Contents

SECTION I - GENERAL REQUIREMENTS .............................................................................................................. 4

Purpose: ............................................................................................................................................................... 4
Scope: ................................................................................................................................................................. 4
Application: ........................................................................................................................................................ 4
Definitions and Acronyms: ................................................................................................................................. 5
Contractor Responsibilities: ............................................................................................................................. 5
NIU Project Manager Responsibilities: .............................................................................................................. 6
NIU Department of EH&S Responsibilities: ...................................................................................................... 6
General Safety Protocol: .................................................................................................................................... 6
Special Rules for Operations Involving Utilities: ............................................................................................. 8
Special Rules for Lockout/Tagout of Machinery, Pipes, etc.: ......................................................................... 8
Contractor Safety Training: ............................................................................................................................ 8
Housekeeping: ..................................................................................................................................................... 8
Barricades and Opening Protection: ............................................................................................................... 9
Additional Requirements Include: .................................................................................................................... 9
Impairment of Fire Protection Systems: ........................................................................................................... 9
Observance of Fire Protection Acceptance Testing: ...................................................................................... 10
Construction in Occupied Buildings: ............................................................................................................. 10

SECTION II - EMERGENCY INFORMATION .................................................................................................. 11
Non-Emergency Campus Telephone Numbers ............................................................................................. 11
Emergency Response Procedures: .................................................................................................................. 11
Accident Reporting Procedures: .................................................................................................................... 11

SECTION III - CONSTRUCTION SAFETY PRACTICES .............................................................................. 13
Site Safety Plan: ................................................................................................................................................ 13
Tool Box Talks: .................................................................................................................................................. 13
Personal Protective Equipment (PPE): ............................................................................................................. 13
Asbestos Management Plan: ........................................................................................................................... 13
Lead Management Plan: ................................................................................................................................... 14
Right-To-Know/Hazard Communication (HAZCOM): .................................................................................... 14
Compressed Gas Cylinders: ............................................................................................................................ 15
Biohazards/ Infectious Materials: .................................................................................................................... 15
Confined Space Entry Program: .................................................................................................................... 15

1
Lock-out /Tag-out Procedures: .................................................................................................................. 16
Electrical Safety: ........................................................................................................................................ 16
Hot Work Permit Program: .......................................................................................................................... 17
Tools - Hand and Power: ............................................................................................................................. 17
Ladder Safety: ............................................................................................................................................ 18
Fall Protection: ........................................................................................................................................... 18
Scaffolding: ................................................................................................................................................ 19
Aerial Lifts and Platforms: .......................................................................................................................... 19
Crane Operation: ........................................................................................................................................ 20
Heavy Equipment: ...................................................................................................................................... 20
Excavation and Trenching: ........................................................................................................................... 20
Demolition Operations: ............................................................................................................................... 21
SECTION IV - ENVIRONMENTAL MANAGEMENT PRACTICES ........................................................................... 23
Environmental Permits, Registration, and Notification: ................................................................................ 23
Construction and Demolition Debris: ............................................................................................................ 23
Storm Water Management: ........................................................................................................................ 23
Underground Storage Tanks (UST): ............................................................................................................. 24
Spill Prevention: .......................................................................................................................................... 24
Fugitive Dust Emission Abatement: ........................................................................................................... 24
Hazardous Waste Management: ................................................................................................................. 24
<table>
<thead>
<tr>
<th>Date</th>
<th>Reviewed by</th>
<th>Changes Made</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
SECTION I - GENERAL REQUIREMENTS

Purpose:

The purpose of the Northern Illinois University (NIU) Contractor Safety Handbook is the protection and safety of all persons and property while contractors perform work on NIU property. This Handbook applies to construction operations at all NIU campus locations including DeKalb, Lorado Taft Field Campus in Oregon, and the Rockford, Naperville, and Hoffman Estates Educational Centers. The handbook can be viewed online at the Department of Environmental Health and Safety website at http://www.niu.edu/ehs/.

Scope:

The following policies and procedures are intended to assist contractors in reducing the possibility of accidents and are to establish minimum standards to protect contractors and university employees during construction operations. Compliance with these safe work policies and procedures in no way guarantees the fulfillment of the contractor's obligations as may be required by any local, state or federal safety, health, and environmental rules and regulations. This handbook does not cover the full spectrum of published safety, health, and environmental standards which are mandated by law. Contractors shall not assume that they are responsible only for those which are referenced in this manual or that they are current and quoted as published. In the event of a conflict between the abiding contract, provisions of this handbook and applicable state or federal safety, health, and environmental laws, regulations or statutes, the more stringent shall apply. The Contractor must also comply with all Occupational Safety and Health Administration (OSHA) regulations regarding multi-employer workplaces. No liability is assumed by NIU by reason of this manual.

Application:

This program applies to any Contractor and Contractor employees performing contract work for NIU. Contractors include, but are not limited to, the following:

- Construction managers
- General contractors
- Coordinating contractors
- Hazardous waste /disposal haulers
- Laboratory testing contractors
- Remediation contractors
- Service and maintenance contractors
- Sub-contractors
- Special consultants including project architects and engineers
Definitions and Acronyms:

Competent Person – A competent person is defined as "one who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them." By way of training and/or experience, a competent person is knowledgeable of applicable standards, is capable of identifying workplace hazards relating to the specific operation, and has the authority to correct them. Some standards add additional specific requirements which must be met by the competent person.

Authorized Person – is a person approved or assigned by the employer to perform a specific type of duty or duties or to be at a specific location or locations at the jobsite.

HVAC – Heating, Ventilating, and Air Conditioning
AED – Automatic External Defibrillator
OSHA – Occupational Safety and Health Administration
ANSI – American National Standards Institute
NIOSH – National Institute of Occupational Safety and Health
IDPH – Illinois Department of Public Health
IEPA – Illinois Environmental Protection Agency
NFPA – National Fire Protection Association
NEC – National Electrical Code
NESHAPs – National Emission Standards for Hazardous Air Pollutants
NPDES – National Pollution Discharge Elimination System
UST – Underground storage tank
SWPPP – Storm Water Pollution Prevention Program
DOT – Department of Transportation

Contractor Responsibilities:

All Contractors who perform any service on NIU property are required to follow applicable federal, state and local regulations and laws as well as all policies of NIU, including this Program. This Contractor Safety Program has been developed for the protection and safety of all persons and property. This program shall be provided to Contractors to aid in the communication of hazard information involving NIU properties and to outline NIU’s environmental health and safety procedures. Contractors are encouraged to implement the contents of this program through weekly safety talks with contractor employees. The program does not relieve Contractors of any responsibility of providing and following their own policies or procedures.

The site superintendent, project foreman and/or subcontractor designee will serve as the competent person and must investigate and abate hazards reported by contractor employees. Workers have the right to stop working and report the hazard immediately if there is imminent danger to life, safety or health. The OSHA standards prohibit retribution toward employees who report hazardous situations or equipment.
NIU Project Manager Responsibilities:

Designated NIU Project Managers are authorized persons that will help ensure contractor cooperation by including this program into project specifications and collaborating with the Contractor to identify and resolve problems as they occur.

NIU Department of EH&S Responsibilities:

The NIU Department of EH&S serves in an advisory role by issuing copies of the Contractor Safety Field Guide during pre-construction and safety meetings, assisting contractors in the development of their site safety plans, and collaborating with the site superintendent on a variety of safety and health matters as they arise during the course of the project. Staff is also authorized to access and inspect job-sites as needed. These visits are for observation only and do not relieve the Contractor of the responsibility for monitoring and enforcing their own safety program.

General Safety Protocol:

The University may require a Contractor to temporarily or permanently remove a Contractor employee(s) from the premises for any of the following reasons:

- Possession or use of alcoholic beverages or regulated drugs not prescribed by a physician.
- Possession of explosives, firearms, ammunition and/or other weapons.
- Deliberate violation of safety or security rules.
- Illegal dumping, handling, or disposal of hazardous materials.
- Destruction or removal, without written permission, of any property belonging to NIU, the property owner, employee or other contractors or employees.
- Intimidating, threatening, harassing, impeding or interfering with an inspector, police officer, or University employee, student or designated representative.
- Using emergency exits other than for emergencies or blocking emergency exits.
- Misuse of fire prevention and protection equipment.
- Unauthorized removal or destruction of a safety barricade, handrail, guardrail, warning sign, fall protection, or other warning devices intended to protect contractor employees, students, faculty, staff, neighbors or property.
- Violation of the University no smoking policy.
- Failure to follow any federal, state, and local regulations and laws, as well as any policy of NIU.

Written approval to begin work typically is granted by receipt of a signed contract by both NIU and the selected Contractor. During the pre-construction meeting, the assigned NIU project manager will review the scope of work with the Contractor and further clarify site access requirements and procedures including the following:

- All project management correspondence shall be directed to the NIU Project Manager unless directed otherwise. The NIU Project Manager will serve as the liaison between contractor personnel and NIU staff.
- Cyclone fencing should be erected around the perimeter of the work site to secure access for authorized personnel only. Silt fencing should also be erected around the perimeter of the work site to prevent soil erosion into streams, lakes, creeks, and other waterways.
• Contractors must comply with campus parking and traffic requirements. Fire access routes must be maintained free and clear of obstructions at all times.
• All persons driving a vehicle on NIU property must have a valid driver's license.
• Contractors must comply with campus parking and traffic requirements. Parking is allowed only in designated parking areas with an NIU parking permit. Contractors can contact Campus Parking Services at 815-753-1045 to request parking permits. The campus parking map can be located at the following URL: http://www.niu.edu/parking/maps/index.shtml.
• Campus buildings are typically open beginning at 7 AM Monday through Saturday and closed on Sundays. Access to buildings outside of normal building hours is subject to approval by the NIU Project Manager. Contractors can contact the Physical Plant Key Control Shop at 815-753-1215 to request copies of building keys by submitting a refundable company check as a key deposit.

Contractors must notify (verbally or in writing) the NIU Project Manager or other designated NIU representative prior to performing the following activities in an existing building, or buildings occupied by University personnel, unless the project documents expressly authorize the activity without such notification requirement:
• Working on electrical, steam, chilled water systems, HVAC systems, or other energized systems.
• Working on security systems.
• Working on sprinkler systems or fire alarm systems.
• Moving emergency equipment (fire extinguishers, first aid kits, AEDs, etc.), provided by NIU.
• Working with hazardous materials.
• Engaging in hot work operations.
• Working in confined spaces such as, but not limited to: electrical vaults, steam tunnels, sewer systems, ejector pits, and HVAC fan units.
• Using powder actuated tools.
• Operating a power vehicle or self-propelled work platform.
• Excavation or trenching.
• Working with compressed air or gases.
• Working on a roof.
• Working on fire protection or detection systems.
• Installing a temporary electrical service.
• Using a gas, diesel, or LP (propane) powered engine indoors.
• Lifting or hoisting with cranes, derricks, hoists or helicopter.
• Performing blasting operations.
• Scheduled use of fireworks or pyrotechnic devices.
• Any additional or supplemental work not listed in the project documents which has a high risk of injury to the Contractor, the Contractor’s employees or other persons or property.
• Working adjacent to a University roadway so the University can make arrangements for road closures, detours, etc. All Contractor personnel shall wear high-visibility safety apparel and designate a competent person to be responsible for the worker safety plan within the activity area of the job site.
Contractors must obtain approval from the NIU Department of EH&S prior to performing the following activities:

- Disposing of hazardous wastes (including waste oil & lead-containing materials).
- Storing hazardous materials on campus property or working in solvent storage areas.
- Working on sprinkler systems or fire alarm systems.
- Working in confined spaces such as, but not limited to: electrical vaults, steam tunnels, sewer systems, ejector pits, and HVAC fan units.
- Using radioactive sources or conducting field radiography (x-ray).
- Working with or impacting suspect asbestos-containing materials.
- Using a Class 3b or 4 laser.
- Working on a fume hood, biological cabinet or autoclave.
- Working in a University laboratory that may contain biological, radiological, or chemical hazards.
- Engaging in hot work operations

**Special Rules for Operations Involving Utilities:**

Only NIU Physical Plant personnel or their designee may shut-down or start-up operating utilities. The Contractor must contact the NIU Project Manager, who will coordinate with the appropriate personnel in advance of the need for such shut-downs or start-ups. Appropriate pre-planning and significant advance notice are essential criteria when dealing with campus utilities.

**Special Rules for Lockout/Tagout of Machinery, Pipes, etc.:**

If the Contractor intends to service or maintain equipment that holds stored energy or that could potentially injure a person if unexpectedly started, the Contractor must inform and coordinate with the NIU Project Manager or Departmental contact of the lockout/tagout procedures scheduled for implementation. University employees will not lend University owned equipment or property to Contractors. Contractors must provide all necessary tools and equipment to safely complete their work.

**Contractor Safety Training:**

Contractors are responsible for providing applicable safety training for their employees. The Contractor shall, upon request, provide copies of all applicable safety training certificates for their employees to the NIU Department of EH&S. Documentation will show that employees have had the appropriate safety training to protect them and others from the hazards of the work assigned. Documentation shall include employees designated as competent persons for inspections of excavations, scaffolds, and other OSHA specific items.

**Housekeeping:**

The Contractor is responsible for ensuring and maintaining good housekeeping while on campus. The Contractor must keep the work site neat, clean, orderly and free of excess trash or debris and never block walkways, stairs, exits, or create a tripping hazard. Projects involving offensive
odors, excessive noise, or other irritating environmental agents may require work during “off-hours.” A Contractor’s failure to maintain good housekeeping in a work area increases the potential for safety hazards and incidents of accidents and chemical spills.

**Barricades and Opening Protection:**

Barricades and warning signs are required around the perimeter to all construction sites. In addition, adequate protection must be given to excavations, holes, or openings in floors or roofs, elevated platforms, crane radii, and around overhead work to protect people from falling objects.

**Additional Requirements Include:**

- Unless the general area is protected, barricades must be erected before any excavation, and extended as the excavation progresses.
- Barricaded areas which contain an opening or hole for access must be protected during working hours and must be secured at the end of each day.
- All holes or openings through floors or deck ing at all elevations must be immediately covered or barricaded.
- Material or equipment must never be stored in an excavation cover or inside an excavated area.
- Hole covers must be secured or cleated so they cannot slip, and they must extend adequately beyond the edge of the hole.
- Barricades shall not create a tripping hazard. Any potential tripping hazards should be clearly marked.
- The type of barricading system, whether it is fencing, caution tape, or some other means, must be discussed with the NIU Project Manager to provide protection for the campus community.
- Warning signs should be placed on barricades/fences for the duration of the construction project.
- Perimeter fencing that blocks sidewalks must include signs directing pedestrians to a safe walkway. Primary signs can be on the perimeter fence but additional signs may be necessary to inform pedestrians of sidewalk closings that allow for safe crossing at a crosswalk.

**Impairment of Fire Protection Systems:**

Fire protection systems including, but not limited to: fire alarm systems, fire sprinkler systems, standpipes, and special hazard suppression systems must remain operational during construction operations. In the event that such system(s) must be impaired for more than four hours, the contractor must notify the NIU Project Manager and the Department of EH&S. Approval to shut down a system will be given only with sufficient prior notice where there is a demonstrated need, and the occupants of the building are not exposed to undue risk. Upon verification that all hot work and related hazardous operations will be shut down during the impairment, the Department of EH&S will issue an impairment tag and notify the University property insurance representative.
A fire watch is required whenever a fire protection system is deactivated for more than four hours. The Department of Public Safety is responsible for providing a fire watch service. Unless specifically addressed, the contractor is responsible for funding the fire watch.

**Observance of Fire Protection Acceptance Testing:**

Upon completion of a fire protection installation, the contractor shall notify the NIU Project Manager and the Department of EH&S to schedule an acceptance test of the system. The acceptance test shall verify the system’s proper installation and operation in accordance with applicable NFPA codes. The contractor shall submit appropriate documentation indicating that the acceptance test has successfully completed.

**Construction in Occupied Buildings:**

When building occupants are present during a construction project, additional safeguards must be implemented to eliminate potential exposures and complaints. Dust and particulates from demolition, sanding and other construction activities must be controlled by adequate ventilation, or containment and negative air ventilation systems based upon the specific type of activity and particle. Similar controls must be utilized for similar odorous activities including, but not limited to, carpet adhesive, painting, welding, and coatings.

Control of construction-related particulate matter in both occupied and unoccupied buildings will also prevent the contamination of HVAC systems. The Contractor shall ensure that the HVAC system is protected in order to prevent contamination. If an HVAC system is unprotected and contaminated by construction-related particulate matter, the Contractor shall be held responsible for the cost of cleaning the system and other related cleaning.

Negative air ventilation systems shall have appropriate filtration and be exhausted outside of the building. Occupant complaints pertaining to construction-related particulate matter and odors during construction may interrupt the project schedule. Projects may only continue once problems have been resolved. Any cost of delay shall be paid by the Contractor.
SECTION II - EMERGENCY INFORMATION

Emergency Number- 911

Contractors must abide by all alarms and evacuation procedures as established by NIU. Any alarm triggered by the Contractor must be reported immediately and a representative must be available to address the incident. In the event of an emergency, the Contractor should report the incident to the Department of Public Safety by calling 911.

Blue Call Stations (Exterior): Push button to talk to Public Safety
Yellow Call Stations (Interior): Push button to talk to Public Safety

Non-Emergency Campus Telephone Numbers
Kishwaukee Community Hospital 815-756-1521 or 800-397-1521
Kishwaukee Corporate Health 815-754-4882
Department of Environmental Health and Safety 815-753-0404
Architectural and Engineering Services (A/E) 815-753-0729
Department of Public Safety 815-753-1212
Physical Plant 815-753-6255
Parking Services 815-753-1045
East Heating Plant 815-753-6094
West Heating Plant 815-752-1791
Grounds Department 815-753-1479
J.U.L.I.E Utility Locate 1-800-892-0123

Emergency Response Procedures:

The general and/or coordinating contractor is responsible for developing site-specific emergency response procedures. Contractor employees and subcontractors shall be trained and have a thorough understanding of such procedures. Contractors are welcome to reference the NIU Emergency Guide located at http://www.niu.edu/publicsafety/Emergency%20Response%20Guide/NIU-EmergencyGuide.pdf as a tool to assist them in developing the site specific procedures. Such procedures, along with emergency contact information, shall be posted in a conspicuous location available to all employees at the worksite. All fire-related incidents that occur in student housing facilities shall be reported to the Department of EH&S for further review, investigation, and documentation in accordance with the Higher Education Opportunity Act.

In the event of severe weather, all Contractors need to move to the nearest shelter area. More information on the campus weather safety program can be found at http://weather.admin.niu.edu/.

Accident Reporting Procedures:

In the event of an accident in which a worker requires medical attention to treat an injury, the
Contractor should call 9-1-1 to notify the NIU Department of Public Safety. The DeKalb Fire Department will evaluate and provide initial treatment as necessary. If the injuries are life-threatening the Fire Department will transport the injured worker to Kishwaukee Community Hospital (http://www.kishhospital.org/) located at One Kish Hospital Drive, DeKalb, IL 60115. Non-life threatening injuries can be treated at Kishwaukee Corporate Health (http://www.kishhealth.org/kishcorporate/injury_care.html) located at 1740 Mediterranean Drive, Sycamore, IL 60178.

All work-related accidents should be immediately reported to the NIU Project Manager and the Department of EH&S. Accidents which result in a fatality or the hospitalization of three (3) or more workers shall be verbally reported by the employer to the OSHA North Aurora Area Office at (630) 896-8700. If the office is closed, then call 1-800-321-OSHA. Whether or not an incident is immediately reportable, if it results in the death of an employee or the in-patient hospitalization of three (3) or more employees within 30 days of the incident, OSHA requires that the employer report the fatality/multiple hospitalizations within 8 hours after learning of it.
SECTION III - CONSTRUCTION SAFETY PRACTICES

Site Safety Plan:

Each Contractor is encouraged to review and understand the contents of this handbook before commencing construction operations on campus. Implementation of this handbook does not preclude or supersede contractors from implementing their own respective safety and health policies. The prime and/or coordinating contractors are encouraged to implement and enforce safety and health policies on the job-site.

Prior to commencing work, the general and/or coordinating contractor will request all subcontractors develop a site safety plan that identifies and addresses hazards and unsafe conditions specific to the job site. Once the plans are complete, the general and/or coordinating contractor will provide an initial safety briefing so all contractor employees on the job-site understand the contents therein. The NIU Department of EH&S serves in an advisory role by issuing copies of this Field Guide during pre-construction and safety meetings, assisting contractors in the development of their site safety plans, and collaborating with the site superintendent on a variety of safety and health matters as they arise during the course of the project.

Tool Box Talks:

Each Contractor is responsible for conducting weekly safety tool box talks with its employees. The purpose is to discuss potential unsafe conditions and ways to engage in safe work practices. Such training will be documented and made available for inspection upon request.

Personal Protective Equipment (PPE):

The on-site competent person(s) will ensure that all authorized personnel (e.g. Contractors, designated NIU staff, and project architects and engineers) are donning hard hats and safety glasses while on the work site. Additional PPE including, but not limited to: hearing protection, hand protection, face protection, fall protection, and respiratory protection may be required if such hazards exist while on the work site.

Each Contractor is responsible for providing PPE to its employees. The Contractor’s competent person shall ensure that its employees wear appropriate PPE necessary to provide adequate protection from normal hazards associated with the job. All PPE used must meet ANSI, NIOSH, or other applicable industry standards.

Asbestos Management Plan:

The Department of EH&S administers the Asbestos Management Plan to effectively manage, survey, and monitor the status of asbestos-containing materials (ACMs) that are found in many different types of building materials in campus buildings. The Department of EH&S
coordinates with facility management staff to identify, quantify, and evaluate cost effective asbestos abatement options during the design and planning phase of a project. Abatement options include disturbance prevention, removal, encapsulation, enclosure, or patch and repair. Once the scope of work is clearly identified, the Department of EH&S may retain the services of a qualified asbestos abatement contractor and environmental consultant to engage in asbestos abatement operations.

Typically, identified ACMs subject to impact during a renovation project are removed before the renovation project commences. However, in the event such ACMs cannot be removed, NIU will make every effort to inform Contractors of the presence of such ACMs as early as possible in the design and planning phase so all stakeholders can work together to prevent a disturbance. If a Contractor discovers suspected ACMs previously unidentified in the renovation phase, the Contractor must immediately stop work and contact the NIU Project Manager and the NIU Department of EH&S for further action. Under no circumstances are Contractors allowed to disturb ACMs without prior approval from the NIU Project Manager and the Department of EH&S.

Asbestos abatement contractors shall perform abatement operations in accordance with engineered project specifications and applicable state and federal rules and regulations. The University retains an environmental consultant to monitor the asbestos abatement contractor and to document airborne asbestos fiber concentrations during the course of the abatement project. Both the asbestos abatement contractor and environmental consultant are responsible for submitting project reports upon completion of the project.

**Lead Management Plan:**

Contractors must notify the EH&S Asbestos and Lead Coordinator of any plans to perform maintenance or renovation activities in campus child-occupied facilities including, but not limited to: Child Development Laboratory in Gabel Hall, Campus Child Care Building, Northern View Apartments, and staff apartments in the residence halls. In the event such work is required, the Contractor shall contact the EH&S Asbestos and Lead Coordinator for further requirements in accordance with the US EPA Lead Repair and Renovation Rule. Contractors shall comply with applicable safety and health regulations if disturbance of lead-coated substrates is anticipated.

**Right-To-Know/Hazard Communication (HAZCOM):**

Upon request, the Contractor shall submit to the Department of EH&S an inventory of all hazardous materials that are to be brought on-site with accompanying Safety Data Sheets (SDS). The Contractor shall also ensure that all containers brought on-site for the storage of hazardous chemicals (e.g., gas, paint, etc.) are labeled and inspected in accordance with all applicable regulations. The Contractor shall remove all hazardous materials brought on-site when work involving a specific hazardous material is complete. The Contractor may request and review SDS for any chemicals that are encountered on University property during the performance of its work by contacting the specific department or the Department of EH&S.
Compressed Gas Cylinders:

Compressed gases pose a severe hazard to persons and property. Contractors are expected to follow standard industry best practices that are outlined in Compressed Gas Cylinder Association Pamphlets. Those guidelines include, but are not limited to the following:

- Storing cylinders overnight in any University building is strictly prohibited.
- If a leak develops in a cylinder that cannot be immediately corrected, the cylinder must be safely transported to a location outside the building. Use of an elevator is prohibited under such conditions.
- Compressed gas cylinders are to be stored in an area approved by the NIU Project Manager.
- Cylinders shall be clearly marked for the type of gas contained.
- Oxygen and acetylene cylinders are to be stored at least twenty feet apart or separated by a 5 foot-1 hour minimum fire rated partition.
- All cylinders are to be stored and transported in a secured, upright position, with their caps secured. Wire ties shall not be used as a securing material. Never load or unload cylinders without caps. Flashback arrestors are required on oxygen and acetylene lines.
- Cylinders must be secured by acceptable means such as chain, strap, or rigid retaining bar.
- Keep cylinders away from welding operations, extreme temperatures, and electrical circuits.
- Liquefied Petroleum Gases (LPG) is not allowed on NIU sites without specific approval from the NIU Project Manager.
- LPG cannot be stored inside any building. Only cylinders actually in use will be allowed inside campus buildings.
- Cylinders on LPG powered trucks may be left on the trucks at night and on weekends with the cylinder valve closed.

Biohazards/ Infectious Materials:

Contractors may need to access or contact biological materials that are potentially hazardous. Examples of these include: work on sewer lines, sumps, drain traps, or areas containing infectious waste. Any Contractor working on equipment or building systems that are known or suspected of being contaminated with human blood or other biological materials, must complete an OSHA required Bloodborne Pathogens training program for the recognition and control of these hazards.

Other Contractors who are not directly working with biological materials, but may encounter these materials, shall train employees to be aware of any potential biological hazard appropriate for the work being performed.

Confined Space Entry Program:

All Contractor personnel required to enter a permit-required confined space on NIU property
must be trained in accordance with applicable OSHA regulations and, if applicable, the NIU Confined Space Entry Procedures. Identification and information pertaining to permit-required confined spaces on campus is available by contacting the Department of EH&S. Permits shall be displayed prominently at the job location, and copies shall be provided to the NIU Project Manager after completion of the entry. The Contractor is responsible for providing monitoring and rescue equipment necessary for safe confined space entry. The Contractor shall also develop an emergency response plan that outlines procedures for emergency rescue in the event a worker becomes incapacitated.

When both NIU personnel and Contractor personnel are working in or near permit-required confined spaces, the Contractor shall coordinate all operations with the affected NIU personnel before entry. NIU personnel will communicate all known hazards of the permit-required confined space area to contractor personnel involved in the entry. Job-site safety meetings are essential to ensure everyone understands the scope of work and their respective responsibility during the entry procedure.

**Lock-out /Tag-out Procedures:**

Contractors shall implement lockout/tagout procedures when working on equipment and machinery located at the job-site in accordance with applicable OSHA standards. Contractors must request permission from the Physical Plant through coordination with the NIU Project Manager prior to performing a lockout/tagout procedure on university-owned and operated equipment. At no time shall the Contractor override any locks or tags encountered during the performance of their work. Physical Plant personnel are responsible for all shut-down and start-up of utility systems for all University properties unless Contractors have received approval otherwise from the Physical Plant.

**Electrical Safety:**

Contractors are required to comply with all applicable OSHA and NEC electrical safety rules and regulations while on the job site. Requirements specific to NIU include, but are not limited to:

- Electrical extension cords must be in good condition and must not create a tripping hazard in hallways or on pedestrian walkways. Only extension cords meeting ANSI standards may be used. Cords that stretch across walkways must be entirely covered, secured, elevated, or protected by other means when exposed to damage, water, or when a potential for a tripping hazard exists.
- Keep all electrical room doors closed and latched shut when unoccupied.
- Lockout/Tagout procedures must be observed when working with energized equipment. Please refer to the Lockout/Tagout section of this handbook.
- All cranes, backhoes, aerial lifts, and similar lifting or excavating equipment must be effectively grounded when a possibility exists of such equipment coming into contact with an electrical power line or power facility located overhead or underground.
- When using temporary power, Ground Fault Circuit Interrupters (GFCI's) are required.
• Areas containing flammable and combustible materials shall require intrinsically-safe equipment and equipment connections.

**Hot Work Permit Program:**

Hot Work is defined as a temporary operation involving open flames which produces heat and/or sparks. This includes, but is not limited to: brazing, cutting, grinding, soldering, thawing pipes, torch applied roofing, welding, arc cutting and the use of heat guns. Alternate methods to execute tasks shall be reviewed before making the decision to engage in hot work operations.

Prior to commencing hot work operations, the Contractor must notify the NIU Project Manager and obtain a Hot Work Permit from the NIU Department of EH&S. The only exceptions are processes performed in designated shop areas in the Physical Plant. Contractors may use their own permit, but must submit a copy of the permit to the NIU Department of EH&S. Additional requirements include, but are not limited to:

• Hot work permits are also required when using an intrinsically safe outlet in a hazardous area for temporary power.
• All permits must be prominently displayed at the entrance to the job site.
• The NIU Project Manager in conjunction with the NIU Department of EH&S will evaluate building utilities and determine if it is necessary to temporarily shut down utility systems or disarm any portions of the building fire protection system. If impairment of a fire protection system in needed, the NIU Department of EH&S will submit an impairment permit in accordance with applicable sections of this manual.
• A fire watch must be implemented for up to four hours after hot work has stopped to locate and extinguish smoldering or flaming sources of ignition. Contractors will assume this responsibility at no additional cost to the University unless written approval indicates that another Contractor or University designee (e.g., Department of Public Safety, Heating Plant, etc.) will assume this responsibility. Contractor employees shall not be assigned other tasks while performing fire watch duties.

**Tools - Hand and Power:**

Power-actuated tools are not permitted in occupied NIU buildings without the consent of the NIU Project Manager. If a power-actuated tool is allowed on campus, it must be operated in accordance with OSHA Standard 29 CFR 1926.302(e). It is the Contractor's responsibility to see that each power-actuated tool operator is properly trained and understands and follows the appropriate safety instructions. Additional requirements include:

• Hand tools, such as shovels, rakes, picks, axes and sledge hammers shall be inspected before use. Broken or splintered handles must be repaired immediately or removed from the job site. Cold chisels and wedges shall also be inspected for mushroomed heads. Defective chisels and wedges need to be removed from the job site. Portable electric power tools shall be inspected before use.
• Defective or damaged tools shall not be used. Personnel shall not drop or throw tools, materials or equipment from one level to another. A hoisting line must be used.
• Power tools shall be maintained in a safe working condition. Designed safety features such as guards and interlocks shall not be removed or disabled. Tools shall be tied off when used overhead. Tools powered by gasoline shall not be used inside University buildings unless approved by the NIU Project Manager. Appropriate engineering controls and safeguards must be established to prevent exposure to building occupants.

Ladder Safety:

Contractors shall comply with manufacturer’s guidelines for use of ladders. Specific requirements include, but are not limited to:
• All ladders shall be heavy-duty industrial strength, fiberglass construction, and in good working condition. Aluminum and wooden ladders are prohibited for use on job-sites.
• The user is responsible for visually inspecting a ladder before use.
• Three points of contact must be maintained on the ladder at all times.
• Only one person is permitted to climb a ladder at a time. A rope and bucket shall be used for raising and lowering tools and materials.
• Step ladders are to be fully opened when in use and are never to be used as straight ladders. The top rung and top step are not to be used.
• All straight and extension ladders are to extend three rungs above the supporting object when used as an access to elevated work areas and shall be secured at the top.
• All straight and extension ladders must be equipped with non-skid feet.
• Straight and extension ladders shall be placed at an angle so the base is one-fourth of the working length.
• The area under and around the ladder shall be secured to ensure no falling objects may strike persons below.
• Ladders shall not be left unattended in occupied buildings.

Fall Protection:

Fall protection procedures shall be implemented if contractor employees are anticipated to be exposed to elevations greater than six (6) feet above the floor or grade level. In areas of fall exposure, guardrails shall be constructed according to OSHA standards. Handrails on temporary stairs and walkways shall also be constructed according to OSHA standards. Full body safety harnesses and shock absorbing lanyards are required for fall protection when it cannot be provided by other means (i.e., proper scaffold with guardrail system, aerial lifts, etc.) Every employee issued a safety harness shall be instructed by a competent person in the proper method of wearing, using, and securing it to an approved anchorage point.

Contractors shall be responsible for providing their employees with fall protection gear that is in good condition and free of visible defects or deterioration. Contractor employees shall visually inspect fall protection gear before each use and remove such equipment from service if exposed to a fall arrest or evidence of damage is observed. Contractor personnel involved in steel erection and roofing operations will be required to follow pertinent OSHA standards. Fall protection equipment must be worn and tied off to independent lifelines when working from elevated areas under the following conditions:
• The roof pitch equals or exceeds 7 in 12.
• The job requires workers be closer than four (4) feet from the roof edge without parapets or other acceptable fall protection systems.
• Two-point suspension scaffolds or stages are used.
• Boatswain’s chairs are used.
• Scaffolds with incomplete handrails and decking are used.
• Ladders are placed near an opening.
• Elevated work is being performed with no protection available to prevent the worker from falling.

Scaffolding:

All scaffolding shall be erected and maintained in compliance with applicable standards and the Manufacturer’s requirements. Each scaffold must be erected and dismantled by trained and qualified scaffolding contractors. Inspection of scaffolding must be made by a competent person assigned by the Contractor for the work to be performed. All scaffold platforms must be equipped with standard forty-two (42)-inch high handrails and mid-rail, rigidly secured and Completely decked with safety plank or manufactured scaffold decking. Rigidly secured four (4)-inch high toe-boards must be used on all scaffolding. Scaffolds must be tied off to the building or structure at proper intervals.

Scaffolding shall be erected on a solid footing rigid and capable of carrying the maximum intended load without settling or displacement. No scaffold shall be erected except under the supervision of a qualified person (as defined by OSHA). No scaffold shall be moved, dismantled or altered except by the Contractor who designed and erected the scaffold. When allowable, all scaffolds shall have guardrails consisting of a forty-two (42) inch high top rail, a mid-rail and toe boards. All handrails, posts and assembly shall be able to withstand a two hundred (200) pound force in any direction with a minimum of deflection. All elevated platforms shall have a ladder access. All planking shall be scaffold grade as recognized by grading rules for the species of wood used. Scaffold planks shall extend over their end support not less than six (6) inches and no more than twelve (12) inches.

Contractors shall not permit employees to ride manually-propelled scaffolds unless the floor is level and free from holes or obstruction, the platform height does not exceed twice the minimum base dimension, the wheels are rubber or similar material, all tools and materials are secured or removed, and the scaffold users are aware that the scaffold will be moved.

Aerial Lifts and Platforms:

Contractors shall not use university-owned or operated aerial lifts. Articulating boom lifts shall only be operated by trained and qualified individuals. Such lifts shall be inspected in accordance with the manufacturer’s instructions and be free of defects. Personal fall arrest harnesses shall be worn during operations. "Deadman" safety switches shall not be altered. A competent person shall inspect the lifts before use. Hi-jacks shall not be used without outriggers fully extended. The safety chain must be in place across the entrance when in use. When using vertical lifts, such
as hi-jacks or scissors lifts, fall protection is recommended. Manufacturer safety recommendations shall be followed while operating lift equipment.

**Crane Operation:**

During crane operation the following safe work practices shall be implemented:
- The safe design capacity of any crane must not be exceeded.
- All cranes, contractor-owned, leased or rented, must be in a safe, mechanical working condition. Proper guards must be provided for exposed gears, belts, couplings, fans, etc.
- All operators must be trained and qualified to operate the equipment they are assigned to operate.
- A crane must be visually inspected on a daily basis. A documented annual inspection must be kept with the crane at all times. Boom cable installation documentation shall also be available.
- Personnel are prohibited from being positioned under any load when being lifted.
- To avoid tipping, all outriggers must be fully extended and all outriggers must remain firmly on the ground. Cribbing is required when the ground cannot support the concentrated load of the outriggers. Boom angle indicators, load charts and a standard hand signal chart, shall be visibly posted on the crane.
- Cranes and other equipment shall be operated with a minimum clearance of ten (10) feet between power lines and any part of the machinery.
- Contractors shall provide appropriate barriers around cranes and material hoists to protect pedestrian and vehicular traffic around the operating area.
- When cranes are operating and moving, flag men shall be provided by the contractor and utilized to prevent pedestrian and vehicular traffic from crossing paths with the crane load.

**Heavy Equipment:**

Heavy equipment, such as backhoes, dump trucks, dozers and excavators, shall only be operated by individuals who are trained and qualified by their Contractors. Back-up signals are required on heavy equipment with a restricted rear view. Roll bars shall be installed when required by OSHA. All vehicles shall have a service brake system, an emergency brake system, and a parking brake system. All cracked or broken glass shall be replaced expeditiously. All heavy equipment shall be in safe operating condition. All contractor employees shall be donned in conspicuous safety warning vests in the presence of heavy moving equipment and other vehicular traffic.

**Excavation and Trenching:**

Before opening any excavation, efforts shall be made to determine if there are underground utilities in the area. Underground utilities include: sewer, telephone, data cables, fuel lines, electric, water, steam, chilled water and irrigation lines. Contractors should request a utility locate assessment by contacting the NIU Project Manager. Representatives from the NIU Physical Plant and A/E Services will perform the utility locate and communicate their
findings to the NIU Project Manager and affected Contractors. If utilities are identified and subject to disturbance, they shall be protected or otherwise shut-down during the excavation operations.

The Contractor must ensure compliance with all requirements of the OSHA Excavation Standard 29 CFR 1926, Subpart P. The Contractor is responsible for providing a competent person at every excavation site. This individual must be capable of identifying existing and predictable hazards in the excavation area and determining the suitability of equipment or materials used for support systems, shield systems, and other protective systems. In addition, the following requirements must be completed prior to or during any excavation on property owned by NIU:

- All excavations greater than five (5) feet in depth must be evaluated and constructed under the supervision of a competent person as identified in OSHA standards. Excavations greater than five (5) feet must be sloped or shored. All excavations must be identified by using barricades.
- While the excavation is open, underground installations shall be protected or supported as necessary to safeguard employees.
- When excavating around direct buried cables, rubber boots and gloves shall be worn.
- Do not use mechanical equipment within three (3) feet of the underground installation.
- Workers operating in trenches deeper than five (5) feet shall be protected by shoring or sloping of trench walls. The use of a trench box is also recommended to provide protection from cave-ins and worker injury. Working in an unprotected trench is not tolerated by NIU and is in violation of OSHA standards.
- Stairway, ladder, ramp, or other safe means are required for access into all excavations greater than five (5) feet in depth and must be within twenty-five (25) feet of the work area.
- The Contractor shall maintain a physical barrier around all excavations and machinery. Barriers such as properly supported snow fencing, orange safety fencing, barricades, or temporary chain link cyclone fencing must be installed. All excavation sites are to be secured during off-work hours to prevent unauthorized access.
- The Contractor is responsible for providing the proper signage necessary to direct both vehicular and pedestrian traffic safely around or through the work area.
- All open holes, trenches or other excavations that create a hazard to persons must be covered, filled, and/or guarded by a railing system before the Contractor leaves the excavation site.
- When working around trees on NIU property, the Contractor must take special precautions not to harm a tree in any way. The Contractor must coordinate this activity with the NIU Project Manager.

**Demolition Operations:**

The Contractor is responsible for addressing the following items in preparation for demolition activities:

- The Contractor shall request utility shut-downs through proper procedures to make certain that all lines, services and equipment have been properly cleared or purged for safe removal.
• All lines, including water and steam, are to be considered "hot" until such utilities are shut-down and locked/tagged out.
• Underground or otherwise hidden lines, cables and sewers shall be physically located when available information is not completely accurate.
• Combustible materials shall be moved prior to hot work operations. Fully charged and appropriate fire extinguishers shall be provided by the Contractor during demolition operations involving combustible materials.
• Special attention shall be given to the marking of hazards and the barricading of hazardous areas for the protection of all personnel, including those not directly involved in the demolition work.
• The Contractor has the responsibility of informing its employees of the potential existence of environmentally-hazardous materials at NIU construction sites.
• The Contractor has the responsibility of notifying the University by contacting the NIU Project Manager of the discovery or suspected discovery of environmentally-hazardous materials at any NIU construction site whether the existence was known or not, prior to the commencement of construction.
• Acquiring all necessary permits and/or licenses required for the packaging, transportation and disposal of environmentally-hazardous materials.
• Completing all arrangements necessary for the packaging, transportation and disposal of environmentally-hazardous materials.
• The Contractor has the responsibility of providing the NIU Department of EH&S with complete documentation of the proper disposal of environmentally-hazardous materials originating at NIU.
• All costs incurred in the permitting, licensing, packaging, transportation and disposal of environmentally-hazardous materials.
• All costs associated with the application of state and federal environmental permits including, but not limited to: IEPA and NESHAP permits and Illinois Historical Preservation Society requirements.

Depending upon the scope of demolition work, the NIU Department of EH&S may need to conduct an environmental hazard assessment to evaluate and assess the presence of environmental hazards that may need to be properly mitigated before demolition can proceed. Common environmental hazards typical of demolition sites include, but are not limited to:

- Asbestos-containing materials;
- Battery back-up power supplies in emergency lighting systems;
- Lead-coated materials and plumbing fixtures;
- Lead-shielding on high voltage electrical cables;
- Mercury-containing materials found in fluorescent light bulbs, temperature and pressure control devices, and drain lines and plumbing traps which have collected mercury;
- Left over, off-spec waste latex and oil-based paints;
- Paint solvents, chemical-based paint strippers or removal agents;
- Water-based or solvent-based surface degreasers;
- Polychlorinated Biphenyl (PCB) – found in pre-1979 fluorescent lamp ballasts and electrical transformers and capacitors;
- Refrigerant-containing (Freon) appliances;
- Heavy metal or other chemical residual found in laboratory ductwork and associated exhaust systems;
- Fire extinguishers.

While NIU believes this to be a reasonably comprehensive listing, there may be other unanticipated environmental hazards encountered during the course of the project. Contractors should inform the NIU Project Manager and Department of EH&S of these hazards upon discovery. University dumpsters, refuse containers, and sewer lines are to be kept free of these items.

SECTION IV - ENVIRONMENTAL MANAGEMENT PRACTICES

NIU has the responsibility of notifying Contractors of the existence of any known environmental hazards that may be encountered on the job site. However, the Contractor is responsible for handling and disposing of all hazardous, special, and normal waste generated as a result of their construction activities.

NIU retains the right to review all transportation and disposal facilities that are proposed to be utilized for the disposal of environmentally-hazardous materials generated on the construction site. The Contractor is required to provide NIU completed documentation of the proper disposal of environmentally-hazardous materials originating at NIU.

Environmental Permits, Registration, and Notification:

The Contractor is responsible for obtaining all necessary permits from applicable environmental regulatory agencies (e.g., IDPH, IEPA, etc.) PRIOR to beginning any work that will require such a permit. Copies of such permits will be submitted to the NIU Project Manager for review before work commences.

Construction and Demolition Debris:

Disposal of construction and demolition debris in campus dumpsters is prohibited. It is the Contractor’s responsibility to properly recycle/dispose of construction debris in accordance with applicable environmental regulations.

Storm Water Management:

Any construction activity, including grading, clearing, excavation, or other earth-moving process may require a National Pollutant Discharge Elimination System (NPDES) storm water permit for construction under the NPDES Storm Water Program. Contractors who disturb campus land greater than one acre must prepare and submit a Storm Water Pollution Prevention Plan (SWPPP) to the NIU Project Manager for review and approval. The Contractor is responsible for closely monitoring discharges to verify that only clean uncontaminated water is being discharged to campus storm sewers.
No hazardous, toxic liquid, or solid material(s) shall be discharged to the storm and/or sanitary sewer system. Contractors performing planned work that will create potential runoffs from water blasting, wet method surface removal, etc., must consult with the NIU Project Manager to ensure proper protection of the drainage system and adequate product collection procedures. Additional guidance on these requirements will be provided during the project design/bidding process.

**Underground Storage Tanks (UST):**

In the event that a UST or associated piping is discovered during the project, the Contractor shall stop work immediately in areas adjacent to the tank or piping and contact the NIU Department of EH&S for further evaluation. Under no circumstance is the tank and/or associated piping to be excavated or removed without the expressed approval of the NIU Department of EH&S or designee.

Installation of above ground and underground storage tanks may also require application of a permit through the Office of the State Fire Marshal. Permit requirements are dependent upon the size and anticipated function of the tank.

**Spill Prevention:**

The Contractor is responsible for any petroleum-based or chemical spill within the construction limits of the project and those outside of the construction limits that are caused by the Contractor’s defective equipment, containers, personnel or subcontractors. The Contractor shall have a spill kit(s) capable of cleaning up a 40 gallon spill on-site at all times. For larger spills the Contractor must provide to the NIU Project Manager the name, address, and phone number of the emergency response company to be contacted for cleanup. The full cost of any clean up shall be the sole responsibility of the Contractor.

**Fugitive Dust Emission Abatement:**

All Contractors must reduce the amount of fugitive dust (particulate matter) emitted into the ambient air as a result of construction activities in accordance with applicable NESHAP requirements.

Any operation or procedure involving the release of significant quantities of dust, vapors, fumes, or mist shall be approved by the NIU Project Manager prior to start of work. Examples include: large applications of floor, wall or roof coatings, spray applications, cement cutting, sandblasting, demolition activities, etc.

**Hazardous Waste Management:**

The Contractor shall comply with all federal, state and local regulations pertaining to the management of hazardous waste, as well as University requirements. Hazardous waste must be handled and accumulated on-site in a safe manner and by properly trained Contractor personnel.
• Mercury-containing fluorescent lamps shall be removed from fixtures with care and placed in special cartons and disposed of properly. Do not dispose of lamps in regular trash containers.
• Asbestos-containing materials removed under abatement contracts may be considered hazardous or special waste. It is the responsibility of the general and abatement contractors to dispose of them properly and coordinate through the NIU Department of EH&S.
• Lead-based paint removed from structures is considered hazardous waste and must be disposed of properly and coordinated through the NIU Department of EH&S.
• Contact the Department of EH&S for guidance on disposal of other types of hazardous wastes otherwise not listed above.

Hazardous waste generated on-site shall not be transported off-campus without proper manifests and signatures. Hazardous waste will be transported and disposed of in accordance with all applicable federal, state, and local regulations. All hazardous and non-hazardous waste generated from asbestos abatement projects must be properly manifested per EPA/DOT regulations. Contractors are required to submit waste manifest records to the NIU Department of EH&S as confirmation that hazardous waste generated from the job-site was properly disposed.