemented. Any passive fall protection equipment that is removed in order to complete work shall be properly replaced prior to leaving the work area.

6.0 **Requirements for active fall protection systems**

6.1 A controlled access zone shall be established below locations where active fall protection systems are employed and where a potential for falling objects exists.

6.2 All fall restraint and personal fall arrest system components (e.g. body harness, lanyard, lifeline, declaration device, anchorage connector, anchorage point) shall be engineered and installed, inspected, used and maintained in accordance with the manufacturer's instructions.

6.3 All fall restraint and personal fall arrest system components shall be inspected daily prior to use by both the competent person and authorized person. Any damaged components shall be immediately removed from service.

6.4 Horizontal lifelines shall be designed, installed and used under the supervision of a qualified person.

6.5 Where feasible, active fall protection system components (e.g. horizontal lifelines, anchor points) shall be secured on structural members prior to these members being installed.

6.6 Personal fall arrest systems shall be rigged in a manner which prevents a worker from free falling more than 6 feet and making contact with anything below his/her work surface. These systems shall also be equipped with an energy absorbing device which limits maximum arresting force to 900 pounds or less.

6.7 Each worker shall be secured to an independent lifeline (horizontal or vertical) unless the lifeline is specifically designed to support more than one person.

6.8 The anchorage for personal fall arrest systems shall be independent of the anchorage for suspended platforms.

6.9 Knots shall not be tied in lifelines, lanyards or other active fall protection system components.

6.10 Concrete-embedded fall protection anchorage devices shall be designed and pull or drop tested by a qualified entity in accordance with New York City Department of Buildings regulations prior to use.

6.11 Chafing protection shall be used wherever fall restraint and personal fall arrest system components may come into contact with sharp edges.

6.12 Only shock absorbing lanyards shall be used. Lanyards shall be connected to the body harness D ring only. Lanyards shall not be tied back to themselves unless specifically designed for that purpose. Lanyards shall not be connected in series. Retractable lanyards shall be connected directly to the body harness D ring.

Related Safety Policies

120: Construction Contractor Safety Requirements
138: Confined space entry
163: Ladders, scaffolds and aerial lifts

Issue date	May 1, 2012
Replaces	New
Reviewed by	J. Goldberg, Environmental Health and Safety R. Cohen, Facilities Operations S. Eisenberg, Legal Counsel A. Holder, Environmental Services T. Howard, RED+F Construction R. Maffia, RED+F Construction C. Pedersen, Facilities Operations D. Rubbo, HJD Facilities Engineering P. Schwabacher, Facilities Management A. Paterno, Holland and Knight NYUHC Environment of Care Committee

APPLICATION

NYU Langone Medical Center (NYULMC)

PURPOSE

To ensure the safety of patients, employees and visitors by providing a protocol for reporting to building occupants and the local fire department (FDNY) the presence and location of a fire, even during a power failure.

POLICY AND GENERAL REQUIREMENTS

1.0 **Policy:** Upon discovery of smoke or fire, the fire alarm shall be pulled and the protocol described in this policy shall be followed. The potential for underestimating the seriousness of a fire dictates no exceptions to this policy.

2.0 **General Fire Emergency Instructions - RACE**

2.1 Rescue

Remove all person(s) in immediate danger to a safe area away from the fire. Shout out the code phrase "Code Red." Never call out the word "Fire" during a fire emergency.

2.2 Alarm

2.2.1 If a fire is suspected or discovered, pull the nearest fire alarm in order to get help. This is essential because small fires can rapidly become out of hand.

2.2.2 To **activate the alarm**:

- open the door of the alarm box, if so equipped
- pull the lever down completely
- release the lever

2.2.3 Coded bells or tones are sounded throughout the superblock, HJD and Hassenfeld. Charts located near pull stations decode the location of alarm pulled.

2.2.4 At the Clinical Cancer Center, Outpatient Ambulatory Surgery and other non-hospital buildings the alarm sounds on the floor of the incident and the floor above. A signal may also be heard on other floors.

2.2.5 Call the emergency number and tell the operator *your name, extension* and the *location of the fire or smoke condition,* including the *building, floor and room number.*

- At the superblock call Communications at 33-911
- At HJD call 3911
- Off-site locations call the facility's emergency number or NYC's 911

2.3 Contain or Confine

2.3.1 Close all windows and doors in the area to prevent the spread of fire and smoke.

2.3.2 If patient room is supplied with oxygen and there is a fire in **that** room, shut off oxygen supply after obtaining the head nurse's permission.

2.3.3 Turn off electrical equipment, e.g., computers, copiers and non-essential clinical apparatus, if safe to do so. Leave the lights on.

2.3.4 Remove gas cylinders and flammable liquids from the immediate fire vicinity, if safe to do so.

2.4 Evacuate or Extinguish

2.4.1 *Patient Areas*
If evacuation is ordered, move patients horizontally to the other side of the fire/smoke doors to the Initial Refuge Area, as per the Evacuation Plan for the area. If patients are not in immediate danger, have them remain in patient rooms with the door closed or in the Solarium until the "All Clear" is sounded.

2.4.2 *Clinical Areas (Operating Room, Diagnostic and Therapeutic Areas)*
If patients undergoing an operation or treatment are in immediate danger, move them, under the direction of the operating room physician, nurse, therapist or technician in attendance. If the patients are not in immediate danger, keep them in the operating or treatment rooms until the "All

Clear" is sounded or until instructed to do otherwise by the FDNY or the Fire Marshall.

2.4.3 *Laboratories, Office Areas, Classrooms, Public Areas*

- *All occupants of the floor where the fire condition exists*: Using the nearest exit or exit stairway, evacuate to at least two floors below the fire location or to a safe place out of the building. Do not use elevators when evacuating from these areas.

- *Occupants of non-fire condition areas*: Remain inside office, classroom or laboratory with the door closed until the "All Clear" is sounded or until instructed to do otherwise by the FDNY or the Fire Marshall.

2.4.4 *Greenberg Hall, Skirball Building, 660 First Ave., Clinical Cancer Center*
Follow the instructions of the floor warden or Fire Safety Director. If there is a fire or smoke condition, evacuate via stairs to two floors below fire floor or out of the building. Do not use elevators when evacuating from these areas unless instructed by the FDNY.

2.4.5 *Other off-site facilities*
Follow the instructions provided by the building management.

2.4.6 Do not fight fire alone. Only attempt to extinguish small fires. Position yourself near an exit in case fire becomes out of control. Be familiar with types of fire extinguishers, their location, and how to use extinguishers.

2.4.7 When using a fire extinguisher, remember **PASS**:

- **P**ull the pin
- **A**im the hose at the base of the fire
- **S**queeze the handle
- **S**weep the hose from side to side

3.0 All Clear

3.1 All fire emergency protocols must remain in effect until the "All Clear" is announced or sounded.

3.2 On the main campus, two bells are sounded and the operator announces "Attention, Attention, Attention, Code Red, all clear". In Greenberg Hall,

Skirball, the Cancer Center and 660 First Ave., the Fire Safety Director will announce the end of the alarm condition. In off-site facilities, follow "All Clear" procedures in the fire safety plans at those sites.

4.0 Fire Marshall During Off-hours

4.1 During the hours of 5 P.M. through 9 A.M. and weekends the protocol remains the same with the exception that the Communications Department operator notifies Environmental Health and Safety (EH&S).

4.1.1 The on-call EH&S member is contacted via the EH&S on-call cell phone.

4.1.2 In the event that the on-call EH&S member cannot be reached, the operator uses the EH&S call list to notify another EH&S member.

5.0 Fire Condition Notification During a Full Power Failure

5.1 In the event of a power failure to the normal electrical supply, the emergency power system provides electrical service to the alarm system (see Safety Policy 117).

5.2 If the interior alarm system is out of service as a result of the failure of both systems the following procedures shall be followed:

5.2.1 Any person discovering a fire should immediately call the emergency number (see section 2.2.5) and tell the operator their *name, extension* and *the location of the fire or smoke condition* including the *building, floor and room number.*

5.2.2 The operator shall immediately notify the FDNY and alert EH&S, Security, and Facilities Operations personnel of the location of the fire and its origin.

5.3 If the interior fire alarm system will be disabled for more than 4 hours in a 24 hour period, personnel shall establish a fire watch (see Safety Policy 145: Interim Life Safety Program).

Issue date	4/12
Replaces	10/11
Reviewed by	B. Bjornstad, Environmental Health and Safety T. Fascianella, HJD Loss Prevention J. Leszkiewicz, Facility Manager, Clinical Cancer Center

APPLICATION

NYU Langone Medical Center (NYULMC)

PURPOSE

To inform employees and contractors of measures to be taken to prevent fires.

POLICY AND GENERAL INFORMATION

All employees and contractors must be aware of potential fire hazards, and every effort must be made to prevent fires. This policy highlights fundamentals that should be reviewed by all NYULMC personnel and contractors. It is supplemental to the Fire Safety Handbook, which outlines in detail procedures to be followed in the event of a fire. The Handbook may be accessed via the NYULMC Environmental Health & Safety (EH&S) website.

1.0 Housekeeping

Good housekeeping prevents fires from starting. All NYULMC staff and contractors must practice workplace housekeeping. Areas of specific attention include the following:

1.1 Strict control shall be maintained over the delivery, distribution, storage, and use of flammable and combustible liquids and products. Such materials shall only be stored in approved containers, and instructions regarding their storage must be strictly followed.

1.2 Waste baskets shall not exceed 32 gallon capacity in any room that does not meet Life Safety Code requirements for a hazardous area (e.g., waste storage room). Large, mobile waste carts (exceeding 32-gallon capacity) shall be attended when in corridors. All unattended mobile waste carts shall be stored in a room designed and maintained as a hazardous area.

1.3 Waste rags and cloths used with solvents shall only be stored in approved containers in accordance with the material safety data sheet for the specific chemical product.

1.4 Control must be established over shop materials such as paints, thinners, scrap, shavings and other housekeeping department materials, including solvents and caustics.

1.5 Spray painting with lacquers and oil-based paint is extremely hazardous. Such work shall be restricted to specially shielded and ventilated areas. Any tools used in these areas should be nonferrous and non-sparking.

1.6 All sizes and types of film and computer tapes, used or unused, must be stored in approved areas.

1.7 Compressed gas cylinders shall be handled in accordance with Safety Policy 102: Compressed Gas Cylinders: Safe Storage, Handling & Use.

1.8 Compressed gas cylinders used on construction sites shall be stored in accordance with New York City laws and only in locations approved by both the New York City Fire Department and NYULMC's Fire Safety Director. Compressed gas cylinders containing oxygen and flammable gas shall be removed from the building when not in use and at the end of each work day.

2.0 Engineering Controls and Maintenance

2.1 Only explosion-proof refrigerators shall be used for refrigerated storage of flammables.

2.2 Electrical installations shall be made in accordance with the NFPA National Electrical code and local codes.

2.3 Heating and ventilating equipment shall meet appropriate codes and shall only be altered by qualified engineers.

2.4 The use of portable heaters and temporary heat in construction areas is prohibited unless specifically authorized by EH&S.

2.5 Use of three-to-two prong adapters is not permitted. All cord-connected electrically powered appliances that are not Double Insulated shall be provided with a three-wire power cord and a three-pin grounding-type plug.

[Symbol for Double Insulation: ]

2.6 Electrical installations or repairs shall only be performed by Facilities Operations personnel and licensed electrical contractors.

2.7 Any equipment with a damaged power cord shall be immediately removed from service, marked, and sent for repair.

2.8 Due to the fire hazard they pose, the use of incandescent, halogen, quartz, tungsten and other "hot" lighting is prohibited on construction sites. Fluorescent and LED lighting are acceptable alternatives.

2.9 The use of plastic light sockets is prohibited. All light sockets must be ceramic.

3.0 **Administrative Practices**

3.1 Smoking is prohibited at all NYULMC facilities (see Safety Policy No. 104, Tobacco Free Facilities).

3.2 Patients in oxygen tents are prohibited from using any electrical appliances or spark producing sources (e.g., bed controls, signal cords, heating pads, razors, radios, sparking toys, etc.).

3.3 Contractors shall be informed of fire safety practices pertinent to their work site (e.g., the presence of flammable materials and flammable material storage practices).

3.4 In construction areas, materials introduced into the site by the contractor (e.g. plywood, plastic sheeting, tarps, debris netting) shall be fire-retardant. The flammable and combustible load shall be maintained at the lowest level feasible. Flammable and combustible liquids and products in excess of 5 gallons shall be stored in an OSHA/NFPA approved fire safety cabinet with self-closing doors. Material safety data sheets (MSDSs) for all products shall be readily available on site. Unless specifically approved by EH&S, chemicals and products used in construction areas shall:

- contain no volatile organic compounds (VOC)
- be low-odor
- have a health, flammability and reactivity rating of "1" or less on a scale of zero to four

3.5 Due to the fire hazard, the use of heating appliances is restricted.

- The use of hot plates, toasters, toaster ovens, grills, crock pots, sternos and similar food heating appliances and equipment is prohibited in Hospital Center staff lounges and on construction sites.
- The use of coffee makers and microwave ovens, with a prohibition of microwave popcorn, is permitted in staff lounges but not on construction sites.

Related policies:

102: Safe Storage, Handling and Use of Compressed Gas Cylinders
103: Handling and Storage of Flammable and Explosive Chemicals in Laboratories
104: Tobacco Free Facilities
108: Chemical Waste Minimization and Disposal Program
108a: Hazardous Waste from Contractors (Construction and Building Maintenance)
120: Contractor Safety Requirements
126: Fire Safety Requirements for Interior Finish Materials
133: Installation and Testing of New Medical Gas Outlets/Piping
143: Hot Work
145: Interim Life Safety Measures
147: Penetration of Fire/Smoke Barrier
157: Electrical Safety
202: Fire Prevention in Oxygen Storage and Enriched Atmospheres
203: Electrical Equipment, Privately Owned
207: Portable Space Heaters

EH&S Website: http://redaf.med.nyu.edu/safety/environmental-health-safety

Issue date	10/13
Replaces	04/12
Reviewed by	P. Aguilar, Building Services Department R. Cohen, Facilities Operations J. Fabbricante, Facilities Operations S. Haney, Environmental Health and Safety R. Kishun, Clinical Engineering B. Maffia, Facilities Construction NYUHC Environment of Care Committee

APPLICATION

NYU Langone Medical Center (NYULMC)

PURPOSE

- To ensure that interior finish materials selected for installation will not pose an unacceptable fire hazard due to their ease of ignitibility and subsequent evolution of smoke and toxic by-products.
- To ensure that these materials meet or exceed all applicable statutory and voluntary standards.

POLICY AND GENERAL INFORMATION

Interior finish materials used at NYULMC shall meet or exceed the requirements of NFPA 101, The Life Safety Code, and the New York City Building Code Sections 27-348 through 27-351.

The following are minimum performance requirements:

1.0 Newly installed interior finish materials used on fixed and movable walls, columns, partitions or ceilings will be rated as Class A when tested in accordance with NFPA 255 (Method of Testing of Surface Burning Characteristics of Building Materials) or ASTM E-84.

1.1 Existing interior finish materials rated Class B in accordance with NFPA 255 may continue in use until replaced.

1.2 Class A Interior Finish: Flame Spread 0-25; Smoke Developed 0-450
Class B Interior Finish: Flame Spread 26-75; Smoke Developed 0-450

1.3 Paint or wall coverings not exceeding 1/28 inches in thickness and applied directly to a noncombustible substrate are exempt from this requirement.

1.4 Class A and B materials correlate directly to Class 1 and 2 materials as used in the Basic/National Building Code and the Uniform Building Code.

2.0 Newly installed interior floor finish in corridors and exits shall be Class 1 rated in accordance with NFPA 253 (Standard Method of Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source) or ASTM E-648 and shall not exceed 300 for smoke development when tested under ASTM E-662.

2.1 Existing interior floor finish rated Class 2 or better may continue in corridors until replaced.

2.2 Minimum Critical Radiant Flux, as per NFPA 253:
Class I: 0.45 watts per square centimeter

Class II: 0.22 watts per square centimeter

2.3 Interior floor finish in other spaces that are not corridors or means of egress may be Class I, Class II, or meet Federal Flammability Standard FF-1-70 "Pill Test".

2.4 Floor covering such as carpeting, when used on walls or ceilings shall meet the Class A rating of NFPA 255.

3.0 Fabrics and other decorations not applied to a solid backing shall be rated Class I when tested in accordance with NFPA 701(Standard Methods of Fire Tests for Flame Resistant Textiles and Films). This includes drapes, curtains, and fabric covered furnishings.

4.0 Upholstered furniture and mattresses in clinical spaces shall meet the applicable codes in NFPA 101, the Life Safety Code.

5.0 It is the responsibility of the department purchasing the material to ensure that it meets the requirements of this policy. Environmental Health and Safety (EH&S) will conduct periodic review of flammability test reports for materials purchased and will evaluate materials for purchase or make recommendations upon request. Where materials submitted have not been tested, EH&S can arrange for testing by an accredited outside laboratory to determine compliance with this policy.

Issue date	04/12
Replaces	09/06
Reviewed by	E. Figueroa, Environmental Health & Safety

APPLICATION

NYU Langone Medical Center (NYULMC)

PURPOSE

To establish a procedure for ensuring fire safety is not compromised when there is an impairment of the fire sprinkler/standpipe system.

POLICY AND GENERAL INFORMATION

1.0 Impairment of the fire sprinkler/standpipe system can happen because of a planned renovation, alteration, new construction or maintenance of the system. Facilities Management will initiate the necessary actions mentioned below to ensure that the impairment does not compromise safety at NYULMC.

2.0 All contractors shall arrange isolation of the sprinkler standpipe system with the Director of Engineering in Facilities Management.

3.0 If an impairment of the fire sprinkler/standpipe system is required or occurs because of a maintenance problem, Facilities Management will notify the NYC Fire Department (FDNY), Environmental Health and Safety (EH&S), and the Security Department of the impairment.

3.1 Facilities Management will notify Factory Mutual Insurance Company.

3.2 If the impairment will last longer than 4 hours in a 24-hour period or occurs outside of normal working hours, Facilities Management will request that the Security Department or an outside Contractor provide a fire watch in the location of the impairment.

4.0 When the fire sprinkler/standpipe system has been returned to normal operation, Facilities Management will notify the FDNY, EH&S and the Security Department.

4.1 Facilities Management will notify Factory Mutual Insurance Company.

5.0 Facilities Management will maintain records of the impairment.

Issue date	01/14
Replaces	09/06
Reviewed by	J. Goldberg, Environmental Health and Safety B. Lorino, Facilities Operations NYUHC Environment of Care Committee

APPLICATION

NYU Langone Medical Center (NYULMC)

PURPOSE

- To provide non-laboratory* employees with information about the identities and hazards of the chemicals with which they work and the protective measures that are available to prevent adverse effects from exposure to these chemicals.
- To comply with the OSHA Hazard Communication Standard (29 CFR 1910.1200).

* Laboratory employees are covered by Safety Policy 134, the Chemical Hygiene Plan.

POLICY AND GENERAL INFORMATION

1.0 Introduction

In 2012, OSHA revised its Hazard Communication Standard (HCS) to align with the United Nations' Globally Harmonized System of Classification and Labeling of Chemicals (GHS). Two significant changes contained in the revised standard require the use of new labeling elements and a standardized format for Safety Data Sheets (SDSs), formerly known as, Material Safety Data Sheets (MSDSs). The new label elements and SDS requirements will improve worker understanding of the hazards associated with the chemicals in their workplace. To help companies comply with the revised standard, OSHA is phasing in the specific requirements over several years (December 1, 2013 to June 1, 2016).

NYULMC is committed to providing employees with the information and training they need to work safely with hazardous chemicals. This policy describes the Hazard Communication Program, which was developed and implemented to address this commitment. The policy describes the following key elements of the program:

- hazard classification
- chemical inventory
- labels
- material safety data sheets/safety data sheets
- information and training
- non-routine tasks
- notification of contractors

2.0 Definitions

- **Article** means a manufactured item that satisfies the following:
  - is formed to a specific shape or design during manufacture
  - has end use function(s) dependent in whole or in part upon its shape or design during end use
  - under normal conditions of use, does not release more than minute or trace amounts of a hazardous chemical and does not pose a physical hazard or health risk to employees

  Examples of articles include thermometers, sphygmomanometer, glassware, etc.

- **Chemical** means any element, chemical compound, or mixture of elements and/or compounds.

- **Container** means any bag, barrel, bottle, box, can, cylinder, drum, jar, storage tank or vessel that contains a hazardous chemical, not including pipes or piping systems.

- **Hazardous chemical/product** means any chemical or product that is a physical or a health hazard.

- **Material Safety Data Sheet (MSDS)** means written or printed material concerning a hazardous chemical, prepared in accordance with OSHA's HCS requirements and including at least the identity of the chemical, physical and chemical characteristics, physical hazards, health hazards, primary routes of entry, exposure limits, safe handling procedures, control measures, emergency and first aid procedures, and manufacturer information. In accordance with the 2012 revisions to the HCS, the MSDS will be replaced by the **Safety Data Sheet (SDS)**, which will follow a standardized format and include 16 mandated sections (see Appendix A).

3.0 Exemptions

The following materials are exempted from the Hazard Communication Program.

- articles (see Section 2 for definition)
- consumer products and hazardous substances, as those terms are defined in the Consumer Product Safety Act and Federal Hazardous Substances Act respectively, where they are used in the workplace for the purpose intended by the manufacturer or importer of the product, and the use results in a duration and frequency of exposure which is not greater than the range of exposures that could reasonably be experienced by consumers when used for the purpose intended

- cosmetics that are packaged for sale to consumers and cosmetics intended for personal consumption by employees while in the workplace
- drugs, as defined in the Federal Food, Drug, and Cosmetic Act, in solid, final form for direct administration to a patient (e.g., tablets or pills), drugs packaged by the manufacturer for sale to consumers in a retail establishment (e.g., over-the-counter drugs), and drugs intended for personal consumption by employees while in the workplace (e.g., first aid supplies)
- food or alcoholic beverages that are sold, used, or prepared at the medical center, and foods intended for personal consumption by employees while at work
- hazardous chemical waste (see Safety Policy 108 for definition)
- tobacco and tobacco products
- wood and wood products, including lumber that will not be processed, where the only hazard they pose to employees is the potential for flammability or combustibility (wood or wood products that have been treated with a hazardous chemical, and wood that may be subsequently sawed or cut, generating dust, are not exempted)

4.0 Hazard classification

NYULMC relies on the hazard classification determined by the manufacturer, importer, or distributor of a chemical or product. This information is indicated on the chemical or product label and the MSDS/SDS.

5.0 Chemical inventory

- The Director of each department/departmental subunit is responsible for ensuring that designated departmental staff maintains a current inventory of hazardous chemicals/products that are stored or used within the department/departmental subunit.
- A copy of the inventory, in alphabetical order, shall be used as an index to the department/departmental subunit's MSDS/SDS binder (see section 7).
- The inventory shall be updated as often as necessary, but at least annually.
- Annually upon request, the current inventory shall be submitted to the following departments for incorporation into NYULMC's annual Community Right-to-Know Reports: Environmental Health and Safety (EH&S) for the main campus and Environmental Services for the HJD campus. These reports shall function as comprehensive chemical inventories for medical center facilities.

6.0 **Labels**

- Each chemical user is responsible for ensuring that containers of hazardous chemicals/products are labeled, tagged, or marked with the common name of the contents and all necessary hazard warnings.
- The manufacturer's and/or vendor's labels shall be maintained on all containers of hazardous chemical/products received at NYULMC. In accordance with the 2012 revisions to the HCS, by June 1, 2015 chemical manufacturers and importers will be required to provide a label that includes:
    - product identifier
    - signal word ("danger" or "warning")
    - hazard statement(s)
    - pictogram(s)
    - precautionary statement(s)
    - name, address and telephone number of manufacturer, importer or distributor

  See Appendix B for an example of a label with the 6 GHS labeling requirements, and the pictograms.

- When hazardous chemicals/products are dispensed into other containers, those containers shall be labeled either by following the GHS labeling requirements, or at a minimum with the common name of the chemical/product and appropriate hazard warnings, and accompanied by the MSDS/SDS. Blank labels are available from EH&S.

- Pipes containing hazardous chemicals shall be labeled to identify their contents.

7.0 **MSDS/SDS**

- The Director of each department/departmental subunit is responsible for ensuring that designated departmental staff maintains binders of MSDSs/SDSs for all products listed in their chemical inventory.

- Information on how to obtain MSDSs/SDSs is available on the intranet at http://redaf.med.nyu.edu/safety/environmental-health-safety/msds-links

- MSDS/SDS binders shall be readily accessible to employees in their work areas.

- A hazardous chemical/product shall not be used until the MSDS/SDS is obtained and incorporated into the binder.
- EH&S maintains a collection of MSDSs/SDSs for hazardous chemicals/products commonly used in the medical center.
- MSDSs and SDSs may be used interchangeably through the transition period, until June 2015, at which time only SDSs shall be used.

8.0 **Information and training**

- The Director of each department/departmental subunit is responsible for ensuring that departmental employees receive information and training on all hazardous chemicals/products stored or used within the department/departmental subunit.
- The following topics shall be covered:
  - the requirements of the OSHA HCS
  - a description of the medical center's Hazard Communication Program, its location and availability
  - where to find MSDSs/SDSs and how to use them, including information on the standardized 16-section format
  - training on label elements
  - operations where chemicals/products are present, and the hazards associated with chemicals/products with which the employees work
  - the procedures employees should follow to protect themselves when working with hazardous chemicals/products
  - how to detect exposures to hazardous chemicals/products
  - the signs and symptoms of exposure to hazardous chemicals/products
  - procedures to follow in the event of an exposure to a hazardous chemical/product
- Information and training shall be provided initially, when new hazards are introduced, and when there is a change in the HCS.
  - All new employees shall be provided with general information and training during Human Resources' New Beginnings. Supervisors shall supplement this with training specific to an employee's work assignments.
  - Upon request, EH&S shall provide department-specific refresher training. It is the responsibility of the department to make employees available for this training.

- The Director of each department/departmental subunit shall ensure that all training is documented.

9.0 **Non-routine tasks**

- The Director of each department/departmental subunit is responsible for ensuring employees receive supplemental training before assigning them to non-routine tasks involving hazardous chemicals/products.
- Additional training shall be provided and documented each time a non-routine task is assigned.
- Upon request, EH&S will assist with this training.

10.0 **Notification of contractors**

- Employees who retain contractors are responsible for ensuring that the contractors have a program that is consistent with the medical center's Hazard Communication Program.
- Each contractor shall provide the NYULMC employee who retained them with copies of MSDSs/SDSs for all hazardous chemicals/products the contractor will store or use at the medical center. The contractor shall do so prior to bringing chemicals/products on site. Each contractor must also inform their NYULMC contact of all necessary precautionary measures. Upon request, copies of MSDSs/SDSs shall be forwarded to EH&S (main campus) or Environmental Services (HJD campus).
- Employees who retain contractors shall ensure that their contractors are notified of potential physical or health hazards present in the project work area and, upon request, provide contractors with access to MSDSs/SDSs for materials within this work area. Employees must document all notification given to contractors and forward copies of such documentation to EH&S upon request.

Appendix A	Safety Data Sheet (SDS) Sections
Appendix B	Sample Label and Pictograms

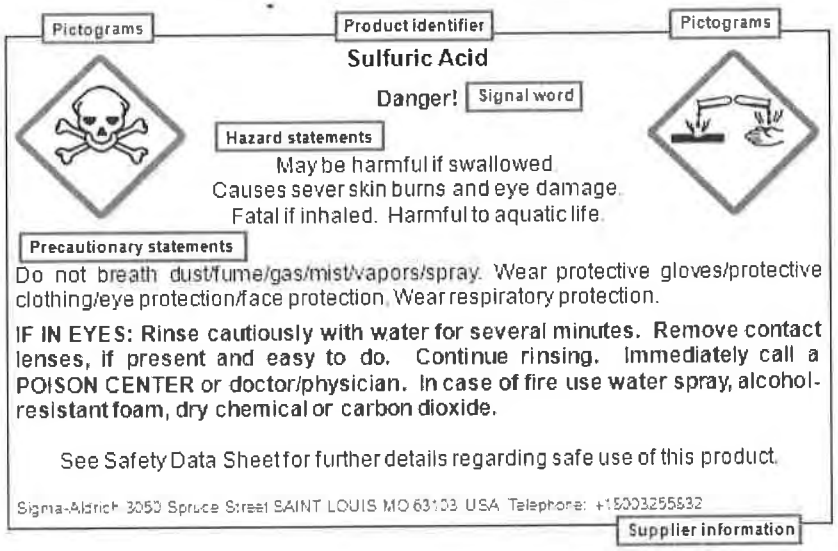
Issue date	11/13
Replaces	2/11
Reviewed by	J. Goldberg, Environmental Health and Safety T. Fascianella, Director of HJD Loss Prevention NYUHC Environment of Care Committee

SAFETY DATA SHEET (SDS) SECTIONS

No.	Section Name	Information included
1	Identifications	Product identifier, manufacturer/distributor information, emergency number
2	Hazard(s) identification	Class/category, signal word, HNOC, mixture comment
3	Composition/ingredients	Common chemical name, CAS, ingredient %
4	First-aid measure	Necessary measures, symptoms/effects
5	Fire-fighting measure	Recommendations for fighting a fire caused by a chemical
6	Accidental release measures	Precautions, PPE, emergency procedures
7	Handling and storage	Guidance on safe handling and conditions for safe storage
8	Exposure controls/Personal protection	Exposure limits, engineering controls, and personal protective measures
9	Physical/chemical properties	Appearance, odor threshold, pH, flash point, LEL/UEL
10	Stability and reactivity	Possible hazardous reactions, incompatible materials
11	Toxicological information	Routes of exposure, acute/chronic exposure symptoms
12 13 14 15	Ecological information Disposal consideration Transport information Regulatory information	Not within OSHA's jurisdiction
16	Other information	Date of preparation/last revision

SAMPLE LABEL

WITH 6 REQUIRED LABEL ELEMENTS



PICTOGRAMS

Health Hazard  ▪ Carcinogen ▪ Mutagenicity ▪ Reproductive Toxicity ▪ Respiratory Sensitizer ▪ Target Organ Toxicity ▪ Aspiration Toxicity	**Flame**  ▪ Flammables ▪ Pyrophorics ▪ Self-Heating ▪ Emits Flammable Gas ▪ Self-Reactives ▪ Organic Peroxides	**Exclamation Mark**  ▪ Irritant (skin and eye) ▪ Skin Sensitizer ▪ Acute Toxicity ▪ Narcotic Effects ▪ Respiratory Tract Irritant ▪ Hazardous to Ozone Layer (Non-Mandatory)
Gas Cylinder  ▪ Gases Under Pressure	**Corrosion**  ▪ Skin Corrosion/Burns ▪ Eye Damage ▪ Corrosive to Metals	**Exploding Bomb**  ▪ Explosives ▪ Self-Reactives ▪ Organic Peroxides
Flame Over Circle  ▪ Oxidizers	**Environment**  (Non-Mandatory) ▪ Aquatic Toxicity	**Skull and Crossbones**  ▪ Acute Toxicity (fatal or toxic)

APPLICATION

NYU Langone Medical Center (NYULMC)

PURPOSE

- To protect human health and the environment through the proper management and disposal of hazardous waste, universal waste, and used oil from contractors.
- To comply with all applicable federal, state, and local laws and regulations.

POLICY AND GENERAL INFORMATION

1.0 Contractors who work on construction, renovation, or building maintenance projects at NYULMC shall collect, store, label, transport and discard universal and hazardous wastes and used oil in accordance with all applicable federal, state and local laws and regulations.

2.0 RESPONSIBILITIES

2.1 **Environmental Health and Safety (EH&S)** is responsible for:

- disseminating information about pertinent laws and regulations to NYULMC personnel
- developing *Policy 108a: Hazardous Waste from Contractors (Construction and Building Maintenance)* (the Policy)
- assisting departments in implementing the Policy, including providing guidance and recommending contract language for construction, renovation and building maintenance contracts (see Appendix A)
- approving the *Universal and Hazardous Waste Compliance Plan* (see Appendix B) for each construction and renovation project, and for each contractor engaged in building maintenance
- maintaining manifests
- conducting random quality assurance (QA) inspections of construction and renovation projects to verify compliance with this Policy
- periodically reviewing and updating the Policy as needed

2.2 **The Vice Presidents and Directors of Building Services, Environmental Services, Facilities Operations, Information Technology, Real Estate and RED+F Design and Construction** are responsible for compliance within their departments and divisions. Their responsibilities include, but are not limited to ensuring all of their employees and contractors implement the Policy on construction, renovation, and building maintenance projects.

2.3 **Foremen, Managers** and **Project Managers** (e.g., design, construction, renovation, operations, maintenance, and cable management) are responsible for implementing and maintaining the Policy on their projects. Their responsibilities include, but are not limited to:

- managing their respective construction, renovation, and building maintenance projects in accordance with this Policy, including ensuring that contracts for their projects contain language (see Appendix A) that clearly defines the responsibilities of the contractors for properly managing hazardous waste, universal waste and used oil
- completing a *Universal and Hazardous Waste Compliance Plan* (see Appendix B) for each of their construction and renovation projects, and for each building maintenance contractor, and obtaining approval for the *Compliance Plan* from EH&S prior to the start of the project
- ensuring their contractors use only NYULMC's approved hazardous waste contractors for the removal and disposal of hazardous waste, universal waste and used oil, unless EH&S approves project-specific alternate contractor(s)
- coordinating implementation of the project-specific *Compliance Plan* for each project
- during daily inspections of their construction/renovation project sites, verifying that their contractors have implemented the *Compliance Plan* and that hazardous waste, universal waste and used oil are being managed properly
- ensuring that all hazardous waste, universal waste and used oil from their construction, renovation, and building maintenance projects are disposed of properly
- ensuring their contractors remove all hazardous materials, petroleum products, hazardous waste, universal waste, and used oil from their project sites at the conclusion of projects, unless otherwise instructed
- correcting problems found on their projects

3.0 SPECIFIC WASTES

This section addresses hazardous waste, universal waste, and used oil, the three most common hazardous waste streams generated on construction, renovation, and building maintenance projects.

3.1 **Hazardous waste** includes:

- waste paint, varnish, solvent, sealers, thinners, resins, roofing cement, adhesives, machinery lubricants and caulks
- clean-up materials, such as rags, contaminated with the items listed above, unless test result document that they are not hazardous
- drums and containers that are not completely empty of the items listed above
- spent aerosol cans that once contained flammable or toxic solvents and/or propellants
- used light ballasts, transformers and capacitors unless labeled "non-PCB"
- broken fluorescent light tubes
- broken mercury switches and thermostats
- lead based paint (unless test results document it is not hazardous), lead flashing, lead solder or other lead containing material (e.g., used for shielding)
- other paint with hazardous components or heavy metals

- All hazardous waste must be labeled as "Hazardous Waste" and list the components of the waste (e.g., "used paint thinner") on the label.
- All hazardous waste must be kept in closed containers.
- All hazardous waste must be transported by a licensed hazardous waste hauler to a disposal facility permitted by the U.S. Environmental Protection Agency (EPA) and approved by EH&S.
- When feasible, the contractor should be listed as the waste generator on hazardous waste manifests.

3.2 **Universal wastes:** Some hazardous wastes are less stringently regulated IF they are recycled. Examples of universal waste include unbroken fluorescent light lamps, unbroken mercury containing equipment, batteries (except alkaline) and unused pesticides. *Note:* If they are not recycled, universal wastes must be managed as hazardous waste. See *Policy 108c: Universal Waste*.

3.3 **Used oil** includes:

- hydraulic fluid
- motor oil
- grease
- clean-up materials, such as rags, contaminated with used oil

- All used oil shall be labeled "Used Oil" and must not be labeled "Hazardous Waste".
- Used oil shall be placed in secondary containment if it is stored in the vicinity of floor drains or could reasonably be expected to enter the sanitary or storm sewer if spilled.
- All used oil shall be transported to a recycling facility permitted by the EPA and approved by EH&S.

4.0 PROCEDURES

4.1 Prior to the start of each construction, renovation, and building maintenance project, NYULMC's project director or manager shall do the following:

- ensure appropriate language is included in the construction/maintenance contract(s) (see Appendix A)
- work with EH&S and the contractor(s) to develop a *Universal and Hazardous Waste Compliance Plan* (see Appendix B), and to determine which of NYULMC's EPA ID#s will be used on waste manifests
- obtain approval from EH&S for the *Compliance Plan*, distributes copies to pertinent contractors and EH&S, and incorporate a copy into the project file
- educate pertinent contractors and staff about the requirements of the *Compliance Plan*
- verify implementation of applicable compliance measures (e.g. training on the *Compliance Plan*, placement and labeling of appropriate waste containers)
- if waste shall be removed by contractors other than NYULMC's approved hazardous waste contractors:
  - obtain the names of and EPA ID numbers for all facilities that will be used for hazardous waste and used oil and forward this information to EH&S for approval

- obtain the names of all destination facilities that will be used for universal waste and forward this information to EH&S for approval

4.2 During a construction or renovation project, NYULMC's project director or manager shall inspect the project site daily to verify that hazardous waste, universal waste and used oil are being collected, labeled, stored, removed, transported and discarded properly.

4.3 During a construction, renovation, or building maintenance project, NYULMC's project director or manager shall do the following:

- ensure that EH&S receives copies of all manifests for hazardous waste and universal waste within 48 hours of the time the manifest is signed
- bring problems to the attention of the appropriate personnel and ensure they are resolved promptly

Related Safety Policies

Policy No. 108: Chemical Waste Minimization and Disposal Program

Policy No. 108c: Universal Waste

Policy No. 144: Lead Management Program

Appendix A	Sample Contract Language
Appendix B	Universal and Hazardous Waste Compliance Plan

Issue date	12/13
Replaces	09/06
Reviewed by	J. Kang, Environmental Health and Safety P. Aguilar, Building Services R. Cohen, Facilities Operation B. Everett, Real Estate and Housing A. Holder, Environmental Services P. Schwabacher, Facilities Management *NYUHC Environment of Care Committee*

Sample Contract Language

NYULMC requires that all outside contractors comply with all EPA regulations. NYULMC intends for the contractor to be fully responsible for all EPA compliance.

There are various types of contracts that may have EPA compliance issues. The following lists several types of contracts, with language for environmental issues. It is recommended this type of language be considered for inclusion when developing contracts, specifications, contract drawings, and scopes of work.

1. ELEVATOR MAINTENANCE

The work shall comply with all applicable local, state and federal environmental regulations, including, but not limited to the following:

- The on-site personnel must be familiar with the NYULMC Spill Prevention, Control and Countermeasures (SPCC) Plan, and be trained in procedures to follow in the event of an oil spill.
- All substance containers shall be labeled as to their contents and kept closed.
- Safety Data Sheets for all chemicals brought onto the premises shall be present at the location of work, such as the elevator motor rooms.
- All containers of used oil (hydraulic, motor, grease, etc.) must be clearly labeled with the words "Used Oil".
- If 55-gallons or more of used oil is to be transported at any time, the transporter must have an EPA identification number.
- It is the contractor's responsibility to collect and contain oily rags in covered, properly labeled containers. The contractor shall provide containers in all of the elevator motor rooms with gear-type elevators. The contractor is responsible for timely disposal of the rags.
- The contractor is prohibited from using or storing chlorinated solvents on NYULMC property.
- Any hazardous chemical waste (not used oil) must be labeled as "Hazardous Waste", and the components of the waste listed. Any hazardous waste maintained on site must be kept in a closed container. The waste must be properly disposed of through a licensed hazardous waste hauler, approved by NYULMC, at an EPA-permitted facility. The contractor shall be listed as the waste generator. A copy of the hazardous waste manifest must be supplied to the NYULMC project manager. Spent aerosol cans that once contained flammable or toxic solvent/propellant are considered hazardous waste.

2. HVAC MAINTENANCE

The work shall comply with all applicable local, state and federal environmental regulations, including, but not limited to the following:

- All technicians on NYULMC property who work with refrigerants must have Universal Certification, and a copy provided to the NYULMC project manager.
- Service records must indicate the amount and type of refrigerant added to the system, as well as a description of the type of service performed.

- All recovery and recycling equipment must be certified to meet EPA's minimum requirements.
- Hazardous materials or petroleum products stored in the vicinity of floor drains, or could reasonably be expected to enter the sanitary or storm sewer if spilled, must have secondary containment.
- All substance containers shall be labeled as to their contents and kept closed.
- Safety Data Sheets for all chemical substances brought onto the premises shall be present at the location of work.
- All containers of used oil must be clearly labeled with the words "Used Oil".
- If 55-gallons or more of used oil is to be transported at any time, the transporter must have an EPA identification number, and the NYULMC project manager provided with the information.
- Any hazardous waste (not used oil) must be labeled as "Hazardous Waste", and the components of the waste listed. The waste must be properly disposed of through a licensed hazardous waste hauler, approved by NYULMC, at an EPA-permitted facility. The contractor shall be listed as the waste generator. A copy of the hazardous waste manifest must be supplied to the NYULMC project manager.
- The contractor must remove all hazardous materials and petroleum products from the NYULMC project site at the conclusion of the project, unless specifically requested, in writing, to leave certain materials with the NYULMC project manager.

3. RENOVATION (PAINTING, CARPETING/FLOORING, DRYWALL, CEILING, PLUMBING, ETC.), ROOFING, METAL MAINTENANCE

The work shall comply with all applicable local, state and federal environmental regulations, including, but not limited to the following:

- All substance containers shall be labeled as to their contents, and containers kept closed.
- Safety Data Sheets for all chemical substances brought onto the premises shall be present at the location of work.
- Hazardous materials or petroleum products stored in the vicinity of floor drains, or that could reasonably be expected to enter the sanitary or storm sewer if spilled, must have secondary containment.
- All containers of used oil (hydraulic, motor, grease, etc.) must be clearly labeled with the words "Used Oil".
- The contractor is prohibited from using or storing chlorinated solvents on NYULMC property.
- The contractor is responsible for the proper storage, handling and removal from the NYULMC project site of all substances whose disposal may be regulated by the EPA, including but not limited to:
  - paints, paint wastes, lacquers, solvent thinners
  - any hazardous substances such as adhesives, contact cements, roofing products, mineral spirits, solvents, cleaners, etc.
  - oily or solvent-contaminated rags

- aerosol cans (spent or unspent)
- fluorescent light tubes
- light ballasts (collect PCB and non-PCB ballasts separately)
- batteries (except alkaline)

None of the above materials are to be disposed of as Construction and Demolition (C&D) waste, and should never be placed in the C&D dumpsters located on NYULMC property.

- Any hazardous waste (not used oil) must be labeled as "Hazardous Waste", and the components of the waste listed. The waste must be properly disposed of through a licensed hazardous waste hauler, approved by NYULMC, at an EPA-permitted facility. The contractor shall be listed as the waste generator. A copy of the hazardous waste manifest must be supplied to the NYULMC project manager.
- The contractor must remove all contract-related hazardous materials and petroleum products from the NYULMC project site at the conclusion of the project, unless specifically requested, in writing, to leave certain materials with the NYULMC project manager.

4. EMERGENCY GENERATOR MAINTENANCE

The work shall comply with all applicable local, state and federal environmental regulations, including, but not limited to the following:

- The on-site personnel must be familiar with the NYULMC Spill Prevention, Control and Countermeasures (SPCC) Plan, and trained in procedures to follow in the event of an oil or fuel spill.
- All substance containers shall be labeled as to their contents, and kept closed;
- Safety Data Sheets for all chemical substances brought onto the premises shall be present at the location of work.
- All containers of used oil (hydraulic, motor, grease, etc.) must be clearly labeled with the words "Used Oil".
- If 55-gallons or more of used oil is to be transported at any time, the transporter must have an EPA identification number.
- It is the contractor's responsibility to remove oily rags used on the premises in a timely manner.
- Waste batteries generated during the servicing of generators shall be handled and disposed of by the contractor as Universal Waste, according to the requirements of the New York State Department of Environmental Conservation.
- The contractor is prohibited from using or storing chlorinated solvents on NYULMC property.
- The contractor is prohibited from introducing used oil, sludge, cleaning products, or anything other than new fuel into the generator for burning.
- The contractor may not store chemical or petroleum products on NYULMC property. Any materials required for use on site must be brought to the site for service and removed immediately following service work.

Sample Contract Language

5. BUILDING CLEANING

The work shall comply with all applicable local, state and federal environmental regulations, including, but not limited to the following:

- All substance containers shall be labeled as to their contents.
- Safety Data Sheets for all chemical substances used on the premises shall be present at the location of work.
- Hazardous materials or petroleum products stored in the vicinity of floor drains, or that could reasonably be expected to enter the sanitary or storm sewer if spilled, must have secondary containment.
- The contractor is prohibited from using or storing chlorinated solvents on NYULMC property.
- The contractor is responsible for the proper storage and handling of all substances whose disposal may be regulated by the EPA, including but not limited to:
  - paints, paint wastes, lacquers, solvent thinners
  - any hazardous substances such as adhesives, contact cements, roofing products, mineral spirits, solvents, cleaners, etc.
  - oily or solvent-contaminated rags
  - aerosol cans (spent or unspent)
  - fluorescent light tubes
  - broken fluorescent light tubes (must be handled and disposed of as hazardous waste)
  - light ballasts (collect PCB and non-PCB ballasts separately)
  - batteries (except alkaline)

  Any of these materials encountered during the cleaning contractor's work shall be brought to the attention of Facilities Management, who will see to its proper disposal through EH&S. None of the above materials are to be disposed of as general building trash or Construction and Demolition (C&D) waste. Cleaning personnel assigned to NYULMC buildings shall attend special training provided by EH&S on the proper handling of the materials listed above.

6. WATER TREATMENT MAINTENANCE

The work shall comply with all applicable local, state and federal environmental regulations, including, but not limited to the following:

- All substance containers shall be labeled as to their contents.
- Safety Data Sheets for all chemical substances brought onto the premises shall be present at the location of work.
- Hazardous materials or petroleum products stored in the vicinity of floor drains, or that could reasonably be expected to enter the sanitary or storm sewer if spilled, must have secondary containment.
- The contractor must remove empty containers from the NYULMC property for proper disposal.

Sample Contract Language

7. RELAMPING

The work shall comply with all applicable local, state and federal environmental regulations, including, but not limited to the following:

- All used fluorescent bulbs shall be collected and stored in rigid containers, with tight fitting lids, and labeled "Universal Waste – Used Fluorescent Light Lamps", along with the date that the first tubes were placed in the container.
- All broken fluorescent light bulbs shall be handled, stored and disposed of as hazardous waste. Sealable containers shall be available on the project site for cleanup of any broken fluorescent tubes. All containers of broken tubes shall be labeled "Hazardous Waste – Broken Fluorescent Light Lamps".
- If more than 500 pounds of fluorescent tubes are transported at any one time, the transporter must have a hazardous waste transporter permit.
- All ballasts shall be collected. PCB and non-PCB ballasts shall be collected separately. Light ballasts not clearly labeled as "non-PCB" containing must be assumed to have PCBs. PCB containing ballasts shall be labeled as "hazardous waste – PCB containing ballasts", collected in sealable containers, and disposed of as hazardous waste.
- The ultimate destination facility for tubes and ballasts must meet the requirements of an EPA RCRA Treatment, Storage and Disposal Facility, and documentation of the facility provided to the NYULMC project manager.
- If a lamp-crusher is used on the NYULMC property, the bulbs must go to a mercury recycler, and documentation about the facility provided to the NYULMC project manager. Copies of waste manifests must be provided to NYULMC.

Universal and Hazardous Waste Compliance Plan

Location:	
NYUMC Project Coordinator:	**Project Start Date:**
Contractor Performing Work:	**Estimated Duration:**
Supervisor's Name:	**Telephone:**
Brief description of the project:	
Who will maintain SDS file? (Print name)	**Signature:** **Date:**
Who will train construction workers on proper waste disposal? (Print name)	**Signature:** **Date:**
Who will coordinate, manage & monitor waste storage & disposal? (Print name)	**Signature:** **Date:**
What Medical Center EPA ID# will be used on Waste Manifests?	
Who will sign waste manifests and forward them to the DEC? (Print name)	**Signature:** **Date:**
Who will ensure EH&S receives copies of all manifests? (Print name)	**Signature:** **Date:**
Who will maintain waste manifests? (Print name)	**Signature:** **Date:**
Compliance Plan prepared by: (Print name)	**Signature** **Date:**
Plan Approved by (EH&S): (Print name)	**Signature** **Date:**

Universal and Hazardous Waste Compliance Plan

Waste	Check if this waste will be generated	Disposal contractor	"Label" / Comments
Aerosol cans			Label: "Hazardous Waste – Aerosol Cans"
Asbestos			Coordinate with Environmental Health & Safety
Batteries (except alkaline)			Label: "Universal Waste – Used Batteries" * Cover both terminals of each battery (tape the terminals or package each battery in a separate bag).
CFCs			Use vendor with Universal Certification for CFCs
Computer equipment			Label: "Recyclable Waste – Computer Equipment" *
Degreasing solvents			Label: "Hazardous Waste – Used . . . (name(s) of solvent(s))"
Electronic equipment			Determine if it is hazardous waste
Fluorescent light bulbs			If unbroken, label: "Universal Waste - Used Lamps" * If broken, label: "Hazardous Waste - Broken Fluorescent Bulbs"
Light ballasts			PCB ballasts – Label: "Hazardous Waste – Contains PCBs" Non-PCB ballasts – Label: "non-PCB ballasts for disposal"
Oil-based paint			Label: "Hazardous Waste – Oil-based Paint"
Rags used with solvents			Determine if they are hazardous waste
Paint thinners			Label: "Hazardous Waste – Used Paint Thinner"
Thermostats			Label: "Universal Waste – Thermostat contains mercury" *
Transformers, capacitors (unless labeled non-PCB)			Label: "Hazardous Waste – contains PCBs"
Used oil and rags used with oil			Label: "Used Oil" Use secondary containment for oil if floor drains are present

* For Universal Wastes, date container with accumulation start date.
Other wastes / requirements:

APPLICATION

NYU Langone Medical Center (NYULMC)

PURPOSE

To protect patients, visitors and employees from the potential hazards posed by hot work.

To comply with the Occupational Safety and Health Administration (OSHA) standard on Welding, Cutting, and Brazing (29 CFR 1910.252), and with New York City Fire Code and NFPA standards.

POLICY AND GENERAL INFORMATION

1.0 Application

This program applies to:

- All indoor and outdoor areas of all NYULMC facilities.
- All employees of NYU Hospitals Center and NYU School of Medicine. The primary departments and divisions impacted by the program are:
  - Facilities Operations and HJD Facilities Engineering (collectively Facilities)
  - Real Estate and Housing
  - RED+F Design and Construction
- All contractors and subcontractors.

2.0 Definition

Hot work means high energy work, such as cutting, welding, burning, grinding or similar operations, which produces, flames, sparks or slag.

Hot work permit (permit) means NYULMC's pre-numbered two-copy form that incorporates the information in Appendix A.

3.0 **Responsibilities**

3.1 **Environmental Health and Safety** (EH&S) is responsible for:

- Developing the Hot Work Program (the Program) and collaborating with others to implement and maintain it.
- Training relevant groups, including Facilities, Real Estate and Housing, and RED+F Design and Construction, on the requirements of the Program.
- Providing training on the use of fire extinguishers.
- Functioning as a consultant on an as needed basis for hot work safety issues.
- Evaluating the effectiveness of the Program and recommending changes as needed.

3.2 **Facilities** is responsible for:

- Managing the Program and the permitting process.

3.3 The **Vice Presidents** and **Directors** of **Facilities, Real Estate and Housing** and **RED+F Design** and **Construction** are responsible for compliance within their departments and divisions. Their responsibilities include, but are not limited to:

- Implementing the Program within their departments and divisions.
- Ensuring all requirements of this policy are followed.
- Ensuring all employees who are covered by the Program are trained on its requirements.
- Ensuring all hot work is identified and included in the Program.
- Ensuring contractors comply with this policy.

3.4 **Foremen, managers and project managers (PMs)** (e.g., design, construction, renovation, operations, and maintenance), are responsible for:

- Implementing and maintaining the Program on their projects.
- Ensuring their employees and contractors comply with this policy.

- Incorporating the requirements of the policy into the specifications for the work.
- Discussing training requirements, required safety equipment, and work area preparation with employees and contractors.

3.5 **Contractors** are responsible for:

- Complying with all provisions of OSHA 1926 subpart J, the New York City Fire Code and the requirements of this policy.
- Obtaining all required New York City Fire Department (FDNY) permits for compressed gas cylinders.
- Removing their cylinders from medical center property at the end of each work day if they have an FDNY usage-only permit.
- Providing proper storage cages for compressed gas cylinders if they have an FDNY storage and usage permit. Obtaining approval from the FDNY and NYULMC's Fire Safety Director for the location of these cages. Removing all cylinders from the construction area at the end of each day and properly transporting them to the storage cages.

3.6 **Workers who engage in hot work** are responsible for:

- Attending training on hot work.
- Requesting a hot work permit prior to conducting any hot work.
- Following the requirements of the permit.
- Notifying their supervisors of any pertinent problems.

4.0 Hot work procedures

4.1 When it has been determined that hot work must be done, personnel shall obtain a permit from Facilities and complete it before initiating the work. Appendix B provides instructions for completing the permit.

- For in-house work, the foreman shall initiate and complete the permit after inspecting the work area. The foreman shall:

- Complete Section 1 of the permit.
- Have the work area prepared for hot work and complete Section 2 of the permit.
- Assign a Fire Guard with the appropriate Certificate of Fitness issued by the New York City Fire Department and enter the name on the permit.
- Sign the permit indicating that the work area is ready for hot work.
- Have the appropriate manager sign and authorize the work.

▪ For work done by contractors, the PM shall initiate the permit.

- The PM shall contact the appropriate Facilities manager.
- The PM and contractor supervisor shall jointly complete and sign the permit following the steps listed above (under in-house work).

4.2 A completed and authorized permit shall be valid until:

- The end of the workers' work shift or the work is completed, whichever comes first; or
- The end of the foreman's or manager's shift; or
- There is an emergency involving or affecting the work area; or
- The time specified on the permit if before end of shift.

4.3 The hard copy of the signed permit shall be posted in the work area until the permit is no longer valid or the hot work is completed. The manager or PM keeps the soft copy.

4.4 If the hot work is in a confined space, the foreman, manager, or contractor shall conduct the pre-entry atmospheric test and complete the confined space entry permit as per Safety Policy 138: Confined Space Entry.

4.5 The foreman, manager, and/or PM shall inspect the work area periodically during the hot work to ensure that the conditions of the permit are being maintained.

4.6 The manager or PM shall debrief the employees or contractor who completed the hot work regarding any challenges encountered during the work. The results of the debriefing will be communicated to EH&S.

4.7 When the work is completed and prior to personnel leaving the work area, all systems shall be returned to their original condition. The Facilities manager shall check the work area and authorize systems to be put back into service.

4.8 The foreman or PM shall return the permit to the Facilities office.

- For in-house work, the foreman returns the hard copy to the office. The manager who signed the permit puts the two copies together.
- For work done by contractors, the contractor returns the hard copy to the PM. The PM puts the two copies together and returns them to Facilities.

4.9 Facilities managers shall forward permits for completed work to EH&S on a daily basis.

4.10 EH&S shall evaluate permits received to ensure compliance with this policy and make recommendations for changes as necessary.

5.0 Training

5.1 Managers and contractors shall train workers who perform hot work on the:

- Requirements of this policy
- Proper preparation of a work area
- Use of safety equipment
- Responsibilities of the Fire Guard
- Emergency procedures (such as fire and employee injury protocols)

5.2 EH&S will assist with training of employees, e.g., on the use of safety equipment.

5.3 Training shall be conducted:

- Before a worker is first assigned hot work tasks.

- Before a worker is assigned new hot work tasks.
- Whenever there is a change in procedures or new hazards are introduced.
- Whenever there are deviations from the requirements of the policy, or there are inadequacies in a worker's knowledge or use of these procedures.

5.4 Each department/division shall maintain training records for its employees.

- Records shall include the dates of training, subjects covered, names of employees trained and name and signature of the trainer.
- Records shall be maintained for 1 year past the last day of employment.
- Copies of records shall be provided to EH&S upon request.

6.0 Program evaluation

6.1 EH&S conducts an annual evaluation of the Program as part of the annual evaluation of NYUHC's Fire Prevention Management Plan.

Appendix A	Sample Hot Work Permit
Appendix B	Instructions for completing permit and conducting hot work

Issue date	04/12
Replaces	09/03
Reviewed by	J. Goldberg, Environmental Health and Safety R. Cohen, Facilities Operations B. Everett, Real Estate and Housing T. Howard, RED+F Construction R. Maffia, RED+F Construction D. Rubbo, HJD Engineering P. Schwabacher, Facilities Management NYUHC Environment of Care Committee

Sample Hot Work Permit

SECTION 1 (General)
Supervision, by signing and issuing this permit, certifies that all safety factors have been considered and addressed satisfactorily. When the hot work is completed, the two parts of the permit shall be sent to Environmental Health & Safety.
The permit becomes void: ▪ At the end of the workers' shift or when work is completed, whichever comes first. ▪ At the end of the foreman's or manager's work shift. ▪ If there is an emergency involving or affecting the work area. ▪ At the following Specified Time:
Work Area:
Equipment Requiring Work:
Work to be Done:

SECTION 2 (Work Area Preparation)	**Yes**	**No**	**N/A**
Is area clean of flammables/combustibles?			
Have requirements of other policies (e.g., lockout, confined space) been met?			
Are proper fire extinguishers in the work area?			
Is the ventilation shut-off or isolated?			
Is a water hose laid out and water running?			
Are fire-rated tarps or welding blankets needed to protect adjoining areas or personnel from sparks or flashes?			
Are penetrations in floors, walls, ceilings and shafts sealed?			
Are other precautions (e.g., PPE) in place?			
Have adjoining work area occupants been informed of work being done?			
Are smoke heads/fire alarm system disabled?			
Who is the Fire Guard?			

SECTION 3 (Authorization)	**Date**	**Time**
Foreman's Signature		
Manager's Signature		

Instructions for completing permit and conducting hot work

SECTION 1

When it is determined that hot work must be done, the foreman shall initiate the permit by completing Section 1. The SPECIFIED TIME (if any), WORK AREA (building, floor, room #) shall be filled in. The WORK TO BE DONE shall describe the work that workers will do in the work area (e.g., welding).

SECTION 2: Work Area Preparation

Work Area

The foreman shall verify that all flammable and combustible substances or materials within 35 feet of the hot work are removed. If flammable or combustible materials cannot be removed, they shall be adequately protected with welding blankets or other non-combustible materials.

Other policy requirements

Workers shall implement lockout/tagout procedures. If confined space entry is required, Safety Policy 138 shall be followed. If there is no equipment requiring lockout/tagout or a confined space entry involved, then N/A shall be checked.

Proper fire extinguisher and water hose

A **charged** 10lb. or greater ABC dry chemical fire extinguisher shall be immediately available during the entire hot work operation. Where possible, a hose with running water shall be available to reduce the possibility of sparks igniting other materials and causing a fire.

Ventilation

A smoke eater shall be used at the point of all burning and welding. Where possible, supply and return air systems shall be shut down so there is no transport of exhaust smoke or fumes to occupied areas.

Tarps and penetrations

Floor, wall and ceiling penetrations shall be sealed to reduce the possibility of sparks or slag entering an adjacent or lower area. Welding blankets and/or or fire-rated tarps shall be placed around the hot work area to reduce the possibility of sparks flying into adjoining areas, penetrations, or shafts. Welding screens shall be used to reduce the possible exposure of personnel to harmful light from welding, burning and cutting.

Instructions for completing permit and conducting hot work

Other precautions

Only cylinders stamped as having been hydrostatically tested within the last 5 years shall be allowed on NYULMC property. All cylinders shall be removed from NYULMC property upon completion of the work or expiration of hydrostatic test.

Compressed gas cylinders shall be secured in an upright position at all times. Cylinders shall be capped at all times when not in use.

For transportation between storage cages and the work area, compressed gas cylinders shall be capped and chained in an upright position in an approved hand truck. If cylinders must be transported by crane or otherwise picked overhead, they shall be rigged using a cradle designed for that purpose. They shall not be rigged directly with slings or straps or lifted by their caps or collars. Cylinders shall not be transported by an excavator bucket, carried over a shoulder or by hand, transported up or down stairs or dragged, rolled or slid.

Cylinders containing differing flammable gases shall be stored 20 feet apart at a minimum. Cylinders shall not be taken into a confined space. Under no circumstances shall a cylinder be heated to increase the pressure of the gas or the volume of liquid inside.

Flashback arrestors shall be installed at the torch side of each compressed gas line. Cylinder hoses and welding leads shall be properly connected and free of cuts, burns and other damage. Cylinder regulator gauges shall have a damage-free protective lens and the gauge shall be operational. Cylinders in use shall be checked daily for cracks and leaks.

Personnel engaged in hot work shall wear the proper personal protective equipment and clothing (e.g. burn jacket, gloves and welding helmet) based on the hazard assessments conducted in accordance with NYULMC Safety Policy 119 (Use and Selection of Personal Protective Equipment).

Where hot work requires the use of respiratory protection, the provision of NYULMC Safety Policy 109 (Respiratory Protection) shall be followed.

Prior to welding of any exotic metals (e.g. galvanized steel or stainless steel) a job hazard analysis is required to ensure compliance with OSHA 1926.353(c) and OSHA Subparts D and E.

Prior to performing any hot work on a tank or vessel that formerly housed a combustible, flammable or explosive gas or liquid, a job hazard analysis is required as is certification of proper purging and cleaning of the tank or vessel.

Personnel performing hot work at height shall do so from a stable work platform with guardrail protection (e.g. scaffold or aerial lift), not a ladder.

Personnel performing electric arc welding from a suspended scaffold shall comply with the requirement set forth in OSHA 1926.451(f)(17)(i) through (vi).

Instructions for completing permit and conducting hot work

Adjoining work area occupants

The manager or PM responsible for the hot work shall inform management of adjoining work areas of the work to be done. This shall be done well before the hot work will be performed, to give sufficient time to address any concerns the departments may have.

Fire watch and other workers

A Fire Guard shall be present at all times in the work area during hot work operations and for 30 minutes after the hot work has concluded. An additional inspection is required 60 minutes post conclusion of hot work. A written log of these inspections shall be kept by the Fire Guard. The sole responsibility of the Fire Guard during the hot work is the safety of the work area. The Fire Guard shall be trained to use a fire extinguisher. The Fire Guard shall move dry chemical extinguishers and water hoses as necessary to reduce the possibility of sparks causing a fire. The Fire Guard shall have a communication device to keep in contact with the manager or PM. The Fire Guard and other workers conducting the hot work shall have in their possession valid New York City Fire Department Certificate of Fitness and/or New York City Department of Buildings Welders license.

Fire alarm system

Appropriate smoke detector heads/fire alarm system shall be disabled prior to conducting hot work in accordance with Facilities procedures for disabling/enabling these systems.

SECTION 3

The foreman or PM shall sign, enter the date and time, and contact the Facilities manager for authorization to conduct the hot work. The hard copy of the permit remains at the work area; the manager or PM keeps the soft copy. After the work is completed or the permit is no longer valid, the hard copy is returned to the Facilities office and matched with the soft copy. Both copies are sent to Environmental Health & Safety on a daily basis.

EMERGENCY PROCEDURES

All hot work incidents, regardless of how minor, shall be immediately reported by the Fire Guard to the foreman, manager, or PM. If a fire occurs, the nearest fire alarm shall be pulled and a call place to the Communications Department (ext. 33-911 at main campus, ext. 3-911 at HJD) or NYC 911 from offsite locations. Communications shall inform FDNY about the nature of the fire. If an employee is injured, he/she should be taken to the Emergency Room for treatment.

POST HOT WORK PROCEDURES

The work area shall be returned to its original condition. The Facilities manager shall check and authorize the systems to be put back into service.

Policy: INSTALLATION AND TESTING OF NEW MEDICAL GAS OUTLETS/PIPING

APPLICATION

NYU Medical Center

PURPOSE

The purpose of the policy on installation and testing of new medical gas outlets/piping is to provide guidelines of the maintenance of safe and proper supply of necessary medical gases to the patients.

POLICY AND GENERAL INFORMATION

1.0 Facilities Management will locate nearest isolation valve, for purposes of determining shutdown requirements.

2.0 All medical air, nitrous oxide, and oxygen should be specified as copper with type "K" with silver brazed fittings. All other gases are lead-free soldered. Dry nitrogen shall be pumped into the system while brazing.

3.0 Specifications for medical gas outlets are as follows:

3.1 Manufactured by Hill Rom MEDAES (DISS)

All piping to be labeled at frequent intervals (no less than every 20 feet and at each change in direction and penetration through walls) as follows (all letters in white unless indicated) per NFPA99:

Carbon Dioxide	-	Gray
Nitrogen	-	Black
Oxygen	-	Green
Nitrous Oxide	-	Blue
Vacuum	-	White
Compressed Medical Air	-	Yellow/ Letters are black
Gas Evacuation	-	Purple

Issue Date	Replaces	Originator	Reviewed By	Reviewed By	Reviewed By
9/06	9/03	Alan Yood Sr. Dir. Env. Svc.	Richard Cohen V.P. F.M.		

Policy: INSTALLATION AND TESTING OF NEW MEDICAL GAS OUTLETS/PIPING

4.0 24-hour pressure test to be conducted by contractor and witnessed at start and finish by Facilities Management Supervisor and/or Plumbing Foreman or Project Manager. Documentation of findings to be kept in project folder. Pressure test will be at least 150 lb. psi, or double the operating pressure.

5.0 Following pressure testing, contractor is to purge lines with dry nitrogen in accordance with NFPA99 and to be sure no debris remains in piping.

6.0 Purity testing (of all lines affected) is conducted by the contractor and results are reviewed by Facilities Management with results filed in project folder.

APPLICATION

NYU Langone Medical Center (NYULMC)

PURPOSE

To ensure adequate life safety protection:

- When a fire alarm, detection, or suppression system is out of service or impaired for more than 4 hours in a 24 hour period.
- Whenever Life Safety Code deficiencies cannot be immediately corrected (i.e., when the Joint Commission (TJC) requires a formal Plan for Improvement (PFI) in the hospital's Statement of Conditions).
- During periods of construction and renovation.

TABLE OF CONTENTS

POLICY AND GENERAL INFORMATION

1.0 Introduction

TJC requires that hospitals develop and implement an ILS policy. The policy must include written criteria for evaluating when and to what extent the hospital implements one or more of the following special measures to compensate for increased life safety risk.

1.1 Inspecting exits in affected areas on a daily basis.

1.2 Providing temporary but equivalent fire alarm and detection systems for use when a fire system is impaired.

1.3 Providing additional fire-fighting equipment.

1.4 Using temporary construction partitions that are smoke-tight and made of noncombustible or limited combustible material that will not contribute to the development or spread of fire.

1.5 Increasing surveillance of buildings, grounds, and equipment, giving special attention to construction areas and storage, excavation, and field offices.

1.6 Enforcing storage, housekeeping, and debris-removal practices that reduce the building's flammable and combustible fire load to the lowest feasible level.

1.7 Providing additional training to those who work in the hospital on the use of fire-fighting equipment.

1.8 Conducting one additional fire drill per shift per quarter in areas where life safety is compromised.

1.9 Inspecting and testing temporary systems monthly, and documenting the completion dates of the tests.

1.10 Conducting education to promote awareness of building deficiencies, construction hazards, and temporary measures implemented to maintain fire safety.

1.11 Training those who work in the hospital to compensate for impaired structural or compartmental fire safety features.

2.0 Responsibilities

2.1 **Environmental Health and Safety (EH&S)** is responsible for:

- Developing the ILS program (the Program).
- Training personnel to implement the Program.
- Issuing Construction Safety and ILS Permits that incorporate appropriate ILS measures.
- Issuing ILS Plans that incorporate appropriate ILS measures.
- Developing illustrated Interim Evacuation Plans.
- Conducting quality assurance (QA) inspections of construction and renovation projects to verify that appropriate ILS measures have been implemented.
- Periodically reporting the results of QA inspections to the Construction Safety Subcommittee of the Environment of Care Committee.

2.2 The **Vice Presidents** and **Directors** of **Facilities Operations, HJD Engineering, Information Technology, Real Estate** and **RED+F Design and Construction** are responsible for compliance within their departments and divisions. Their responsibilities include, but are not limited to:

- Ensuring the Program is implemented on all construction, renovation, and maintenance projects.
- Ensuring personnel who report to them:
  - Implement the required ILS measures.
  - Conduct regular inspections of their projects.
- Providing Security with current information on active projects (the Daily Security Site Inspection List) so security staff can inspect project sites daily.
- Designating an individual to summarize and report on Project Managers' inspections to the Environment of Care Committee.

2.3 **Managers** and **Project Managers (PMs)** (e.g., design, construction, renovation, operations, maintenance, and cable management) are responsible for implementing and maintaining the Program on their projects. The Managers' and PMs' responsibilities include, but are not limited to:

- Contacting the fire department, Security, and EH&S whenever a fire watch is needed.
- Requesting ILS risk assessments in accordance with this policy.
- Informing their contractors about the requirements of this policy.
- Obtaining Construction and/or Interim Life Safety Permits; ensuring they are posted at entrances to their projects; and ensuring contractors comply with the terms of the permits.
- Conducting regular inspections of their projects. As a rule, daily inspections are required unless otherwise specified in the Construction or Interim Life Safety Permit. A sample inspection checklist is included as Appendix B.
- Promptly correcting deficiencies found on their projects.

2.4 **Security** and **HJD Loss Prevention** are responsible for:

- Implementing a fire watch on request.
- Inspecting projects daily using the Daily Security Site Inspection List.
- Periodically reporting the results of daily inspections to the Environment of Care Committee or HJD Environment of Care Subcommittee.

2.5 **Department heads** are responsible for:

- Ensuring their department's space is free from life safety hazards.
- Ensuring their subordinates receive all training required by the Program.
- Resolving any life safety deficiencies within the department.

3.0 **Criteria for implementing a fire watch**

3.1 Whenever a fire alarm, detection, or suppression system will be out of service or impaired for more than 4 hours in a 24 hour period, personnel must evaluate the need for a fire watch.

3.2 If a fire watch is needed, NYULMC's engineers contact the NYC fire department.

3.3 As a rule, the Security department implements the fire watch. On occasion, the responsibility for establishing a fire watch is delegated to a contractor.

3.4 Risk assessments for common situations that could require a fire watch are summarized below.

- Situation: Putting a shield over one smoke detector for more than 4 hours to prevent false alarms from dust.
  - Fire watch required? No
  - Rationale: Other fire protection features, such as additional smoke detectors and sprinkler heads in the affected area, are not compromised.
- Situation: Covering all smoke detectors during a work shift for a controlled event, such as when contractors are working in an affected area. (Devices are operational after hours.)
  - Fire watch required? Yes, unless the Fire Safety Director determines that one is not needed.
  - Rationale: During a controlled event, PMs and/or contractors are managing the deficiency. If they are capable of monitoring the area continually, a fire watch would not be required.
- Situation: Scheduled event, such as working on, servicing, or upgrading the fire alarm or sprinkler system. E.g., shutting off a zone valve to the sprinkler system or disabling a fire alarm zone for more than 4 hours.
  - Fire watch required? Yes, unless the Fire Safety Director determines that one is not needed.
  - Rationale: During a scheduled event, PMs and/or contractors are managing the deficiency. If they are capable of monitoring the area continually, a fire watch would not be required.

- Situation: Unscheduled event, such as responding to a system failure. E.g., shutting off a zone valve to the sprinkler system or disabling a fire alarm zone for more than 4 hours.
  - Fire watch required? Yes

4.0 Criteria for selecting and implementing other ILS measures

4.1 NYULMC has conducted a risk assessment for routine in-house operations and maintenance (O&M) activities. Based on this assessment, ILS measures have been incorporated into the Standard Safety Precautions for such work (see Section 6.0). As a rule, no additional ILS risk assessment is needed for routine work and/or routine deficiencies.

4.2 Personnel evaluate the need to implement ILS measures whenever they identify conditions that could pose a threat to life safety. This includes:

- Whenever Life Safety Code deficiencies cannot be immediately corrected, (i.e., when a formal PFI is required by TJC).
- During periods of construction and renovation.

4.3 When such conditions arise, professionals from EH&S conduct a risk assessment.

- EH&S evaluates, using professional judgment on a case-by-case basis, the extent to which it is necessary to implement specific ILS and construction safety measures.
- Consideration is given to which measures will mitigate the risk effectively and use resources wisely.
- At the end of the process, EH&S issues the PM one or more of the following:
  - A Construction Safety or Interim Life Safety Permit. A sample permit is included as Appendix A.
  - An Interim Life Safety Plan.
  - An Interim Evacuation Plan.

5.0 Procedures

5.1 Fire watch

- Whenever a fire alarm, detection, or suppression system will be out of service or impaired for more than 4 hours in a 24 hour period, the PM submits a shutdown request. If a fire watch is needed (see Section 3), the PM asks NYULMC's engineers to contact the fire department, and asks the Security department (or a contracted service) to implement a fire watch.

5.2 Construction Safety/Interim Life Safety Permit

- Before initiating a construction, renovation, or non-routine maintenance project, the PM asks EH&S to issue a Construction Safety or Interim Life Safety Permit (the Permit).
- The PM informs contractors of the Permit requirements and pertinent Safety Policies (e.g., Construction Contractor Safety Requirements).
- PMs coordinate implementation of the Permit requirements (e.g. training on alternative exits, installation of temporary alarm system, provision of additional fire extinguishers, and informing affected departments).
- During the project, the PM:
  - Inspects the project site regularly (for sample inspection checklist, see Appendix B) and maintains documentation in the project file.
  - Arranges for daily testing if a temporary fire alarm system is installed.

5.3 Interim Life Safety and Interim Evacuation Plan

- When the following situations arise, the PM asks EH&S to approve an Interim Life Safety Plan. The plan may include an Interim Evacuation Plan. Each plan must be approved by NYULMC's Fire Safety Director.
  - TJC requires a formal PFI.
  - The width of an egress corridor in an inpatient area is reduced either to less than 4 feet or to the point where the corridor cannot accommodate common transport devices (e.g., stretchers or beds).

- The width of an egress corridor in a non-inpatient area is reduced to less than 3 feet.
- The planned work will obstruct or render temporarily render inaccessible part of the horizontal or vertical evacuation route(s) for an area or access to an exit stair or discharge or any other means of egress.

- EH&S and the PM coordinate implementation of the requirements of the Plan (e.g. informing affected departments and coordinating training on alternative evacuation plans).

6.0 Standard safety precautions for in-house operations and maintenance (O & M) activities

It generally is not necessary to conduct an ILS risk assessment for in-house O&M work. When small, routine O&M activities are undertaken, the PM, foreman, and supervisor ensure that the following personnel do the following:

6.1 Wear an employee ID badge above the waist with the picture facing front at all times.

6.2 Do not disturb any suspect asbestos containing material. Ask the supervisor/ foreman/manager to have EH&S coordinate testing and abatement (if needed).

6.3 If mold is observed, ask the supervisor/foreman/manager to have EH&S coordinate testing and provide recommendations.

6.4 If a heat gun will be used to remove paint, ask the supervisor/foreman/manager to have EH&S coordinate testing for lead based paint.

6.5 Set up the work area so as to contain dust and debris. Work in an enclosure, such as a room, or erect barriers around the work area.

6.6 Do not block exits from the floor or work area. Maintain egress corridor width of 4 feet in an inpatient area or 3 feet in any other area.

6.7 Do not block access to emergency equipment such as fire alarm pull stations, fire extinguishers, or emergency medical gas shutoff valves..

6.8 Run a HEPA-filtered air cleaner in the work area if the work will generate dust.

6.9 If an open flame will be used, obtain a **daily** Hot Work Permit from the supervisor/ foreman/manager and have it accessible.

6.10 Remove all gas cylinders from the work area at the end of each day.

6.11 Schedule the project to minimize the impact of noise and vibration.

6.12 Follow the medical center's tobacco-free workplace policy.

6.13 Remove flammable and combustible materials from the work area when the work is finished for the day.

6.14 Remove accumulated waste before leaving for the day.

Related Safety Policies

115: Fire Alarm System Testing and Maintenance

131: Fire Sprinkler/Standpipe System Impairment

120: Construction Contractor Safety Requirements

127: Fire Drills

143: Hot Work Permit

104: Tobacco Free Facilities

147: Penetration of Fire/Smoke Barrier

Appendix A	Sample Construction Safety/Interim Life Safety Permit
Appendix B	Sample Construction Site Inspection Checklist

Issue date	10/01/13
Replaces	10/12/12
Reviewed by	J. Goldberg, Environmental Health and Safety R. Cohen, Facilities Operations T. Fascianella, HJD Loss Prevention T. Howard, RED+F Construction R. Maffia, RED+F Construction D. Rubbo, HJD Engineering P. Schwabacher, Facilities Management R. Zick, Security NYUHC Environment of Care Committee

Revised: September 30, 2013

Sample Construction Safety/Interim Life Safety Permit

Reason for Permit: Construction Project	
Location:	
Project Coordinator:	Project Start Date:
Contractor Performing Work:	Project Completion:
Supervisor's Name:	Telephone:
Brief description of project: Demolition, abatement and renovation of existing space.	

The contractor shall comply with all federal, state and local laws, rules and regulations, and NYULMC Safety Policies.

The Project Manager will review this permit with the contractor to ensure that the following construction safety and interim life safety measures are implemented on this project and will conduct daily hazard surveillance inspections:

- The contractor shall comply with all requirements set forth in the site specific ICRA permit issued for this project.
- The project shall be planned and scheduled to minimize the impact of noise and vibration for patients and staff.
- Project Manager shall coordinate removal of all NYULMC supplies and equipment (e.g. chemicals, compressed gas cylinders, appliances, etc.) from the project space prior to the start of work.
- Contractor shall not disturb asbestos-containing materials. Abatement must be coordinated through Environmental Health and Safety (EH&S).
- All construction personnel shall wear NYULMC Security I.D. badges at all times.
- All means of egress shall be kept unobstructed at all times. Exits shall be inspected daily. Stairwell doors shall not be propped or otherwise kept open. Exit signs with directional arrows shall be installed within the work area to aid in worker evacuation. The contractor shall not store any tools, materials or equipment outside the work area (e.g. in corridors, stairwells, etc.).
- A mounted, 10lb. ABC dry chemical fire extinguisher with tag showing annual and monthly inspection record, is required for every 2,500 square feet of space. The distance between any 2 fire extinguishers shall not exceed 75 feet. A 10lb. ABC dry chemical extinguisher must also be immediately available by hot work or wherever flammable liquids or compressed gas cylinders are stored.
- Hot work to be performed requires issuance of a **daily** NYULMC Hot Work Permit. Contractor shall comply with all provisions of OSHA 1926 subpart J, the New York City Fire Code (including any storage and usage permit requirements), and NYULMC Safety Policy 143 (Hot Work). Compressed gas cylinders shall be removed from the job site at the end of each work day. All welding requires the use of an operable smoke-eater at the point of the welding. A dedicated fire guard shall be in place at all times during hot work.

Sample Construction Safety/Interim Life Safety Permit

- The project site shall be maintained under 0.02" of negative pressure at all times with air exhausted out of the building.
- The width of the corridor shall not be reduced to less than 4 feet nor can any established means of egress be changed or eliminated unless specifically authorized by NYULMC's Fire Safety Director along with issuance of Interim Life Safety and Interim Evacuation Plans.
- Temporary hard and soft construction partitions shall be smoke tight. Hard partitions shall be constructed of non-flammable material (drywall). Soft (plastic) partitions shall be fire retardant sheeting.
- All construction materials introduced into this site by the contractor (e.g. plywood, plastic sheeting, tarps, etc.) shall be fire-retardant or non-combustible. Inspect daily to verify that flammable and combustible load is maintained at the lowest level feasible.
- Shutdown of all existing utilities in the construction area(e.g. electric, HVAC, plumbing, etc.) shall be coordinated with NYULMC Facilities Operations. A temporary lighting and power system shall be installed by a licensed electrical contractor. If any contractors require tie-in of a temporary electrical panel, this work shall be done by NYULMC Facilities Operations. No work shall be performed on live systems unless pre-planned, specifically authorized by EH&S and Facilities Operations, and conducted in accordance with all NFPA 70e requirements. Live electrical panels shall be properly covered and locked at all times. All power tools and equipment shall be GFCI protected.
- Contractor shall arrange for shutdown of the fire alarm, detection and/or suppression systems if the possibility of an accidental activation exists due to planned work activities (see NYULMC Safety Policy 145). Sprinkler heads and piping and fire alarm speaker/strobes, pull stations and their associated wiring, shall be protected against physical damage. Any damage caused to these systems shall be immediately reported to both NYULMC Facilities Operations and the Project Manager.
- The Project Manager shall request that the NYULMC Security Department provide a fire watch if impairment of a fire detection, alarm or suppression system will last longer than 4 hours in a 24 hour period or will occur outside normal working hours. NYULMC Security Department shall be given advanced notice of all work to be performed after hours, work that needs to be performed in sensitive, controlled or restricted areas, and any work that may adversely affect patients, staff or the public.
- All work on the building's fire suppression systems shall be performed by a New York City licensed plumber or fire suppression contractor in accordance with the New York City Building Code and all Local Laws.
- The PM shall notify the contractor that smoking is completely prohibited on campus, indoors and out. Contractor shall post an adequate number of "No Smoking" signs to comply with NYC Fire Code Section 1401.1. PM shall inspect daily for cigarette butts and follow up on problems.
- Ground penetrating radar shall be used to ensure no striking of in-slab utilities.

Revised: October 12, 2012

Sample Construction Safety/Interim Life Safety Permit

- Penetrations in floors, walls and ceilings, uncovered or created during the course of the project, must be fire-stopped immediately utilizing NYULMC Facilities Operations approved STI brand fire-stopping products.
- Chemicals and products used are to be low or no VOC unless specifically approved by the EH&S. Flammable or combustible liquids, chemicals and products shall be stored in an approved fire safety cabinet. Material Safety Data Sheets (MSDSs) for all products shall be readily available on site.
- Debris containers shall be wiped down and capped with plastic prior to leaving the job site. Debris removal and material deliveries to the site shall be made via the service elevators at times when minimal interaction with patients and staff is expected.
- Construction personnel shall wear hard hats and use other personal protective equipment when the work calls for same.
- Construction personnel shall use the right size and type ladder for the work they are performing. A-frame ladders shall not be used in the closed position. Due to the potential electrical hazard metal ladders pose, only fiberglass or wood ladders shall be used. Ladders shall be inspected daily before use. Damaged ladders shall be thrown out. Workers shall not stand on the top 2 rungs of, stand backwards on or straddle, any ladder. Where the work does not allow 3 points of contact to be maintained on the ladder, another more stable work platform (e.g. bakers scaffold) shall be used.
- **All** construction personnel shall be protected against falls from height greater than 6 feet at all times utilizing the hierarchy of controls. Use of a fall arrest system is a last resort and shall only be implemented where no other practical means (e.g. guardrail, aerial lift, or scaffold) exists. A controlled access zone shall be established wherever the potential for falling persons, tools or materials exists. Workers at height shall tether their tools.
- The contractor shall properly handle, and dispose of, hazardous waste on site in accordance with the NYULMC Hazardous Waste from Contractors policy 108a. Typical waste encountered or created during the demolition project includes:
  - Fluorescent bulbs (mercury)
  - Lighting ballasts (PCBs)
  - Smoke detectors (radioactive isotopes)
  - Aerosol cans

Permit issued to: _____ Date: _____

Permit authorized by: _____ Date: _____

Contractor's competent person: _____ Date: _____

Revised: October 12, 2012

Construction Safety Inspection Checklist

Project Name: _____ PIM#:_____ SOM or HC:_____ Inspected by:_____

Bldg/Flr/Location: _____ Contractor: _____ Date (week of): _____

Project Manager: _____ VP/Sr. Director: _____ Inspection Type: _____ ICRA:_____

Category Deficiency	Deficient M T W Th F	Comments
Access control	☐ ☐ ☐ ☐ ☐	
Construction site unlocked and unattended	☐ ☐ ☐ ☐ ☐	
IT or electrical closets unlocked	☐ ☐ ☐ ☐ ☐	
Other	☐ ☐ ☐ ☐ ☐	
Barriers	☐ ☐ ☐ ☐ ☐	
Entrance unzipped	☐ ☐ ☐ ☐ ☐	
Inadequate (e.g. unsealed, not fire-rated, uncovered vents)	☐ ☐ ☐ ☐ ☐	
Other	☐ ☐ ☐ ☐ ☐	
Ceiling tiles	☐ ☐ ☐ ☐ ☐	
Damaged or missing	☐ ☐ ☐ ☐ ☐	
Other	☐ ☐ ☐ ☐ ☐	
Compressed gas cylinders	☐ ☐ ☐ ☐ ☐	
Stored on site	☐ ☐ ☐ ☐ ☐	
Unsecured	☐ ☐ ☐ ☐ ☐	
Other	☐ ☐ ☐ ☐ ☐	
Doors	☐ ☐ ☐ ☐ ☐	
Don't self close, latch or lock	☐ ☐ ☐ ☐ ☐	
Excess clearance (>3/4" under or >1/8" above/sides)	☐ ☐ ☐ ☐ ☐	
Propped open	☐ ☐ ☐ ☐ ☐	
Other	☐ ☐ ☐ ☐ ☐	
Egress	☐ ☐ ☐ ☐ ☐	
Inadequate (<3' within; <4' outside)	☐ ☐ ☐ ☐ ☐	
Obstructed	☐ ☐ ☐ ☐ ☐	
Other (e.g. egress doors locked during work)	☐ ☐ ☐ ☐ ☐	
Electrical hazards	☐ ☐ ☐ ☐ ☐	
Damaged electrical cords	☐ ☐ ☐ ☐ ☐	
Electrical cords on the ground	☐ ☐ ☐ ☐ ☐	
Electrical panels open	☐ ☐ ☐ ☐ ☐	
Exposed wiring	☐ ☐ ☐ ☐ ☐	
GFCI protection missing	☐ ☐ ☐ ☐ ☐	
Work on live electrical	☐ ☐ ☐ ☐ ☐	
Other	☐ ☐ ☐ ☐ ☐	
Exit signs	☐ ☐ ☐ ☐ ☐	
Inadequate	☐ ☐ ☐ ☐ ☐	
Fall protection	☐ ☐ ☐ ☐ ☐	
Improper use of ladders	☐ ☐ ☐ ☐ ☐	
Inadequate	☐ ☐ ☐ ☐ ☐	
Fire detection/notification/suppression	☐ ☐ ☐ ☐ ☐	
Pull stations/speakers/strobes obstructed	☐ ☐ ☐ ☐ ☐	
Sprinkler system impaired	☐ ☐ ☐ ☐ ☐	
Other	☐ ☐ ☐ ☐ ☐	
Fire extinguisher	☐ ☐ ☐ ☐ ☐	
Missing annual inspection	☐ ☐ ☐ ☐ ☐	
Missing monthly inspection	☐ ☐ ☐ ☐ ☐	
Not hung or hung at wrong height (<36" or >60")	☐ ☐ ☐ ☐ ☐	
Wrong size/type	☐ ☐ ☐ ☐ ☐	
Other (e.g. discharged, inadequate as per ILS permit)	☐ ☐ ☐ ☐ ☐	
Flammables/Chemicals	☐ ☐ ☐ ☐ ☐	
Improper/excess storage	☐ ☐ ☐ ☐ ☐	
Products with VOCs, odor, or >1 NFPA rating	☐ ☐ ☐ ☐ ☐	
Other (e.g. cabinet required)	☐ ☐ ☐ ☐ ☐	

Category Deficiency	Deficient M T W Th F	Comments
HEPA filter	☐ ☐ ☐ ☐ ☐	
Hose ripped	☐ ☐ ☐ ☐ ☐	
Not in use	☐ ☐ ☐ ☐ ☐	
Overloaded	☐ ☐ ☐ ☐ ☐	
Other (e.g. exhaust point not sealed)	☐ ☐ ☐ ☐ ☐	
Hot Work	☐ ☐ ☐ ☐ ☐	
Combustibles in vicinity	☐ ☐ ☐ ☐ ☐	
Fire guard not present	☐ ☐ ☐ ☐ ☐	
Smoke eater not used	☐ ☐ ☐ ☐ ☐	
Housekeeping	☐ ☐ ☐ ☐ ☐	
Clutter	☐ ☐ ☐ ☐ ☐	
Inadequate dust control	☐ ☐ ☐ ☐ ☐	
Slip, trip, fall hazards	☐ ☐ ☐ ☐ ☐	
Other (e.g. dusty clothing outside site)	☐ ☐ ☐ ☐ ☐	
ID badges	☐ ☐ ☐ ☐ ☐	
Missing/not worn	☐ ☐ ☐ ☐ ☐	
Lighting	☐ ☐ ☐ ☐ ☐	
Inadequate	☐ ☐ ☐ ☐ ☐	
Missing or improperly assemled protective covers	☐ ☐ ☐ ☐ ☐	
Other	☐ ☐ ☐ ☐ ☐	
MSDS	☐ ☐ ☐ ☐ ☐	
Inadequate staff knowledge	☐ ☐ ☐ ☐ ☐	
Missing MSDS/binder	☐ ☐ ☐ ☐ ☐	
Other	☐ ☐ ☐ ☐ ☐	
Negative pressure	☐ ☐ ☐ ☐ ☐	
Inadequate	☐ ☐ ☐ ☐ ☐	
Penetrations	☐ ☐ ☐ ☐ ☐	
Created or existing	☐ ☐ ☐ ☐ ☐	
PPE	☐ ☐ ☐ ☐ ☐	
Missing hard hats	☐ ☐ ☐ ☐ ☐	
Missing safety glasses	☐ ☐ ☐ ☐ ☐	
Other	☐ ☐ ☐ ☐ ☐	
Signs/permits	☐ ☐ ☐ ☐ ☐	
Missing Hot Work permit	☐ ☐ ☐ ☐ ☐	
Missing ICRA permit	☐ ☐ ☐ ☐ ☐	
Missing ILS permit	☐ ☐ ☐ ☐ ☐	
Missing Penetrations permit	☐ ☐ ☐ ☐ ☐	
Missing Pre-Construction Validation permit	☐ ☐ ☐ ☐ ☐	
Missing Warning Construction Site sign	☐ ☐ ☐ ☐ ☐	
Other (e.g. missing ILS plan)	☐ ☐ ☐ ☐ ☐	
Smoking	☐ ☐ ☐ ☐ ☐	
Evidence of smoking	☐ ☐ ☐ ☐ ☐	
Sticky mats	☐ ☐ ☐ ☐ ☐	
Missing	☐ ☐ ☐ ☐ ☐	
Saturated	☐ ☐ ☐ ☐ ☐	
Storage/Supplies	☐ ☐ ☐ ☐ ☐	
Construction materials in unauthorized location	☐ ☐ ☐ ☐ ☐	
Construction materials stockpiled	☐ ☐ ☐ ☐ ☐	
Materials not fire-rated/non-combustible	☐ ☐ ☐ ☐ ☐	
Non-construction materials unprotected in const. site	☐ ☐ ☐ ☐ ☐	
Other	☐ ☐ ☐ ☐ ☐	
Waste	☐ ☐ ☐ ☐ ☐	
Excess storage	☐ ☐ ☐ ☐ ☐	
Not covered/moistened/wiped during transport	☐ ☐ ☐ ☐ ☐	
Hazardous waste not properly managed	☐ ☐ ☐ ☐ ☐	
Universal waste not properly managed	☐ ☐ ☐ ☐ ☐	
Other	☐ ☐ ☐ ☐ ☐	
Other	☐ ☐ ☐ ☐ ☐	
Food prep equipment in construction site	☐ ☐ ☐ ☐ ☐	
Other	☐ ☐ ☐ ☐ ☐	

APPLICATION

NYU Langone Medical Center (NYULMC)

PURPOSE

- To minimize the hazards associated with the use of ladders, scaffolds and aerial lifts.
- To comply with applicable federal, state and local laws and regulations, including the Occupational Safety and Health Administration (OSHA) standards 29 CFR 1910 subpart D and 29 CFR 1926 subparts L and X.

POLICY AND GENERAL INFORMATION

1.0 General Requirements

- Ladders shall be used in accordance with manufacturers' instructions, OSHA 1910 subpart D and OSHA 1926 subpart X.
- Scaffolding shall be erected, used and disassembled in accordance with manufacturers' instructions, OSHA 1926 subpart L and all NYC regulations.
- Aerial lifts shall be operated in accordance with manufacturers' instructions, OSHA 1926 subpart L and the American National Standards Institute (ANSI) standards A92.5 (boom supported elevating work platforms) and A92.6 (elevating work platforms).

2.0 Application

This policy applies to:

- all indoor and outdoor areas under the control of NYULMC, in all facilities owned or leased by NYU Hospitals Center or NYU School of Medicine
- all employees and contractor personnel of NYU Hospitals Center and NYU School of Medicine

3.0 Definitions

- **Aerial lift** is defined as any vehicle used to elevate personnel. Examples include scissor and boom supported lifts.
- **Competent person** means one who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

4.0 Responsibilities

4.1 **Environmental Health and Safety (EH&S)** is responsible for:

- developing the policy and updating it as needed
- responding promptly to questions and concerns about the use of these devices
- maintaining a list of consultants who can provide training and competent/qualified persons relative to these devices
- periodically evaluating the policy to determine if changes are needed

4.2 **Vice Presidents** and **Directors** are responsible for compliance within their departments/divisions.

4.3 **Foremen, managers and project managers (PMs)** are responsible for:

- ensuring personnel and contractors receive training on proper use of ladders, scaffolds and aerial lifts prior to use
- informing personnel about the requirements of this policy and enforcing policy requirements

4.4 **Personnel who work with ladders, scaffolds and aerial lifts** are responsible for:

- following the requirements of this policy
- attending user training
- reporting work hazards to the competent person or person in charge

5.0 Requirements for Ladders

5.1 All personnel who use ladders shall receive safety training. Training shall consist of recognition of hazards associated with ladder use, means of inspecting ladders, and safety precautions to be taken when using ladders.

5.2 Where the task to be performed does not allow the worker to maintain 3 points of contact on the ladder, a more stable and protected work platform shall be used.

5.3 Personnel shall use the right size and type of ladder for the work being performed. Only ladders with a Type 1 (250 lb. limit) or Type 1A (300 lb. limit) rating shall be used; personnel are not to exceed this ladder limit through a combination of body weight, tools, material and/or equipment. Due to the electrical hazard that metal ladders pose, only fiberglass or wood ladders shall be used.

5.4 Ladders shall be set up on a stable and level surface capable of supporting the anticipated load.

5.5 Personnel who use ladders shall inspect them prior to each use. Damaged ladders shall be removed from service immediately and tagged as such.

5.6 Ladders shall only be used by one user at a time unless specifically designed to support multiple workers simultaneously.

5.7 A ladder shall not be moved when a worker is on it.

5.8 Personnel shall face the ladder while ascending, descending and working from it.

5.9 Workers shall not stand on the top two steps or rungs of any ladder.

5.10 A-frame ladders shall not be used in the closed position. Workers shall not sit atop or straddle an A-frame ladder.

5.11 Extension ladders shall only be used with both sections joined together.

5.12 Extension ladders shall be set up at the proper 4 to 1 angle, extend 3 feet above the level they are servicing, and be properly secured at the top to prevent movement.

5.13 Ladders shall not be positioned at building perimeters, leading edges, or other locations which create a fall exposure for the worker (see Safety Policy 160, Fall Prevention and Protection Program).

5.14 Ladders shall not be positioned in front or around doors, unless the door is locked or a worker is present below to direct others.

6.0 Requirements for Scaffolds

6.1 All personnel, including erectors and dismantlers, shall be protected against falls from scaffolds at a height greater than 6 feet at all times in accordance with OSHA 1926 subpart M (not subpart L) and NYULMC's Fall Prevention and Protection Program.

6.2 All supported scaffolds, including mobile frame and Baker scaffolds, greater than 1 frame in height, require installation of a guardrail system (e.g. top rail, mid rail, toe board) at all working levels.

6.3 Baker scaffolds greater than 2 frames in height require installation of manufacturer supplied outriggers to prevent tipping.

6.4 The wheels on Baker and mobile frame scaffolds shall be locked when the scaffold is in use. Baker and mobile frame scaffolds shall not be moved with personnel on them.

6.5 Gaps between a supported scaffold and the building exceeding 14" require installation of an inner guardrail system on the scaffold for the benefit of the workers.

6.6 Each suspended scaffold user requires an independent vertical lifeline properly secured to a structural member or an anchor point rated for 5,000 lbs. Chafing protection shall be used wherever fall protection system components come into contact with sharp edges.

6.7 A controlled access zone shall be established below scaffold work areas where the potential for falling material, equipment or debris exists. All workers at height shall tether their tools.

6.8 All personnel who use a supported scaffold on a construction site, regardless of size, are required to have a valid 4 hour user card as required by the New York City Building Code.

6.9 All personnel who erect, modify or dismantle any supported scaffold in excess of 40 feet must have a valid 32 hour erector card as required by the New York City Building Code.

6.10 All personnel who work on a suspended scaffold must have a valid 16 hour training card as required by the New York City Department of Buildings (DoB), as well as a certificate of fitness from the DoB licensed special rigger by whom they are employed. All suspended scaffold operations must be supervised by a DoB registered rigging foreman who has both, a valid 32 hour training card, and a designated rigging foreman card issued by the DoB licensed special rigger by whom the foreman is employed.

6.11 Supported scaffolds in excess of 40 feet in height must be designed by a NYS registered design professional and approved by the DoB. Vertical netting attached to the scaffold must be fire-retardant and shown on the drawing to ensure that the "sail effect" of the netting is factored into the scaffold design.

6.12 Use of C hooks to support a suspended scaffold requires a letter from a NYS licensed Professional Engineer (PE) attesting to the integrity of the parapets from which they are to be hung. Use of outriggers to support a suspended scaffold requires PE drawings approved by the DoB.

6.13 Sidewalk bridges shall be constructed in accordance with the PE drawing. Where possible, the walkway beneath the bridge shall be closed to pedestrians while it is erected and dismantled. Where this is not possible, an adequate number of flag personnel shall be in place below to direct and stop pedestrians as necessary. No tools, material, equipment or debris shall be stored atop the sidewalk bridge unless

specifically permitted by the DoB or New York City Department of Transportation (DoT). The underside of the sidewalk bridge requires adequate lighting to comply with NYC local laws. This lighting shall be installed by a licensed electrical contractor. The width of the walkway beneath the bridge shall comply with the requirement set forth in the DoT permit. Where a permit is not required, the minimum walkway width shall be 5 feet. The walkway must be free of protrusions and other hazards to pedestrians. Sidewalk bridge posts installed beyond the curb line shall be protected against displacement by vehicles.

6.14 Prior to erecting a supported scaffold, an assessment of the surface on which it is to be set up shall be made in order to confirm that it can support the intended load.

6.15 Supported scaffold components shall be from a single manufacturer. Scaffold components must be free of damage (e.g. cracks, dents, excessive rust).

6.16 Scaffolds must be plumb and level.

6.17 Supported scaffold frames shall be joined together with the manufacturer's stacking pins (e.g. no bolts or wire used). The scaffold shall be properly tied back to the building at the locations indicated on the PE drawing.

6.18 Supported scaffold platforms shall be fully planked utilizing appropriate grade lumber. The planks must properly overhang the scaffold supports and be secured against displacement.

6.19 Proper means of accessing supported scaffolds (e.g. ladder, stair tower) shall be provided. Workers shall not climb on cross-bracing or scaffold framing unless the frame is specifically designed for that purpose in accordance with the OSHA 1926 subpart L and X regulations.

6.20 Scaffolds shall not be loaded in excess of the manufacturer's specifications or the limits set forth in the PE drawing. Working platforms shall only be erected and occupied where permitted by the PE drawing.

6.21 Supported scaffolds shall be inspected prior to use daily by a competent person. Suspended scaffolds shall be inspected prior to use daily by the designated rigging foreman. A written record of these inspections shall be maintained.

6.22 Supported scaffolds acceptable for use require a green tag posted at the base. Scaffolds under construction or not otherwise available for use require a red tag posted at the base.

7.0 Requirements for Aerial Lifts

7.1 All personnel are required to attend safety training prior to using an aerial lift.

7.2 Prior to using an aerial lift, an assessment of the area where the lift is to be set must be conducted to identify elevation changes, inclines, openings and other hazards, and to ensure that the surface can support the weight of the lift.

7.3 On aerial lifts that employ them, outriggers shall be fully extended at all times.

7.4 Aerial lifts shall not be moved with the work platform elevated.

7.5 Lifts shall not be loaded in excess of the limit indicated by the manufacturer. Aerial lifts are work platforms. They shall not be used as a means for personnel to access a higher level or as a hoisting device for materials or equipment.

7.6 Personnel using a boom supported aerial lift shall wear a full body harness with lanyard attached to a manufacturer-supplied anchor point at all times.

7.7 Personnel shall not climb on lift guard rails, use any items to increase the height of the work platform, or climb out of an aerial lift while it is elevated.

7.8 Aerial lifts shall not be operated where winds exceed the limit set forth by the manufacturer.

Related Safety Policies
120: Construction Contractor Safety Requirements
160: Fall Prevention and Protection Program

Issue date	09/13
Replaces	New
Reviewed by	S. Haney, Environmental Health and Safety R. Cohen, Facilities Operations R. Maffia, RED+F Construction P. Schwabacher, Facilities Management NYUHC Environment of Care Committee

APPLICATION

NYU Langone Medical Center (NYULMC)

PURPOSE

To protect employees, patients, tenants, and visitors from exposure to lead.

To comply with regulations and guidelines promulgated by the Occupational Safety and Health Administration (OSHA), the Environmental Protection Agency (EPA), and the New York City Department of Health and Mental Hygiene (NYC DOHM).

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POLICY AND GENERAL INFORMATION

1.0 Policy

In order to maximize safety, personnel shall presume that there is lead in the paint in NYULMC buildings constructed prior to 1978, and on painted metal surfaces (e.g., structural steel, tanks, fire escapes) in all NYULMC facilities. Lead also may be found in roofs, cornices, tank linings, electrical conduit, soft solder, and shielding for radiation protection.

NYULMC's Standard Safety Precautions for In-house Operations and Maintenance Activities (see Safety Policy 145, Section 6.0) incorporate appropriate controls for many common building maintenance activities involving presumed LBP, as long as the paint is in good condition. For example, the standard safety precautions are generally adequate for activities such as opening wall cavities, and preparing interior walls, ceilings, doors, door frames, windows, window frames and similar surfaces for painting.

Prior to initiating work where presumed LBP is not in good condition, or other work that will disturb presumed lead-containing material (see Section 2.0 of this policy), personnel shall obtain approval from Environmental Health and Safety (EH&S) for proposed work practices.

Contractors conducting lead abatement projects or performing renovation, repair, or painting projects that will disturb lead-based paint (LBP) in a child-occupied facility, shall possess current EPA Lead-Safe Contractor certification and use only EPA certified lead abatement workers.

2.0 Scope

This policy applies to all work that could create lead-containing dust, debris, fume, or waste. It includes, but is not limited to:

- Demolition or salvage of structures where lead or lead-containing material is present.
- Scraping, sanding, abrasive blasting, welding, cutting or torch burning of lead or lead-containing material.
- Installation of lead or lead-containing material (e.g., lead shielding).
- Mold casting in Radiation Oncology.
- Emergency clean-up of lead contamination.

- Disposal of lead-containing waste.

3.0 Application

This program applies to:

- All indoor and outdoor areas of all NYULMC facilities.
- All employees of NYU Hospitals Center and NYU School of Medicine.
- All contractors and subcontractors.

The primary departments and divisions impacted by the program are:

- Facilities Operations and HJD Facilities Engineering (collectively Facilities)
- Real Estate and Housing
- Radiation Oncology
- RED+F Design and Construction

4.0 Background

Lead has long been recognized as a serious health hazard to those exposed to high levels. In recent years the health effects of lower level exposures, particularly to young and unborn children, has received much attention. OSHA promulgated two standards (26 CFR 1910.1025 and 29 CFR 1926.62) to protect workers and their families from lead. The EPA has passed legislation to protect children from exposure to lead paint in housing and lead in drinking water. The NYC DOHM passed Local Law 1 of 2005, also aimed at protecting young children from lead paint poisoning.

This policy describes the program NYULMC has implemented to prevent lead exposures and comply with regulatory requirements.

5.0 Definitions

Certified refers to certification under the EPA's Lead-Safe Certification Program.

Child-occupied facility means a building, or a portion of a building, constructed prior to 1978 that is visited regularly by the same child, six years of age or under. Such facilities include, but are not limited to, residences, preschools and day care centers.

Lead abatement refers to activities that are undertaken with the intent of permanently eliminating LBP hazards.

LBP means paint which has a lead content greater than or equal to 1.0 mg/cm^2 or is greater than 0.5% lead by weight.

OSHA action level means an 8-hour time-weighted average exposure of 30 micrograms of lead per cubic meter of air.

OSHA permissible exposure limit (PEL) means an 8-hour time-weighted average exposure of 50 micrograms of lead per cubic meter of air.

6.0 Responsibilities

6.1 Environmental Health and Safety (EH&S) is responsible for:

- Developing the Program and collaborating with others to implement and maintain it.
- Coordinating lead investigations.
- Coordinating employee exposure assessments.
- Providing training to any employees who could be exposed to lead levels at or above OSHA's action level.
- Developing exposure control plans for any employees who could be exposed to lead levels at or above OSHA's PEL.
- Approving bid specifications and Health and Safety Plans (HASPs) for contractor work involving lead-containing material.
- Responding to spills of lead-containing material.
- Managing the disposal of lead-containing waste. Coordinating testing to determine if waste is regulated under the Resource Conservation and Recovery Act (RCRA).
- Maintaining documentation for lead investigations, employee exposure assessments, and lead waste disposal.
- Periodically evaluating the Program and updating it as needed.

6.2 **Vice Presidents** and **Directors** are responsible for compliance within their departments and divisions. Their responsibilities include, but are not limited to:

- Ensuring all their employees, contractors, and other vendors whose work could create lead-containing dust, debris, fume, or waste,are familiar with this policy and comply with it.
- Ensuring EH&S is notified of any activities under their direction that could create lead-containing dust, debris, fume, or waste.

6.3 The **RED+F Program Directors** and **Project Executives** are responsible for compliance with the Program on their projects.

6.4 **Managers** and **Project Managers (PMs)** (e.g., design, construction, renovation, operations, and maintenance) are responsible for implementing and maintaining the Program on their projects. Their responsibilities include, but are not limited to:

- Ensuring all personnel (e.g., employees, contractors, and other vendors) who are working on their projects and whose work could create lead-containing dust, debris, fume, or waste, are familiar with this policy and comply with it.
- Contacting EH&S in writing and requesting an evaluation of any work that could create lead-containing dust, debris, fume, or waste.
- Ensuring that any of their employees who could be exposed to lead levels at or above OSHA's action level receive training and medical surveillance.
- Implementing exposure control plans for any of their employees who could be exposed to lead levels at or above OSHA's PEL.
- Ensuring work in or immediately outside child-occupied facilities complies with Local Law 1 of 2005.
- If contracted work could create lead-containing dust, debris, fume, or waste, incorporating appropriate specifications into the bid documents (see Appendix A for sample specifications).
- Forwarding the contractor's HASP (see Section 7.5) to EH&S for approval. Ensuring the contractor implements the approved HASP.
- Arranging a secure location for collection of lead waste from their projects.

6.5 **Real Estate and Housing** is responsible for:

- Complying with all requirements for disclosure of LBP hazards in pre-1978 housing.
- Complying with all requirements of NYC Local Law 1 of 2005.

6.6 **Employee Health Services** is responsible for:

- Developing and implementing a medical surveillance program for lead, if required.
- Maintaining medical records.

6.7 **Employees** who have the potential to create lead-containing dust, debris, fume, or waste are responsible for:

- Requesting a lead investigation prior to conducting any work that could impact presumed lead-containing material.
  - *Note:* As noted in Section 1.0, NYULMC's Standard Safety Precautions for In-house Operations and Maintenance Activities incorporate appropriate controls for many common building maintenance activities involving presumed LBP, as long as the paint is in good condition.
- Implementing measures to control lead-containing dust, debris, fume, and waste.
- Participating in medical surveillance and training if they have the potential to be exposed to OSHA's action level for lead.
- Notifying their supervisors of potential exposures and of any pertinent problems.

6.8 **Contractors** who have the potential to create lead-containing dust, debris, fume, or waste are responsible for:

- Obtaining pre-approval from EH&S for a written Health and Safety Plan (HASP) for the work (see Section 7.5).
- Complying with Local Law 1 of 2005 when working in or immediately outside child-occupied facilities.

- Coordinating all removal of lead-containing waste with EH&S (see Safety Policy 108a).

7.0 Lead Control Program

7.1 Prohibited activities

Employees and contractors shall not use the following methods on surfaces coated with LBP or primer unless they have pre-approval in writing from EH&S for task-specific exposure controls.

- Torch cutting or open flame burning
- Dry sanding (unless the sander is equipped with HEPA vacuum)
- Open abrasive blasting
- Methylene chloride paint removal in indoor locations

7.2 Lead investigations

EH&S shall coordinate lead investigations on a case-by-case basis, generally in preparation for demolition, construction, renovation, or maintenance projects.

- The need for an investigation shall be based on the type, condition, and quantity of presumed lead-containing material, and the potential impact of the project on targeted areas.
  - Targeted areas include child-occupied facilities and pediatric and prenatal units.
- All surveys shall be conducted by EPA certified inspectors.

7.3 Hierarchy of controls

- Employees and contractors shall use engineering, work practice, and administrative controls, to minimize exposure to lead, to the extent that such controls are feasible. The recommended basic controls include use of:
  - Local exhaust ventilation

- Plastic sheeting or hard barriers to isolate the work area from adjoining areas
- Water misting and a scraper to remove peeling paint
- A HEPA vacuum or wet methods for cleanup of dust(all surfaces should be maintained as free as practicable of accumulations of dust and debris)
- Clean change areas for workers with separate storage facilities for work and street clothes
- Showers for workers where feasible

▪ Whenever all feasible engineering, work practices, and administrative controls that can be instituted are not sufficient to reduce worker exposure to below OSHA's PEL, personnel shall nonetheless use them to reduce worker exposure to the lowest feasible level and shall supplement them by the use of respiratory protection.

7.4 **Additional requirements for employees**

▪ **Exposure assessment**

- If it is necessary for employees to do work that could create lead-containing dust, debris, fume, or waste, their manager shall ask EH&S to evaluate potential exposures.
  - Personal air monitoring shall be conducted on employees performing the work.
  - OSHA methods of sampling and analysis shall be used.
  - Employees shall be notified of the results.

▪ **Medical surveillance**

- In the unlikely event that an exposure assessment indicates exposure to the OSHA action level, Employee Health Service will develop and implement a medical surveillance program in accordance with OSHA requirements.
  - Blood tests for lead shall be analyzed according to the schedule in the OSHA lead standard and within two weeks of the exposure incident.

- A medical exam shall be conducted annually if the blood lead levels are at or above 40 micrograms of lead per deciliter of blood; when the employee exhibits symptoms of lead poisoning; or when the employee requests medical advice about exposures to lead.
- Medical removal may be required if elevated blood lead levels persist.

- **Information and training**
  - In the unlikely event that an exposure assessment indicates exposure to the OSHA action level, the department/division shall work with EH&S to provide information and training in accordance with OSHA requirements. The information and training shall be provided annually and consist of:
    - The contents of the OSHA lead standard.
    - The nature of the activities that may result in exposures above the action level.
    - The engineering controls and work practices to be used.
    - Personal protective equipment requirements.
    - The purpose and description of the medical surveillance program.

- **Exposure control plan**
  - In the unlikely event that an exposure assessment indicates exposure to the OSHA PEL, the department/division shall work with EH&S to develop an exposure control plan.
  - Engineering, work practice, and administrative controls shall be the primary means for controlling lead dust and fume.
  - If engineering, work practice, and administrative controls do not reduce exposures below the PEL, respirators shall be used, consistent with Safety Policy 109, Respiratory Protection.
  - Other protective clothing (e.g., disposable full body suits with hoods and shoe; goggles) shall be used, consistent with Safety Policy 119, Personal Protective Equipment.

7.5 **Additional requirements for contractors**

- Sample specifications for repainting surfaces coated with LBP are included as Appendix A.
- Prior to commencing the work, the contractor shall establish and implement a written HASP or other submittal that incorporates the following elements unless contractor can document that airborne lead levels will not reach OSHA's action level.
  - A description of each activity in which lead is emitted, e.g. equipment used, material involved, controls in place, crew size, employee job responsibilities, operating procedures and maintenance practices.
  - A description of the specific means that will be employed to control airborne lead and, where engineering controls are required, engineering plans and studies used to determine methods selected for controlling exposure to lead.
  - A report of the technology considered in minimizing airborne lead.
  - Air monitoring data which documents the source of lead emissions.
  - A detailed schedule for implementation of the plan, including documentation such as copies of purchase orders for equipment, construction contracts, etc.
  - A work practice program which includes items required under paragraphs 29 CFR 1926.62(g), (h) and (i) and incorporates other relevant work practices.
  - An administrative control schedule required by 29 CFR 1926.62(e)(4), if applicable.
  - A description of arrangements made among contractors on multi-contractor sites with respect to informing affected employees of potential exposure to lead and with respect to responsibility for compliance with this section as set-forth in 29 CFR1926.16.
  - A description of procedures for collecting and discarding waste.
  - Other relevant information.

- Contractor shall notify NYULMC's PM prior to commencing any work covered by the HASP.

7.6 **Disposal of RCRA-regulated lead waste**

- EH&S coordinates testing to determine if waste that contains lead is RCRA-regulated.
- EH&S contracts with a permitted hazardous waste hauler for the transport and disposal of RCRA-regulated waste.
- The waste hauler transports the RCRA-regulated waste to an approved disposal facility.
- EH&S maintains and tracks waste manifests to ensure that waste is received by the disposal facility within the required time period.

8.0 **Recordkeeping**

8.1 Air monitoring and medical surveillance records shall be maintained for 40 years, or 20 years plus the duration of employment, whichever is longer.Training records shall be maintained for a minimum of one year following the last day of employment.

- EH&S maintains documentation for lead investigations and exposure monitoring.
- Employee Health Services maintains medical surveillance records.
- Real Estate and Housing maintains records for disclosure of LBP hazards in pre-1978 housing.
- Each department/division maintains its training records; EH&S may maintain copies.

9.0 **Access to records**

Training records and personal exposure monitoring records for employees are available to the employees, employee representatives, OSHA and NIOSH in accordance with 29 CFR 1910.20.

10.0 **Program evaluation**

EH&S shall evaluate the Lead Management Program as part of the annual evaluation of NYUHC's Hazardous Materials and Wastes Management Plan

Related Safety Policies

108a: Hazardous Waste from Contractors
109: Respiratory Protection
119: Personal Protective Equipment
120: Contractor Safety Requirements
138: Confined Space Entry
143: Hot Work
145: Interim Life Safety Program

Appendix A	Sample Specifications for Preparing Surfaces Coated with LBP

Issue date	5/23/12
Replaces	4/23/12
Reviewed by	J. Goldberg, Environmental Health and Safety R. Cohen, Facilities Operations B. Everett, Real Estate and Housing T. Howard, RED+F Construction R. Maffia, RED+F Construction C. Pedersen, Facilities Operations D. Rubbo, HJD Engineering P. Schwabacher, Facilities Management NYUHC Environment of Care Committee

Sample Specifications for Preparing Surfaced Painted with LBP

Qualifications

Trained and certified lead-abatement contractors and workers shall be used to perform the project. Each supervisor and worker assigned to the project must have EPA certification available at the project site. Contractors must possess an EPA Contractor Certification Number.

Training

a) The workers who remove paint shall be trained as required under the OSHA Lead in Construction standard 1926.62 and shall be certified by EPA as lead abatement workers as per EPA/HUD lead paint regulations.

b) The work shall be supervised by a trained competent person who is an EPA certified lead paint supervisor and is fully knowledgeable of general renovation techniques, including LBP abatement.

c) The supervisor shall be trained on engineering controls and good work practices relating to lead paint abatement and on the importance of adherence to these controls and practices.

Personnel protection

Any work that may produce lead airborne dust or fumes shall be conducted by trained workers using engineering controls and work practice controls to prevent exposure to lead dust and fume and wearing appropriate personal protective equipment (PPE).

a) Respiratory protection shall be worn by all individuals performing the work or in the work area who may be exposed to lead dust or fumes at all times during lead abatement activities.

b) Hand scraping of paint shall require half mask tight fitting respirators with N100 cartridges.

c) The contractor shall perform personal monitoring for lead exposure. The following are the minimum respiratory protection requirements based on air sample results:

   i. Air lead levels of 500 ug/m^3 or less: Half-mask air purifying (protection 10X) respirator with high efficiency filters; or half-mask supplied air respirator operated in demand (negative-pressure) mode.

   ii. Air lead levels between 500 ug/m^3 and 1,250 ug/m^3: Loose fitting hood or helmet (protection 25X) powered air purifying respirator with high efficiency filters; or hood or helmet supplied air respirator operated in continuous-flow mode (e.g., type CE abrasive blasting respirators operated in a continuous flow mode).

   iii. Air lead levels between 1250 ug/m^3 and ug/m^3: Full facepiece air purifying (protection 50X) respirator with high efficiency filters; tight fitting powered air purifying respirator with high efficiency filters; full facepiece supplied air respirator operated in demand mode; half-mask or full facepiece supplied air respirator operated

in a continuous-flow mode; or full facepiece self-contained breathing apparatus (SCBA) operated in demand mode.

iv. Air lead levels between 2500 ug/m^3 and 50,000 ug/m^3: Half-mask supplied air (protection 1,000X) respirator operated in pressure-demand or other positive pressure mode.

v. Air lead levels between 50,000 ug/m^3 and 100,000 ug/m^3: Full facepiece supplied air (protection 2,000X) respirator operated in pressure demand or other positive pressure mode (e.g., type CE abrasive blasting respirators operated in a positive pressure mode).

vi. Greater than 100,000 ug/m^3, unknown concentration or fire fighting: Full facepiece SCBA operated in pressure-demand or other positive pressure mode (protection over 2000X).

d) Only approved National Institute of Occupational Safety and Health (NIOSH) respirators shall be used. Respirators shall be properly fitted for all persons working at the site.

e) The manufacturer's instructions shall be followed for maintenance, proper fit, use of appropriate cartridges, cleaning, repair, replacement of defective parts, appropriate storage, and frequency of cartridge replacement for the specific respirator in use.

f) Respirators shall not be removed while in the work site or work area.

g) Additional respiratory protection by supplemental filters, such as organic vapor cartridges, may be needed when handling some coating or stripping products. Consult the Material Safety Data Sheets (MSDS) or the manufacturer and obtain the proper filters as necessary.

h) Individuals at the work site shall wear full body suits with hoods and shoe covers. A TYVEK or similar type of disposable suit may be worn. Disposable suits shall be used once, and properly discarded. Protective clothing, as described above, and other PPE shall be put on prior to entering the work site or work area. Protective clothing shall be worn in the work site or work area until it has been thoroughly cleaned as described in clean-up activities. Protective clothing shall be changed before leaving the work site or work area and non-disposable suits shall be laundered separately. An area other than the work site or work area shall be provided for persons to put on suits and other PPE and to store their street clothes.

i) Goggles with side shields shall be worn when working with a material that may splash or fragment, or if protective eye wear is specified on the Material Safety Data Sheet (MSDS) for the product.

Paint removal methods

Abatement of lead-paint shall not employ the following methods:

- open flame burning

Sample Specifications for Preparing Surfaced Painted with LBP

- dry-sanding
- open abrasive blasting
- uncontained hydro-blasting
- methylene chloride for interior use

Removal of lead-paint shall employ only the following methods:

- nonflammable chemical strippers which do not contain methylene chloride, except that chemical strippers containing methylene chloride may be used for localized touch-up
- Manual scraping using a HEPA vacuum cleaner to collect dust
- Sander equipped with HEPA vacuum

Warning signs

a) Warning signs shall be posted at all approaches to the work area. The warning sign shall indicate a warning that the area is a lead work area. Lettering shall be at least 1" high and bold.

b) The work area shall be vacated of non-abatement personnel.

c) Tenant Notification: At least 3 days before removing, enclosing, or encapsulating lead paint, post caution signs immediately outside all entrances and exits to the work site. In emergency situations posting shall be done as soon as possible. Keep the caution signs posted until the lead abatement is completed. The caution signs shall meet the following specifications:

   i. the sign shall be at least 20" by 14", and state the date and place of the lead abatement project; and

   ii. the sign shall include the phrase "Caution, Lead Hazard, Keep Out" or "Warning, Lead Work Area, Keep Out" in bold lettering, at least two inches high.

Hygiene practices

a) Eating, drinking, smoking, and applying of cosmetics are not allowed in the work site or work area. Any person leaving the work site or work area shall rinse his or her mouth with potable water and wash hands and face thoroughly before eating, drinking or smoking.

b) Decontamination enclosure systems shall be installed/constructed outside the work area and/or at the entrance to the work area. The personal decontamination enclosure system shall be of sufficient size and dimensions to accommodate the largest anticipated work shift and shall be maintained to ensure all workers can properly use the system. A waste storage area shall be established. Decontamination enclosures shall be equipped with curtained doorways (air locks) and shall have lockable doors for off hours.

Sample Specifications for Preparing Surfaced Painted with LBP

c) All individuals shall wash or shower before leaving the work site or work area for the day.

d) A lavatory facility or potable water supply or a portable decontamination unit shall be provided and located at the work site or work area for the washing of hands and face and for clean-up activities.

Work procedures (exterior paint removal)

Before beginning to abate the lead-containing paint:

a) Seal all windows on the level of work and all levels below the work.

b) For all sealing and covering of windows and interior and exterior abatement work, use the following:

   i. Plastic sheeting, at least 6 mils thick or equivalent;

   ii. Polyethylene sheeting shall be sufficiently overlapped and all joints shall be fully sealed. Polyethylene sheeting shall be fire retardant and have a minimum thickness of 6-mil. Floor surfaces shall be contained with two (2) layers of reinforced, fire retardant 6-mil polyethylene sheeting.

   iii. Duct tape or equivalent waterproof tape spray adhesives; or other additional appropriate work practices to contain particulate lead or lead-containing liquids.

c) For removal of the lead paint by manual scraping the following precautions shall be followed:

   i. When water/liquid waste is produced by any abatement technique used, plastic sheeting at least 6 mils thick shall be placed on the ground, as close as possible to the building foundation, or on the floor when applicable. Sheeting placed on the ground or floor shall be raised at its edge and extended a sufficient distance to contain the liquid waste.

   ii. When non-liquid waste is produced by any abatement technique used, plastic sheeting at least 6 mils thick shall be placed on the ground, as close as possible to the building foundation, or on the floor when applicable. Sheeting placed on the ground or floor shall extend out from the foundation 3 feet per story being abated, with a minimum of 5 feet and a maximum of 20 feet.

   iii. Sheeting shall be secured at the foundations and along all edges and seams.

   iv. If the wind speed causes visible dust during an exterior abatement project producing dry waste, abatement shall not be continued or performed unless vertical shrouds are erected.

Sample Specifications for Preparing Surfaced Painted with LBP

Cleanup of work site

After completion of each day's work the site shall be completely cleaned by removing plastic sheeting and HEPA vacuuming surfaces:

Daily cleaning at end of shift

a) The dust and debris collection method shall be selected in conjunction with the paint removal method to assure the methods are compatible and can be integrated.

b) Dust and debris may be collected from the surface at the point of removal or from the general work area.

c) Debris shall be collected on a regular basis and shall not be left to accumulate in the work area during the course of removal. Collection of debris from ground covers and horizontal surfaces shall occur while the material is wet using acceptable means that are not destructive to the containment materials.

d) Deposit all lead waste, including sealing tape and plastic sheeting, in double plastic bags at least 4 mils thick or single bags 6 mils thick or equivalent, and seal the bags.

e) Before washing, vacuum-clean all surfaces in the work site including, walls, windows, window wells, and fire escape and scaffolding with a HEPA vacuum.

f) After vacuum-cleaning, wet wash all surfaces in the work site including walls, windows, window wells, scaffolding floors and the fire escape with a solution containing a phosphate-free detergent.

g) If visible residue remains after washing and allowing all surfaces to dry, vacuum all surfaces with HEPA vacuum.

h) Deposit all lead waste from clean-up, including mop heads, sponges, filters, and disposable clothing, in double plastic bags at least 4 mils thick or single bags 6 mils thick, and seal the bags.

Final clean-up

a) After removal of the paint, all surfaces shall be wet wiped and HEPA vacuumed.

b) A visual inspection shall be performed by the contractor lead abatement supervisor to confirm the absence of dust and/or debris and that abated surfaces are clean of residual paint.

c) The polyethylene sheeting shall be removed by folding inward so that residual dust and/or debris are within the polyethylene sheeting.

Sample Specifications for Preparing Surfaced Painted with LBP

d) A second visual inspection shall be performed by the contractor lead abatement supervisor to confirm the absence of dust and/or debris.

e) As a prerequisite to commencement of clearance air monitoring, a thorough visual inspection by the NYULMC Project Manager or his/her designee shall verify the absence of residual paint and dust/debris from the work area.

Air Monitoring/Sampling

a) Daily area air samples shall be collected on representative workers performing the work as well as in the vicinity, but outside the work area containment barriers to assure the action level is not exceeded outside containment.

b) Personal samples and area monitoring air samples shall be collected and analyzed in accordance with NIOSH method 7082 Lead by Flame Atomic Absorption Spectrophotometry (AAS) with 24-hour turnaround time by an ELAP certified laboratory (or other validated NIOSH method). The results of area air samples shall be posted daily at the beginning of the work shift.

Waste Disposal

a) Make arrangements, 1 month in advance of project start date, with NYULMC Environmental Health and Safety for waste disposal.

b) Place LBP chips, debris, and lead dust in double 4-mil or single 6-mil polyethylene bags or equivalent that are air-tight and puncture-resistant. Pieces of wood or other large items that do not fit into plastic bags shall be wrapped with double 4-mil or single 6-mil plastic sheeting and sealed.

c) Place all disposable cleaning materials, such as sponges, mop heads, filters, disposable clothing, and brooms in double 4-mil or single 6-mil plastic bags, or equivalent, and seal.

d) Remove plastic sheeting and tape from covered surfaces. Prior to removing the plastic sheeting, the sheeting shall be lightly misted in order to keep dust down and folded inward to form tight small bundles to bag for disposal. All plastic sheeting shall be placed in double 4-mil or single 6-mil thick plastic bags, or equivalent, and shall be sealed.

e) Bag and seal vacuum cleaner bags and filters in double 4-mil or single 6-mil thick plastic bags or equivalent.

f) Place all contaminated clothing or clothing covers used during abatement and cleanup in plastic bags for disposal prior to leaving equipment room, work site or work area.

g) Place solvent residues and residues from strippers in drums made from materials that cannot be dissolved or corroded by chemicals contained in those solvents and strippers. Solvents shall be tested to determine if they are hazardous. Solvents and caustic and acid waste shall not be stored in the same containers.

Sample Specifications for Preparing Surfaced Painted with LBP

h) Contain and properly dispose of all liquid waste, including lead dust contaminated wash water.

i) HEPA vacuum the exterior of all waste containers prior to removing the waste containers from the work site or area and wet wipe the containers to ensure that there is no residual contamination. Containers that have been cleaned shall be moved out of the work site or area into a designated storage area.

j) Carefully place the containers into the truck or dumpster used for disposal.

k) Ensure that all waste is transported in covered vehicles to an approved landfill.

Records

Contractor shall maintain accurate and complete records of items listed below for a minimum six years.

- Inspections and work reports.
- Complete description of the abatement work area and abatement surfaces.
- Complete records of any changes in work procedures.
- List of all trained and certified workers on the project.
- List of PPE used throughout the entire project.
- Activities by regulating agencies.
- Air monitoring and test results.
- Disposal, test results and disposition of waste.

Policy: Penetrations in fire/smoke barriers

PURPOSE

- To protect patients, employees, and visitors from potential hazards of fire and smoke.
- To identify, document, and repair penetrations in smoke and fire barriers promptly.
- To provide a quality assurance process so that as infrastructure is installed, penetrations in smoke and fire barriers are properly sealed.
- To describe the preventive maintenance and inspection procedures for identifying and repairing penetrations.
- To comply with NFPA 101, *The Life Safety Code* and Joint Commission standards.

POLICY AND GENERAL INFORMATION

Policy: Penetrations in fire/smoke barriers

1.0 Background information

Maintaining the integrity of smoke and fire barriers is a major component of the medical center's fire protection plan. If smoke and fire barriers are not maintained in accordance with their original fire rating, the level of protection provided to patients, staff, and visitors is compromised.

2.0 Policy

2.1 All employees and contractors' employees who engage in work which involves penetrations in smoke or fire barriers, including floors, ceilings, and walls, must:

- Attend training and obtain certification in fire stopping from Facilities Operations (main campus), Facilities Engineering (HJD campus), or IT before engaging in such work.
- Obtain a project-specific *Rated Wall/Slab Penetration Permit* before engaging in such work.
- Refer to Facilities Operations' (main campus) or Facilities Engineering's (HJD campus) latest set of smoke and fire barrier drawings for ratings of smoke and fire barriers. In the absence of adequate drawings, consult with the Fire Safety Director for information on ratings.
  - Drawings for several main campus buildings/floors are posted on the intranet at: http://redaf.med.nyu.edu/building-features-drawings
- Ensure that each penetration, created or observed, is properly sealed as soon as possible upon completion of work.
  - Either seal each penetration with a material that returns the barrier to its original rating, or report the penetration to the appropriate department (see Responsibilities section) for repair.

2.2 Any contractor failing to conform to this policy will be prohibited from working at NYULMC.

3.0 Scope

This policy covers every penetration in a smoke or fire barrier within an NYULMC facility, owned or leased, including penetrations that are new or existing, used or not

used, created for but not limited to utilities, conduits, duct work, pipe and cabling (telephone, data network, fiber-optics, security devices, motion detectors, surveillance cameras, card swipes, biomedical devices, nurse call, fire alarms, overhead page, audio visual equipment, telecom carriers, wireless and microwave communications, cable TV, and developmental wiring).

4.0 Definitions

Fire barrier: Any wall, floor, ceiling, or roof which has a fire-resistance rating. A fire barrier also restricts the movement of smoke.

Fire stopping: Any component or product installed to maintain or regain the fire resistance rating of a fire barrier that has a penetration. All fire stopping systems must be tested and listed by an accredited third party testing agency for their appropriate use.

Penetration: Any compromise of a required wall, floor, or ceiling's integrity and/or continuity. This breach of integrity and/or continuity may be the result of a hole made in the wall or slab to permit the installation of utilities or data services, or the disruption of an existing fire rated patch of a previous penetration due to work on the same wall or slab. Open junction boxes, pull boxes, conduit, and raceways are potential penetrations and are to be appropriately sealed or covered.

Smoke barrier: A barrier which divides a floor into smoke compartments. A smoke barrier may or may not have a fire rating. In newly constructed or renovated areas, smoke barriers have a fire resistance rating of at least one hour.

Smoke partition: Any construction designed to prevent passage of smoke. A smoke partition is not required to be fire rated.

5.0 Responsibilities

5.1 **Environmental Health and Safety** is responsible for:

- Developing the policy and updating it as needed.
- Conducting semi-annual QA inspections for penetrations on the main campus and distributing summary reports.
- Conducting a weekly QA inspection of one construction site on the main campus and distributing quarterly summary reports.

- Functioning as a consultant on an as-need basis to provide guidance on the fire code, the structural features of fire protection, and fire stopping materials.

5.2 **HJD Loss Prevention** is responsible for:

- Conducting semi-annual QA inspections for penetrations at the HJD campus and distributing summary reports.
- Conducting a weekly QA inspection of one construction site on the HJD campus and distributing quarterly summary reports.

5.3 **Facilities Operations** (main campus, superblock and 660 First Avenue)

5.3.1 The **Director of Engineering** is responsible for:

- Reviewing this program and all documentation at least annually
- Retaining a trained life safety professional at least once every 3 years to review and survey the wall, floors, and ceiling for penetrations as part of the Joint Commission (TJC) Statement of Conditions (SOC) requirement for hospital areas.
- Maintaining TJC electronic Plan for Improvement (ePFI) and documenting efforts to comply with the plan. Entering all penetrations that cannot be repaired within 45 days into the ePFI.
- Managing the penetrations maintenance program to document all penetrations that can be repaired within 45 days, including locations, date of discovery and correction.

5.3.2 The **Plant Operations Manager,** working under the direction of the Director of Engineering, is responsible for reviewing the program quarterly for compliance.

5.3.3 The **Building Systems Manager** is responsible for implementing the program on a day-to-day basis.

5.3.4 The **Carpentry and Paint Foremen** are responsible for inspections and repair/maintenance work. This includes:

- Coordinating annual inspections by their mechanics of all walls, above and below the ceiling line.
- Reporting all identified penetrations to the Building Systems Manager.
- Coordinating repair of all penetrations identified during their inspections.

5.4 **Facilities Management** (Clinical Cancer Center, Hassenfeld, and Columbus Infusion Center) and **Real Estate** (other leased properties) oversee the responsibilities listed in Section 5.3 at their facilities.

5.5 **HJD Facilities Engineering** (HJD campus)

5.4.1 The **Director of Facilities Engineering** is responsible for:

- Reviewing this program and all documentation at least annually
- Retaining a trained life safety professional at least once every 3 years to review and survey the wall, floors, and ceiling for penetrations as part of the Joint Commission (TJC) Statement of Conditions (SOC) requirement for hospital areas.
- Maintaining TJC electronic Plan for Improvement (ePFI) and documenting efforts to comply with the plan. Entering all penetrations that cannot be repaired within 45 days into the ePFI.
- Managing the penetrations maintenance program to document all penetrations that can be repaired within 45 days, including locations, date of discovery and correction.
- Retaining a consulting life safety specialist to conduct quarterly inspections of all walls, above and below the ceiling line.
- Retaining a certified fire stopping vendor to repair all penetrations identified during the quarterly inspections.
- Reviewing the program quarterly for compliance.

5.4.2 The **Operations Manager and Facility Coordinator** under the direction of the Director of Facilities Engineering is responsible for:

- Reporting all penetrations identified during quarterly inspections to the Director of Facilities Engineering.
- Coordinating repair of all penetration identified during quarterly inspections with the Building Supervisor and fire stopping vendor.

5.4.3 The **Building Supervisor** is responsible for:

- Implementing the program on a day-to-day basis.
- Report all identified penetrations to the Director of Facilities Engineering and the Operations Manager.
- Coordinating repair of all identified penetrations.
- Signing the penetrations permit after verifying, by inspection, that all penetrations have been properly sealed.

5.6 **Departments that coordinate work involving penetrations** are responsible for compliance with the policy. Their responsibilities include:

- Ensuring that every project manager is trained on and familiar with the requirements of this policy.
- Including the requirements of this policy in bid documents.
- Ensuring that contractors are appropriately trained and informed about the policy.
- Ensuring the policy is implemented and all requirements are followed.

5.7 **Project managers** are responsible for implementing the policy on their projects. There responsibilities include, but are not limited to:

- Ensuring that contractors and employees use appropriate materials to seal penetrations and restore barriers.
- Reporting on any new construction projects at the weekly construction coordination meeting.

- Conducting (or coordinating) daily inspections during the project duration and following up on identified issues.

6.0 **Ratings of smoke and fire barriers**

6.1 Facilities Operations (main campus) and Facilities Engineering (HJD campus) maintain drawings and information on the structural features of fire protection for medical center buildings.

- Drawings for several main campus buildings/floors are posted on the intranet at: http://redaf.med.nyu.edu/building-features-drawings

6.2 **Standard ratings for smoke and fire barriers:** The following general rules apply:

- Stairwells, pipe shafts, and elevator shafts have a **two hour** fire rating.
- Mechanical rooms and laboratories have at least a **one hour** fire rating.
- Smoke barriers used to divide floors into smoke compartments have at least **one-half hour fire rating**. Smoke barriers in newly constructed or renovated areas have **a one hour fire rating**. (All NYUHC patient floors are divided into at least two smoke compartments.)
- Exit corridors, in general, must be sealed to limit the spread of smoke.

7.0 **Materials and procedures:** Employees and contractors working in NYULMC facilities must seal penetrations in accordance with the following guidelines.

7.1 **Fire stopping**

- Provide and use penetration seal assemblies whose fire resistance ratings have been determined by testing (ASTM E-814) in the configurations required and which have fire resistance ratings at least as high as that of the fire-rated assembly in which they are to be installed.
- Comply with Underwriters Laboratories (UL) listed methods and procedures, such as those found in Hilti Fire Stopping Systems book *07270/07840 – Fire stopping.*

7.2 **Smoke stopping**: Use any caulking-gun type or poured joint sealant suitable for the application. Use only fully curing types where accessible in the finished work. For smoke partitions, rated fire stopping is not required.

- In all cases, use products which allow normal expansion and contraction movement of adjacent materials without failure of the penetration seal, and which emit no hazardous, combustible, or irritating by-products during installation or the curing period.
- For high-traffic openings, use materials specifically designed for retrofit, such as intumescent fire stop putty or pillows. Typical high-traffic openings include cable tray penetrations of walls and floor, openings for voice, data and communications cabling, and all sleeved cabling openings.
- When a penetration in a smoke or fire barrier is made in error or is too large to be sealed using fire stopping, repair it using the original materials of construction.
- Obtain approval from the project manager prior doing work that involves exceptions to these general rules.

8.0 **Training and certification in fire-stopping**

8.1 Personnel who do work involving penetrations must attend training about the building codes for smoke and fire barrier penetrations and know the appropriate seals and techniques for the repair/restoration of penetrations.

8.2 Employees and contractors working in NYULMC space must obtain certification by submitting evidence of training for applicable personnel to Facilities Operations, HJD Facilities Engineering, or IT.

8.3 Evidence may be a certificate or a roster of trained individuals from the manufacturer of the fire stopping material (or other authorized organization) verifying that all listed individuals have been trained in the UL approved methods of installing fire stopping material.

8.4 Training can be arranged through Facilities Operations (main campus) or HJD Facilities Engineering (HJD campus).

9.0 **Permits for rated wall/slab work:** The process for obtain, using, and closing out a permit is summarized in the *Penetrations Flow Chart* (see Appendix A).

9.1 **Construction and renovation projects:** A permit is issued as part of the Interim Life Safety Measures (ILSM) documentation and is good for the length of the project.

- The permit is good only for work within the project site.
- Periodic renewal of the permit is not required.
- Any project-related work that entails running cables, pipes, etc. outside the project site is subject to the rules in Section 8.2 (below).
- A drawing articulating the locations of all work where penetration of fire/smoke barriers may occur must be appended to the permit
- Final inspection and sign-off is performed at the project's completion.

9.2 **Other penetrations work**

- Employees and contractors must obtain a Rated Wall/Slab Penetrations Permit (a permit) (see Appendix B) to install infrastructure from Facilities Operations (main campus) or HJD Facilities Engineering (HJD campus) prior to beginning work.
- A request for a permit must include evidence of training for all personnel, and the following information: company name, cabling location (building, floor, and path of cable (from – to)), number of cable runs, and names/phone numbers of project managers.
- A drawing articulating the locations of all work where penetration of fire/smoke barriers may occur must be appended to the request for a permit.
- A request for a permit may be sent via email attachment, fax, or hard copy to Facilities Operations (main campus) or HJD Facilities Engineering (HJD campus). The approved permit is sent via the same mechanism that it was received.
- Facilities Operations (main campus) or HJD Facilities Engineering (HJD campus) will issue a permit within 2 business days (assuming certification requirements as described above have been met). If a permit is not issued, Facilities Operations or HJD Facilities Engineering will provide the requestor with a reason for not issuing a permit.

- Permits are issued in either daily or calendar week increments only. A permit can be renewed for additional weeks if the project extends beyond a one week period.
- Employees and contractors must follow the terms of the permit. Signature on the permit by the contractor or their appointed representative constitutes acceptance of these terms.
- Contractors are required to sign the Penetrations Log Book located in Facilities Operations (main campus) or HJD Facilities Engineering (HJD campus) every morning, prior to commencing work specified in the permit.
- At the end of the work week permitted, the sponsor department (Facilities Operations/Engineering/Construction or IT) updates the activities described on the permit to include any alterations in scheduled work or additional "small pulls or projects" that occurred.

9.3 **Close-out of permits**

- When installation is complete and rated wall/slab penetrations are sealed, the permit holder notifies the sponsor department (i.e.: Facilities Operations, HJD Facilities Engineering, or IT). The permit holder updates the permit to include any deviation from the original path and any other additions or alterations.
  - If the sponsor department is not Facilities Management, the department submits a Plant Maintenance Service Request (PMR) for the painters.
- A Facilities Operations (main campus) or HJD Facilities Engineering (HJD campus) painter mechanic inspects all rated wall/slab penetrations for completed fire stopping. The permit holder provides a representative to accompany the mechanic to familiarize him with the work to be inspected, and act as a guide to expedite the inspection.
- The mechanic performing the inspection signs the penetrations permit after verifying that all penetrations have been properly sealed.
- Final payment to a contractor is authorized only after the painter mechanic validates all penetrations have been properly sealed, or other arrangements have been made to fire stop the penetrations.

10.0 **Existing penetrations**

10.1 After using an existing penetration, an employee or contractor must:

- Seal and fire stop the penetration
  - if it is of a similar size and scope to one that the individual needed to make to accommodate the penetrating it, or
  - if the proper sealing of all pre-existing penetrations was included in the scope of work
- Report the penetration to the project manager if it is of a size and scope beyond the needs of the current job. Reporting of penetrations for in-house repair is generally confined to those found during small scale wiring projects.

10.2 If a contractor or employee does not either create or use, but observes a penetration in a fire wall or smoke barrier, the individual must either repair the penetration or to report it to the project manager who must report it to Facilities Operations (main campus) or HJD Facilities Engineering (HJD campus).

11.0 **Procedures for construction and renovation projects**

11.1 **Drawings** must indicate rated smoke and fire barriers.

11.2 **Bids and contracts**

- For every significant construction or renovation project, the project manager must inform all bidders of their responsibility to bring all rated fire walls and smoke barriers into code compliance.
- Bidders must be given the opportunity during the walk-through to examine these areas so as to bid accordingly.
- The project manager must provide bidders with any *penetration survey* drawings of the area.
- For those projects where areas may not be visible until after demolition begins, the project manager must:
  - include an allowance for any found penetrations beforehand;

- issue a change order to cover the additional work afterwards; or
- after discussions with the appropriate administration, transfer responsibility for repair to the Facilities Operations or HJD Facilities Engineering Paint Shop.

11.3 **Field quality control**

- Each project manager or his/her designee conducts daily Interim Life Safety (ILS) inspections, which include an inspection for penetrations. If deficiencies are identified, they are corrected as soon as possible.
- The project manager records penetrations on the inspection form and ensures that the general contractor, construction manager, or in-house paint or carpentry shop is aware of the problem. The project manager follows-up to ensure the repair work is completed.
  - Penetrations may be submitted to the contractor in the form of a punch list to be completed as work progresses.
- The project manager's ILS inspection records and documentation of corrective action are maintained in the project file.

11.4 **Final payment**

- Since contract language requires contractors to properly seal all penetrations, a failure to do so may result in withholding and/or reducing payment until such work is completed.
- Should the contractor fail to complete the work, the withheld monies may be used to cover the expense of hiring another contractor/vendor to rectify the work.

12.0 **Procedures for preventive maintenance and inspection (PMI)** (main campus)

12.1 The Building Systems Manager and the Carpentry and Paint Foreman coordinate and document inspections and repairs in accordance with the following general guidelines.

- Consulting life safety experts inspect all walls below the ceiling line at least once every three years. The Building Systems Manager maintains documentation of the inspections.

- The painters, carpenters, respective foreman, and the Building Systems Manager inspect all walls above and below the ceiling line at least annually. Access doors are used to gain access above the ceiling. The Building Systems Manager maintains documentation of the inspections.

- Contractors may be used to supplement in-house staff for repairs.

13.0 **Documentation:** Facilities Operations (main campus) and HJD Facilities Engineering (HJD campus) maintains documentation for identified penetrations.

13.1 **45 day list** (main campus): The Building Systems Manager or his designee maintains the 45 day list and related documentation, including logs created by Facilities Operations painter mechanics.

- Penetrations that can be reasonably repaired within 45 days are entered into a 45 day list of penetrations. They are not initially entered into the Joint Commission ePFI.

- If a penetration is not repaired after 30 days, it is entered into the Joint Commission ePFI.

13.2 **Joint Commission ePFI**

- Penetrations in smoke and fire barriers in patient care areas that are not repaired within 30 days of their discovery are entered into the NYU Hospitals Center Statement of Conditions (SOC), electronic Plan for Improvement (ePFI).

- Each penetration in the ePFI has a completion date of at least six (6) months within the date of reasonable notice of the penetration.

- The ePFI is available on the www.jointcommission.org web-site to authorized users.

14.0 Performance monitoring

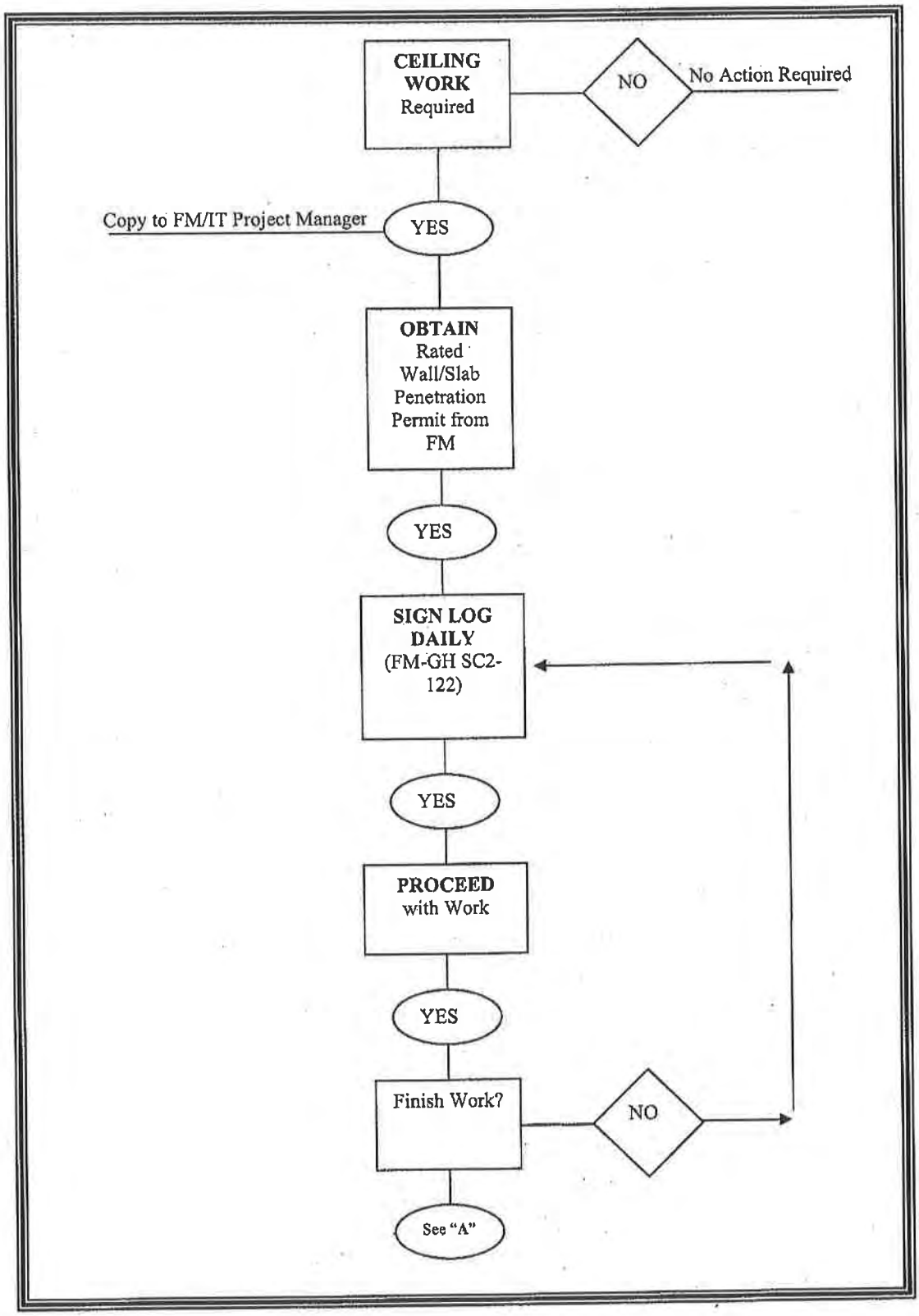
14.1 Environmental Health and Safety (main campus) and HJD Loss Prevention (HJD campus):

- Conduct semi-annual QA inspections of primary fire walls and smoke barriers and annual QA inspection of electrical and IT closets.
  - Communicates deficiencies promptly to the appropriate department (Facilities Operations, Facilities Construction, HJD Facilities Engineering, or IT).
  - Prepares and distributes semi-annual summary reports.
- Conducts a QA inspection of one construction site each week.
  - Communicates deficiencies promptly to the project manager.
  - Prepares and distributed quarterly summary reports.

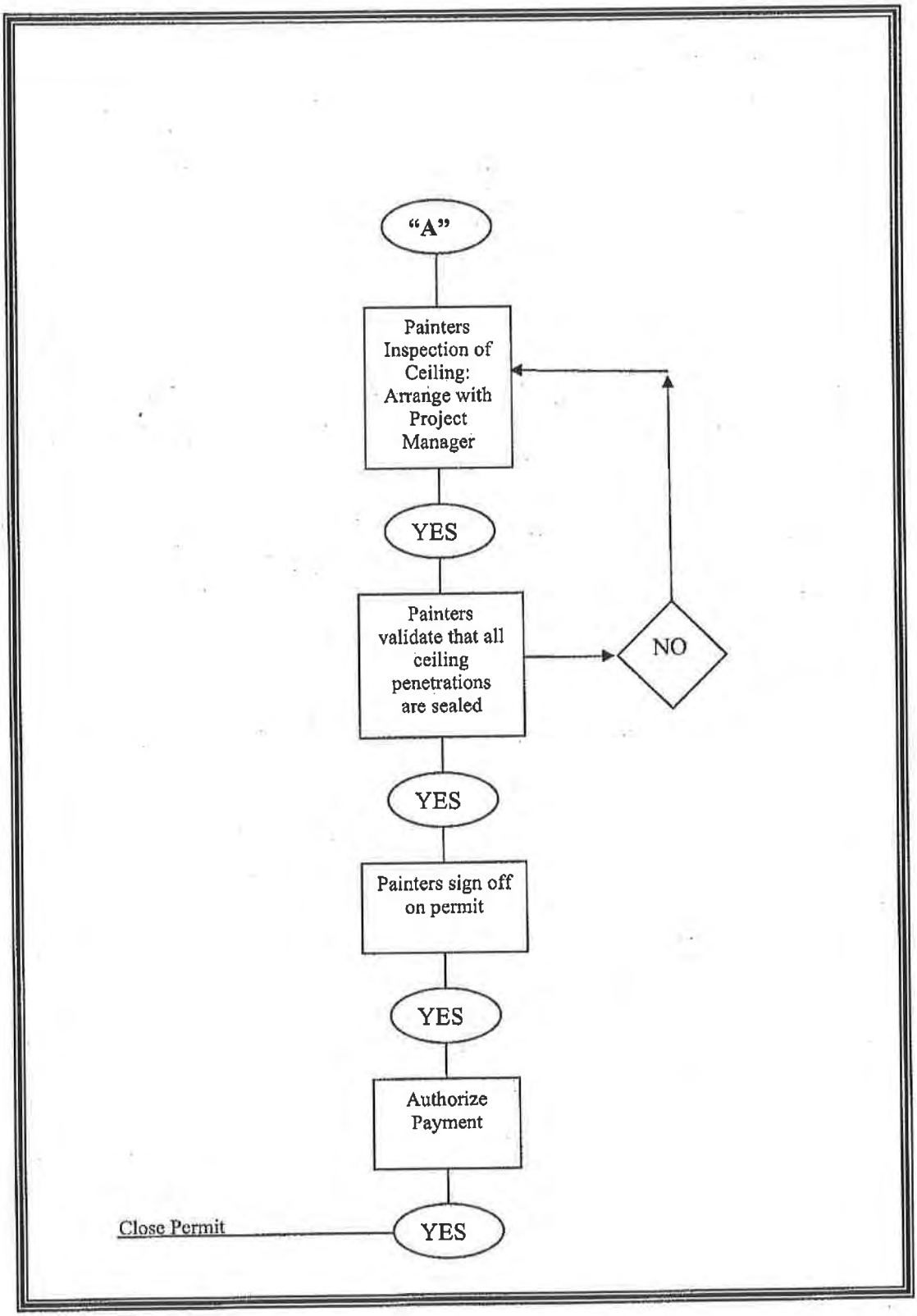
Appendix A	Penetrations Flow Chart
Appendix B	Rated Wall/Slab Penetrations Permit

Issue date	12/09
Replaces	9/06
Originator	J. Goldberg, Environmental Health and Safety
Reviewed by	B. Bjornstad, Environmental Health and Safety G. Griffin, Environmental Health and Safety R. Cohen, Facilities Operations B. Maffia, Facilities Construction B. Baulch, IT B. Zick, Security N.DeGregorio, HJD Engineering T. Fascianella, HJD Loss Prevention NYUHC Environment of Care Committee

Appendix A
Penetrations Flow Chart



Appendix A
Penetrations Flow Chart



Appendix B
Rated Wall/Slab Penetrations Permit

NYU Medical Center
Rated Wall/Slab Penetrations Permit*

Permit No._____

Date Start:_____ Date Stop: _____ (Not to exceed 7 calendar days)

1. Location:_____
2. If cabling, piping, or other extended linear work, please describe route in detail (provide drawings or additional sheets, as necessary. Please type in box below)
3. Person (s) doing the work is:

   NYU School of Medicine or NYU Hospital Center staff

   Contractor staff: Name of contractor:

_____

5. Is Contractor Certified by Hospital for Fire stopping?

   Yes No

6. Contractor PM: _____

   Phone #: _____

7. NYULMC PM: _____
   Phone #: _____

8. Permit Issued by: _____ Date: ____

9. Fire stop Inspection by: _____

   Date:_____

10. All fire stopped penetrations authorized by this permit have been properly sealed.

    Yes No

11. Drawing showing location of work attached:

    Yes No

Failure to follow the above procedures shall result in the revocation of this permit and interruption of the work.

I CERTIFY THAT THE FOLLOWING SAFETY PRECAUTIONS WILL BE FOLLOWED:

A) All penetrations used in rated walls to run cable, pipe, conduit, ductwork, etc., will be fire stopped in accordance with UL approved materials and techniques. Materials shall be approved by the Building Systems Manager or designee.

B) New Penetrations shall be made by drilling or careful cutting to prevent unseen damage that may change the integrity of the wall.

C) New penetrations shall be used when doing new work. If an existing hole is used, the contractor is responsible for fire stopping the existing hole. Penetrations made but not used shall be repaired to meet UL requirements for the wall rating.

D) All staff or contractor personnel performing fire stopping shall be trained in such by the manufacturer or outside agency. The contractor shall provide to the Facilities Management Department a certificate or letter from the training agency listing names of trainees.

Contractor:_____

Signature:_____

Date:_____

This permit is valid for 7 calendar days from the date of issue. If the work exceeds that time, a new permit must be obtained from the Facilities Dept.

E) Contractor's validation that work is completed:

Contractor:_____

Signature:_____

Date:_____

UL System Used: _____

The work will not be considered complete until all items penetrations as outlined above have been properly sealed and verified.

APPLICATION

NYU Langone Medical Center

PURPOSE

- To prevent accidents resulting from unsafe operation of powered industrial trucks (PITs).
- To comply with the OSHA Powered Industrial Trucks standard (1910.178).

Table of Contents

POLICY AND GENERAL INFORMATION

1.0 Definitions

Operator means an individual who is competent to operate a PIT safely, as demonstrated by the successful completion of training and current certification.

PIT means a mobile, power-driven vehicle, such as a fork lift truck, platform lift truck, or motorized hand truck.

PIT program coordinator means a person who has the knowledge, training and experience needed to manage the PIT program within a department/division and to train and evaluate the performance of PIT operators.

2.0 Application

The primary departments and divisions impacted by the program are:

- Division of Laboratory Animal Resources (DLAR)
- Environmental Services
- Facilities Operations
- Food Services
- Receiving
- RED+F Construction

3.0 Responsibilities

3.1 **Environmental Health and Safety (EH&S)** is responsible for:

- Developing the Program and updating it as needed.
- Training PIT program coordinators on the requirements of the Program.
- Evaluating operating environments to determine if they are hazardous.
- Approving PITs for use in hazardous environments.
- Conducting annual audits to evaluate the effectiveness of the Program.

3.2 **Department/division heads** are responsible for compliance with the Program within their departments/divisions. Their responsibilities include, but are not limited to:

- Reporting all PITs to EH&S.
- Designating a manager, supervisor, or foreman as their PIT program coordinator.
- Ensuring that contractors comply with this policy.

3.3 **PIT program coordinators** are responsible for:

- Ensuring the Program is implemented within the department/division.
- Training and certifying PIT operators.
- Maintaining training, certification, and pre-operational inspection records.
- Conducting periodic inspections to verify that all requirements of this policy are followed.

3.4 **Supervisors and foremen** are responsible for:

- Ensuring operators receive required training and are certified prior to operating PITs.
- Ensuring that only individuals who have been trained and certified operate PITs.
- Ensuring operators are certified at least once every 3 years.
- Ensuring daily checklists are completed.
- Implementing corrective action in the event that an operator violates safe operating procedures.

3.5 **Operators** are responsible for:

- Completing initial training prior to operating a PIT.
- Completing refresher training as needed.

- Conducting a pre-operational inspection prior to using a PIT, and completing the daily checklist.
- Operating equipment safely and in accordance with the manufacturer's operating instructions.
- Reporting any defects or malfunctions to the supervisor or foreman immediately, and discontinuing use if the defect impairs the safe operation or use of the PIT.

4.0 Equipment selection

4.1 EH&S classifies each operating environment as hazardous or non-hazardous.

- Only PITs approved for hazardous locations shall be used in these areas.
- Any approved PIT may be used in a non-hazardous location.

4.2 Safety equipment

- High lift rider trucks shall be fitted with an overhead guard.
- Fork trucks shall have a vertical load backrest extension.
- Fork trucks shall have operable flashing lights and audible travel alarms.

5.0 Training and certification

5.1 EH&S trains PIT program coordinators on the requirements of the Program.

5.2 PIT program coordinators train operators.

- Trainees shall be supervised at all times during the training and evaluation.

5.3 **Curriculum**

- Training shall be specific to the type of PIT.
- Training shall consist of a combination of formal instruction and practical training.
- A sample training curriculum is included as Appendix A.

5.4 **Evaluation**

- The PIT program coordinator shall administer a performance driving test to each prospective operator.
- The operator shall locate and explain all operational controls, and demonstrate competency in operating the PIT.
- The PIT program coordinator shall re-evaluate each operator's performance at least once every three years.

5.5 **Certification**

- The PIT program coordinator shall prepare and maintain written certification for all operators.
- The certification shall include the name of the operator, the date of the training, the date of the evaluation, and the name of the person performing the training and evaluation.
- The certification shall be valid up to three years, as long as safe operating techniques are met.

5.6 **Refresher training** in relevant topics shall be provided to the operator when:

- The operator has been observed to operate the PIT in an unsafe manner.
- The operator has been involved in an accident or near-miss incident.
- The operator has received an evaluation that reveals that the operator is not operating the PIT safely.
- The operator is assigned to drive a different type of PIT.
- A condition in the workplace changes in a manner that could affect safe operation of the PIT.

6.0 **Pre-operational inspection**

6.1 The operator shall examine the PIT before use for conditions that may adversely affect its operation, and verify that it is safe to operate.

- A sample checklist for Internal Combustion Engine Industrial Truck - Gas/LPG/Diesel Truck is included as Appendix B
- A sample checklist for Electric Industrial Truck is included as Appendix C.

7.0 Standard operating procedures

7.1 General

- PITs should only be operated on surfaces capable of handling the weight.
- Unauthorized personnel shall not be allowed to ride on PITs.
- Operators of sitdown PITs shall wear seat belts.
- Arms or legs shall not be placed between the uprights of the mast or outside the running lines of the PIT.
- No person shall be allowed to stand or pass under the elevated portion of any PIT, whether loaded or empty.
- There shall be sufficient headroom under overhead installations.
- Whenever a PIT is equipped with controls elevatable with the lifting carriage or forks for lifting, the following precautions shall be taken:
  - The platform shall be securely attached to the lifting carriage and/or forks.
  - Means shall be provided whereby personnel on the platform can shut off power to the PIT.
  - Protection from falling objects shall be provided.
- Whenever a PIT is left unattended:
  - It shall not obstruct fire aisles, access to stairways, or fire equipment.
  - The load engaging means shall be lowered.
  - The controls shall be neutralized.
  - The power shall be shut off.

- the brakes shall be set.
- the wheels shall be blocked if the PIT is parked on an incline.

7.2 **Fuel**

- Liquid fuels such as gasoline and diesel fuel shall be stored and handled in accordance with New York City Fire Code and NFPA 30, Flammable and Combustible Liquids Code.
- Liquid petroleum gas (LPG) shall be stored and handled in accordance with New York City Fire Code and NFPA 58, Storage and Handling of Liquefied Petroleum Gases.
- LPG and diesel powered PITS shall be refueled outdoors and kept outdoors when not in use.
- Fuels tanks shall not be filled while the engine is running. Spillage shall be avoided.
- Spillage of oil or fuel shall be carefully washed away or completely evaporated and the fuel tank cap replaced before restarting the engine.
- No PIT shall be operated with a leak in the fuel system until the leak has been corrected.
- Open flames shall not be used for checking level of fuel in tanks or level of electrolytes in storage batteries.

7.3 **Batteries**

- A location shall be designated for charging batteries.
  - When handling corrosives or other hazardous materials, the location shall be within 25 feet of an eyewash/safety shower.
- PITs shall be properly positioned and brake applied before attempting to change or charge batteries.
- While charging batteries, acid shall be poured into water; water shall not be poured into acid.

- Reinstalled batteries shall be properly positioned and secured in the PIT.
- The battery (or compartment) cover(s) shall be open to dissipate heat. Vent caps shall function properly.
- Tools and other metallic objects shall be kept away from the top of uncovered batteries.

7.4 **Loading**

- Only stable or safely arranged loads shall be handled. Caution shall be exercised when handling loads that cannot be centered.
- Only loads below the rated capacity of the PIT shall be handled.
- PITs equipped with attachments shall be operated as partially loaded PITs when not handling a load.
- A load engaging means shall be placed under the load as far as possible. The mast shall be carefully tilted backward to stabilize the load.
- Extreme care shall be used when tilting the load forward or backward, particularly when high tiering.

7.5 **Travelling**

- Stunt driving and horseplay is prohibited.
- A flagman shall escort PITs when they are operated indoors.
- PITs shall not be driven up to anyone standing in front of a bench or other fixed object.
- The operator shall slow down and sound the horn at cross aisles and other locations where vision is obstructed.
- If the load obstructs forward view, the operator shall travel with the load trailing.
- The operator shall look in the direction of, and keep a clear view of the path of travel.

- Grades shall be ascended and descended slowly.
- When ascending or descending grades in excess of 10 percent, loaded PITs shall be driven with the load upgrade.
- On all grades the load and load engaging means shall be tilted back if applicable, and raised only as far as necessary to clear the road surface.
- Under all travel conditions the PIT shall be operated at a speed that permits it to be brought to a stop in a safe manner.
- The operator shall slow down for wet and slippery floors.
- Running over loose objects on the roadway surface shall be avoided.
- Dockboards and bridgeplates shall be properly secured before they are driven over. They shall be driven over carefully and slowly and their rated capacity never exceeded.
- Elevators shall be approached slowly and entered squarely after the elevator is properly leveled. Once on the elevator, the controls shall be neutralized, power shut off, and the brakes set.
  - Motorized hand trucks shall enter the elevator or other confined areas with load end forward.
- While negotiating turns, speed shall be reduced to a safe level and the hand steering wheel shall be turned in a smooth sweeping motion.

7.6 **Interaction with trucks**

- The brakes of highway trucks shall be set and wheel chocks placed under the rear wheels to prevent the trucks from rolling when they are boarded by PITs.
- Fixed jacks shall be used to support a semi-trailer that is not coupled to a tractor, to prevent up-ending during the loading and unloading.

7.7 **Alteration, maintenance and repair**

- A PIT shall not be altered without approval from the manufacturer.
- PITs shall be kept in clean condition, free of lint, excess oil, and grease.

- If a PIT is found to be in need of repair, defective, or in any way unsafe, it shall be taken out of service until it has been restored to safe operating condition.
  - All repairs to PITs shall be made by authorized personnel.
  - Repairs shall not be made in hazardous locations.
  - Repairs to the fuel or ignition systems that involve fire hazards shall be conducted only in locations designated for such repairs.
  - The battery shall be disconnected before repairs are made to the electrical system.

7.8 **Lighting**: If lighting in the operating area is less than 2 lumens per square foot (EH&S can evaluate lighting levels) auxiliary directional lighting shall be provided.

7.9 **Exhaust emissions:** If a PIT creates carbon monoxide gas, levels in the operating environment shall not exceed 50 parts per million (EH&S can evaluate carbon monoxide levels).

8.0 Recordkeeping

8.1 The PIT program coordinator maintains the certification of training records and daily checklists for each operator within the department/division.

9.0 Annual evaluation

9.1 EH&S conducts an annual evaluation of the program as part of the Annual Evaluation of the Safety Management Plan.

Issue date	4/12
Replaces	8/00
Reviewed by	J. Goldberg, Environmental Health and Safety R. Cohen, Facilities Management C. Pedersen, Facilities Management M. Raymond, DLAR A.Holder, Environmental Services J. Hufnal, Food Services K.Maral, Supply Chain Management

Sample Training Curriculum

1. Introduction
    a. Overview of the program
    b. Goal of the program: to provide a training program based on the trainee's prior knowledge, the types of PITs used in the workplace, and the hazards of the workplace.
    c. Course shall utilize video, group discussion and hands-on practice. Each operator shall obtain the knowledge and skills needed to do their job correctly and safely.
2. Types, features, and physics
    a. Familiarize each operator with the basic types and functions of PITs.
    b. Develop an understanding of the information shown on a data plate.
    c. Understand the critical truck measurements that affect safety.
    d. Understand the forces that cause tipovers, and the truck design considerations and safety ratings that help prevent them, including the "stability triangle."
3. Inspecting the PIT
    a. Understand the purpose and importance of pre-operational checkouts.
    b. Provide a basic understanding of areas covered during a pre-operational checkout.
    c. Familiarize each operator with a checklist for pre-operational checkouts, and what to do if a problem is discovered.
4. Driving the PIT
    a. Understand the elements of safe movement of a PIT.
    b. Understand the differences between an automobile and a PIT.
    c. Recognize the safety hazards associated with operating a PIT.
5. Load handling
    a. Understand the elements of load lifting safety.
    b. Understand the safe operating procedures for raising and lowering loads in aisles.
6. LPG for lift trucks
    a. Discuss LPG and its properties.
    b. Understand the elements and procedures of safely refueling internal combustion PITs.
    c. Describe tank components: service valve, surge valve, relief valve, etc.
    d. Discuss related safety issues.
7. Battery and charging
    a. Understand the elements and procedures of safely changing and charging batteries.
    b. Discuss filling procedures and maintenance.
    c. Discuss related safety issues.
8. Safety concerns
    a. Review/reinforce potential of serious injury.
    b. Review/reinforce safety procedures in your facility.
9. Specific PIT and workplace training/hands-on
    a. Review features of specific PIT's to be operated.
    b. Review operating procedures of specific PIT's to be operated.
    c. Review safety concerns of specific PIT's to be operated.
    d. Review workplace conditions and safety concerns of areas where PIT's shall be operated.

Sample Training Curriculum

e. Learn/practice actual operation of specific PIT's to be operated and appropriate workplace conditions where PIT's shall be operated.
f. Demonstrate proficiency performing the PIT operator duties specific to the trainee's position and workplace conditions.

10. Certification of completion of the course

Sample Operator's Daily Checklist
Internal Combustion Engine Industrial Truck - Gas/LPG/Diesel Truck

Record of Fuel Added

Date		Operator		Fuel	
Truck#		Model#		Engine Oil	
Department		Serial#		Radiator Coolant	
Shift		Hour Meter		Hydraulic Oil	

Safety and Operational Checks (prior to each shift)

Have a **qualified** mechanic correct all problems.

Engine Off Checks	OK	Maintenance
Leaks – Fuel, Hydraulic Oil, Engine Oil or Radiator Coolant		
Tires – Condition and Pressure		
Forks, Top Clip Retaining Pin and Heel – Check Condition		
Load Backrest – Securely Attached		
Hydraulic Hoses, Mast Chains, Cables and Stops – Check Visually		
Overhead Guard – Attached		
Finger Guards – Attached		
Propane Tank (LP Gas Truck) – Rust Corrosion, Damage		
Safety Warnings – Attached (Refer to Parts Manual for Location)		
Battery – Check Water/Electrolyte Level and Charge		
All Engine Belts – Check Visually		
Hydraulic Fluid Level – Check Level		
Engine Oil Level – Dipstick		
Transmission Fluid Level – Dipstick		
Engine Air Cleaner – Squeeze Rubber Dirt Trap or Check the Restriction Alarm (if equipped)		
Fuel Sedimentor (Diesel)		
Radiator Coolant – Check Level		
Operator's Manual – In Container		
Nameplate – Attached and Information Matches Model, Serial Number and Attachments		
Seat Belt – Functioning Smoothly		
Hood Latch – Adjusted and Securely Fastened		
Brake Fluid – Check Level		

Sample Operator's Daily Checklist
Internal Combustion Engine Industrial Truck - Gas/LPG/Diesel Truck

Engine On Checks – Unusual Noises Must Be Investigated Immediately	OK	Maintenance
Accelerator or Direction Control Pedal – Functioning Smoothly		
Service Brake – Functioning Smoothly		
Parking Brake – Functioning Smoothly		
Steering Operation – Functioning Smoothly		
Drive Control – Forward/Reverse – Functioning Smoothly		
Tilt Control – Forward and Back – Functioning Smoothly		
Hoist and Lowering Control – Functioning Smoothly		
Attachment Control – Operation		
Horn and Lights – Functioning		
Cab (if equipped) – Heater, Defroster, Wipers – Functioning		
Gauges: Ammeter, Engine Oil Pressure, Hour Meter, Fuel Level, Temperature, Instrument Monitors – Functioning		

Sample Operator's Daily Checklist
Electric Industrial Truck

Record of Fluid Added

Date		Operator		Battery Water	
Truck#		Model#		Hydraulic Oil	
Department		Serial#			
Shift		Drive Hour Meter Reading		Hoist Hour Meter Reading	

Safety and Operational Checks (prior to each shift)

Have a **qualified** mechanic correct all problems.

Motor Off Checks	OK	Maintenance
Leaks – Hydraulic Oil, Battery		
Tires – Condition and Pressure		
Forks, Top Clip Retaining Pin and Heel -- Condition		
Load Backrest Extension – Attached		
Hydraulic Hoses, Mast Chains, Cables & Stops – Check Visually		
Finger Guards – Attached		
Overhead Guard – Attached		
Safety Warnings – Attached (Refer to Parts Manual for Location)		
Battery – Water/Electrolyte Level and Charge		
Hydraulic Fluid Level – Dipstick		
Transmission Fluid Level – Dipstick		
Operator's Manual in Container		
Capacity Plate Attached – Information Matches Model, Serial Number and Attachments		
Battery Restraint System – Adjust and Fasten		
Operator Protection Sitdown Truck - Seat Belt – Functioning Smoothly Man-up Truck – Fall protection/Restraining means - Functioning		
Brake Fluid – Check level		
Motor On Checks (Unusual Noises Must Be Investigated Immediately)	OK	Maintenance
Accelerator Linkage – Functioning Smoothly		
Parking Brake – Functioning Smoothly		
Service Brake – Functioning Smoothly		
Steering Operation – Functioning Smoothly		
Drive Control – Forward/Reverse – Functioning Smoothly		
Tilt Control – Forward and Back – Functioning Smoothly		

Revised: April 13, 2012

Sample Operator's Daily Checklist
Electric Industrial Truck

Hoist and Lowering Control – Functioning Smoothly		
Attachment Control – Operation		
Horn – Functioning		
Lights & Alarms (where present) – Functioning		
Hour Meter – Functioning		
Battery Discharge Indicator – Functioning		
Instrument Monitors – Functioning		

APPLICATION

NYU Langone Medical Center (NYULMC)

PURPOSE

- To support the health, safety, and welfare of faculty, staff, students, patients, and visitors.
- To reduce the risk of fire hazards.
- To comply with New York State and New York City regulations and Joint Commission standards.

POLICY AND GENERAL INFORMATION

1.0 Policy

- Use of tobacco products and smoking are prohibited:
  - inside all owned and leased medical center facilities
  - on roofs and grounds, including courtyards and gardens, of all owned and leased medical center facilities
  - in front and on the sidewalks of owned and leased medical center facilities
  - within 15 feet of any entrance to or exit from a medical center facility
- This policy applies to any substance which contains tobacco, including but not limited to cigarettes, cigars, pipe tobacco, powdered tobacco, and chewing tobacco, and any smoking devices, such as artificial, electronic cigarettes.
- This policy is in effect for all faculty, staff, students, patients, and visitors of medical center facilities.

2.0 Rationale

As a world-class, patient-centered, integrated academic medical center, NYULMC has implemented a tobacco-free policy. Tobacco use is the leading cause of preventable death, resulting in more than 5 million deaths per year worldwide [1]. In the United States, tobacco use leads to one in five deaths annually, costing an estimated $193 billion [2].

3.0 **Tobacco cessation program**

- The Tobacco Cessation Program is available to all NYULMC employees at no cost. The program is managed through the Joan and Joel Smilow Cardiac and Pulmonary Rehabilitation and Prevention Center of the Rusk Institute.
- All employees, patients, and visitors can call the NYU Hospitals Center Smokers' Quitline, 855- NYU-QUIT (698-7848), for additional information on tobacco cessation programs.

4.0 **Designated areas for tobacco use**

- Smoking may be permitted outside NYULMC facilities only in specifically designated areas that comply with state and city regulations, and have been approved by NYULMC senior leadership.
- At the superblock, tobacco use is allowed on 30th Street, east of the School of Medicine entrance, up to the FDR Drive service road.

5.0 **Procedure**

- All faculty and staff are asked to help maintain this policy by courteously informing anyone who appears to be unaware of the tobacco free facility policy.
- If any employee is found using tobacco products, (s)he shall be subject to disciplinary action up to and including termination.
- If a patient or visitor is found using tobacco products in a patient care area, the patient/visitor shall be reminded of the policy and tobacco products shall be removed from the patient care area. The tobacco products may be given to family to take home or inventoried as personal property and locked on the unit. If necessary, Security may be called to perform a property search.
- Additional information regarding this policy is available through Employee Relations at 212-404-3857.

References:

1. World Health Organization. WHO Report on the Global Tobacco Epidemic, 2009.Geneva: World Health Organization, 2008 [accessed 2011 May].

2. Centers for Disease Control and Prevention. Smoking - Attributable Mortality, Years of Potential Life Lost, and Productivity Losses United States, 2000-2004. Morbidity and Mortality Weekly Report 2008;57(45):1226–8 [accessed 2011 May].

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