

CONTRACTORS SAFETY HANDBOOK



THE UNIVERSITY OF
CHICAGO
MEDICINE

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Chicago, IL 60637 | 773-702-1000

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*****Also applicable to all other locations that are under The University of Chicago Medicine's License*****

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PURPOSE

Welcome to **THE UNIVERSITY OF CHICAGO MEDICAL CENTER (UCM)**. The purpose of this handbook is to summarize safety procedures and other pertinent information that are specifically useful to the contractor performing work at THE UNIVERSITY OF CHICAGO MEDICAL CENTER. The Contractor and its Subcontractors are responsible for this information and it represents the expectation of the Hospital Administration and UCM Construction Projects. This information is provided as supplementary to the project plans and specifications. If there is any conflict between this information and the project specifications, the project specifications shall take precedence. Questions regarding specific guidelines associated with life safety, infection control and utility systems should be directed to appropriate UCM Representative/Department. Your observance and cooperation with the expressed guidelines in this handbook will assist in ensuring a safe environment for our patients, visitors, and staff.

UCM VALUES

UCM is committed to providing every patient and visitor to UCM with world class treatment and it does not stop with UCM staff. To assure each and every experience is consistent with this commitment, we expect all Contractors, personnel and vendors to follow our P.R.I.D.E. Values.

Please review our Values below with your crew.

PRIDE Values

The **PRIDE Values** outline how we expect members of UCM team to behave at work. It is critical that each individual holds him or herself, and their colleagues, accountable to living the PRIDE Values so that we may deliver the best experience possible to our patients, their families, and visitors. Each value listed below has a clear, concise definition so that we can all meet those expectations, and make a difference every day.

Participation	Follows through on commitments, engages with others, offers new ideas to achieve objectives and advance the mission of the organization, works collaboratively with others, demonstrates teamwork and support of co-personnel, takes initiative to act and get things done, performs at the highest level every day.
Respect	Recognizes and appreciates the contributions of others, demonstrates professional behavior, and communicates responsibly to build trust in relationships, shows kindness and compassion to others, focuses on others and their needs.
Integrity	Instills trust and confidence in others and acts in a fair and ethical manner to uphold our tradition and invest in our future, respects others' privacy and maintains confidentiality, demonstrates commitment to the organization, takes pride in own work and the work of peers, supports the community.
Diversity	Supports an inclusive environment and embraces different backgrounds, perspectives, and customs, develops self-awareness to understand own worldview and addresses own assumptions and biases, understands the worldview of others and develops skills to meet others' cultural needs.
Excellence	Creates ideal experiences and raises standards through personal development, investing in others and continuous improvement to achieve exceptional outcomes, identifies opportunities to make improvements, sets and follows high standards of service and care, participates in performance improvement activities, reduces non-value-add activities.

UCM Contacts and Information

Department	Phone / Pager #
Construction – UCM Project Manager (PM)	Obtain from PM
Facilities/Plant Operations	(773) 702-6295
Environmental Health and Safety (EHS)	(773) 795-SAFE or Pager 773-228-8382
Infection Control & Prevention	(773) 702-1365 or Pager 773-228-7025
Public Safety / Security	(773) 702-6262
Medical Emergency	(773) 702-1000 or 147 Inside Line
Paging Operator	(773) 702-1000
Radiation Safety Office	(773) 702-6299 or Pager 773-228-9130
Utility Shut-Down Coordinator	(773) 702-6499
Firestopping	(708) 671-9386

UCM Policies and Procedures referenced in the Contractors Safety Handbook can be accessed by Contractors at the following URL: <http://ucmfacilities.uchicago.edu/construction/>

Definitions

Building Life Safety System – Any interior building element designed to detect, alarm, protect and evacuate the building population in emergencies, including fires and less critical events, such as power failures.

Confined Space – Spaces such as manholes, crawl spaces, and tanks that are not designed for continuous occupancy and are difficult to exit in the event of an emergency. A “permit-required confined space” is a confined space that has one or more of the following characteristics: contains or has the potential to contain a hazardous atmosphere; contains material that has the potential to engulf an entrant; has walls that converge inward or floors that slope downward and taper into a smaller area which could trap or asphyxiate an entrant; or contains any other recognized safety or health hazard, such as unguarded machinery, exposed live wires, or heat stress.

Contract – a voluntary arrangement between two or more parties that is enforceable by law as a binding legal agreement.

Contractor – Any company performing work within UCM facilities and property, including Subcontractors or vendors, contracted by the Contractor and each of their respective employees, for purposes of this Handbook.

EHS – UCM’s Office of Environmental Health and Safety.

EPA – United States Environmental Protection Agency.

Fire Watch – Is a temporary process of physically patrolling in an area that has an impaired automatic fire alarm system, fire suppression systems or an area where hot work is being performed to observe and correct life safety deficiencies and initiate fire response should a fire occur during the impairment. Personnel assigned to fire watch cannot be assigned to any other duties.

FPD&C – UCM’s Office of Facilities, Planning, Design & Construction

Hazard – Something that has the potential to cause injury or harm to any person or property.

Hazardous Substance – For the purpose of this Handbook, the terms hazardous chemical and hazardous material are synonymous with hazardous substance. Any substance or chemical that poses a physical or health hazard which has the capability of producing adverse effects on the health and safety of humans or any substance that requires a Safety Data Sheet (SDS).

Hot Work – A temporary operation involving open flames or which produces heat and/or sparks. This includes, but is not limited to: brazing, cutting, grinding, soldering, thawing pipe, torch applied roofing, welding and the use of heat guns.

ICRA (Infection Control Risk Assessment) – A process to assess and identify potential risks associated with construction activities and implement appropriate measures to mitigate and/or reduce the risk of infection to patients.

Incident – Any unplanned event resulting in, or having a potential for injury, ill health, damage or loss.

Immediate Threat to Life (ITL) – A threat that represents immediate risk and has or may potentially have serious adverse effects on the health or safety of the patient, visitors and staff. ITL’s could include; inoperable fire pump, inoperable emergency generator, fire alarm system not functioning, medical gas system not functioning, lack of procedures to identify and maintain fire protection, no means of exit in an emergency and lack of implementation of interim life safety measures.

Infection Control – The discipline concerned with preventing healthcare-associated infections in a health care facility. This includes the prevention of the spread of microorganisms from patient to patient, patient to staff member or staff member to patient.

Interim Life Safety Risk Assessment – An evaluation of the effect any construction, renovation or alteration activities will have on the Building Life Safety System, occupants and the required measures to insure continued and equivalent protection to the building occupants during such activities.

ILSM (Interim Life Safety Measures) – A process to assess and identify life safety standards that will be compromised by construction activities and implement appropriate alternative measures to protect the safety of patients, visitors, and staff who work in the hospital.

Life Safety Deficiency/Impairment – Any deficiency that impairs a Building Life Safety System that would decrease or eliminate the protection and life safety of the building occupants. These may include deficiencies in fire compartments, means of egress, exit signage, fire detection system/component, fire alarm system/component and/or fire suppression system/component.

Life Safety Feature – A single component of the Building Life Safety System. These may include fire compartments, means of egress, exit signage, fire detection system components, fire alarm system components and/or a fire sprinkler and suppression system components.

LockOut-TagOut – A safety procedure which is used to ensure that dangerous machines and energy sources are properly shut off and not able to be started up again prior to the completion of maintenance or servicing work. It requires that hazardous energy sources be "isolated and rendered inoperative" before work is started on the equipment in question. The isolated power sources are then locked and a tag is placed on the lock identifying the worker who has placed it. The worker then holds the key for the lock ensuring that only he or she can start the machine. This prevents accidental startup of a machine while it is in a hazardous state or while a worker is in direct contact with it.

NFPA – National Fire Protection Association Publishes fire and building safety standards including the National Electrical Code.

OSHA – The United States Occupational Safety and Health Administration.

Plant Operations – UCM's department that manages the maintenance and support of UCM buildings and utility systems.

PCRA (Pre-Construction Risk Assessment) – A process to assess the projects risk associated with air quality, infection control, noise, vibration, utility interruptions and any other activity that may affect patient care.

Pre-Qualified Vendors List – A list of qualified contractors, suppliers, or vendors that have been approved to receive an invitation-to-bid on projects or provides services at UCM.

Preliminary Denial of Accreditation (PDA) – Preliminary Denial of Accreditation decisions are made by The Joint Commission when an organization's patients have been placed at risk for a serious adverse outcome, such as, issues that present an immediate threat to life safety.

Project Manager –The UCM's Construction Manager, Engineer, Planner, or other UCM staff who oversee or direct work being performed by Contractors and Subcontractors.

The Joint Commission – An independent, not-for-profit group that administers voluntary accreditation programs for hospitals and other healthcare organizations. The Joint Commission develops performance standards that address crucial elements of operation, such as, patient care, patient safety, employee safety, and life safety and infection control.

Subcontractor – A person or company who is hired by a general contractor to perform a specific task as part of the overall project and is normally paid for services provided to the project by the originating general contractor.

Survey-Related Plan for Improvement (SPFI) – A corrective action plan required by The Joint Commission to address life safety deficiencies identified during the accreditation survey process that result in a Requirement for Improvement (RFI). RFI's are required to be corrected within 60 days or a Time Limited Waiver is required to request additional time for correction.

Time Limited Waiver (TLW) – The Center of Medicare and Medicaid (CMS) process for organization's seeking additional time to complete a physical environment (EC or LS) Requirement for Improvement (RFI) outside of the 60 days provided evidence of standards compliance (ESC) allotted time or for Equivalency of an RFI Life Safety Code® deficiency that cannot be corrected without major construction. This would include self-identified and/or survey related life safety deficiencies.

Worksite – A place(s) as defined in the Contract where the Contractor, Sub-Contractor and their employees are required to perform the task(s) specified in the Contract.

Responsibilities

Contractors

Whenever the term “personnel” is used in this Handbook it shall mean the Contractor’s employees, agents, Subcontractors, suppliers/vendors, and any other person providing services on behalf of the Contractor or Any Subcontractor. In addition, whenever the term “Contractor” is used herein, its meaning shall include “personnel”.

Contractor assumes full responsibility for its employees, its Subcontractors’ employees, third party Subcontractors and suppliers/vendor’s conduct and activity while on UCM property. All Contractors are responsible for strict compliance with applicable UCM policies/procedures, federal, state and/or local codes and regulations. UCM recommends that Contractors implement the contents of this program through weekly safety talks with Subcontractors and their workers. Failure to comply with applicable policies and/or regulatory requirements could result in work stoppages and/or termination of Contractor privileges.

Damages to UCM property caused by any of these personnel must be immediately brought to the attention of UCM’s Representative. Contractor assumes full responsibility for all repairs and/or corrective measures.

Project Managers

Project Managers shall help ensure Contractor compliance with all of the requirements set forth in this Handbook and referenced policies by including this Handbook into project specifications and communicating issues with compliance to the Contractor when they are identified. Project Managers will provide oversight of work as described in this program. Project Managers are responsible for coordinating project plans with all affected UCM stakeholders and building occupants to ensure that interim life safety measures, infection control measures and utility systems are properly maintained throughout each phase of the project.

Plant Operations

Plant Operations is responsible for ensuring that all UCM building systems and equipment are installed and maintained in accordance with Joint Commission standards and applicable Local, State, and Federal laws and regulatory requirements. Plant Operations will coordinate the shut-down of all fire protection systems, utility systems and hot work being performed by Contractors to minimize the risk of any disruption to essential utilities and/or fires caused as a result of construction project activities.

UCM Environmental Health & Safety (EHS)

The role and responsibility of Environmental Health and Safety (EHS) is to provide oversight of the Contractor Safety Program. EHS is responsible for developing policies that provide a safe patient care environment during construction projects, providing technical support, and monitoring compliance with applicable regulatory requirements and UCM policies. Responsibilities include, but are not limited to, the following:

- 1) Reviewing and revising the Contractor Safety Program as necessary;
- 2) Evaluating work activities to assure compliance with ILSM, Hot Work and other applicable EHS policies;
- 3) Developing written guidance documents and training materials to support this program;
- 4) Recommending personal protective equipment and safe handling procedures for specific UCM operations;

- 5) Responding to hazardous conditions/accidents during construction projects and assisting in determining corrective measures;
- 6) Providing internal staff training associated with UCM policies/procedures; and
- 7) Tour construction sites to verify compliance with applicable regulations and UCM policies.

Infection Control and Prevention

The roles and responsibilities of the Infection Control program are multifaceted and are required from planning phase to accepted occupancy. The primary responsibility of the Infection Control Department is to protect patients, visitors and staff from construction related infection. Infection Control staff members provide important leadership and a communication link with all members of the construction team, including program administrators, architects, and engineers. Completion of an Infection Control Risk Assessment (ICRA) is only one requirement; input is provided throughout each stage of project design, commissioning and occupancy.

Infection Control establishes the level of involvement based on project scope and impact to minimize the risk of activities that could lead to infection of patients, visitors or staff. Responsibilities for Infection Control include, but are not limited to the following:

- 1) Participate in planning and design of new or renovated medical center facilities, including participation in kaizen activities as a full or consulting member;
- 2) Identify when patient relocation or unit closure is necessary;
- 3) Review of all projects that will impact air handling, water or sewer systems;
- 4) Provide training for renovation, construction and design and other facilities staff (e.g. project managers and directors, plant personnel, etc.) related to risk and steps to reduce risk of infection related to construction, renovation or maintenance projects;
- 5) Assist with identification and recommendations for emergency stop work procedures related to construction, renovation or maintenance projects;
- 6) Approve revised traffic patterns for patients, visitors, staff and Contractors as well as patient care and construction project supplies, equipment, and waste;
- 7) Provide policy guidance for occupational health (Contractors must comply with all UCM policies that assist in maintaining infection prevention and control standards including occupational health, dress codes for restricted areas, hand hygiene, environmental cleaning, and maintenance of physical plant). These policies will be considered when reviewing and developing the Infection Control Risk Assessment document for each project for which it is required; and
- 8) Provide consultation and establish requirements to maintain patient, visitor and staff safety during construction preparation and demolition, intra construction operations and maintenance, project completion and post construction cleanup; and monitoring (e.g., air and/or water quality).

General Policies / Procedures

Pre-Qualification

Facilities, Planning, Design & Construction uses a pre-qualification process to procure services from architects, engineers, consultants, general contractors, construction managers, and specialty contractors. Only qualified vendors that have successfully completed the pre-qualification process and are currently on the Pre-Qualified Contractors List are invited to bid on projects.

At least twice per year, an evaluation committee meets to review pre-qualification application packages. The evaluation committee includes representatives from Facilities, Planning, Design, Construction, Plant Operations, Environmental Health and Safety, Infection Control, Procurement, and Diversity. The evaluation committee can accept, reject, or conditionally accept the applications. In case of conditional acceptance, the applicant will be invited to present their application to the evaluation committee and respond to its questions, after which a decision will be made. Successful vendors are added to the Pre-Qualified Contractors List. Qualified vendors remain on the Pre-qualified Contractors List for one year barring any issues with performance or safety violations. UCMC may request vendors to update their qualification information by submitting update statements.

Completing the pre-qualification process does not guarantee access to any RFP or invitation to bid. UCMC reserves the right to issue bids to any firm it deems appropriate for the project.

Pre-Construction Risk Assessment (PCRA)

Prior to construction, the UCM Project Manager will conduct a pre-construction risk assessment meeting that includes representatives from the Contractor, Facilities, Plant Operations, Environmental Health & Safety, Infection Control and Environmental Services. A representative from the Design Team may also be invited to attend. The purpose of the meeting is to discuss, assess and evaluate risk factors associated with the project that could potentially impact the safety of patients, visitors and staff during the project. Appendix B - Pre-Construction Risk Assessment (PCRA) Matrix provides a list of potential risk factors and their required mitigation measures. The PCRA includes, but is not limited to, an assessment of the following:

- 1) Life Safety
- 2) Utility Interruptions / Shutdowns
- 3) Noise and Vibration
- 4) General Safety Hazards / OSHA
- 5) Infection Control

A copy of the completed PCRA will be provided by the Environmental Health and Safety Department to the General Contractor and responsible Project Manager. The PCRA will serve as a reference document for required safety measures that will need to be addressed during the planning and construction phase of the project as well as assist in determining the need for an Infection Control Risk Assessment and/or an ILSM Risk Assessment.

Reference: UCM Policy S06-10 Implementation of ILSM, Fire System Impairments, and Fire Watch

Training Requirements

It is the responsibility of the Contractor to communicate all information contained in this Handbook to its personnel using the Appendix C – UCM Construction Safety Training Handout as well as an Infection Control Risk Assessment and any additional infection control related training. It is also the responsibility of the Contractor for any specific job related training with respect to work procedures in accordance with all applicable State, Federal or Local regulations and codes. Documentation of applicable certification or training in accordance with the Occupational Safety and Health Administration (OSHA) is required prior to beginning work and/or construction projects at UCM.

Personnel found not complying with the requirements specified in this handbook and/or applicable regulatory requirements will be removed from the Project by the Contractor and/or at the request of the UCM Project Manager.

Upon request by the UCM Project Manager or EHS, the Contractor shall be required to provide documentation and certification of construction personnel training when applicable.

Security Identification and Access

Contractor personnel will be required to obtain a UCM Photo ID badge issued by the UCM Department of Public Safety prior to working on UCM premises. Contractors and Contractor personnel will display their UCM provided photo ID Badge at all times while on UCM premises.

Public Safety staff or management may question personnel at work without proper identification and will, if necessary, escort such personnel to the Security Communications Center for verification of the contracted project.

Obtaining a Photo ID Badge

Contractor personnel shall obtain a UCM Photo ID Badge in accordance with the following process:

1. UCM Project Manager representing the Contractor and/or Contractor personnel will complete and sign an ID Request for Vendor/Contractor Photo ID Card.
2. Contractor shall take the signed ID Request for Vendor/Contractor Photo ID Card to the Parking Garage Office with the signed ID Request for Vendor/Contractor Photo ID Card. A fee of \$35 dollars (CASH or COMPANY CHECK) will be required to obtain each UCM Photo ID. This cost/fee will be the responsibility of the Contractor.
3. Contractor shall go to Public Safety ID Station located on the 1st Floor of the Wyler Building to obtain its UCM Photo ID Badge. UCM Public Safety staff operates the ID station from 7:30AM – 4:00PM, Monday through Friday, excluding holidays. Hours of operation may be adjusted from time to time and will be clearly posted at the entrance of the ID Station.
4. Lost and found badges should be returned to the Project Manager or to a Public Safety Officer located in the Mitchell, Comer or CCD lobby.
5. Contractor personnel will be required to report the loss of a Contractor ID Badge immediately to the UCM Public Safety Department. A fee of \$35 dollars (cash or check) will be required for replacement badges.

Contractors must contact their UCM Project Manager to determine what (if any) restrictions apply to individual personnel for the specific project area (i.e. Operating Room attire). Contractors must do this in advance of assigning personnel to work on or within a UCM property or facility. Should the Contractor require access to any of the utility or electrical panel rooms, Plant Operations must be contacted and an engineer will provide access to the space. No Facilities keys will be given to any contractor. UCM reserves the right to deny property access for Contractor personnel who are unwilling or unable to meet UCM requirements.

All Contractor locksets on the project(s) site must be keyed alike and a key provided to the UCM Project Manager. If the Contractor personnel need to access any other area, they must contact UCM's Project Manager for assistance.

Contractor personnel will be responsible for complying with, but not limited to, the following identification and access requirements:

- 1) Contractors must contact their UCM Project Manager to determine what (if any) restrictions apply to individual contractor personnel for the specific project area (i.e. Operating Room attire, background checks, etc.). Contractors must do this in advance of assigning personnel to work on or within a UCM property or facility. Contractor personnel must display their UCM provided Photo Identification Badge at all times. Photo ID Badges must be turned in to the UCM Project Manager at the end of the job.
- 2) For evacuation purposes, the Contractor must keep a daily log of all sub-Contractors onsite.
- 3) Contractor personnel must report the loss of a contractor picture ID badge immediately to their UCM Project Manager or Staff Representative and immediately pay for and obtain a replacement.
- 4) Contractor personnel must not bring firearms and/or weapons on premises.
- 5) Picture taking and video equipment of security sensitive systems or of items not pertaining to the immediate project, portable radios, tape decks, television sets are prohibited.
- 6) Contractor personnel are restricted to the predetermined area in which they are working.
- 7) Contractor personnel are responsible for the security of all materials, tools and equipment used for the job, whether owned or rented by the contractor.
- 8) The Fair Labor Standards Act prohibits the employment of anyone less than 18 years of age in hazardous occupations.
- 9) All packages, equipment and vehicles are subject to inspection by UCM Public Safety, UCM Project Manager, or the EHS Department.
- 10) Personnel on UCM property must conduct themselves in an orderly and safe manner. Fighting, engaging in horseplay, being under the influence of or possessing alcohol or drugs, gambling, soliciting, stealing, immoral, unauthorized use of UCM equipment or otherwise undesirable conduct is not permitted.
- 11) Access to all swiped or locked areas, i.e. Plant Operations mechanical spaces or Computer Rooms, shall be locked. Access to construction areas must be locked. Contractors may not change door cylinders unless authorized by the UCM Project Manager.
- 12) Any keys specific to the project must be turned into the UCM Project Manager upon completion i.e. mechanical space keys.
- 13) Vehicles must be parked only in areas designated by the UCM Project Manager.
- 14) Authorization must be obtained from the UCM Project Manager for any access to UCM property before 7 am or after 5 pm (weekdays) or on weekends/holidays.
- 15) Contractor personnel must report any suspicious activity, security incidents, altercations and thefts immediately to Public Safety 702-6262.

UCM reserves the right to deny property access for Contractor personnel who are unwilling or unable to comply with UCM requirements.

Security background checks are not routinely required for Contractor personnel that perform work at UCM. However, if projects impact highly sensitive security areas security background checks may be a required specification of the project at the expense of the Contractor. Security background checks will be clearly stated in the contract specifications if this is a required element of the project.

Health Screening

UCM requires that before any Contractor personnel are permitted to work in any patient care, they must complete occupational health screening and immunization, as indicated in UCM Policy A00-23 Occupational Health and IC02-15a Personnel Health. These screenings or waivers are required before UCM will issue an

identification badge, pursuant to Administrative Policy S03-10. This screening includes screening for tuberculosis, proof of immunization against measles, mumps, rubella, and chickenpox and Influenza vaccine.

- 1) Construction personnel employed by UCM will be officially on-boarded through Occupational Health and will be required to undergo health screening and yearly influenza vaccination.
- 2) Contractor personnel who have not undergone health screening must enter and exit construction areas through non-clinical areas. They are not allowed to enter or go through any occupied areas (e.g., patient care units, treatment or support areas).
- 3) Contractors may not work if they have known or suspected communicable infections (e.g., tuberculosis or influenza) and must follow workforce guidelines for prevention of respiratory viruses that are updated each year on the UCM intranet site.

Patient Privacy (HIPPA)

The Contractor must instruct his/her personnel that proper behavior is expected in patient care environment. If work must be accomplished in a patient care area, the privacy of a patient's care must be strictly understood and followed by all personnel.

Note: *Patient Privacy is the Law. Patients' needs take priority over construction needs. Non-compliance to Patient Privacy may result in immediate removal from UCM.*

Personnel Conduct

All Contractor personnel are expected to maintain adult, professional behavior at all times. It is important to remember that patients and their visitors are in a stressful situation, and while they are at UCM, they deserve to be treated in a respectful manner and enjoy an environment that contributes to a positive patient experience. Horseplay, fighting, sexual harassment, use of offensive language, patient harassment, partial nudity, or any other inappropriate behavior, is not allowed and may be cause for immediate removal from UCM property.

Work Clothing /Accessories

Because dust may be a source of mold spores, Contractors cannot enter any active area of the Medical Center with dusty clothing. If clothes are dusty and the contractor must cross through any occupied area, they must don a coverall to contain dust (e.g. bunny suit) and may also be required to wear shoe covers and/or hair covering. Contractors working in restricted areas (e.g., the operating rooms or other procedural areas) may need to wear scrubs or special covering. Any dress requirements will be specified in the completed Infection Control Risk Assessment (ICRA) prior to the start of work. Contractor personnel may not wear tank tops, sleeveless shirts, shorts, or other clothing that in the opinion of UCM's Representative displays offensive images or wording. The worker may be requested to turn such offensive clothing inside out or to change into something more appropriate. Failure to comply may subject the worker to immediate removal from the jobsite.

Smoking

UCM is a smoke-free environment and has a "Smoke and Tobacco Free" policy to promote a healthy environment, to reduce risk of fire hazard, and to set a standard that prohibits the use of smoke and/or tobacco-related materials throughout the hospital building (including e-cigarettes). Contractor personnel may not smoke on the construction site or on hospital grounds including parking structures and lots. UCM is not obligated to and will not provide any designated smoking areas.

Alcoholic Beverages/Drugs/Firearms

Possession or use of alcohol, unauthorized drugs, firearms or any illegal substance is strictly forbidden and is grounds for immediate removal of the offending personnel from the site and project. A zero-tolerance enforcement policy is in effect.

Parking

Parking on-site at UCM is at a premium and must be reserved for patients, hospital visitors, and staff. Contractor personnel may only use City street parking or parking areas designated for Contractor parking established at the pre-construction meeting. At no time shall Contractor personnel obstruct a handicapped parking space or park in a fire lane. Under no circumstances is there to be any impeding of the emergency vehicle access roadway to the Emergency Department, or the emergency vehicle parking area, no matter how temporary, without specific prior coordination with the UCM Project Manager, Public Safety Office and affected municipal agencies.

Working Hours

Contractor's daily working schedule at the site will be established at the pre-construction meeting. The UCM Project Manager must be notified whenever a change is anticipated, allowing adequate time to coordinate with adjacent UCM Public Safety and UCM activities.

Elevators

The UCM Project Manager will inform the Contractor as to which elevator(s) will be available to the contractor personnel and approved for use to transport materials and personnel during the Work. Contractors may only use elevators as specified in the ICRA.

Restrooms

Access to UCM restroom facilities is restricted to patients, visitors and hospital staff only. The UCM Project Manager will inform the Contractors as to which public restroom(s) will be used by Contractor personnel for the construction project within an existing UCM building. It is the responsibility of the Contractor to provide hand washing and restroom facilities for new building projects. On a case-by-case evaluation, UCM may allow use of certain facilities restrooms. Contractors may only use restrooms as specified in the ICRA.

Housekeeping

Contractor(s) shall comply, but not limited to the following:

- 1) Hospital linens or supplies for any cleaning activities shall not be used by Contractor personnel. Contractors are expected to provide all their own cleaning supplies.
- 2) Absolutely no liquids, chemicals or contaminated construction debris may be poured down a mop sink, drain, restroom sink or toilet. Drains should be questioned in construction area prior to use so that a capped drain is not used.
- 3) Contractor personnel must maintain a high standard of housekeeping on the job at all times. Daily clean-up of work areas is required per fire safety and infection control policies.
- 4) Materials shall be neatly stored when not used and sharp objects shall either be removed or bent over to prevent puncture. A one-day amount of material staging practice is allowed. No material shall be stored outdoors without the permission of the UCM Project Manager. Materials shall be marked with the Contractor's Name. Written permission from UCM's Plant Operations Department is required for use of any mechanical space/room to store tools and materials.

- 5) Contractor personnel must perform work in a manner that will minimize the production of dust and not allow migration of dust and debris to areas outside of the construction area. Contractors must follow any directions from the Infection Control Risk Assessment (ICRA) that is posted on the site.

The UCM Project Manager will notify the Contractors immediately if/when inspections identify unsatisfactory clean-up efforts by Contractor personnel.

Fire Extinguishers

Contractors shall provide their own fire extinguisher(s) for protection against hazards they introduce to the job location. Contractor fire extinguishers shall have a current annual certification, with visual inspections monthly and documented by the Contractors.

Flammable Storage

Flammable and combustible liquids dispensed at one time in quantities greater than 5 gallons shall:

- 1) Be dispensed in an area separated from other areas of operation by 25 feet or by construction having at least a one-hour fire resistance rating.
- 2) Be stored in FM approved Safety cans or drums.
- 3) Be controlled with ventilation to prevent the development of concentrations above 10% of the lower flammable limit.
- 4) Be only transferred between containers that are properly grounded to prevent the build-up of static electricity and prevent sparks.
- 5) Not be transferred by means of air pressure.
- 6) Have a 25 lb. bag of absorbent or spill absorbent pads in the transfer area.

Equipment with gasoline or LPG/ propane fuel (including but not limited to pressure washers, bobcats, forklifts) is allowed by exception after a review by the EHS office. Electric, non-exhaust emitting equipment is to be used. No equipment with gasoline or LPG/propane fuel is to be stored on the construction site overnight. The equipment must be removed daily.

Materials Delivery

The UCM Project Manager shall be notified by phone or email prior to the delivery of any materials, equipment or supplies that will impact the on-site vehicular/pedestrian circulation or parking, or of any off-hours deliveries, to insure proper coordination with UCM. Prior notification to the Grounds Manager is also required for the use of the Hospital's, or any other UCM facility's loading dock. Contractors must transport items as specified in the ICRA and may only deliver during the hours specified on the ICRA. They may only use routes and elevators as specified in the ICRA.

Unattended Equipment & Material

Tools and equipment are not to be left unattended in any public area, corridor or patient area.

Disposal of Debris

Facilities provides three (3) dumpsters at the FMI loading dock for the disposal of debris. Two (2) dumpsters are for regular debris and one (1) is for metal.

Contractors shall comply with, but not limited to the following:

- 1) All construction debris must be fully contained prior to leaving the construction site if it must be taken through an occupied hospital building. Containment will consist of sealed bags for small projects and a covered gondola or other approved container with a sealed lid. Use of a bed sheet or other permeable fabric or soiled plastic is not considered an appropriate cover. Wheels of all transport containers must be wiped as they leave the construction site or the transport container must be followed by someone who is responsible for immediately cleaning any tracks from the construction site to the outside of the building.
- 2) All debris and recycled materials are to be placed in the correct dumpster.
- 3) Only the following metals can be disposed of in the Metals Debris Dumpster: steel furniture (minimal seat covering allowed), pipe, metal parts, equipment, and appliances with refrigerant evacuated, and ornamental steel/iron work.
- 4) Regular debris that can be placed in the Regular Debris Dumpster includes; paint cans, wood, plastic, paper, and landscape waste.
- 5) No debris/material is to be placed/left on the ground. All material without exceptions (including furniture) must be placed in the dumpsters, and should be loaded from front to back.
- 6) No debris or storage may be placed for any amount of time outside of the dumpsters, on the deck of the dock, or on the stairwells leading to the dock. This is regulated by the City of Chicago Municipal Code 7-28.
- 7) No batteries, electronic waste, hazardous waste, radioactive waste or other regulated items shall be placed in the FMI dumpsters. Contractor personnel should contact the EHS Department at (773) 795-SAFE to coordinate disposal.
- 8) Items that contain refrigerants cannot be disposed of until the refrigerant is reclaimed. Equipment should not be moved to the FMI loading dock until the refrigerants have been reclaimed.

Management of Dumpsters

Contractors shall comply with, but not limited to the following:

- 1) The Facilities Grounds team manages removal of the dumpsters. Dumpsters are normally removed on a set schedule to ensure that dumpsters have capacity and are available for use by Contractors.
- 2) Contractors are responsible to confirm there is room in the dumpsters for their debris before arriving with their loads and materials.
- 3) If there is no room in dumpsters, individuals are to contact individuals in the following order to arrange for a dumpster exchange:
 - 1) 1st - Grounds Supervisor – 773-702-5714
 - 2) 2nd - Lead Grounds Mechanic at – 773-552-6787
 - 3) 3rd – Physical Plant Operations Department – 773-702-6295
- 4) While the dumpsters are being exchanged, Contractors are not to place debris on the FMI dock. They must wait until the dumpster is exchanged, and then proceed with disposal.
- 5) If a project, maintenance operation or other activity will generate an unusually large amount of debris or has unique items to dispose (e.g., large pumps/motors, research equipment, refrigerators/freezers), Contractors should contact the Grounds Supervisor to coordinate disposal prior to starting the activity.
- 6) If a project needs a dumpster located at another location (e.g., Parking A or Parking B loading dock), Contractors should contact the Grounds Supervisor and EHS to review the request. All requirements of this policy apply to dumpsters located at alternate locations.

FMI Dock Access and Operations

Contractors shall comply with, but not limited to the following:

- 1) Access to the FMI loading dock is controlled through the UCM security system.
 - a. Access from Ellis Ave. is provided by contacting UCM Public Safety through the intercom located at the dock entrance.
 - b. Access from inside the building is provided through a proximity reader. UC/UCM staff and Contractors will need a valid UCM ID Badge to access the FMI loading dock.
- 2) Vehicles are allowed in the FMI dock for the purposes of loading and unloading equipment and materials only. No vehicles are to be left unattended or parked in the area. Unattended vehicles will be towed at the owner's expense.
- 3) Vehicles and material are not allowed to block entrance to the following areas within the FMI blockhouse: Com Ed vault, Radiation Safety storage, alcohol storage vault, or other emergency exits within the FMI courtyard.
- 4) No smoking is permitted on the FMI dock. Contractors that violate this policy are subject to the Contractor Safety Progressive Performance Improvement Program (UCM Policy S04-61), which may include removal of staff from the project and prohibition of return.
- 5) The FMI loading dock may not be used as a pedestrian pass through from Ellis Avenue into the Medical Center. Contractors must enter the Medical Center through designated entrances.
- 6) Contractors must be professional at all times. Foul language, excessive noise, and other loud or disruptive behavior can disturb the staff working in areas adjacent to the FMI dock and must be avoided.

Perimeter Fencing

Perimeter fencing made of 36 inch high snow fence must be used when directing pedestrians to a safe walkway in addition to signage. Primary signs can be on the perimeter fence, but additional signs may be necessary to inform pedestrians of sidewalk closers that allow for safe crossing at a crosswalk. Perimeter fencing may not obstruct or block access to fire hydrants and fire department connections. Six foot chain link fences may be used to secure large job.

Grounds Protection

Contractor shall provide and maintain protection for all existing lawns, trees, curbs, gutters, hydrants, fire department connections, light standards, drives, walks, street signs, buildings not noted for removal, etc. Damage will be repaired or the items replaced at the Contractor's expense in accordance with the General Conditions and project specifications. If any digging is required on campus, Contractor will need to coordinate these activities with the UCM Project Manager, Plant Operations and EHS.

Construction Site Safety Inspections

UCM EHS and Infection Control may conduct unannounced safety surveillance inspections to verify compliance with applicable regulatory requirements and UCM policies and procedures at any time during the course of the project. Projects will be monitored by UCM Facilities, Project Management, EHS, Infection Control and Plant Operations. Identified infractions and/or safety hazards will be communicated to the UCM Project Manager, and Contractors will be expected to take appropriate corrective action(s) to immediately address the issue and take measures to eliminate the risk of recurrence.

Willful violations of applicable policies, regulatory standards and poor safety performance may be raised to succeeding levels of management within a Contractor's organization and UCM management. A progressive improvement plan may be necessary to implement corrective actions to avoid future violations and business interruptions.

Emergencies

Medical Emergency

In the event of an injury or illness requiring immediate medical attention, dial 702-6262 from any internal UCM phone if the person is non-ambulatory. Otherwise, report directly to the Emergency Department and then dial 702-6262 (if ambulatory). Provide the dispatcher with the following information:

- 1) Nature of emergency;
- 2) Location (department name/number, building letter, column number);
- 3) Your name and the name of the company for which you work;
- 4) Also notify the UCM Project Manager; and
- 5) Only properly trained UCM personnel (i.e. EVS) are qualified to clean up injury sites involving body fluids.

Fire Response

In the event of a fire, locate and pull the nearest fire pull station and call 702-6262 (Public Safety & Security). Be aware of the building alarm chime code or voice annunciated system. Do not attempt to extinguish a fire yourself, unless you are trained to operate a fire extinguisher.

Follow the UCM Fire Plan:

- R** = RESCUE from smoke/fire. Move persons to safety
- A** = ALARM Activate fire alarm pull station nearest you. Call 702-6262 from a safe location.
- C** = CONTAIN the smoke/fire. Close all doors.
- E** = EXTINGUISH the fire if safe to do so and safe exit available
- R** = RELOCATE Shut off equipment, stop hot work. Be ready to evacuate to ground level.

Evacuation

Evacuations may be indicated by a loud continuous intermittent or electronic signal followed by a specific announcement over the public address system or via our mass notification system. It is essential that there be adherence to all evacuation instructions. The UCM Project Manager will be responsible for reviewing evacuation routes with the Contractor.

Code Silver

Code Silver is the terminology that the Medical Center uses to inform staff that there is a violent intruder on campus. You will hear the announcement over the PA system in addition through our mass notification system.

Response will vary depending on the immediacy of the threat. The building and unit where the intruder is located is considered the Code Silver or Active area. All other locations are at risk, but staff are not considered to be in imminent danger in these areas. These areas are considered "Inactive" areas.

Code Silver Active Area: If Contractor personnel hear shots fired or know of an incident where someone has discharged a firearm, threatened to do so, or has been injured with a weapon, the following steps shall be taken:

- 1) If immediately confronted with the intruder, take steps to protect yourself.

- 2) Evacuate the area if safe to do so and find a secure place to hide. Help others evacuate, if possible and safe to do so, but evacuate regardless of whether others follow. Do not stay behind because others will not go. Specifically, when evacuating:
 - a. Leave your belongings behind;
 - b. Prevent others from entering the area; and
 - c. Call 911 when you are safe.
- 3) If unable to evacuate, you should attempt to hide. Attempt to find a secure location to barricade yourself away from the intruder. You may wish to consider additional actions, such as barricading areas where patients are located, if safe to do so. Additionally, when sheltering in place:
 - a. Lock and/or blockade the door;
 - b. Silence phone and remain out of the shooter's view;
 - c. Hide behind large objects to provide protection if shots are fired in your direction;
 - d. Remain very quiet; and
 - e. Do not trap or restrict your options for movement.
- 4) As a last resort, physically confront the attacker as follows:
 - a. Attempt to incapacitate the shooter;
 - b. Act with physical aggression;
 - c. Improvise weapons; and
 - d. Commit to your actions.
- 5) Once you are in a safe location, call 911 to report a violent intruder, then call Public Safety 7022-6262 if able.
- 6) If you and the shooter are outside when the event occurs, act as follows:
 - a. Drop immediately to the ground, face down and as flat as possible.
 - b. Get to a safe place by staying low to the ground and moving as quickly as possible away from the gunfire when safe to do so
- 7) When you reach a safe place, stay down and do not move.
- 8) Wait and listen for further instructions from law enforcement

Code Silver Inactive Area: Contractor personnel NOT in the Code Silver/Violent Intruder active area should plan to remain on their worksite and shelter in place until they receive further direction from either law enforcement or the UCM Public Safety. Contractor personnel should take the following steps:

- 1) Immediately lockdown your area and DO NOT let anyone enter the worksite with the exception of law enforcement personnel.
- 2) Account for all construction personnel at the worksite.
- 3) Continue this response until you hear an "All Clear" over the public address system or receive further direction from law enforcement or the UCM Public Safety.

Chemical Spills

A spill is defined as an accidental release of any product such as, but not limited to: paint, adhesive, cleaners, or other liquid, including water, where outside of its normal container except during use. There is no minimum quantity that defines a spill. Chemicals (including, but not limited to, paints, cleaners, thinners, adhesives, and tar) may not be disposed of by dumping on the ground or into sanitary or storm drains. Contractors and Subcontractors are to clean up their own spill and to call the EHS to report it and receive guidelines on the disposal. All sewer or supply water spills, leaks or breaches shall be reported to the Plant Operations Department 702-6295. A Contractor-provided "flood cart" with mitigation supplies (such as a wet vac) is requested be to be on site if a plumbing breach is possible for those projects at risk. All chemical spills, including those that occur outside a building, shall be reported immediately by dialing 795-SAFE (may connect to on-call pager) applicable to the site where you are working and providing the dispatcher with the following information:

- 1) Nature of emergency (injury, spill, fire);
- 2) Location (department name/number, building letter, column number);

- 3) Your name and the name of the company for which you work;
- 4) Identity of material spilled/released; and
- 5) Quantity of material spilled/released.

Contractors shall be responsible for all spills that result from their work at any UCM facility. However, Contractors cannot start cleaning up the spill until authorized to do so, unless failure to do so immediately poses an imminent risk to human health or the environment.

If UCM determines that a spill clean-up is beyond the Contractor's ability, or the Contractor has failed to clean up the spill adequately, UCM shall use its own personnel or contract with spill clean-up specialists.

In all cases, the Contractors shall be responsible for all costs. These costs may include removal of contaminated materials, as well as restoration of the area.

Medical Gas Leaks or Accidental Breeches

After planning with the Project Manager and Plant Operations, ONLY CUT CONFIRMED, CAPPED MEDICAL GAS LINES AFTER A LOCAL VALVE.

For any accidental breach of a Medical Gas Line:

- 1) IMMEDIATELY clamp off the leak while a second person simultaneously contacts the Plant Operations Department 702-6295, or locate the zone shut off valve and shut it off;
- 2) The Project Manager or Plant Operations will confirm any patient incidents; and
- 3) The responsible Contractor shall follow up with a detailed written Incident Investigation, and report to the Project Manager within 24 hours of the incident's occurrence.

Utility Damage and/or Accidental Outages

If any essential utilities, such as, electrical, plumbing, HVAC, medical gas, fire alarm, or sprinkler, are damaged or compromised, IMMEDIATELY call Plant Operations Department at 702-6295 and your UCM Project Manager. Provide specific details of the damage and/or associated impact to essential utilities. The responsible Contractor must submit a detailed written Incident Investigation Report to the Project Manager within 24 hours of the incident's occurrence.

Accident/Incident Investigation

The UCM Project Manager, accompanied by the Contractors, must formally investigate all incidents, injuries and spills, including near misses, in order to prevent reoccurrence.

- 1) Contractors must collaborate with the UCM Project Manager and EHS in the incident investigation and root cause corrective action implementation.
- 2) An investigative report assessing the root cause and corrective action must be submitted within 24 hours of the incident's occurrence to the EHS with a copy to the UCM Project Manager.
- 3) Any unsafe conditions and activities must be reported to the UCM Project Manager and EHS, and must be corrected immediately.

For all incidents:

- 1) Secure the area with barricades/caution tape to preserve the scene;
- 2) Perform a walk-through of the incident site; this may occur with the EHS as well as the UCM Project Manager;

- 3) Interview witnesses, where applicable;
- 4) Take pictures and/or create a diagram of the incident site;
- 5) Submit a written incident investigation report to the UCM Project Manager, within 24 hours of the incident occurrence;
- 6) The report must describe the incident and identify root cause and corrective actions, along with a timetable for implementing the corrective actions; and
- 7) With the assistance of the UCM Project Manager, an internal divisional incident report must be completed for all incidents that result in a recordable injury, environmental release deemed hazardous by the EHS, or significant property damage.

Fire / Life Safety

Interim Life Safety Measures (ILSM)

The Joint Commission and NFPA require health care organizations to implement interim life safety measures (ILSM's) to ensure that an equivalent level of protection is provided to patients, visitors and staff when construction and renovation activities temporarily impair a building life safety feature. These include, but not limited to, impairments of fire compartments, means of egress, exit signage, fire alarms system, sprinkler systems and/or emergency service access. Contractors will may responsible for one or more of the following ILSM'S depending on the building safety feature(s) temporarily impaired by the construction project:

- 1) Initiate a fire watch when the fire alarm system is out of service more than 4 out of 24 hours or a sprinkler system is out of service for more than 10 hours in a 24-hour period in an occupied building.
- 2) Post signage identifying the location(s) of alternative exit(s) to all occupants effective when the means of exit egress is compromised.
- 3) Provide additional portable fire extinguishers within the construction site. *Note: This is the responsibility of the contractor.*
- 4) Provide temporary, but equivalent fire alarm and detection systems when a fire system is impaired.
- 5) Inspect, test and document temporary fire alarm and detection systems monthly to maintain fire safety.
- 6) Build temporary construction partitions that are smoke-tight, or made of non-combustible or limited combustible material that will not contribute to the development or spread of fire.
- 7) Conduct daily inspections of the construction site during working hours to validate compliance with required ILSM measures and general safety and OSHA standards. Daily Inspection Forms are required to be posted at the main entrance of the construction site.
- 8) Enforce storage, housekeeping, and debris-removal practices that reduce the building's flammable and combustible fire load to the lowest level feasible.
- 9) Provide additional training to those who work in UCM on the use of firefighting equipment.
- 10) Conduct one additional fire drill per quarter in areas affected to improve preparedness. *Note: This is the responsibility of the EHS Department.*
- 11) Provide education to promote awareness of building deficiencies, construction hazards, and temporary measures implemented to maintain fire safety and compensate for impaired structural or compartmental fire safety features.
- 12) Maintain and unobstructed access to buildings for Emergency Medical Services and Fire Department.
- 13) Post ILSM Plan at the main entrance of the construction site that list the required Interim Life Safety Measures for project.

Interim Life Safety Risk Assessment Process

If the Pre-Construction Risk Assessment (PCRA) discloses project activities that will impair any building life safety feature, the Project Manager will be required to conduct an Interim Life Safety Risk Assessment. Specific risk criteria will be used during this assessment process to define the appropriate interim measures for the construction project and/or phase of the project. This ILSM Risk Assessment process includes the following procedures:

- 1) Prior to a construction or maintenance project that may involve an impairment of any life safety system (including but not limited to egress, sprinklers, alarms, detection, walls, slabs, ceilings, floors, doors), a ILSM risk assessment will be completed by the Project Manager responsible for the construction or maintenance project using the ATG Online Permit System (www.atginc.com). Additional information such as a drawing or scope detail should be included as an attachment to the electronic record.
- 2) If the project has multiple phases or is expected to be of long duration, additional separate ILSM permits must be completed for the project as the impairment of building life safety feature may change throughout the life of the project.
- 3) ILSM Assessments submitted via the ATG Online Permit System will be reviewed and approved by the Environmental Health & Safety Department. Allow at least ten (10) working days for EHS to complete the review/approval process.
- 4) Subsequent to approval by the Environmental Health & Safety Department, an ILSM Plan listing required life safety measures will be issued to the responsible Project Manager.
- 5) The Project Manager will be responsible for reviewing the ILSM Plan and implemented the required interim life safety measure(s) prior to starting project activity at the construction site.
- 6) A copy of the ILSM Plan shall be posted outside the main entrance of the construction site.
- 7) When noted in the ILSM Plan, the Project Manager is responsible for conducting awareness training in the adjacent areas to promote awareness of building deficiencies, construction hazards and ILSM measure(s) that will be implemented during the project. Awareness training will be documented using Appendix D - Interim Life Safety Awareness Acknowledgement Form. The Project Manager will be responsible for scanning, uploading and attaching all completed Awareness Acknowledgement Forms to the appropriate project in the ATG System.
- 8) When noted in the ILSM Plan, the Project Manager is responsible for conducting a Daily Inspection during active construction days. The inspection will include, but limited to, verifying compliance with required ILSM measures and other general safety requirements. Note: Construction Site Safety Inspections may be may be delegated to the contractor on large projects if the contractor provides qualified personnel for performing this requirement, such as, a Contractor Safety Officer. The delegation of this assignment should be confirmed and approved by the person responsible for the project, i.e., Project Manager.
- 9) The ILSM Daily Inspection Form shall be posted with the ILSM plan at the main entrance of the construction site.
- 10) Safety rounds will be conducted at least monthly by the Environmental Health and Safety Department for all active projects requiring ILSMs. Compliance with required ILSMs will be evaluated and completed ILSM Daily Inspection Rounds Forms will be collected during this rounding process.
- 11) The Environmental Health and Safety Department will be responsible for scanning, uploading and attaching all completed ILSM Daily Inspection Forms to the appropriate project in the ATG System.
- 12) Any modifications, additions or deletions of any life safety device, including but not limited to, heat detectors, smoke detectors, sprinklers, fire extinguishers, fire hoses, fire valves, fire doors, rated walls, evacuation routes will be communicated to the Plant Operations and the Environmental Health & Safety Department. Updates for the changes will be sent by the Project Manager to ATG via Space Planning for incorporation into the Life Safety drawings.

- 13) When the use of a space changes or for new construction, the purchasing of new extinguishers is the responsibility of the Project. For spaces that do not change use, such as minor renovations, the Environmental Health & Safety Department will supply the extinguishers.
- 14) Any penetrations created by the Project will be filled with approved 3M Fire stopping material or systems. Fire stopping shall be performed in accordance with applicable NFPA standards by UCM's approved sole source certified fire-stopping contractor.
- 15) All life safety devices listed above will be installed and fire rated according to Code.

Reference: UCM Policy S06-10 Implementation of ILSM, Fire System Impairments, and Fire Watch

Fire Watch

Fire Watch is a temporary process of physically patrolling in an area that has an impaired automatic fire alarm system, fire suppression systems or an area where hot work is being performed to observe and correct life safety deficiencies and initiate fire response should a fire occur during the impairment. Personnel assigned to fire watch cannot be assigned to any other duties.

When is a Fire Watch Required

Fire Watch is required when project activities, routine maintenance/testing activities, and/or unplanned emergency event meet any of the following criteria:

- 1) Hot work is being performed.
- 2) More than 25% of any Fire Alarm System sub-zone on one floor is impaired or non-operational for more than 4 hours in a 24 hour period.
- 3) Fire Alarm Panel impaired or non-operational for more than 4 hours in a 24 hour period.
- 4) More than 25% of a Sprinkler sub-zone on one floor or standpipe affecting multiple areas is impaired or non-operational for more than 10 hours in 24 hour period. Note: Draining a whole system should be avoided if the drainage can occur locally.
- 5) Fire Pump impairments or non-operational for more than 10 hours in a 24 hour period.

When a Fire watch has been implemented it must remain in effect for a minimum of 1-hour after hot work procedures have ceased or until building life safety systems have been fully restored.

Fire Watch is not required for impairments associated with routine maintenance and testing if impairments do not exceed the impairment criteria listed above. However, an informal fire watch is highly recommended by having one electrician located in the area impaired and another electrician located by the fire panel for the duration of the work.

No documentation is required for an informal fire watch or for hot work.

Fire Watch Procedure

In the event of a system impairment that requires a Fire Watch, the following procedures shall be implemented:

- 1) Fire Watch shall be declared by the person and/or department responsible for the impairment.
- 2) Notify the Plant Command Center and the Environmental Health and Safety via telephone or email a scanned and completed the Fire Watch Notification and Log, Part 1 – Fire Watch Notification.
- 3) This should include the following information:
 - a. Date;
 - b. Location Name and Address;

- c. System(s) impacted;
 - d. Reason for Fire Watch;
 - e. Anticipated duration, if known; and
 - f. Name and contact information.
- 4) Determine the coverage needed to effectively perform the Fire Watch of impaired areas(s). Note: Consult with Environmental Health and Safety for assistance.
 - 5) Recruit and assign the appropriate number of personnel (Fire Watch Officers) to conduct the Fire Watch.
 - 6) Individuals assigned to Fire Watch duties are not to be permitted to perform any other duties during their watch assignment.
 - 7) Inform the assigned Fire Watch Officer(s) of their responsibilities, area(s), date(s), and time(s) they will provide Fire Watch coverage.
 - 8) Review Fire Watch Notification and Log, Part 2 with all assigned Fire Watch Officer(s) so they clearly understand their assigned to Fire Watch duties.
 - 9) Prior to implementing the Fire Watch all affected department managers (Plant, Project Managers, Safety, Public Safety, Nursing and other affected departments) should be notified of the Fire Watch.
Note: Email is the preferred method of communicating the implementation of a Fire Watch.

Reference: UCM Policy S06-10 Implementation of ILSM, Fire System Impairments, and Fire Watch

Fire Wall & Floor Penetrations

At UCM facilities, fire walls and smoke barriers have been constructed throughout to comply with applicable National Fire Protection Association (NFPA) standards and provide safe areas of refuge for patients, visitors, and staff in the event of a fire. Fire walls and smoke barriers must be placed from the floor to the adjacent floor and extend from the exterior wall to the exterior wall or from one fire wall to another. The Contractor shall ensure that all fire/smoke barrier walls and floors comply with all applicable codes.

Any penetration that occurs above or into a ceiling, into a wall or floor must be contained when made. If the project cannot be contained within an enclosed unoccupied room requires an ICRA or use of a BIO Cart, HEPA Cart or comparable barrier whenever making penetrations in any patient care building. Exceptions may be approved after review by UCM Infection Control. Any granted exceptions must be obtained in writing.

Penetrations to fire or smoke barrier walls, ceilings, and floors must be properly sealed, filled or repaired with a UL approved firestop/barrier material or firestop systems [3M Firestop products is the preferred manufacturer] installed in accordance with State approved codes and facility requirements. All firestop materials and/or firestop systems shall be installed by UCM's approved sole source firestop contractor. Contractors shall be responsible for coordinating the sealing, filling, repair or installation for all penetrations throughout the course of the project with UCM's approved sole source firestop contractor. No other Contractor is allowed to perform firestopping at UCM facilities.

As construction progresses, any stray opening through walls and floors found by the Project Manager or EHS must be reviewed by the Contractor.

Penetrations made by the Contractor and/or Subcontractor and not filled per these requirements will become a back-charge assessed to the Contractor on a time and materials basis according to market conditions at the time of discovery.

Contractor will report all existing wall or floor penetrations found to the UCM Project Management before Work commences. A photographic record of the existing penetrations shall be submitted to the UCM Project

Manager prior to commencing Work. Existing penetrations will be repaired UCM's approved sole source firestop contractor upon receiving approval by UCM Project Management.

In addition to the requirements provided in the General Conditions, the Contractor's final application for payment will not be processed until all wall and floor penetrations have been filled in accordance with the requirements stated herein, and approved by UCM Project Management.

If, during construction, the Contractor or any of the Contractor's personnel encounters one or more penetrations not found and reported in the photographic penetration report this should be reported to the UCM Project Manager. A plan of action will be developed and implemented by the UCM Project Manager to properly address/correct the penetration with UCM's sole source Firestop Contractor.

Note: *Fire and Smoke Barriers shall be maintained at all times.*

Fire Alarm / Sprinkler System Impairments

Contractors are required to contact the UCM Plant Operations Department when performing work near or above smoke detectors or heat detectors to determine appropriate isolation methods of the detectors. Any activities that may cause dust near any detector will create an alarm. Treat all detectors in the project area and outside the project area as possible sources of fire alarm activations. Take every precaution to prevent alarm activations. Any fire alarm activations in the area near the Contractor's project will be considered as caused by the contractors activities and could result in a fine from CFD which will be the Contractor's responsibility.

The shut-down or impairment of any fire alarm or sprinkler system will require an approved Utilities Shut-Down Request Form. Utilities Shut-Down Request Forms can be completed and submitted at the Plant Operations Sign Shop located in the basement of Gilman Smith Room W-025.

Any fire alarm or sprinkler system impairments of four hours or more require a fire watch following UCM Fire watch guidelines.

Hot Work

Contractors must obtain a permit for any cutting, welding, seaming, or other hot work prior to the onset of work. If a permit is required, the permit must be applied for 48 hours in advance, and the record of approval will be kept on file by the Contractor. A hot work permit must be affixed by the Contractor to the area under construction, with all applicable rules followed as stated on the permit. Extreme caution must be used at all times during this type of work. Workers shall be licensed for all intended work, and proof submitted to the Fire Marshal on request.

Any deviation from permit requirements may be cause for immediate cessation of work at the Contractor's expense. Fire suppression equipment must be provided by the Contractor where cutting, welding, seaming, or other hot work is conducted. Adjacent areas potentially affected by any cutting, welding, or hot work must be protected by the Contractor. Contractors must provide their own fire suppression equipment.

A fire watch for one hour shall be in effect after completion of the hot work, or as otherwise stated on the permit.

For activities causing dust, paint spraying operations, or any other activity that might activate a smoke sensor, request a shut down. If the smoke sensor is covered with plastic, paper, or other material, the Contractor must ensure that it is uncovered before leaving the area (this includes lunch, breaks, evenings, and weekends). If the smoke sensor must remain covered, the Contractor must have a fire watch for that area.

If the Contractor's activities will affect the sprinkler system in any way, the Contractor must make arrangements with a UCM Plant Operations to deprogram the water flow device at (773) 702-6295. The Contractor must complete the UCM Plant Operations shut-down paper work prior to the work. The Contractor may not start their activities until appropriate systems have been disabled by UCM personnel. The Contractor must make sure it is placed back in service by UCM Plant Operations before leaving the work area.

Note: Any impairment to the Fire Detection or Fire Protection Systems must be approved and coordinated prior to the onset of work with the UCM Project Manager and Plant Operations Department. Hot Work is prohibited in any area that has an impairment of the Fire Sprinkler System.

Contractors must comply with the following hot work permit requirements:

- 1) All Hot Work Contractors, their helpers and Contractor superintendent will complete annual UCM hot work training requirements.
- 2) A hot work permit shall be requested by the Contractor by calling the Plant Operations Department for any activity that produces a source of ignition. Such activities include but are not limited to:
 - a. Gas welding and cutting
 - b. Electric arc welding
 - c. Heating torches and other open flames
 - d. Tar pots and kettles
 - e. Other activities that produce a spark.
- 3) In some work activities, other hazards must be addressed before hot work may be safely undertaken. These hazards may involve:
 - a. Energized equipment
 - b. Pressurized or contaminated piping
 - c. Entry into confined spaces.
- 4) Hot work permits are issued for one Contractor's continuous work shift for a specific operation and will be displayed at the construction site.
- 5) Hot work permits are not transferable across Contractor shifts.
- 6) Suitable fire extinguishing equipment (e.g., fire blankets, non-combustible heat shields, flash curtains and fire extinguishers) shall be provided by the Contractors and shall be immediately available in all welding, cutting and brazing locations.
- 7) The following fire prevention activities must be completed before hot work can begin:
 - a. Combustibles shall be moved at least 35 feet from the hot work operations. If combustibles cannot be removed, they must be protected using flame-retardant covers or curtains.
 - b. Flammable liquids shall be removed from the area or totally isolated from the vicinity of the hot work. The UCM Project Manager is to be notified if any fire extinguishing equipment has been discharged.
 - c. Tarpaulins used as hot work barriers must be listed as flame resistant.
 - d. Lines previously containing a flammable or combustible fluid must be purged, protected by inert gases, and verified safe for exposure to ignition sources.
 - e. Floor, wall and other openings must be closed or covered, including floor drains.
 - f. Combustible dust must be cleaned from the vicinity of the hot work operations.
 - g. Surrounding floors made of combustible construction must be protected with a flame-retardant cover.
- 8) Where electrical equipment is not involved, the floors may be swept clean and wetted with water.
- 9) Contractor personnel shall be informed of the location of the nearest fire alarm pull box.
- 10) Contractors must bring their own fire extinguishers of the appropriate class for the hazards involved.
- 11) Fire watch and operator must be trained in use of portable fire extinguishers and RACER.
- 12) The EHS must be notified if a fire extinguisher is used in response to an incident directly related to hot work in progress.
- 13) For hot work involving open flame or high heat generation, a fire watch may be required during the conduct of the work as determined by the EHS Office. A fire watch is required for a minimum of 30

minutes after completion of the job, as directed by our insurance carrier (Factory Mutual). The Contractors shall provide the manpower for the watch.

Reference: Policy S06-21 Hot Work Precautions

False/Nuisance Alarms

Per Chicago City ordinance, WHEN THE CONTRACTOR OR ANY OF THE CONTRACTOR'S PERSONNEL ARE KNOWN TO HAVE CAUSED A NUISANCE ALARM, THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL FINES. NUISANCE ALARMS CAN RESULT IN \$500.00 OR MORE PER RESPONSE VEHICLE IN FINES.

Infection Control & Prevention

Infection Control Risk Assessment (ICRA)

It is the policy of UCM to protect patients, visitors and employees from infection risks during construction or renovation projects. Dust created during renovation and construction often is a marker for the release of fungal spores (e.g., Aspergillus) which can cause severe or fatal infections in patients. An Infection Control Construction Risk Assessment ("ICRA") form (Appendix E) must be submitted by the project manager to the Infection Control Department at least 7 days prior to the anticipated start of construction for final written approval. The Contractor may be required by the Project Manager to complete the first draft of this document. The Project Manager can contact the Infection Control Program for assistance in planning for completion of the ICRA during regularly scheduled office hours. Infection Control will sign the final ICRA indicating approval of the risk mitigation plan. The signed ICRA and attached map or drawing is required to be posted at the main entrance of the construction project at all times.

The UCM Project Manager/Director shall:

- 1) Include a copy of this ICRA Form in the contract documents to construction Contractors and consultants;
- 2) Have construction barriers, the construction site access door, and number of fire extinguishers detailed in the bid documents, when possible;
- 3) Review the design drawings with Infection Control and determine the type of construction activity and interventions necessary to protect patient's visitors and staff;
- 4) Discuss the need for patient relocation with Infection Control and normal occupants of the space;
- 5) Set up a pre-construction meeting(s) with the contractor, user, Infection Control, Safety and Security as needed-;
- 6) Designate an elevator used for the transport of construction materials and debris;
- 7) Designate access to janitor's closet if applicable;
- 8) Designate access to restrooms, if applicable;
- 9) Visually monitor the construction site at regular intervals;
- 10) Restrict access to the construction site to authorized personnel;
- 11) Resolve problems identified by Infection Control and ensure that corrective measures are taken;
- 12) Have Contractors implement designated Infection Control Class of Precautions for the project;
- 13) Inform the contractor of emergency response procedures; and
- 14) Notify all downstream users in advance of changes or shut-downs to domestic water lines so that lines may be flushed and alternative lines (e.g. for hand washing) planned.

The Contractors and Construction Workers shall:

- 1) Implement the required infection control precautions needed for the type of construction activity; and
- 2) Implement the required safety precautions for the type of construction activity;

A clean mop and bucket filled with clean water should be available to clean when dust is noted on the floor of the doorway to the construction site barrier or any elevators or stairways used by workmen. Compressed air or a vacuum cleaner is NOT to be used to clear away dust or dirt; and all workers must display construction identification obtained from Public Safety.

The UCM Project Manager will be responsible for routinely monitoring construction and renovation areas for compliance with the UCM Policy IC02-22 "Infection Control During Construction and Renovation" and adherence to the applicable procedures. Any breaches in infection control practices must be reported immediately to Infection Control. Infection Control will identify any additional requirements because of the breach.

Reference: UCM Policy IC02-22 Infection Control during Construction and Renovation

HEPA/Negative Pressure Requirements

HEPA-equipped air filtration machines must be used to ensure negative pressure in the construction area to prevent dust from escaping the work site. HEPA-equipped air filtration machines must maintain a negative pressure differential of at least 2.5Pa (-0.01-in. water gauge) into the construction area barricade entrances. HEPA equipped air filtration machines must be connected to normal power and ganged to a single switch for emergency shutoff and must run continuously.

Whenever possible, the construction air should be exhausted outside the building with no re-circulation. If this is not possible, the air can be exhausted internally if interim measures are implemented to maintain life safety code compliance. If the exhaust must tie into a re-circulated air system, a pre-filter and high efficiency filter (95%) must be used before exhaust to prevent contamination of the ducts. Through review of UCM life safety drawings will be required to verify smoke compartments and/or fire walls prior to running hoses for negative pressure. Penetrations are permitted in non-rated fire/smoke walls and the hose can exhausted to a suspended and/or hard ceiling exhaust grille. Penetrations for exhaust in smoke compartment walls and/or fire rated walls shall require the installation of a fire/smoke damper to maintain the rating and life safety protection during the construction project. Fans should be turned off before opening ductwork and necessary interruptions should be planned for to minimize risk.

Ongoing monitoring will also be required to verify negative pressure is maintained throughout the life of the construction project. UCM requires the use of a manometer with an automated alert system to monitor negative pressure when required for the construction project.

Containment Barriers

The construction area shall be isolated, as the project requires. Interim barriers will be required to protect patient care areas and terminal cleaning (not to be misconstrued as merely "broom" cleaning) is required prior to removal of the barriers. Contractor barriers for life safety or infection control shall consist at a minimum of the following requirements:

- 1) Barrier Doors: Solid core wood in metal frame, painted.
- 2) New Gypsum board assemblies rated and/or smoke as required.
- 3) Constructed from floor to ceiling/structure as identified and approved in the ICRA.
- 4) The public side of the barrier must be painted to match adjacent walls.

- 5) The public side of the barrier must have base to match adjacent base.
- 6) The public side must have necessary flooring patched as required for a finish look.
- 7) The public side must have necessary ceiling patched as required for a finish look.
- 8) Construction entrance door and frame shall match as closely as possible to adjacencies.
- 9) The barrier must not interfere with existing fire sprinkler or fire alarm device coverage.
- 10) The barrier must not interfere with existing HVAC supply or return air grilles.
- 11) The barrier must not interfere with existing lighting fixtures.
- 12) Any use of plastic or poly must be fire rated and stamped on the materials being used (Sheet plastic must be fire retardant polystyrene, 6-mil thickness).
- 13) The signed ICRA must approve and identify allowable uses for plastic barriers.
- 14) Doors into construction areas are required at a minimum to be equipped with the following:
 - a. Door Closer
 - b. Door Gaskets Around Frame
 - c. Door Sweep
 - d. Lockable Door Hardware with Construction Access Key Core
- 15) UCM Facilities and Public Safety must have a key to all areas of construction for emergencies
- 16) Post adequate and necessary signage on each access point into a construction area.
- 17) Post signed ICRA and ILSM Permit at main entrance to Construction Project.
- 18) Walk-off mats installed and maintain within vestibule or anti-room and in public side of corridor (Adhesive Walk-Off must be a minimum size mats of 24 inches x 36 inches).
- 19) Sprinkler heads should be protected with approved NFPA head covers.
- 20) Negative pressure machines with HEPA filtration as necessary or other proper filters.
- 21) Negative pressure must be maintained to at least -0.03 inches of water.
- 22) Proper negative air measuring devices (manometers) must be installed and visible on the public side of the corridor for each construction areas. Recording manometers or manometers with capability of alerting the contractor and designated UCM personnel may be required for high risk projects.
- 23) Construct a vestibule or anti-room where ever possible to help maintain negative air.
- 24) HVAC shall comply with the following:
 - a. Temporary filters on intakes as approved in the ICRA.
 - b. Cover and/or blank off return air grilles as approved in the ICRA.
 - c. Cover and/or blank off supply air grilles as approved in the ICRA.
- 25) Maintain any rated or smoke barriers within the construction area and ICRA barriers.
- 26) Barrier types and rating should be labeled on each barrier.

Cleaning of the area(s) where barrier(s) are constructed must be done by the Contractor at completion of the barrier construction; plans must also describe a terminal barrier removal process that minimizes dust dispersal.

Barriers around construction must be monitored to maintain protection of in-use patient care areas as described. Patient doors adjacent to construction area must be kept closed, with appropriate traffic control.

The construction zone must be maintained in a clean manner by Contractors and swept or HEPA-vacuumed daily or more frequently as needed to minimize dust. Adjacent areas must be damp-mopped daily or more frequently as needed. Plans must describe a terminal barrier removal process that minimizes dust dispersal.

Personal Cover Precautions

Contractors must observe cover precautions (i.e., protect clothing from dust or other construction related contamination). This means that whenever the Contractor's personnel are working outside, with sewer lines, above ceiling tiles, or at any construction site where the Work may contaminate clothing or coveralls with materials not usually associated with a clean indoor environment, all workers must:

- 1) Change clothing or coveralls prior to entering or re-entering the UCM facility. If personnel contaminate their clothing and cannot change into clean clothing or adequately cover clothing, they will be denied entry into the facility;
- 2) Wash hands thoroughly before entering the facility; and
- 3) Ensure that hair has not been contaminated. Hair contamination may require using a cover or washing the hair before entering the facility.

Occupied Patient Care Areas

Contractors may not enter or work in a working patient care area e.g., a nursing unit , procedure room or clinic even during off hours, unless approved by UCM Infection Control. In order to protect the health and safety [\[of our patients,\]](#) Contractors may not enter:

- 1) any occupied patient room with an isolation sign unless specifically trained on how to follow isolation procedures;
- 2) any room that has been vacated until it has been cleaned by housekeeping; or
- 3) any occupied patient room without the approval of the nurse or charge nurse.

Water and Sewage Handling Precautions

Unplanned interruptions of the water supply and sewage spills are situations which require immediate recovery and remediation measures to assure the health and safety of patients, visitors, and staff. Should any planned or unplanned interruption occur, the Contractor must follow Facilities and Infection Control procedures for restoration of service. Face and hand protection should be worn to prevent exposure.

IF A SEWAGE SPILL OR RELEASE SHOULD OCCUR, THE FLOW SHALL BE STOPPED IMMEDIATELY. NOTIFY UCM PROJECT MANAGER, PLANT OPERATIONS, INFECTION CONTROL, AND EHS IMMEDIATELY.

Utility Systems

Contractor Work Plan

Prior to starting construction projects and/or phases of construction, Contractor must present a work plan to the Project Manager and Plant Operations that shows how UCM operations and utilities will be maintained and/or protected during construction operations throughout each phase of the project.

Work that impacts UCM operations is any work that directly or indirectly affects the daily routine of UCM. It also includes work that may impact the visiting or general public such as interruption of normal vehicular and pedestrian access, parking, noise, vibration, deliveries, crane and equipment setups, street closures or detours, and other interruptions.

Work that impacts UCM essential utilities is any work that creates a risk of disruption or requires the temporary shutdown or impairment of any of the following essential systems: Electrical, Medical Gas, Medical Vacuum, Plumbing, HVAC, Vertical Transport, Pneumatic Tube System, Fire Alarm, Fire Suppression / Sprinklers and/or Information Technology Systems.

DISRUPTION OF MEDICAL CENTER UTILITIES IS EXTREMELY CRITICAL AND COULD RESULT IN LIFE-THREATENING SITUATIONS FOR PATIENTS WHO'S LIVES DEPEND ON CONTINUOUS SUPPORT OF CRITICAL UTILITIES.

NO WORK MAY BE PERFORMED ON ESSENTIAL UTILITY SYSTEMS, SUCH AS: ELECTRICAL, MEDICAL GAS, MEDICAL VACUUM, PLUMBING, HVAC, VERTICAL TRANSPORT, PNEUMATIC TUBE, FIRE ALARM, OR SPRINKLER SYSTEM, WITHOUT NOTIFYING THE PROJECT MANAGER AND THE PLANT OPERATIONS DEPARTMENT AND RECEIVING APPROVAL PRIOR TO STARTING WORK ON THESE CRITICAL UTILITY SYSTEMS.

Utility System Shut-Down Request

All projects and/or jobs requiring the shut-down of an essential Utility System, such as, electrical, medical gas, medical vacuum, plumbing, HVAC, Vertical Transport, Pneumatic Tube, Fire Alarm or Sprinkler System will require a Utility System Shut-Down Request Form to be completed by the responsible Contractors in accordance with the following process:

- 1) Project Managers are required to complete and submit a Utility Shut-Down Request to the Plant Operations Utilities Shut-Down Coordinator before the start of the project indicating what essential utilities will require impairment sometime during the course of the project. This Utility Shut-Down Request will reference the Project Number. All Contractors submitting monthly Utility Shut-Down Request during the course of the project will be required to reference this Project Number. No Utility Shut-Down Request will be approved without an approved Project Number.
- 2) Contractors will be required to complete a Utilities Shut-Down Request Form and submit the form to the Utilities Shutdown Coordinator located in the Plant Operations Sign Shop located in the basement of Gilman Smith, Room W-025.
- 3) Smoke and Heat Detectors require a minimum of 24 hour notice prior to shut down.
- 4) Sprinklers, steam, domestic water, and all Medical Gases require a minimum of 72 hour notice prior to shut down.
- 5) Fire Alarm and Fire Sprinkler systems cannot be shut down at the same time.
- 6) Requester must notify the Plant Department when the task is completed in order to restore fire protection or utility.
- 7) Approved Utilities Shut-Down Request Forms must be immediately forwarded to the UCM Plant Operations Command Center by the Utilities Shutdown Coordinator.

- 8) Information about these impairments/events will be recorded in the Plant Operations Call Center.

Stacks & Drains

- 1) Operational exhaust systems may not be compromised in any way without prior approval from the UCM Project Manager.
- 2) Stacks and drains may not be painted, installed, relocated, or altered in any manner or their identification changed without prior approval from the Plant Operations Department
- 3) Jobs that require removal or installation of stacks require coordination with the Plant Operations Department for proper stack identification management.
- 4) DO NOT put flooring over or fill in drains UNLESS it is verified to be abandoned by the Plant Operations Department.

Roof Work / Access

- 1) Access to roof work requires prior authorization from the UCM Project Manager, Public Safety & Security, and Plant Operations.
- 2) Employees performing work within ten feet of the leading edge of the roof shall review fall protection compliance requirements prior to commencing the task.
- 3) Contractors are not permitted on the roof in severe weather.
- 4) All unused materials must be removed after the job is finished.
- 5) Work on roofs with helipads (CCD and Mitchell) require notification to the Aeronautical Network.

Reference: UCM Policy S06-12 Persons Working on Mitchell Roof

Plumbing

Abandoned pipes must be removed and capped at the main feed in accordance with the project specifications.

Pneumatic Tube Systems

All abandoned pneumatic tube system components must be identified and removed.

HVAC

When installing new duct work, old ducting must be removed. No unused ductwork shall remain. When removing a branch of abandoned ductwork adjoining an active main, cap the branch takeoff at the main.

When eliminating pneumatic thermostats, lines must be removed and permanently capped at the main air line and air conditioning unit.

All new ductwork must be covered and protected from dust during transport, installation, and after installation until the mechanical system is functioning. All new and existing duct work must be cleaned prior to activating heating and cooling systems.

Medical Gas and Vacuum (Only required on Hospital / Patient Care Projects)

All construction personnel working on the medical gas system must be certified to do so. A copy of the installers' certifications must be given to both the UCM Project Manager and Plant Operations, and additionally kept in a Contractor's project file at the site. The certification information must be provided to Plant Operations. Medical gas compliance certification must be obtained by a certified third party.

Occupational Safety & Health

Hazard Communication

Contractor(s) must comply with, but not limited to, the following:

- 1) Contractors must have a written Hazard Communication program and must inform their employees of the location and availability of their program.
- 2) Contractors must train their employees on the physical, chemical and biological agents in the workplace.
- 3) Safety Data Sheets (SDS) must be readily available for materials supplied and used by the contractor.
- 4) The UCM Project Manager will communicate hazards inherent to the work location. Although chemical, biological or radiological hazards should be generally removed for construction work, EHS may be contacted for assistance with regard to chemical, biological or radiological hazards that may still exist in the work area.
- 5) All chemicals used by contractor personnel (including fuels, paints, coatings, coolants, cleaners, flooring materials, etc.) must have prior approval via the standards established by the project planning team.
- 6) Chemicals must be properly labeled and segregated to prevent potential hazardous mixing.
- 7) Factory Mutual-approved metal safety cans with self-closing lids and flame arrests must be used for handling flammable liquids not in their original containers.
- 8) All containers must be properly labeled as to their contents and potential chronic health and target organ effects and be stored/segregated properly to prevent potential hazardous mixing.
- 9) Flammable and combustible liquids must not be used or stored in any close proximity to open flames and ignition sources and must remain in closed containers.
- 10) All unused, flammable and combustible liquids or oily contaminated rags must be stored in a fire-rated bin, storage closet or removed from the premises on a daily basis.
- 11) Approved flammable and combustible liquids and other hazardous materials must be kept in closed containers when not in use.
- 12) Upon completion of the project, all unused materials must be taken off site.
- 13) Storage and transfer of flammable liquids must be grounded and bonded where necessary (i.e. drums).
- 14) Emergency Safety showers and eyewash units are provided in various areas of the facility. UCM Project Manager (eyewashes) or the Plant Operations Department (showers) can identify their locations. In the case that there is not an immediate eyewash station available, a Contractor-provided portable eyewash station shall be required.
- 15) All affected Contractor employees must wear appropriate personnel protective equipment per their Hazard Communication Program and the SDS of the product in use.

Personal Protective Equipment (PPE)

Contractors must furnish and require the use of personal protective devices and equipment (PPE) by their employees and by their Subcontractor employees. PPE must not be modified or used in any manner other than which it was designed. The Contractor must train their employees on the use and type of PPE.

Minimum PPE Requirements shall include the following:

Eye Protection

Contractor personnel must wear Safety glasses with side shields that meet the OSHA specifications of ANSI Z87 and Contractors must require their employees to wear appropriate eye protection for welding, chemicals, overhead ceiling work or in areas where high impact processes occur.

Hearing Protection

Hearing protection is required when posted in designated areas. Contractors are required to follow OSHA for their employees' hearing protection.

Respiratory Protection

- 1) When respiratory protection is required, Contractors must have an OSHA-compliant Respiratory Protection Program that includes proper training of employees if employees are at risk of exposure to airborne contaminants.
- 2) Contractors must provide their employees with respiratory protection to protect them from exposure to harmful dust, mist, fumes, gases or vapors when engineering and administrative controls are not adequate.

Gloves

- 1) Contractors shall ensure that their employees wear appropriate gloves to protect their hands from chemical agents, heat, cold, etc.
- 2) Gloves must not be worn around moving machine parts such as belts, pulleys and gears.

Protective Footwear

Contractor shall ensure that each affected employee uses OSHA appropriate protective footwear when working in areas where there is a danger of foot injuries due to falling or rolling objects, or objects piercing the sole, and where such employee's feet are exposed to electrical hazards or chemicals. (ASTM International standards, F 2412, Test Methods for Foot Protection, and F 2413, Specification for Performance Requirements for Protective Footwear)

Hard Hats

ANSI Z-89-rated hard hats are required on all construction sites areas where there is a potential for injury to the head from falling objects and shall be worn as designed.

Motor Vehicle Safety

Contractor(s) shall comply with, but not limited to, the following:

- 1) Contractor employees must park their personal vehicles on the street unless approved by Public Safety. UCM assumes no responsibility for vehicles, or articles in vehicles, parked on UCM property.
- 2) Vehicles and equipment must not block exits, walkways, driveways, loading areas, fire hydrants or emergency equipment.
- 3) Operators of vehicles with high overhead clearance must pre-plan travel routes on site to ensure overhead utilities, obstructions and or personnel will not be at risk of impact.
- 4) Contractor diesel and gas powered vehicles are prohibited inside buildings unless prior approval and arrangements for ventilation have been made with the UCM Project Manager and EHS.
- 5) Contractors must not perform extensive maintenance or repairs of vehicles while on UCM property.
- 6) Drivers must obey all traffic regulations and signs, and carry a current driver's license for any vehicles they operate.
- 7) Vehicle's engines must be turned off when parked.
- 8) Passengers may not ride in beds of pick-up trucks.
- 9) Drivers must be mindful of pedestrian traffic at all times.

- 10) Equipment, including rentals, brought to this facility, used inside or outside, must be identified with the name of the contractor utilizing the equipment.
- 11) All accidents must be reported immediately to Public Safety and Security 702-6262.
- 12) All cargo and equipment on vehicles must be properly loaded and secured. Vehicles must not be overloaded.

Powered Industrial Vehicles

Contractor(s) must comply with, but not limited to, the following:

- 1) Contractors are required to provide their own PIVs unless otherwise arranged through a separate contract (i.e. linen or gas delivery). PIVs are to be in proper working order and comply with OSHA or other local standards with regard to training and maintenance.
- 2) Contractors are not permitted to use UCM vehicles without authorization from the designated manager of the owning department.
- 3) Powered industrial vehicles include, but are not limited to, fork trucks, electric buggies, aerial lifts, earth-moving equipment, earthmoving equipment (bobcats), cranes and hoisting equipment.
- 4) PIV speed will be limited to 6-mph/10-kph (approximately twice walking speed).
- 5) Makeshift fork extensions and use of C-clamps are prohibited.
- 6) Contractors may not use any motor vehicle, earth moving or compacting equipment having an obstructed view to the rear unless the vehicle has a reverse signal alarm distinguishable from the surrounding noise level.
- 7) Diesel and gas-powered vehicles are prohibited inside buildings unless prior approval and arrangements for ventilation have been made with the UCM Project Manager, and the EHS.
- 8) Areas within the facility where vehicles will be operated must be assessed for hazardous conditions, and only vehicles designed for use under any identified hazardous conditions may be used in that area.
- 9) PIVs operated in parking lots or on roadways must be operated with flashing lights/strobes. If such operation will involve multiple trips for several hours or more, the UCM Project Manager should work with the site EHS to coordinate the activity with other operations at the facility that may be impacted (e.g. vehicle and pedestrian traffic flow)
- 10) Parked forklifts must have forks resting at ground level.
- 11) Vehicles may not be left running while unattended.
- 12) In the event of an indoor facility emergency notification, vehicles must be pulled over to the side of the aisle and motors switched off.
- 13) Actively leaking vehicles or equipment are prohibited from exiting the facility.
- 14) The contractor must repair or contain any leaking vehicle or equipment before exiting the facility and the EHS Department must be notified.
- 15) Riding construction equipment as a passenger is prohibited.
- 16) Towing or otherwise pulling loads with the forks on a forklift is prohibited.
- 17) PIV use shall be restricted or minimized during shift changes to minimize UCM employee exposure to PIV traffic.
- 18) PIV operators must abide by local rules (e.g., speed limits, restricted areas).

Overhead Work

This includes swing stages, lifts, cranes or scaffolding. Contractor(s) must comply with, but not limited to the following:

- 1) Loads must not be suspended over any persons or over occupied building areas.
- 2) Contractors must secure area with safety stanchions or caution tape and post warning signs to alert (block) pedestrians and area occupants of overhead work. The distance the barricade is set up away

from the work area must take into consideration the length of materials in use and the potential for materials to be projected horizontally or to rebound from the ground surface or surrounding structures if they fall from overhead. The set-up distance must allow for these types of hazards to be contained within the barricaded area.

- 3) When work is limited to a visual inspection without tools, Caution tape or safety cones at a minimum of two feet from the work (no potential for falling objects) may be used.

Confined Spaces

Contractor(s) must comply with, but not limited to the following:

- 1) Contractors must follow their own Confined Space Entry procedure program when entry into a UCM designated permit-required confined space is necessary.
- 2) Contractors may be asked to provide their procedure to the UCM Project Manager and EHS for review and approval prior to entering a permit required confined space.

Fall Protection

Primary fall protection systems provide protection for walking and working surfaces in elevated areas with open sides, including exposed floor openings, and include, but are not limited to, fixed guardrails, as well as scaffolds, aerial lifts and other approved personnel lifting devices.

A secondary fall protection systems consists of an approved full body harness and two shock-absorbing lanyards

Contractor(s) must comply with, but not limited to, the following:

- 1) For any employee working six feet or more above an exposed work surface, Contractors must provide primary fall protection whenever possible, and secondary fall protection only when primary fall protection is not practical.
- 2) For work that requires disconnection from an anchorage point, a full body harness with two shock absorbing lanyards and locking snap hooks must be used. Contractors must attach the second lanyard to a suitable anchorage point prior to disconnection from the original anchorage point.
- 3) The anchorage point must be at waist level or higher, and be capable of supporting at least 5,000 lbs. per employee attached.
- 4) Use of a secondary fall protection system must include the prior establishment of a rescue plan for the immediate rescue of an employee in the event they experience a fall while using the system.
- 5) Vertical lifeline systems must be made from materials (including the line itself) designed specifically for fall protection.
- 6) Vertical lifeline systems must be capable of supporting at least 5,000 lbs. for one person only.
- 7) Lifelines may be mounted either vertically or horizontally and are generally intended to provide mobility to personnel working in elevated areas.
- 8) Horizontal lifelines must withstand at least 5,000 lbs. impact and pulled tight enough to prevent deflection.
- 9) Horizontal lifelines must be positioned to provide points of attachment at waist level or higher.
- 10) Vertical lifelines used for vertical mobility must be equipped with sliding rope grabs or consist of self-retracting reel type lanyard/lifeline attached directly to a Safety harness. Retractable lifelines must be attached to supports capable of 5,000 lbs. impact loading.
- 11) Sliding rope grabs, approved for the size rope used, are the only approved method for securing a Safety lanyard to a vertical lifeline. Lanyards may not be attached to lifelines by means of knots and loops.

- 12) All fall protection devices used in elevated work must be inspected by a competent person prior to initial use (and annually thereafter) and by the user prior to each use.
- 13) Defective equipment must be tagged "Do Not Use" and immediately removed from service.
- 14) All Contractor employees who will be required to perform elevated work must be fully trained in elevated work practices and the care and use of safety equipment.

Scaffolding

Contractor(s) must comply with, but not limited to, the following:

- 1) All scaffolds must meet OSHA standards and be inspected by a competent person employed or contracted by Contractor prior to use and daily while in use. A competent person may be a 3rd party.
- 2) Fall protection must be used during erection and dismantling of supported scaffolds if over 6 feet tall.
- 3) The footings or anchorage for scaffolds must be sound, rigid and capable of carrying the maximum intended load without settling or displacement.
- 4) Guardrails and toe-boards must be installed on all open sides and ends of scaffold platforms that are more than four feet above the ground or floor.
- 5) Scaffolds must be provided with an access ladder or equivalent safe access. Contractors may not climb or work from scaffold handrails, mid-rails or brace members.
- 6) When freestanding, manually propelled scaffolds are used, the height may not exceed four times the minimum base dimension.
- 7) Employees may not ride on mobile scaffolds when they are being moved.
- 8) Rolling "Bakers" scaffolds must be used in accordance with design and may not be stacked or used in place of supported scaffolding.

Floor & Wall Openings

Contractor(s) must comply with, but not limited to, the following:

- 1) A cover or a standard railing and toe board must guard floor openings. The railing must be provided on all exposed sides, except entrances to stairways.
- 2) Wall openings, from which there is a drop of more than four feet, and the bottom of the opening is less than three feet above the working surface, must be guarded.
- 3) A standard railing or equivalent must guard every open-sided floor or platform four feet or more above an adjacent floor or ground level. A toe-board must be provided wherever persons can pass beneath the open sides or there is moving machinery or equipment which falling material could create a hazard.
- 4) Employees must be protected at all open sides and edges during the performance of built-up roofing work on low-pitched roofs.
- 5) Contractors must post, install, and maintain signs, signals and barricades to detour passage of persons and vehicles at locations where potential hazards exist.
- 6) Barricades must be placed where necessary to warn employees against hazardous conditions and activities, such as overhead work, floor and wall openings and trenches.

Barricades

Contractor(s) must comply with, but not limited to, the following requirements related to barricades for hazardous work area(s):

- 1) Snow fencing, expandable gates or equivalent must be at least 42" high.
- 2) Danger Tape must be used when work is in progress that is continuously attended and supervised with a hazard that has a potential for moderate to severe injury (e.g., mounting hoist rails, hot work).
- 3) Caution Tape or Cones must be used when work is in progress that is continuously attended and supervised with a hazard that has a potential for minor injury only (e.g., mounting a bulletin board, plumbing repairs on a water fountain).
- 4) Blocked main aisles require prior approval from the UCM Project Manager and must have detour signs posted to re-route personnel to alternate emergency exits.
- 5) Major construction areas must be barricaded and construction signs erected to keep out all unauthorized personnel. Curtain barriers must be made of flame retardant materials certified by Factory Mutual, Underwriters Laboratories or equivalent on the product label or the product specifications.

Contractor(s) must comply with, but not limited to, the following requirements related to trenches/holes/pits:

- 1) UCM Project Managers must be informed about all project activities that involve trenching or digging holes and pits.
- 2) If trenches, holes or pits are four feet or more in depth standard rail systems must comply with OSHA 1910.23(e) specifications.
- 3) If trenches, holes or pits are under four feet deep, but greater than one foot the snow fencing, expandable gates, or equivalent must be at least 42" high and positioned at least four feet from the edge of pit.
- 4) If trenches, holes or pits are under one foot in depth and unattended (i.e. work is not in progress), caution tape is required at least four feet from the edge of pit.
- 5) If the barrier will interfere with a main aisle or completely block the only means of egress of a department aisle, the 4-foot minimum distance from the edge of the trench, hole or pit alternate barricading methods should be discussed and approved by the UCM Project Manager and the EHS Department.

Excavation/Trenching/Drilling

Contractor(s) must comply with, but not limited to, the following:

- 1) Underground lines, equipment and electrical cables must be identified and located by the Contractor or Sub-Contractor prior to beginning work that involves trenching, excavating or drilling into structures. Any local "Call Before You Dig" program must be contacted as well for excavations and trenches. Ground Penetrating Radar may be requested by UCM for locating tunnels during crane lifts and conduit/rebar in concrete slabs for coring.
- 2) Contractor must assign a competent person to all trenching and excavation work. This person must be clearly identified to all employees assigned to the job.
- 3) Contractors may not initiate work without prior approval of the UCM Project Manager.
- 4) Walls and faces of trenches and excavations, four or more feet deep, must be shored, sloped or shielded as required by the type of soil encountered.
- 5) Prior approval from the UCM Project Manager is required before commencing, or continuing, with trenching deeper than four feet.
- 6) A confined space entry permit shall be required where oxygen deficiency or a hazardous atmosphere exists or could exist.

- 7) A stairway, ladder, ramp or other safe means of egress must be located in trench excavations that are four feet or more in depth so as to require no more than 25 feet of lateral travel for employees.
- 8) Daily inspections must be conducted by a competent person for evidence of a situation that could result in possible cave-ins, indications of failure of protective systems or other hazardous conditions.
- 9) Contractors and UCM employees may not be permitted underneath loads handled by lifting or digging equipment.
- 10) Contractors must be protected from excavated or other materials and equipment that could cause a hazard by falling or rolling into the excavation.
- 11) Physical barriers must be placed around or over trenches and excavations. See "Barricades," supra, for details. Flashing light barriers must be provided at night.
- 12) Erosion control measures to minimize storm water pollution must be reviewed approved by the UCM Project Manager prior to implementation.
- 13) Shoring or sheet lining must be made of at least 2-inch thick wood or other material with strength equivalent to 2-inch wood. Steel shoring or sheeting must be used in all excavations more than 16-feet deep.
- 14) In excavations that Contractor employees may be required to enter, excavated or other material must be effectively stored and retained more than two feet from the edge of the excavation.
- 15) Excavations below the base of footings of any foundation or retaining wall shall not be permitted without prior approval from an architect in Facilities Design and Construction.
- 16) Pedestrian walkways over open trenches must be of sufficient strength, have guardrails on both sides, and be beveled to ground level at both ends. Maximum slope for ramps is one foot rise in 12 feet, and a non-slip surface is required.

Aerial Lifts

Contractor(s) must comply with, but not limited to, the following:

- 1) Aerial lifts (boom, scissors, snorkel types, etc.) and other vehicle mounted elevated work platforms must be used in accordance with applicable regulatory and industry recognized standards, and must meet UCM Powered Industrial Vehicle (PIV) requirements.
- 2) All aerial lift operations must be properly trained for the lift they use and may not use UCM equipment unless consent is given by the department that owns it.
- 3) Employees may work from the floor of the aerial lift only. Climbing on handrails, mid-rails, brace members or out of the lift is prohibited unless an anchor point independent of the lift has been established and an approved body harness and lanyard is worn and attached to the anchor point.
- 4) Areas below overhead work must be clearly marked with safety stanchions, caution tape and signs to protect associates at grade level.
- 5) Major construction areas must be barricaded and construction signs erected to keep out all unauthorized personnel.
- 6) Contractor personnel may not use UCM overhead cranes, hoists or powered lift apparatus unless prior approval has been received from the UCM Project Manager.
- 7) Mobile cranes, including portable crane derricks, power shovels, or similar equipment, may not be operated within ten feet of overhead electrical power lines.
- 8) The UCM Project Manager must be notified of all proposed crane use at least one day in advance of the actual lift to facilitate a pre-work review with, and impacted area supervision.
- 9) The UCM Project Manager must notify the EHS at least two weeks before proposed airlift operations.

Crane & Rigging Operations

Contractor(s) must comply with, but not limited to, the following:

- 1) Notification must be made by the UCM Project Manager to Public Safety & Security, the EHS and Helicopter group (UCAN) for any cranes. Upon determination that a crane will be needed, the crane operator or contractor safety representative must prepare a lift plan for approval by the UCM Project Manager. The UCM Project Manager shall obtain approval from his/her supervisor. If applicable, the crane operator must submit an Obstruction Evaluation/Airport Airspace Analysis to the Federal Aviation Administration pursuant to Title 14 of the Code of Federal Regulations CFR Part 77.13
- 2) Operator must be certified to operate cranes. Contractors must operate and maintain cranes and hoisting equipment in accordance with manufacturer's specifications and limitations.
- 3) Equipment must be maintained and inspected in accordance with regulatory requirements.
- 4) Riding on crane hooks and headache balls is prohibited.
- 5) Eyes on crane hooks must have a Safety latch.
- 6) Outriggers must be fully extended and pedestals lowered for any lift.
- 7) Contractors must provide a documented lift plan for critical lifts (lifts over process equipment, lifts over 10 tons, or other critical situations) to their UCM Project Manager.
- 8) Crane components used for overhead work must be rated for the load. No self-fabricated lifting devices/components may be used.
- 9) Cranes and derricks may not be refueled while in operation and must be properly secured.
- 10) Rated load capacities and recommended operating speeds, special hazard warnings or instruction must be conspicuously posted on all equipment.
- 11) Accessible areas within the swing radius of the rear of the rotating superstructure of the crane must be barricaded to prevent an employee from being struck or crushed.
- 12) If a crane exceeds the height of the tallest structure on site, it must be flagged and/or equipped with a warning light.
- 13) When making a lift with a crane:
 - a. One person must supervise the lift.
 - b. One person, proficient in hand signals, must perform signaling. Signals must comply with ANSI standards for the type of crane used. An illustration of the signals must be posted at the job location.
 - c. Crane operator and signal person must maintain continuous visual contact during lifting operation.
 - d. Area must be cleared and roped or barricaded off.
 - e. No one may stand or pass under suspended loads.
- 14) Slings may not be loaded in excess of their rated capacities. Annual inspection tags must be affixed to chain slings.
- 15) All slings other than wire rope slings must be labeled for their load capacity.
- 16) Slings must be padded or protected from sharp edges of loads and may not be pulled from under a load when the load is resting on the sling.
- 17) Each day, prior to use, slings and all fastenings and rigging attachments must be inspected for damage or defects. Damaged or defective slings must be immediately tagged "Do Not Use" and removed from service.
- 18) Wire rope and synthetic web slings must be removed from service and destroyed when they become worn, damaged or their load markings become illegible.

Ladder Safety

Contractor(s) must comply with, but not limited to, the following:

- 1) A stairway or ladder must be provided for access where there is a break in elevation of 19 inches or more and no ramp, runway, sloped embankment or personnel lift is provided.
- 2) Portable metal or conductive ladders may not be used near energized lines or equipment.
- 3) Items fabricated to be used as ladders are prohibited.
- 4) Conductive or metal ladders must be prominently marked as conductive and all necessary precautions must be taken when used in specialized work.
- 5) No ladders other than Type 1 or Type 1A may be used. Fiberglass ladders are mandatory for electrical tasks or when working in close proximity to electrical services where accidental electrical contact is a foreseeable event.
- 6) Ladders may be secured to keep them from shifting, slipping, being knocked or blown over. Ladders must never be tied to facility services piping, conduits, or ventilation ducting. Ladders must be lowered and securely stored at the end of each workday.
- 7) Ladders may not be placed in front of doors or door openings unless the door is either monitored by an attendant or blocked open to prevent contact with the ladder. If all traffic around the ladder work area cannot be re-routed, the ladder must be secured to prevent accidental knock down. The UCM Project Manager will arrange closure of aisles, walkways and selection of alternative traffic routes. Appropriate warning signs, tape and cones must be deployed around ladder work to define exclusion zones.
- 8) Stepladders may not be used as straight ladders. The top or first step below the top of ordinary stepladders may not be used as a step or a stool.
- 9) Ladders must only be used for the purposes for which they are designed.
- 10) Extension ladders must not be separated and must be tied off.
- 11) The following requirements shall apply to the use of all ladders:
- 12) Ladders are provided by the contractor and sub-contractor and must be inspected and maintained by the contractor and sub-contractor. Ladders must be visually inspected by a competent person and approved for use before being put into service. Each user must inspect ladders visually before using.
- 13) Ladders used for access to an upper landing surface must have side rails that extend at least three feet above the landing surface.
- 14) Ladders must be maintained free of oil, grease and other slipping hazards.
- 15) Non-self-supporting ladders must be tied off or otherwise secured to prevent accidental displacement.
- 16) Non-self-supporting ladders must be used at an angle where the horizontal distance from the top support to the foot of the ladder is approximately one quarter of the working length of the ladder.
- 17) When ascending or descending a ladder, the user must face the ladder and must use at least one hand to grasp the ladder. The user must not carry any object or load that could cause him/her to lose balance and fall.
- 18) Ladders with structural defects must be tagged "Do Not Use," immediately taken out of service, and removed from the site by the end of the day.
- 19) Wooden ladders must not be painted.

Control of Hazardous Energy – Lockout/Tagout

Contractor(s) must comply with, but not limited to, the following:

- 1) Contractors must restrict access to work areas by unauthorized employees where energy sources have been de-energized.
- 2) All affected employees must be notified. Where applicable, the area must be secured and signs posted to alert employees that a de-energizing activity is in progress.
- 3) Contractors must obtain specific site lockout instructions from the UCM Project Manager.

- 4) Standardized lockout devices and "Danger" tags must be used to prevent the operation of switches, valves, pieces of equipment, and other items where personal injury may occur or equipment may be damaged.

For work that involves multiple trades and/or Contractors and Subcontractors:

- 5) A primary authorized employee must be designated to oversee the event and to coordinate affected work forces and to ensure continuity of protection
- 6) A lead authorized employee must be designated for each party that is part of the group.
- 7) Each lead must verify that a zero energy state has been achieved for each hazardous energy source that must be locked out that is associated with his or her party's work.
- 8) Each authorized employee of the party must then also verify zero energy for each hazard that is associated with the work they perform.
- 9) If any party does not have an employee that is qualified to perform the verification (e.g. an employee qualified to assess electrical hazards), then the lead employee and each member of his/her party must witness the verification performed by a designated qualified employee of one of the other parties or a qualified UCM employee.
- 10) The primary and all lead persons must sign a document attesting to the completion of these verification steps before work may begin. UCM Project Managers shall coordinate these requirements at a pre-job hazard review.
- 11) Each Contractor and Subcontractor employee performing operations where equipment or systems require de-energizing must place his/her own lock and tag on each energy source requiring de-energizing; each employee shall sign and date the tag. The tag must include the employee's name, the name of the Contractors they work for, the date the lock is installed and the reason for lockout is required.
- 12) Only standard "Danger - Do Not Operate" (black, red and white) tags may be used.
- 13) If equipment for de-energizing is in a confined space, the confined space must be cleared of all employees prior to testing the energy source for deactivation.
- 14) Stored energy systems and equipment, such as electrical capacitors, mechanical springs, steam lines, and hydraulic systems, must be put in a "zero energy" state.
- 15) Contractor employees may remove only their own locks and tags when they complete their work.
- 16) Used danger tags must be destroyed; tags may not be reused unless designed for reuse.
- 17) Extended lock out requirements must be coordinated with the UCM Project Manager.
- 18) When more than one crew, trade, or Contractor is used on a project that requires equipment lockout/tagout, one specific employee must be designated to coordinate affected work forces and to ensure continuity of protection.

General Electrical Safety

Contractor(s) must comply with, but not limited to, the following:

- 1) Contractors may not access, operate or otherwise tamper with any utility (including medical gases) without UCM Project Manager or Plant Operations Supervisor approval as it pertains to the current project.
- 2) Contractors and Subcontractors must locate the utility as part of the project.
- 3) The requirements of NFPA 70E 2004 must be followed for all live electrical work. This covers requirements for PPE, flash clothing, insulated tools, live work permits and establishing a blast radius for all work to be performed.
- 4) Electric Utility Use – Contractors must coordinate with their UCM Project Manager for access to appropriate electric utility sources. Accessing power from test stands or production equipment is prohibited.

- 5) Exposed live electrical parts must be de-energized and locked out before working on or near them whenever practical.
- 6) If determined by the UCM Project Manager that de-energizing exposed live electrical parts introduces additional hazards, or is not feasible due to equipment design or operational limitations, specific Safety related energized work practices must be developed by qualified contractor personnel and the UCM Project Manager. Work practices must protect against direct body contact or indirect contact by means of tools or materials and be suitable for work conditions and the exposed voltage level.
- 7) Extension cords must be listed or approved as assemblies by a nationally recognized testing agency and may not be used in a manner that could cause damage to the outer jacket or cause tripping hazards. When crossing over aisles with extension cords appropriate overhead clearance must be maintained. Extension cords may never be routed through door or window openings. Portable electric equipment and extension cords must be approved for the work environment and kept in good condition. Extension cords must not be fastened with staples, hung from nails or suspended by wire.
- 8) Outlets (120 volts) on construction sites that are not a part of the permanent wiring of the building or structures must have UL-approved ground fault circuit interrupters (GFCI).
- 9) Energized panels must be closed after normal working hours and whenever they are unattended. Temporary wiring must be de-energized when not in use.
- 10) Suspended temporary lighting must be UL-Approved Festoon Lighting.
- 11) Only qualified electrical contractor employees may enter substations and/or transformer vaults and only after being specifically authorized by the UCM Project Manager. All others must be accompanied at all times by UCM qualified personnel.

Compressed Gas Cylinders

Contractor(s) must comply with, but not limited to, the following requirements for Compressed gas cylinders on the project site:

- 1) Compressed gas cylinders must always be fastened securely in the proper position to appropriate carriers or restraints for the cylinder contents.
- 2) Cylinders must be kept away from welding or cutting operations so that sparks, hot slag, or flame will not impinge on them. When this is impractical, fire resistant shields must be provided. Cylinders may not be placed where they can contact an electric circuit.
- 3) Cylinder valves must be closed and valve protection caps must be in place when compressed gas cylinders are transported, moved, stored or otherwise not in use.
- 4) If a leak develops in a cylinder, follow emergency procedures and call the UMC EHS.
- 5) Gas cylinders that are damaged or have a buildup of scale or rust, which could weaken the container, may not be used and must be removed from this site as soon as possible.
- 6) Cylinders must be permanently labeled, marked or stenciled to identify the gas in the cylinder. Cylinders must be mounted and stored with the content labels facing out.
- 7) Hose lines must be periodically inspected and tested for leaks.
- 8) When storing compressed gas cylinders, flammable gas such as acetylene and hydrogen must be separated from oxidizing gas such as oxygen by a distance of 20 feet, or by a fire-rated barrier when needed and removed from the construction site when not in use (i.e. at the end of the day).
- 9) Cylinders must be moved by tilting and rolling them on their bottom edges or cylinder carts must be used for their transportation. All cylinders must be handled with care.
- 10) Cylinders may not be transported horizontally on the forks of a fork truck
- 11) Compressed gas cylinders may not be taken into confined spaces unless they are supplying breathing air.
- 12) Oxygen cylinders in storage must be separated from fuel-gas cylinders or combustible materials (especially oil or grease), by a minimum of 20 feet or a noncombustible barrier at least five feet high having a fire resistance rating of at least one-half hour.

Tools

Contractor(s) must comply with, but not limited to, the following:

- 1) Hand tools must be kept in good condition, i.e., sharp, clean, oiled, dressed and not abused.
- 2) Tools subject to impact (chisels, star drills, and caulking irons) tend to "mushroom" and must be kept dressed to avoid flying spalls. Any tool that has already mushroomed must be immediately taken out of service.
- 3) Tools must not be used beyond their capacity; e.g., extending the handle using a piece of pipe or other means. Contractor personnel must use the proper tool[s] for the job.
- 4) Tools and other materials may not be left on stepladders, scaffolds, roofs or other places where they may be dislodged and fall.
- 5) Non-sparking tools are required in areas where flammable solvents are handled and where sparks could create an explosion.
- 6) Wooden handles of tools must be kept free of splinters and cracks, and be kept tight in the tool.
- 7) Contractors must maintain all portable power tools, electrical cords and pneumatic hoses in good condition and proper working order.
- 8) Faulty or damaged tools and hoses must be removed from service immediately.
- 9) When powered tools are designed to accommodate guards, they must be equipped with the manufacturer's guards in operable and original condition when the tool is in use.
- 10) Contractors must provide ground-fault circuit interrupters (GFCI's) at all times when using portable hand held electric power cords in order to protect employees from ground-fault hazards.
- 11) Cords and hoses must be protected from damage and must be routed through the job area in a manner that prevents tripping hazards and cord or hose damage.
- 12) Portable electric power tools must be marked double-insulated or electrically grounded using three-conductor cord and three-prong plugs.
- 13) Pneumatic power tools must be secured by some positive means to prevent the tool from becoming accidentally disconnected.
- 14) Tools may not be hoisted or lowered by their hoses/cords.
- 15) All pneumatically driven nailers, staplers and other similar equipment provided with automatic fastener feed, which operate at more than 100 psi of pressure at the tool, must have a Safety device on the muzzle to prevent the tool from ejecting fasteners, unless the muzzle is in contact with the work surface.
- 16) Powder actuated tools require advanced written approval by the UCM EHS prior to use.
- 17) Powder actuated tool operators must possess a certificate for operation.
- 18) Warning signs must be posted when powder actuated tools are in use.
- 19) Powder actuated tools may never be left unattended. When not in use, they must be secured under lock and key.
- 20) Powder actuated tools may not be used in explosive or flammable atmospheres.
- 21) Contractors are not permitted to use UCM tools and equipment without authorization from the Plant Operations Department.
- 22) All tools must be secured and may never be left unattended in corridors or areas open to the public.
- 23) All tools must be secured at the end of the work day.

Welding/Cutting/Brazing

Contractor(s) must comply with, but not limited to, the following:

General

- 1) A hot work permit must be obtained prior to welding, cutting, soldering, brazing operations, open flame work, and use of spark/ heat producing equipment or powder actuated tool operations.
- 2) The contract superintendent must oversee the safety and operations of the hot activities. He/She must stop all un-safe operations. He/She must immediately contact safety at 5SAFE to report unsafe activities.
- 3) Suitable fire extinguishing equipment must be immediately available in all welding, cutting and brazing locations.
- 4) Objects to be welded, cut or heated must be moved to a designated safe location, or, if they cannot be readily moved, all movable fire hazards in the vicinity must be taken to a safe place. If fire hazards cannot be removed, a pre-job assessment must be performed and control measures established to protect the immovable fire hazards from heat, sparks and slag.
- 5) Personnel working around or below the welding, burning, or grinding operation must be protected from falling or flying objects.
- 6) Should a pre-job assessment identify that an unsafe accumulation of contaminants could develop, then suitable mechanical ventilation or respiratory protective equipment must be provided.

Gas Welding and Cutting

- 1) All hoses and torches carrying acetylene, oxygen, fuel gas, or any substance that may ignite or be harmful to employees must be inspected at the beginning of each shift.
- 2) Defective hoses and torches must be tagged "Do Not Use" and immediately removed from service.
- 3) Acetylene cylinders may not be stored on their side.
- 4) Torches must be lighted from friction lighters and not by matches or from hot work.
- 5) Directional gas flow fittings (back-flow valves) must be provided on hoses to prevent reverse gas flow or back flow.
- 6) Torches must be turned off and removed from confined spaces when not in use.

Arc Welding and Cutting

- 1) Arc welding and cutting operations must be shielded by non-combustible or flame-retardant screens to protect employees and other persons working in the vicinity from the direct rays of the arc. When curtains or other barriers may not be feasible, "Don't Watch the Arc" signage must be used at safe approach distances to warn passersby about the hazards of looking into the arc.
- 2) Arc welding and cutting cables must be completely insulated, flexible, and capable of handling the maximum current requirement of the work in progress. Cables in need of repair may not be used.
- 3) The power supply switch to the equipment must be opened when the welder or cutter has to leave the work or to stop work for any appreciable length of time, or when the welding or cutting machine is to be moved.
- 4) All ground return cables and all arcs welding and cutting machine grounds must be in accordance with regulatory requirements.
- 5) Ground connections must be made directly to the material being welded.

Laser Use Operations

UCM allows the use of equipment with visible light beam Class 1 and 2 lasers on projects without special permission from EHS. However, if a project requires the use of equipment with a Class 3 or 4 laser, the Contractor must contact EHS at (773) 795-SAFE and obtain written permission prior to using the equipment on UCM property. During laser operation, the Contractor is responsible for ensuring that all OSHA standards are followed.

Field Radiography Operations

The use of radiography is a routine quality assurance procedure for welding in the construction industry. The energy source used is a high activity gamma ray source similar to X-rays. Due to the public perception of radiation risk, and UCM's policy of keeping exposure to radiation as low as reasonably achievable, the following additional requirements are applicable.

UCM Project Managers must:

- 1) Notify EHS of the date, time, and location of any radiography work on UCM property at least 24 hours in advance. The UCM Project Manager must also provide the name of the radiography company performing the work and require the company to submit a current State license.
- 2) Notify building occupants prior to starting radiography work. This is particularly important when occupied spaces are involved or nearby.
- 3) Coordinate with UCM Public Safety to have an officer on site for the duration of the work if their presence is required to ensure control of access to the work area.

Radiographers must:

- 1) Ensure continuous direct visual surveillance of the operation to protect against unauthorized entry into a radiation area during radiographic operations.
- 2) Conspicuously post signs in all areas where radiography is performed.
- 3) Maintain a current radiography license, or approved reciprocity agreement from the State of Illinois.

Radioactive Containing Devices for Life Safety

Self-luminous (Tritium) Exit Signs:

A self-luminous (or self-powered) tritium exit sign is a non-electrical device that uses radioactive tritium gas to produce light. The signs contain glass tubes, internally coated with a phosphor, and are filled with tritium gas. The radioactive gas causes the phosphor coating in the glass tubes to continuously produce light. The production and distribution of self-luminous signs is licensed by the U.S. Nuclear Regulatory Commission because they contain significant amounts of radioactive material. UCM is responsible for ensuring compliance with state and federal regulations and, to do so, must be aware of the location of these signs. Tritium exit signs cannot be installed, or replaced of any kind in UCM properties unless approved in writing by UCM EHS. Authorization to use these signs will only be considered when traditional lighting fixtures are extraordinarily difficult to install. If discovered intact during renovation projects, these signs must be collected for disposal by Radiation Safety, at the time of their removal, for proper disposal. The cost of disposal will be charged to the project. If a sign is damaged or found damaged during construction, Contractor personnel must immediately contact the UCM Plant Operations Department (Plant Operations). Plant Operations must inform the Radiation Safety Office so the sign(s) can be properly evaluated and disposed of in accordance with applicable regulatory requirements.

Ionizing Smoke Detectors

The production and distribution of smoke detectors using radioactive material is licensed by the U.S. Nuclear Regulatory Commission. In Illinois, the Radiation Control Agency continues the regulatory supervision of possession and use of these items if they contain a certain type or amount of radioactive material. UCM is responsible for ensuring compliance with these Federal and State regulations and must be aware of the presence and location of smoke detectors that require further regulatory supervision.

- 1) If smoke detectors are installed or removed during renovation or construction projects, Plant Operations must be notified so the devices can be properly collected and evaluated. Devices will be evaluated by the Radiation Safety Office for approval of their intended use, or to make a determination of proper disposal methods if they are removed.
- 2) If smoke detectors are installed or removed during renovation or construction projects, Plant Operations must be notified for evaluation and approval of their intended use, or to make a determination of proper disposal methods if they are removed.
- 3) If a smoke detector is damaged or found damaged during construction or renovation work, Plant Operations must be notified by Contractor personnel. Plant Operations will inform the Radiation Safety Office so the sign(s) can be properly evaluated and disposed of in accordance with applicable regulatory requirements.

Miscellaneous Safety

Contractor(s) must comply with, but not limited to, the following:

- 1) All equipment and materials must be stored in an orderly manner. Equipment may not obstruct emergency equipment, exits, telephones, safety showers, eye washes, fire extinguishers, pull boxes, fire hoses, or other stations which may need to be accessed.
- 2) Any use of explosives, caps, blasting equipment, or related materials is not allowed.
- 3) Contractors may not install or alter sprinkler systems without prints or documentation approved by the department at the site responsible for fire Safety. Only licensed/qualified Contractors (and sub-Contractors), specifically retained for such work, may alter sprinkler systems.
- 4) Contractors may not operate diesel and gasoline powered vehicles or equipment inside buildings unless prior approval and arrangements for ventilation have been made with the UCM Project Manager, and the Environmental Health & Safety Department.
- 5) Temporary Heating Devices - Temporary propane or resistance heating devices used on site must be approved by a nationally recognized testing agency (e.g., UL, Factory Mutual). No devices with open flames (such as torpedo heaters) are allowed.
- 6) A hot work permit must be issued on the day of use (see, *infra*, Hot Work Permit section).
- 7) MAPP™ gas and Propane are not allowed on site.
- 8) Fire alarm, suppression or utility shut downs requires Plant Operations Department notification and approval. Contractor personnel must contact the UCM Project Manager to notify the affected areas, notify the EHS and notify Plant Operations, Safety and the UCM Project Manager when all systems are re-established. If a shutdown lasts more than one shift, more stringent Interim Life Safety Measures must be in place per the Project Interim Life Safety Risk Assessment process
- 9) Cleaning of clothing with compressed air is prohibited. Compressed air that is used for material cleaning must be limited to 29 psig, and appropriate personal protective equipment and chip guards must be used.
- 10) All protruding reinforcing steel, onto which employees could fall, must be capped to eliminate the hazard of impalement. Rebar caps must be affixed as necessary. Employees may not work under suspended concrete buckets. Employees must be protected with fall protection systems and other necessary protective equipment when placing or tying reinforcing steel more than six feet above any working surface. Formwork and shoring must be designed, erected, supported, braced and maintained

so that it will safely support all vertical and lateral loads. Reinforcing steel for walls, piers, columns and similar vertical structures must be adequately supported to prevent overturning or collapse. A limited access zone must be established whenever a masonry wall is being constructed. The zone must be equal to the height of the wall to be constructed plus four feet and must run the entire length of the wall.

- 11) An engineering and environmental survey must be made by a competent person prior to the demolition of any structure. The survey must determine the condition of the framing, floors, and walls and the possibility of unplanned collapse of any portion of the structure, and the presence of hazardous materials.
- 12) Contractor personnel must always wear static discharge equipment (except UCM electricians), test the static discharge equipment for effectiveness, and may not touch any ESDS equipment or hardware.
- 13) Prior approval must be obtained from the EHS before any laser equipment Class 3B or higher is used on site. Lasers less than class 3B i.e. those used for sighting must be used in accordance with the manufacturer's or contractor's safety rules
- 14) Contractor personnel must adhere to their company Hearing Protection program and at a minimum, wear appropriate hearing protection in accordance with facility rules and posted signs. Contractors must inform UCM Project Manager and the Safety department if any planned task may create a noise level greater than 85 dBA for possible restrictions and area identification as deemed necessary by the EHS. Other sensitive areas may have additional requirements (animal care).
- 15) Prior approval must be obtained from the EHS before any radiation-emitting equipment (X-ray units, radioactive sources, etc.) is used on site. Approved radiation sources may not be left unattended or on UCM property overnight.
- 16) Contractors may only work around the MRIs while supervised by a MRI Supervisor. Only MRI-safe tools may be used by Contractor around the MRI. Tools that can be affected by a magnet (iron, ferrous) are not allowed.
- 17) Contractors may only use freight elevators for materials transport or specific elevators, if assigned.
- 18) Contractors must post building permits and hazard warnings as necessary or required by law.
- 19) Contractors must read and follow all CAUTION, NOTICE, WARNING or DANGER signage. Contractor personnel must use caution when entering rooms labeled with "Caution Radioactive Material" signage. Contractor must always contact Plant Operations and the Radiation Safety Office when working on ventilation systems either tagged or connected to a fume hood labeled with "Caution Radioactive Material" signage.

Environmental Management

Air Emissions

Air Emissions Permit

UCM has an Air Operating Permit (AOP) issued by the Illinois Environmental Protection Agency. Any modification, addition or removal of any fuel burning equipment must be coordinated with UCM EHS to ensure proper modification of the AOP. Any maintenance or repairs to fuel burning equipment that could result in a change in maximum heat input value or overall emissions (e.g., modification or installation to burners, exhaust stacks, generators or fuel conversions) must be reported to UCM EHS immediately. Any conditions discovered which could have resulted in an increase in air pollutant emissions must be reported to UCM EHS immediately.

Emergency Generators

If an emergency generator is added or removed from campus, the AOP must be modified to reflect the change and specific permits must be acquired from the Illinois Environmental Protection Agency prior to purchase and installation of new units. If the project will include installing an emergency generator with an input heat duty of less than 350,000 BTU/Hr, or in the case of internal combustion engines, is less than 50 HP, Contractor must provide UCM EHS with the location and input duty of the generator, so it can be added to list of insignificant sources in the AOP. If the project will include installing an emergency generator with an input heat duty of 350,000 BTU/Hr or more, or in the case of internal combustion engines, is 50 HP or larger, UCM must submit an Application for a General Permit for an Emergency Generator, and the unit must be added to the AOP. Contractors supplying equipment must work with EHS to complete the application. Please note that the unit cannot be installed until permit approval is received from the Illinois Environmental Protection Agency.

Boilers and Other Fuel Burning Equipment

If the project will include installing any fuel burning equipment with an input heat duty of less than one million BTU/Hr, Contractor must provide UCM EHS with the location and input duty of the unit, so it can be added to list of insignificant sources in the AOP of greater than or equal to one million BTU/Hr. The unit must then be added to the UCM's Air Operating Permit. Contractor must provide UCM EHS with location and detailed specifications for the proposed unit. If the project will include installing any fuel burning equipment with an input heat duty of more than 10 million BTU/Hr for gas-fired equipment or 5 million BTU/hr. for oil fired equipment, UCM is required to submit an Application for Approval of Plans to Construct, Install, or Modify Fuel Burning Equipment and the unit must be added to UCM's Air Operating Permit. Contractor must work with the vendor supplying equipment and UCM EHS to complete the application. Please note that the unit cannot be purchased until permit approval is received from the Illinois Environmental Protection Agency. Permit approval may take 90 days or more.

Other Air Emissions

If the project will include installing any equipment that has the potential to emit any of the 223 Air Toxics by an amount greater than the Minimum Quantity for that contaminant specified in Regulation 22, Contractor must consult with EHS immediately. No person shall construct, install, or modify or cause construction, installation, or modification of any stationary source which has the potential to increase emissions of a listed toxic air contaminant by an amount greater than the Minimum Quantity for that contaminant, as specified in Regulation 22, without first obtaining an approved permit to construct, install or modify from the Illinois Environmental Protection Agency.

Asbestos Containing Materials (ACM)

It is the policy of UCM that no asbestos or its synonyms (chrysotile, amosite, crocidolite, anthophyllite, actinolite containing building materials may be used in new construction or renovations on UCM property. Some foreign country suppliers identify the names of the types of asbestos their product contains without using the word asbestos. Contractors are responsible for verifying that all building materials used in new construction or renovations are free of Asbestos Containing Materials (ACM).

Some building materials throughout existing UCM facilities may contain ACM. Therefore, project activities involving work on existing buildings that could disturb suspect ACM building materials must be reviewed for ACM by the UCM Project Manager and UCM EHS prior to commencing the work. In the event that ACM or suspect ACM material is encountered during construction or demolition, Contractor must stop work immediately and call the UCM Project Manager or EHS at 795-SAFE. Contractor personnel may not attempt to clean up any such debris, or perform any repair to the suspect ACM material unless they are trained and qualified to perform asbestos abatement, and are approved by UCM for asbestos abatement projects. Contractor personnel will be required to vacate effected area(s) while UCM personnel assess suspect materials prior to commencing work.

ACM suspect materials include, but not limited to, the following materials:

Cement Pipes	Boiler Insulation
Cement Wallboard	Breaching Insulation
Cement Siding	Ductwork Flexible Fabric Connections
Asphalt Floor Tile	Cooling Towers
Vinyl Floor Tile	Pipe Insulation (corrugated air-cell, block, etc.)
Vinyl Sheet Flooring	Heating and Electrical Ducts
Flooring Backing	Electrical Panel Partitions
Construction Mastics (floor tile, carpet, ceiling tile, etc.)	Electrical Cloth
Acoustical Plaster	Electric Wiring Insulation
Decorative Plaster	Chalkboards
Textured Paints/Coatings	Roofing Shingles
Ceiling Tiles and Lay-in Panels	Roofing Felt
Spray-Applied Insulation	Roll Roofing
Blown-in Insulation	Roof Patching Cement
Fireproofing Materials	Base Flashing
Taping Compounds (thermal)	Thermal Paper Products
Packing Materials (for wall/floor penetrations)	Fire Doors
High Temperature Gaskets	Caulking/Putties
Laboratory Hoods/Table Tops	Adhesives
Fire Blankets	Wallboard
Fire Curtains	Joint Compounds
Elevator Equipment Panels	Vinyl Wall Coverings
Elevator Brake Shoes	Spackling Compounds
HVAC Duct Insulation	

Contractor must not disturb, damage or otherwise handle any suspect asbestos-containing material.

Examples of activities that may result in the disturbance of suspect asbestos-containing materials include, but not limited to, the following:

- 1) Removing or repairing floor tile;
- 2) Drilling, sanding, cutting, or abrading floor tile, lab bench tops, or fume hoods;
- 3) Removing ceiling tiles where overhead pipe insulation has been damaged;
- 4) Removing pipe insulation to access pipes;
- 5) Making holes in or removing walls;
- 6) Removing carpet which has floor tile underneath it.

Some buildings may have thermal insulation sprayed on ceiling structural components (such as decking or I & H beams). Contractor must contact EHS before ceiling tiles are moved below areas that have not previously been confirmed to be free of sprayed-on asbestos. Should the upper ceiling be insulated with sprayed on asbestos, only personnel trained and qualified to work with asbestos will be permitted to remove ceiling tiles and work above them, and only after authorization by the site facilities department or site asbestos coordinator is obtained. If the asbestos cannot be avoided to perform the work, it must be abated before the work is performed.

Contractor may not sweep, dust, vacuum, or mop dust or debris that is the product of a suspect asbestos-containing material. Contractor also may not pick up or throw away any suspect asbestos-containing waste or trash. If a material that is suspected to be asbestos-containing is disturbed and becomes airborne, Contractor must immediately notify the UCM Project Manager.

Stripping of floor finishes must be done using low-abrasion pads at speeds lower than 300 rpm and wet methods shall be used. Contractor must take care not to over-strip floors and shall stop stripping immediately upon removal of the old surface coat. Sanding of suspect or asbestos-containing flooring material is strictly prohibited.

Any suspect asbestos containing material that is observed by Contractor to be crushed, ripped, broken or in any way damaged must be reported by Contractor personnel to the UCM Project Manager immediately. Contractors must immediately convey to UCM Project Manager any information they newly discovered about the presence, location and quantity of asbestos -containing or potentially asbestos-containing materials.

Asbestos-containing building materials may not be entombed or abandoned as a solution to project cost, since the materials might be forgotten and overlooked in future renovations, causing a potential for future exposures. Examples of entombing include, but are not limited to: installing carpet over vinyl asbestos tiles, and installing fiberglass pipe insulation over asbestos pipe insulation.

Asbestos Abatement Activity Requirements

- 1) Before work is started for planned asbestos abatement projects, UCM will have determined the presence, location and quantity of asbestos-containing materials that would be impacted by the work of the contract.
- 2) The UCM Project Manager must provide a current asbestos inspection report or abatement plan to the contractor which is consistent with the scope of work. Contractors must coordinate with the UCM Project Manager for specific requirements for asbestos abatement work.
- 3) Contractors and asbestos abatement Contractors must review and be familiar with the asbestos inspection report and asbestos abatement plans.
- 4) The asbestos abatement Contractors must:
 - a. Perform all OSHA required personnel air monitoring.
 - b. Provide original waste shipment records to UCM EHS for recordkeeping, and provide copies of waste shipment records to the State.
- 5) Under the direction of the UCM Project Manager, the industrial hygiene consultant must:
 - a. Perform an asbestos inspection, take samples as appropriate and prepare a report for any affected area within the defined scope of work.
 - b. Prepare and submit the asbestos abatement plan to EHS.
 - c. Perform baseline air monitoring as required.
 - d. Provide air monitoring during every work shift where abatement is performed.
 - e. Perform visual inspections and clearance air samples at the completion of abatement activities.
 - f. Authorize re-entry once acceptable air clearance samples have been received.
 - g. Provide all analytical results, inspection reports, abatement plans and air clearance results to UCM EHS and the UCM Project Manager.

- 6) UCM uses a select group of approved industrial hygiene consultants that perform services for the medical center. Any other company must receive specific approval by UCM EHS and Purchasing.

Reference: UCM Policy S04-60 Asbestos Management Program

Lead -Containing Materials

Unless the UCM Project Manager provides a specific lead-paint inspection, Contractors must assume that **any painted surface they come in contact with in buildings older than 1978 is coated with lead-based paint**. Therefore, Contractors may not perform any intrusive, dust-generating work on painted surfaces (e.g., drilling, cutting, brazing, scraping, and demolition), unless the surface has confirmed to be non-lead or unless such work is part of the contracted work and they are specifically trained to do so. The UCM Project Manager is responsible to ensure that proper notification of lead paint abatement will be performed. There are three [SIX ARE LISTED BELOW] types of notification that can occur:

- 1) When performing any interior work in an occupied building, the UCM Project Manager must ensure that the scope of the work is communicated to the building occupants.
- 2) When performing any exterior work, the UCM Project Manager must work with UCM EHS and Public Affairs and Media Relations to communicate to external neighbors in compliance with the Illinois Environmental Protection Agency (IEPA).
- 3) The IEPA does not presently have regulations specific to the removal of LBP. However, violations of the Illinois Environmental Protection Act may occur if the LBP waste generated is not contained or disposed of properly. Section 9 of the Environmental Protection Act (Act) prohibits the discharge or emission of any contaminant into the environment so as to cause or tend to cause air pollution. Section 12 of the Act prohibits the discharge into water or deposit upon the land of any contaminant which may pollute waters of the State. In addition, Section 21 of the Act contains a general prohibition against open dumping of any waste, plus a number of additional prohibitions on the storage, treatment, and disposal of specific wastes which have not been properly permitted by the IEPA.
- 4) Any painted surfaces that have loose, flaking, and chipping or otherwise non-intact paint may not be impacted by Contractor and should be reported to the UCM Project Manager.
- 5) Contractor is responsible for developing, implementing and maintaining their Lead Exposure Control Program in accordance with OSHA standards as it applies to the work of the contract. Contractor shall ensure that its Lead Exposure Control Program meets all of the requirements of OSHA and the IEPA.
- 6) Lead paint abatement Contractors must coordinate with the UCM Project Manager and UCM EHS for specific requirements for lead abatement work and disposal of materials. Contractors must refer to the Hazardous Waste Management section of this program for specific requirements on the proper disposal of lead -containing paint.

Characterization of Lead -Contaminated Material

There are separate analyses required for evaluation of lead contamination with respect to worker safety and waste disposal. Analysis of total lead concentration is used to evaluate the hazards for compliance with the IEPA and OSHA worker safety requirements. Total lead concentrations, in most cases, may not be used to determine the proper method of disposal. Total lead concentrations may only be used if the concentration found is less than 100 parts per million. TCLP testing is the only definitive test method for determining allowable disposal methods for lead-contaminated materials. Contractors must work with one of the Industrial Hygiene consultants to develop and implement a sampling and analytical plan to appropriately characterize the impacted areas and waste to be disposed.

Sampling and Analysis for Total Lead Concentrations for Safety

Appropriate sampling protocols for potentially lead contaminated materials will depend on the surfaces or materials impacted. Contractors must work with one of the industrial hygiene consultants to develop and implement a sampling and analytical plan to appropriately characterize the materials to be impacted.

Sampling and Analysis for Waste Disposal

There are two approaches for characterizing lead-contaminated materials for disposal. Pre-characterization sampling of impacted materials may take place at the beginning of the project if all or most of the lead contaminated materials are accessible. This will allow segregation of waste that is considered hazardous from other non-hazardous wastes. Alternatively, lead contaminated debris may be sampled at the end after all the lead contaminated material has been collected. In either case, representative samples of all lead contaminated materials must be taken to determine the proper disposal of the material. An adequate number of representative composite samples of the waste must be collected and analyzed by TCLP to determine the proper disposal route. Representative sample must include all material to be disposed (e.g., not just paint flakes). As noted above, Contractors must work with one of the Industrial Hygiene consultants to develop and implement a sampling and analytical plan to appropriately characterize the waste to be disposed. TCLP analytical results that show the material concentration of less than 5.0 mg/L (5 ppm) of lead may be disposed of as non-hazardous waste. TCLP analytical results that show the material concentration of greater than or equal to 5.0 mg/L (5 ppm) of lead must be disposed of as hazardous waste. All analytical results must be submitted to EHS for review before disposal can take place. In addition to the TCLP results, SDS's for any stripper or material used to remove paint must be submitted to EHS for proper waste determination. All hazardous waste must be stored, labeled and contained in compliance with all Federal and State regulations as outlined, infra, in the Hazardous Waste Management Section. Additional waste collection requirements may be required by the waste hauler selected. Any other company must receive specific approval by UCM EHS, Purchasing and Facilities.

Hazardous Waste Management

All hazardous waste generated must be collected and stored in compliance with Federal and State requirements. Hazardous wastes include, but are not limited to, waste oil, contaminated fuels, lead contaminated paint or debris, spent products, spill clean-up materials, used solvents, unusable products, batteries, fluorescent tubes, lighting ballasts and mercury containing switches. Excess products or leftover unused/surplus chemical products must be appropriately removed by Contractors prior to completion of the job. Excess product, including "touch up" paint, is considered abandoned waste by the EPA if it is left behind by a Contractor at UCM. Products must not be abandoned or otherwise left at UCM unless specifically requested by the UCM Project Manager for UCM disposal. Abandoned products include but are not limited to paints, chemicals, solvents, compressed gases, adhesives, caulking, oils, mastics, refrigerants, building materials, fuels, etc. At no time shall hazardous waste be disposed of by Contractor personnel in chutes, dumpsters, drains, pipes or any similar waste container. Contractor must work with the UCM Project Manager and any consultants engaged by the UCM Project Manager to perform services with respect to the analysis, detection, removal, containment, treatment and disposal of such regulated materials. Contractor must ensure, at a minimum, proper labeling, adequate secondary containment, segregation of incompatible materials and routine inspection of storage areas as required by law. All hazardous waste containers must be constructed of a material that is compatible with the waste, be in sound condition, and be kept securely closed at all times in accordance with Illinois Environmental Protection Agency waste regulations. Containers and/or tanks used to store hazardous wastes must be managed in accordance with EPA and Illinois Environmental Protection Agency regulations. Contractor must ensure that hazardous waste is packaged as follows:

- 1) All containers must meet all applicable DOT requirements. Any existing labels on the containers must be removed or completely painted over prior to using it for waste.

- 2) Waste Storage – Drums may be used to store either liquid or solid materials, but if a liquid is stored in a drum it must be stored on a secondary containment pallet.
- 3) Boxes may only be used for solid material and must have a 6-mil poly liner and be secured to a pallet.
- 4) Roll-offs may only be used for solid material and must have a 6-mil poly liner. Roll-offs must be covered so as to protect waste from contact with rainwater.
- 5) All waste storage containers must be closed and secured except when adding materials to the container.
- 6) All containers must be labeled as soon as material is added to it. Hazardous waste labels can be obtained from the selected waste hauler. For drums, labels must be attached to the side of the drum near the top. The drums must be stored so that the labels are easily visible at all times. For boxes, two sets of labels must be attached and be on opposite sides of the box. All labels must be attached to box near the top, and the containers are to be stored so that the labels are easily visible at all times. Duct tape or similar shall be used to close the box flaps. Two sets of labels must be attached and be on opposite sides of the roll off. All labels must have the words “Hazardous Waste” and must identify the contents of the container.
- 7) All materials placed in the roll-off must be no more than three feet long in any direction and the roll-off may not be filled higher than the sidewalls. The contractor must ensure that:
 - a. The containers are in good condition (e.g., no damage, dents, excessive rust).
 - b. There is no water damage to the container and that the waste is protected from the weather.
 - c. If a container is damaged, the waste must be transferred to a new container with the appropriate labels.
 - d. Waste containers must not be moved from the work site without permission of UCM EHS. When multiple projects are being completed on campus, waste may not be moved from project area to project area without consultation and approval of UCM EHS.
 - e. Contractors must arrange for the performance of all waste characterizations of the waste generated at the site as required by the waste disposal location. Contractors must provide all results of waste characterization to UCM EHS. Contractors will coordinate with UCM EHS and the waste disposal location to develop the waste profile. The EHS must review and sign waste profiles prior to Contractors arranging for waste shipment.
 - f. Waste must be transported from the work site within 90 days of the date of generation or when the project is completed, whichever is sooner. Waste must not be moved off-site without the approval of UCM EHS. Contractors must coordinate the waste shipment with the waste hauler and with staff from UCM EHS.
 - g. Contractor, in coordination with UCM EHS staff and the hazardous waste transporter, is responsible for completing all disposal documents, which may include, but are not limited to, waste profiles, waste analytical samples and hazardous waste manifests.
- 8) UCM has several EPA Identification Numbers (EPA ID) defined by specific contiguous areas of the campus which must be used on all hazardous waste shipment manifests.
- 9) Waste shipment Contractors must contact EHS to receive the appropriate EPA ID's for their shipment[s]. UCM EHS will provide the Contractor with the appropriate EPA ID number or request a new temporary EPA ID number from the Illinois Environmental Protection Agency if an EPA ID number does not exist for the Transportation of Hazardous UCM under any circumstances.
- 10) The UCM Environmental Health and Safety Department must be designated as the Generator on all documents and must be provided with copies of all waste analyses, land disposal restriction forms and related documentation.
- 11) DOT -trained UCM EHS staff are the only personnel allowed to sign the hazardous waste manifest(s) for UCM. At the time of shipment, Contractor must provide the appropriate copies of the manifest to the UCM EHS representative for distribution to the appropriate agencies.
- 12) In the event a Contractor encounters previously unidentified material that is reasonably believed to be radioactive, volatile, corrosive, flammable, explosive, biomedical, infectious, toxic, hazardous,

asbestos containing or oil-based, the Contractor must immediately stop work in the affected area and report the condition to the UCM Project Manager and EHS.

Waste Hauling

Waste hauling or disposal Subcontractors must be selected from an approved list provided by UCM Purchasing. Contractor must establish a contract with the proposed waste hauler for the management of the waste prior to the commencement of the work. Any other company must receive specific approval by, UCM Purchasing.

Transportation of Hazardous Materials

All transportation of hazardous materials while on UCM property must be conducted in accordance with USDOT Hazardous Materials Regulations for proper packaging, marking/labeling, handling, documentation, etc. At no time may hazardous materials be transported via public or private roads at UCM in a manner that could result in an unsafe condition for personnel or the environment.

Universal Wastes [Fluorescent Bulbs, Batteries, Mercury Containing Devices]

Contractors must contact the EHS department should fluorescent bulbs, batteries, or mercury-containing devices need to be disposed of. In the State of Illinois, certain batteries, fluorescent bulbs and mercury-containing devices (e.g., mercury switches, mercury thermostats) are considered hazardous waste if they are disposed. The Illinois Environmental Protection Agency considers these wastes to be “Universal Wastes” if they are required to be recycled in lieu of being disposed of as hazardous waste. UCM requires that all Universal Wastes be recycled. **Universal Wastes cannot be disposed of with regular trash.** Universal Wastes, especially fluorescent bulbs, must be handled so that they remain unbroken. Boxes must be closed at all times except when bulbs are being added to the container. Bulbs may not stick out of the boxes. Universal Wastes that become broken must be collected, stored and disposed of as hazardous waste. Contractors must store Universal Wastes in closed containers obtained from the proposed transporter or in those approved for use by the transporter. Containers must be labeled with a Universal Waste label with the contents identified and the date when waste was first added to the container. Containers must be stored indoors.

Electrical Ballasts

Older (pre 1980) light ballasts can contain Polychlorinated Biphenyls (PCBs). As a result, these lighting ballasts are considered hazardous waste by the State of Illinois. Ballasts manufactured after 1980 do not contain PCBs, however, it is the policy of UCM to collect these ballasts and send them off-site for recycling. Ballasts may not be disposed of with the general trash. Ballasts that do not contain PCBs will state “No PCBs” on the ballast product label. If there is no information on the label regarding PCBs, it must be considered a PCB ballast. It is more expensive to dispose of PCB ballasts. As a result, PCB and non-PCB ballasts must be segregated as they are removed from the fixtures. Separate containers must be established for each type of ballast and labeled appropriately.

Oil Containing Equipment

The installation or removal of any oil-containing equipment that contains 55 gallons or more of any type of oil triggers the requirement to update UCM’s Oil Spill Prevention Control and Countermeasures (SPCC) plan. Contractors must contact UCM Plant Operations to notify of any changes to oil containing equipment. Waste oil and oil-contaminated debris are considered a hazardous waste in Illinois. Contractors at UCM must comply with all state and federal requirements, including Illinois Environmental Protection Agency hazardous waste regulations for waste oil and oil-contaminated debris. Underground Storage Tank (UST) removal must be pre-approved by the Illinois Environmental Protection Agency. Contractors must work with EHS to submit an

Application for Permanent Closure of a UST Form to the Illinois Environmental Protection Agency. Approval can take 1-2 weeks. Please note this applies to both identified USTs and unknown USTs discovered during excavation. Contractors must comply with the following:

- 1) Contractors must contact UCM EHS as soon as a previously unknown UST is discovered. Contractors must coordinate the application for closure with EHS.
- 2) Contractors must work with UCM EHS and Plant Operations to identify the contents. If the contents are uncontaminated, the contractor must use a licensed transporter to move the contents to an on-site tank with the same type of material. Contractor must ensure that the destination tank has adequate capacity to hold the material. If oil is contaminated (not reusable), Contractor must work with UCM EHS to properly dispose of the oil as a hazardous waste.
- 3) All releases/spills must be reported immediately to UCM EHS.
- 4) Tanks must be cut/cleaned per Providence Fire Marshal's regulations.
- 5) Closure Assessment reports are required if fuel has leaked.
- 6) Tank closures-in-place are only approved under special conditions.
- 7) The closure report, if required, must be submitted by Contractor to the State of Illinois within 30 days and shall be submitted to UCM EHS at least 7 days prior to the due date.
- 8) Above-ground Storage Tank (AST) removal must be coordinated by Contractor with UCM EHS.
- 9) Contractor must work with EHS and Facilities Management to identify the contents of the AST. If the contents are uncontaminated, Contractor must use a licensed transporter to move the contents to an on-site tank with same type of material. Contractor must ensure that the destination tank has adequate capacity to hold the material. If oil is contaminated (not reusable), Contractor must work with EHS to properly dispose of the oil as a hazardous waste.

Oil Spill Prevention and Control

UCM's Spill Prevention Control and Countermeasures (SPCC) Program establishes UCM-wide procedures for the prevention and detection of spills and/or releases of oil or hazardous materials. Based on the inventory of oil that will be brought on-site, Contractor must have available equipment (e.g., secondary containment pallets, absorbent pads, absorbent booms, speedy-dry) that is suitable and sufficient to control a potential spill/release of petroleum products used during the Project. Contractor is responsible for identifying conveyances to the environment (e.g. sumps, storm/floor drains, etc.) and adequately minimizing spill potential to these areas. Contractor is responsible for the proper storage of all petroleum products so as to prevent spills. Contractor must use appropriate protective procedures such as secondary containment, overflow protection, employee training, and other measures as part of activities involving the use, storage, or handling of petroleum products or hazardous materials on UCM Property.

Soil Management / Fill Materials

Any fill material being brought on to UCM property must be free from contaminants. This may be accomplished by any of the following methods:

- 1) Certify in writing by the contractor that the fill is free of contamination
- 2) Take reasonable steps to ensure fill material is clean such as composite sampling and analysis, review of fill source disclosure, or photo ionization screening of fill material.

Stormwater

Urban soils are often contaminated with lead, arsenic and polynuclear aromatic hydrocarbons (PAH). The presence of these contaminants can be naturally occurring or can result from the deposition of hazardous materials (e.g., from coal ash, leaded gasoline, lead paint) over the last century. The soils at UCM or University properties may have these contaminants at concentrations above the regulatory levels. If contaminants are

present above specific concentrations, the soil may be subject to Illinois Environmental Protection Agency rules and regulations for the Investigation and Remediation of Hazardous Material Releases. Movement of contaminated soils off-site is a time-consuming and costly effort. Priority should be given to reusing the soils on-site, if possible. Impacted soils kept on site during construction must remain covered at all times to prevent run-off from precipitation. Contractors are also responsible for following all of the requirements in the Excavation section, infra. Contractor shall not sample or remove any soils off-site without prior approval from UCM EHS. The planning and approval process surrounding contaminated soils is long and complicated.

The UCM Project Manager is strongly encouraged to work with the EHS early in the planning portion of a project involving contaminated soil or potentially contaminated soils to ensure the regulatory process does not affect the project timeline.

Wastewater

UCM's wastewater discharge is regulated by the City of Chicago Department of Water Management. The discharge of any wastewater must adhere to all wastewater discharge prohibitions. These include, but are not limited to:

- 1) No discharge of mercury, silver or other metal-bearing wastewater.
- 2) No discharge of highly corrosive substances (pH < 5 or pH > 11).
- 3) No discharge of flammable materials that could create a hazard for UCM personnel or City of Chicago public works personnel.
- 4) If there is an existing discharge permit at the location and it is anticipated that an increase in wastewater discharge by more than 20% from the site, a new wastewater hook-up permit from the City of Chicago Department of Water Management will be required. A new or revised Pretreatment permit may also be required depending on the type of discharge anticipated.
- 5) If the project includes excavation that will require water discharge from the site (e.g., dewatering operations), the potential location of the discharge must be determined. Contractor must then determine whether the discharge line drains to a body of surface water (stormwater line) or to the sewage system. If there both are available, the discharge will likely be required to discharge to the storm water line.
- 6) If discharging to stormwater sewers, Contractor must work with EHS and Contractors to design a pretreatment system and obtain a water discharge permit.
- 7) If discharging to the sewer system, Contractor must work with EHS and Contractors to design a pretreatment system and apply for a wastewater discharge permit. Lead time on getting discharge permits can be 60 days.
- 8) If there will be wastewater discharge from the site after the completion of the project, Contractor must determine the potential location of the discharge, determine whether the sewer line drains to a body of surface water (stormwater line) or to the sewage system.
- 9) If only Sanitary Wastewater discharge will occur, only a hook-up permit is required.
- 10) If other wastewaters will be generated, Contractor must apply for a pretreatment permit.

Pest Control

If a Contractor witness's evidence of cockroaches, mice, ants or other pests during the course of its work, it must notify the UCM Project Manager of the condition. Contractor shall not use any insecticide or pesticide products on UCM property unless such activities are part of the contracted work and the contractor is specifically trained and licensed to do so. UCM has an outside pest control contractor that can be reached by calling 4-BUGS.

Mold Prevention & Remediation

Contractor must comply with the following EPA mold remediation guidelines for mold prevention:

- 1) Safely investigate and evaluate mold and moisture problems to prevent exposures and minimize spreading mold spores. If the problem is in a clinical area, Infection Control must be notified at pager 773-228-7025.
- 2) Quickly report moldy conditions when found. Contractor must **not** sweep, dust, vacuum, or mop dust or debris that is contaminated with mold.
- 3) Contractor must also **not** pick up or throw away any suspect mold-contaminated waste or trash.
- 4) If the material is mold-contaminated and is disturbed and becomes airborne, Contractor must immediately notify the UCM Project Manager and EHS.
- 5) If the mold is a known preexisting condition, UCM may have determined, before work is begun, the presence, location and quantity of mold-contaminated materials that would be specifically impacted by the work of the contract. The UCM Project Manager will provide any available mold inspection reports for those work areas in question.
- 6) If the presence of mold is newly discovered, Contractors must immediately convey to the UCM Project Manager any information they discover concerning the presence, location and quantity of mold-contaminated materials.
- 7) For mold areas less than 100 sq. ft., Contractors must follow EPA guidelines to clean-up.
- 8) For mold areas greater than 100 sq. ft., only approved mold remediation will be allowed to clean-up. Any other company must receive specific approval by UCM EHS, Purchasing and Facilities.
- 9) Approved remediation Contractors must be coordinated by Contractor with the UCM Project Manager and EHS, as necessary, for specific requirements for mold remediation work.
- 10) All sampling (air, wipe or other) for mold remediation projects must only be performed with approval from EHS and/or Infection Control.
- 11) UCM uses a select group of approved industrial hygiene Consultants that perform services for the Medical Center. Any other company must receive specific approval by UCM EHS, Purchasing and Facilities.

Reference: UCM Policy S04-35 Mold Prevention & Response Plan

Documentation and Records

General

Contractors are required to maintain current up-to-date records and files as required by this Contractor Handbook, Contract Documents, the UCM Project Manager, and the authority(s) having jurisdiction. UCM reserves the right to request a copy of the Contractor's hazard control programs, training certificates, injury logs or other safety-related program documentation in order to substantiate compliance with various Federal and State laws and regulatory requirements.

Project File

Contractors must maintain a project file at the site, electronically or made available upon request. Specific records must be kept readily available for inspection by various departments at any time. Records to be made available upon request are described herein, and include, but are not limited to:

- 1) Documentation of Background Checks
- 2) TB/Influenza Records
- 3) Safety Data Sheets
- 4) ILSM Assessment
- 5) ICRA Assessment
- 6) Worker Hot Work Licenses
- 7) Hot Work Authorizations / Hot Work Permits
- 8) UCM Hot Work Training Records
- 9) Contractor Safety Handbook
- 10) Contractor's Checklist

Safety Performance / Progressive Action Plan

Willful violations of applicable policies, regulatory standards and poor safety performance will be raised to succeeding levels of management within Contractor and UCM. A progressive improvement plan may be necessary to implement corrective actions to avoid future violations and business interruptions.

Minor Violations

Minor violations are those not expected to have the potential to cause a fatal or serious injury, such as, failure to wear identification. However, failure to wear proper personal protection carries a higher safety risk. The following items are not inclusive and subject to the discretion of the Director of Program Management in conjunction with the Director of Environmental Health & Safety:

- 1) Failure to follow verbal or written direction from the UCM Project Manager;
- 2) Failure to follow the Contractor Handbook;
- 3) Failure to follow the requirements of the Construction Contract; and
- 4) Failure to follow the requirements outlined in the Request for Proposal.

Major Violations

UCM has identified ten (10) major risk areas that have the potential to cause serious injury or loss of life if strict adherence to safety requirements is not implemented and maintained. Therefore, these are considered major violations and failure to comply with safety requirements and regulations are subject to disciplinary action up to and including permanent suspension from working at UCM. UCM major violations include, but are not limited, to the following:

- 1) Interim Life Safety Measures - Contractors must implement and maintain required interim life safety measures, such as temporary fire/smoke barriers, exit egress, fire watch during fire system impairments, and other measures as defined by the Interim Life Safety Risk Assessment.
- 2) Infection Control Measures - Contractors must implement and maintain required infection control measures, such as, dust barriers and negative pressure environments, as defined by the Infection Control Risk Assessment.
- 3) Hot Work - Contractors shall strictly adhere to the Hot Work permit process and associated safety requirements. No Hot Work is allowed without a Hot Work Permit.
- 4) Fire Alarm System Impairment - Contractors must communicate and coordinate all fire alarm/protection system impairments with the UCM Project Manager and the Plant Operations Department prior to starting associated construction work. A Fire Watch must be implemented if fire alarm/protections systems are impaired for more than 4 hours.
- 5) Critical Utility System Impairment - Contractors must communicate and coordinate all construction work that could potentially disrupt any critical utility systems, such as, electrical, medical gas, medical vacuum, plumbing, HVAC, vertical transport and pneumatic tube system with the UCM Project Manager and the Plant Operations Department prior to starting associated construction work.
- 6) Fire / Small Wall Penetrations - Contractors performing work that requires the penetration of rated fire walls and/or smoke barrier walls are required to properly seal in accordance with NFPA requirements using Fire Stop materials specified by UCM prior to completing the defined scope of work.
- 7) Confined Space - Contractors must follow their internal Confined Space program. At a minimum, Confined Spaces must be identified and written procedures established and followed for entry.
- 8) Elevated Work - Contractors must follow their company Fall Protection program. At a minimum, Contractor employees must use fall protection when exposed to a fall hazard (working at an elevated level of 6 feet or more).
- 9) Lockout Tagout - Contractors must follow their internal Lockout Tagout program. At a minimum and prior to performing work on machines or equipment, Contractor personnel must identify all hazardous energy

forms, bring them to a Zero Energy State and secure them. Zero Energy State is defined as the elimination and/or control of hazardous energy such that it no longer represents a hazard to personnel. This must include but is not limited to mandatory use of lockout / tagout procedures when working on any electrical, mechanical, hydraulic, pneumatic, compressed gas, chemical or thermal processes.

- 10) GFCI use on all Hand and Portable Power Tools – Contractor personnel shall provide and use Ground Fault Circuit interrupters (GFCIs) on all portable tools and portable electrical devices used in all activities where construction activities are performed, or where there is the potential for exposure to damp/wet areas or the potential for damage to cords, plugs, or receptacles.
- 11) Two or more Nuisance Fire Alarms – This is triggered by a Contractor causing two or more Nuisance fire alarms. This includes any alarms in the area near the project. Such alarms will be considered caused by the activities unless proven otherwise to/by UCM EHS.

References / UCM Policies

The following policies and procedures that provide detailed information concerning requirements mentioned in this Handbook can be viewed and downloaded at this link:

- S06-61 Contractors Safety Program
- S06-10 Interim Life Safety Measures, Fire System Impairments, and Fire Watch
- IC02-22 Infection Control During Construction and Renovation
- S06-21 Hot Work Precautions
- S04-60 Asbestos Management Program
- S04-35 Mold Prevention & Response Plan
- S06-12 Persons Working on Mitchell Roof
- HR 603 Photo-Identification Badges
- A00-23 Occupational Health Screening
- IC02-15a Personnel Health
- A00-09 Smoking Restriction

UCM Policies and Procedures referenced in this Handbook can be accessed by Contractors at the following URL:

<http://ucmfacilities.uchicago.edu/construction/>

Appendix A - Acknowledgement of Receipt

THE UNIVERSITY OF CHICAGO MEDICINE Contractors Safety Handbook

I acknowledge that I have been provided with a copy of the UCM Contractor's Safety Handbook (Handbook) and understand that I am expected to read and comply with the established guidelines, protocols and policies listed within.

I further acknowledge that the contents of the Handbook are minimum requirements for maintaining a safe environment during periods of construction and are not intended to incorporate all of what I am required to comply with in accordance with Federal, State and/or Local laws, codes and/or regulations.

Name (Print): _____ Date: ____/____/____

Signature: _____

Company/Department: _____

[illegible]

[illegible]

[illegible]

Pre-Construction Risk Assessment (PCRA) – Matrix Mitigation strategies to minimize risks associated with life safety systems, air quality and pressurization, utility interruptions/impacts, noise, vibration, housekeeping and other safety hazards.	1. Complete ILSM Risk Assessment	2. Notify CFD and develop interim plan for maintaining building access for emergency services	3. Design areas to be rated and identified by signage in accordance with NFPA code	4. Coordinate firestopping with Preferred Provider	5. Complete Hot Work Permit Request prior to each hot work activity in accordance with ILSM Policy S06-10	6. Remove flammable liquids from construction site at the end of each work day	7. Notify EHS and review work activities and requirements for paint spraying operations	8. Complete a Plant Shut-Down Request prior to each system impairment in accordance with ILSM Policy S06-10	9. Develop and implement a plan to minimize noise disruption	10. Provide EHS with the name and contact number for Safety Representative	11. Have Accessible PPE for Guest and signage entering the worksite	12. Implement measures to eliminate exposure to ventilation systems serving occupied areas	13. Install UCM Approved Emergency Eyewash and Shower Devices	14. Notify EHS to registered X-ray, Laser, CT, or MRI devices with the State	15. Have Safety Data Sheets (SDS's) for chemicals and appropriate spill kits	16. Notify UCAN, Public Safety and EHS and develop interim plan	17. Notify EHS to coordinate testing and abatement of ACM and/or lead	18. Implement and maintain compliance with UCM Contractors Safety Handbook and applicable OSHA regulations
	- Medical Vacuum																	
	- Other (Specify)																	
	Noise & Vibration																	
	Is the location of the project in area(s) that would likely be disruptive?								X									
	Is the location of the project in area(s) that would be considered noise sensitive, such as, areas that provide patient treatment and/or services.								X									
	Safety / OSHA																	
	Will the project have a safety representative, Foreman or contact person on site during work hours?									X								X
	Will construction area require hard hat, safety glasses and reflective vest to enter?										X							X
	Will there be any lasers, X-Ray machines, CT, MRI, or other types of radiation as part of the new space?													X				X

<div>Pre-Construction Risk Assessment (PCRA) – Matrix</div> <div>Mitigation strategies to minimize risks associated with life safety systems, air quality and pressurization, utility interruptions/impacts, noise, vibration, housekeeping and other safety hazards.</div>	1. Complete ILSM Risk Assessment																	
	2. Notify CFD and develop interim plan for maintaining building access for emergency services																	
	3. Design areas to be rated and identified by signage in accordance with NFPA code																	
	4. Coordinate firestopping with Preferred Provider																	
	5. Complete Hot Work Permit Request prior to each hot work activity in accordance with ILSM Policy S06-10																	
	6. Remove flammable liquids from construction site at the end of each work day																	
	7. Notify EHS and review work activities and requirements for paint spraying operations																	
	8. Complete a Plant Shut-Down Request prior to each system impairment in accordance with ILSM Policy S06-10																	
	9. Develop and implement a plan to minimize noise disruption																	
	10. Provide EHS with the name and contact number for Safety Representative																	
	11. Have Accessible PPE for Guest and signage entering the worksite																	
	12. Implement measures to eliminate exposure to ventilation systems serving occupied areas																	
	13. Install UCM Approved Emergency Eyewash and Shower Devices																	
	14. Notify EHS to registered X-ray, Laser, CT, or MRI devices with the State																	
	15. Have Safety Data Sheets (SDS's) for chemicals and appropriate spill kits																	
	16. Notify UCAN, Public Safety and EHS and develop interim plan																	
	17. Notify EHS to coordinate testing and abatement of ACM and/or lead																	
	18. Implement and maintain compliance with UCM Contractors Safety Handbook and applicable OSHA regulations																	
Will the new space have hazardous areas that require the installation of emergency eye wash or showers?																		
Will hazardous materials or chemicals be used or stored within the project area?																		
Will project activities require any of the following in the work area? If YES , check all that apply: - Confined Space entry - Live Electrical work - Lock-Out Tag Out procedures - Excavation requiring protection - Scaffolding - Work requiring fall protection - Cranes and hoisting equipment																		
Will project activities require a crane or helicopter lift?																		
If YES , do project activities require lifting above the height of the buildings in the affected area?																		
Environmental Hazards																		

<p>Pre-Construction Risk Assessment (PCRA) – Matrix</p> <p>Mitigation strategies to minimize risks associated with life safety systems, air quality and pressurization, utility interruptions/impacts, noise, vibration, housekeeping and other safety hazards.</p>	1. Complete ILSM Risk Assessment		
	2. Notify CFD and develop interim plan for maintaining building access for emergency services		
	3. Design areas to be rated and identified by signage in accordance with NFPA code		
	4. Coordinate firestopping with Preferred Provider		
	5. Complete Hot Work Permit Request prior to each hot work activity in accordance with ILSM Policy S06-10		
	6. Remove flammable liquids from construction site at the end of each work day		
	7. Notify EHS and review work activities and requirements for paint spraying operations		
	8. Complete a Plant Shut-Down Request prior to each system impairment in accordance with ILSM Policy S06-10		
	9. Develop and implement a plan to minimize noise disruption		
	10. Provide EHS with the name and contact number for Safety Representative		
	11. Have Accessible PPE for Guest and signage entering the worksite		
	12. Implement measures to eliminate exposure to ventilation systems serving occupied areas		X
	13. Install UCM Approved Emergency Eyewash and Shower Devices		
	14. Notify EHS to registered X-ray, Laser, CT, or MRI devices with the State		
	15. Have Safety Data Sheets (SDS's) for chemicals and appropriate spill kits		
	16. Notify UCAN, Public Safety and EHS and develop interim plan		
	17. Notify EHS to coordinate testing and abatement of ACM and/or lead		X
	18. Implement and maintain compliance with UCM Contractors Safety Handbook and applicable OSHA regulations		X
Are there any potential contaminants and/or environmental hazards in the project area that will require testing, mitigation, removal or abatement? If YES , check all that apply: - Asbestos - Lead - Other (Specify)			
Will project activities generate noxious fumes or unusual odors?			

Appendix C - UCM Contractors Safety Training Handout

Medical Emergency

In the event of an injury or illness requiring immediate medical attention, dial 702-6262 from any internal UCM phone if the person is non-ambulatory. Otherwise, report directly to the Emergency Department and then dial 702-6262 (if ambulatory). Provide the dispatcher with the following information:

- 1) Nature of emergency
- 2) Location (department name/number, building letter, column number)
- 3) Your name and the name of the company for which you work.
- 4) Also notify the UCM Project Manager.
- 5) Only properly trained UCM personnel (i.e. EVS) are qualified to clean up injury sites involving body fluids.

Fire Response

In the event of a fire, locate and pull the nearest fire pull station and call 702-6262 (Public Safety & Security). Be aware of the building alarm chime code or voice annunciated system. Do not attempt to extinguish a fire yourself, unless you are trained to operate a fire extinguisher.

Follow the UCM Fire Plan:

R = RESCUE from smoke/fire. Move persons to safety

A = ALARM Activate fire alarm pull station nearest you. Call 702-6262 from a safe location.

C = CONTAIN the smoke/fire. Close all doors.

E = EXTINGUISH the fire if safe to do so and safe exit available

R = RELOCATE Shut off equipment, stop hot work. Be ready to evacuate to ground level.

UCM Emergency Codes

Dr. Cart – Cardiac Arrest

Dr. Red – Fire Alarm Activation

Dr. Strong – Patient Disturbance

Code Pink – Child Abduction

Code Silver – Violent Intruder

Code Triage – Disaster victims in route to UCM

Code Orange – Patient Decontamination Team

Code Black – Bomb Threat

Code Bio – Bio-Outbreak response

Code Internal – Internal Disaster

Utility Damage and/or Accidental Outages

If any essential utilities, such as, electrical, plumbing, HVAC, medical gas, fire alarm, sprinkler, etc. are damaged or compromised while performing work IMMEDIATELY call Plant Operations Department at 702-6295 and your Supervisor.

Work Permits

Hot Work Permits are required for any cutting, welding, seaming, or other hot work prior to the onset of work. The hot work permit shall be affixed by the Contractor to the area under construction, with all applicable rules followed as stated on the permit. Failure to comply will result in immediate cessation of work.

Utility System Shut-Down Request are required for any work that requires the shut-down or impairment of any essential Utility System, such as, electrical, medical gas, medical vacuum, plumbing, HVAC, Vertical Transport, Pneumatic Tube, Fire Alarm or Sprinkler System. Failure to comply will result in immediate cessation of work.

Appendix D - Contractors Safety Checklist

TO BE COMPLETED PRIOR TO PROJECT START DATE

Contractor: _____

Contractor Representative: _____ Cell Phone #: _____

Contractor's Project Manager: _____ Pager/Cell Phone #: _____

Project Name: _____ Project #: _____

Project Start Date: ____/____/____ Est. Project End Date: ____/____/____

	Yes	No	NA
1. Contractors Safety Handbook Reviewed Acknowledgement of Receipt signed and provided to UCM Project Manager.			
2. Pre-Construction Risk Assessment (PCRA) completed with UCM Project Manager, Infection Control/Prevention and Environmental Health and Safety to discuss impact on patient and life safety.			
3. Federal/State local required training completed by Contractor.			
4. Workers were provided and reviewed the UCM Contractors Safety Handout.			
5. Proof of OSHA required training provided for all workers.			
6. Proof of Security and Background Check for all workers, if required.			
7. Proof of TB health screening for all workers who have or will be issued an ID badge.			
8. Proof of immunizations for all workers, if required.			
9. Project/building evacuation routes identified.			
10. Parking and staging information received from UCM Project Manager.			
11. Permits received/on file for modifying existing fuel burning equipment (boilers, generators, hot water heaters, etc.).			
12. Permits received/on file for the installation of new fuel burning equipment (boilers, generators, hot water heaters, etc.).			
13. Permits received/on file for the installation of equipment that has the potential to emit any of the 223 Air Toxics greater than the minimum quantities specified in regulation.			
14. Asbestos survey performed to identify asbestos containing building materials (ACBM) that will be impacted by the scope of the project (Coordinated by UCM EHS).			
15. Identified ACBM been abated and/or scheduled to be abated (Coordinated by UCM EHS)?			
16. Plumbing service and/or distribution system impacted by the scope of the project have been surveyed/identified for lead and plans developed for proper removal and disposal.			
17. Painted surfaces impacted by the scope of the project have been surveyed/identified for lead and plans developed for proper removal/disposal.			
18. Waste batteries (e.g., lead acid, alkaline, Ni-Cad, etc.) generated by the scope of the project have been identified and plans developed for proper removal/disposal.			
19. Fluorescent bulb waste generated by the scope of the project has been identified and plans developed for proper removal/disposal.			

	Yes	No	NA
20. Mercury containing device waste generated by the scope of the project has been identified and plans developed for proper removal/disposal.			
21. PCB ballasts and non-PCB ballast waste generated by the scope of the project have been identified and plans developed for proper removal/disposal.			
22. Underground storage tank removal required by the scope of the project has been identified and plans developed for proper tank closure.			
23. Permits received/on file for the installation of underground storage tanks.			
24. Oils removed from equipment containing a capacity of 55 gallons or more (elevators, transformers, switches, etc.) have been tested for PCB's and plans developed for proper removal/disposal.			
25. Soil removed from UCM property has been tested for lead, arsenic, polynuclear aromatic hydrocarbons and if they exceed state limits plans have been developed for proper removal/disposal.			
26. Permits received/on file for Stormwater discharge?			
27. Permits received/on file for Wastewater discharge?			
28. Radiation protocols developed for radiography for quality assurance welds.			
29. Exit signs with tritium as their power source removed by the scope of the project have been identified and plans developed for proper removal/disposal.			
30. Smoke detectors that contain 1 micro Curie of Americium 24 or any other radioactive isotope removed by the scope of the project have been identified and plans developed for proper removal/disposal.			
31. Measures are in place to properly dispose of any hazardous waste generated during the project (e.g. waste oils, adhesives, unusable products).			
32. Hazardous chemicals that will utilized during the project identified.			
33. Chemical inventory list provided for all products used.			
34. UCM Project Manager advised of any hazardous waste anticipated.			
35. Personal Protective Equipment (PPE) available and readily accessible.			
36. Radio frequency devices discussed and understood.			
37. All patient care supplies and equipment removed or protected.			
38. Impacted and adjacent areas have been notified.			
39. Equipment list developed (new and old equipment that will be retired).			
40. Reviewed Interim Life Safety (ILSM) policy/procedure.			
41. Reviewed Infection Control Risk Assessment (ICRA) policy/procedure.			
42. Reviewed Hot Work Permit policy/procedure.			
43. ILSM Measures reviewed with UCM Project Manager.			
44. ICRA Measures reviewed with Infection Control and UCM Project Manager.			
45. ILSM Measures implemented and maintained.			
46. ICRA Measures implemented and maintained.			

Contractor Signature: _____ **Date Completed:** ____/____/____