

**FACILITIES MANAGEMENT  
SAFETY HANDBOOK**

**HIGHLIGHTS FOR FACILITIES MANAGEMENT  
EMPLOYEES**

**Implemented: September 2010**

# Table of Contents

## Facilities Management Safety Handbook

Safety and Security Master Plan	3
Forklift	4
Fall Protection	5
Personal Protective Equipment (PPE)	6
Asbestos Awareness	7
Ladder Safety	8
Life Safety	10
Confined Space Entry	11-12
Electrical Safety	13
Motor Vehicle Safety	14-15
Hazardous Energy Sources	16
Rigging Safety	17
Hazard Communication	18
Respiratory Protection	19
Hearing Conservation	20
Material Handling and Lift Techniques	21
Blood-borne Pathogens	22
Used Oil Management	23
Refrigerant Management	24
Hazardous Waste Management	25
Water Pollution Control	26
Disposal of Containers and Used Rags	27
Department of Transportation	28
Compressed Gas	29
Scaffolds	30
Welding, Cutting, Brazing and Soldering	31
Inspections	32
Incident Investigations and Reporting	33
Hand Tools	34
Electric Powered Tools and Equipment	35
Safety Rules	36
Mandatory Fatality Prevention Review: Electricity	37-38
Mandatory Fatality Prevention Review: Heights above 6 Feet or 2 Meters	39-40

## Introduction

Protecting the safety of our employees and the environment is a core value within Facilities Management. We will not be satisfied until our workplaces are safe from hazards, our employees are injury-free, our services are safe, and our commitment and record of protecting the environment are unmatched.

Specifically, this handbook requires the following of every Facilities Management employee:

- Compliance with legal requirements and the policies, standards and practices of the University;
- Establishment of safety and environmental goals and the tasks necessary to achieve these goals;
- Providing accurate and timely measurement and reporting of performance;
- Implementation and periodic evaluation of EH&S policies in order to reduce risks and continually improve the effectiveness of our EH&S processes;
- Promotion of the health and wellness of our employees;
- Integration of safety and environmental considerations into the design of our services and support of University policies that encourage the use of “green” products and services in the areas we serve;
- Commitment of the means and resources necessary to direct, support, monitor and maintain accountability for implementation of these rules.

In all of the above, we seek and expect the involvement and contribution of employees.

**This Safety handbook is designed to provide key highlights of the Facilities Management safety requirements and procedures. More complete information on each topic is readily available by accessing the specific EH&S policy cited in each section of this book. Any questions or concerns about your safety should be discussed with your supervisor or EH&S.**

## **SAFETY & SECURITY MASTER PLAN**

### **MISSION STATEMENT**

Facilities Management, utilizing best practices and in compliance with regulations fosters developing and maintaining a safe and secure work environment.

### **FACILITIES MANAGEMENT MISSION STATEMENT JANUARY 26, 2002**

As professional employees, we support Creighton's mission by providing quality services and the management of physical assets, and the stewardship of resources in accordance with University policies, values, regulatory requirements, and best practices standards.

### **PURPOSE**

To establish guidelines and procedures:

1. To be a steward of Creighton resources by adhering to practices that continuously strives to ensure a safe and secure work place.
2. To develop and implement programs that optimizes safety and security for the employee.
3. To best contribute to the safety and security of the campus community.
4. Documented training of employees in a manner that demonstrates a high standard of safety and security in the work place.
5. Purchasing equipment that is safe for the operator and maintaining the equipment in a safe operating condition and operating in accordance with manufacturer intent.

## **Forklift**

- Only trained operators will be permitted to operate a forklift.
- The operator will, at least daily prior to each shift, perform an inspection of the forklift.
- Park the forklift with the forks resting at ground level.
- Wheel chocks will be placed under the rear wheels of a highway vehicle to prevent it from rolling while it is boarded with a forklift.
- Only an authorized service provider of the forklift will perform maintenance on the equipment.

## **Fall Protection**

- Walking and working surfaces will have the strength to support employees.
- Employees working near unprotected edges or holes, including skylights, which are six feet above a lower level, will be protected from falling by the use of guard rails, positioning devices, a warning line system, safety monitoring system or personal fall arrest system.
- Holes should be covered to prevent falls or at the very least marked.
- Fall arrest systems will consist of a harness, self-retracting lanyard with a deceleration device and anchor point. Short rope lanyards may be utilized in the buckets of man lifts.
- Fall arrest systems will be inspected by each employee for defects such as cuts, tears, abrasions, mold, stretching, etc before each use.
- Guardrails will consist of a handrail, midrail and toe board that will withstand 200 pounds of pressure. Guardrails are not to be used in lieu of ladders.
- Anyone utilizing fall protection systems will be trained in the use, care and maintenance of the system annually.
- Housekeeping is important to remove obstacles and trip hazards.
- Aisles and corridors will be clear and open.
- Carry loads that are heavy or bulky with assistance by others.

## **Personal Protective Equipment (PPE)**

- All employees will wear proper PPE based on job hazard analysis.
- All employees will have received training on the PPE they are required to use before they use it. The job hazard analysis will be referenced for each task.
- PPE kits will be with you on the job.
- Proper eye protection will be worn on all jobs. As required for the task and/or by the job hazard analysis. Safety glasses when used will have side shields.
- The wearing of hard leather-work shoes with non-conductive soles is mandatory when working with electricity.
- Steeled toed shoes are required for crew members on the grounds crew, moving crew, recycling crew and Central Receiving.
- PPE will be stored as required by EH&S procedures and practices and/or the job hazard analysis.
- Comply with the requirements found in the Facilities Management PPE quick reference list and the other items listed below.

For additional information, see the following:

- EH&S Website Policy - Job Hazard Analysis for the task being performed.
- Service PPE assessments will be conducted by the employee prior to use. Annual inspections of equipment will be conducted by the EH&S staff and/or the Facilities Management safety officer.
- PPE quick reference table.

## Asbestos Awareness

- Facilities Management employees are prohibited from performing any work that will intentionally disturb asbestos containing materials.
- Facilities Management employees are prohibited from performing work in any areas that will, or may, expose them to airborne asbestos where abatement is in progress.
- Facilities Management employees are permitted to work in areas where asbestos containing materials exist as long as the materials are safe from becoming airborne and providing the employee has the proper PPE and training
- Facilities Management employees will initially bring any job site asbestos concerns to their supervisor and ultimately to EH&S.
- EH&S must determine the presence, location and quantity of asbestos containing material at their facility and they must inform contractors and employees of its presence.
- EH&S may affix signs or labels so workers will be alerted to what materials contain asbestos, its location, and the appropriate work practices that will ensure that the materials will not be disturbed.
- Creighton University is exempt from communicating information about the presence and/or absence of asbestos by demonstrating that materials do not contain asbestos through inspection or testing processes that meet OSHA requirements. The University must retain the records of the demonstrating process.
- Facilities Management employees will not take asbestos samples or dispose of asbestos.

For additional information, see the following:

- EH&S Website Policy - Asbestos Management Control Plan.



## Ladder Safety Fixed And Portable

- Prior to using any ladder, the employee will have received ladder safety training from EH&S.
- Employees are required to attend annual ladders safety training by EH&S.
- Choose the right ladder style (i.e., step or extension), size and duty rating for the job. Use fiberglass ladders if there is even a remote possibility of working near electricity.
- The construction of all ladders will meet or exceed the requirements of the American National Standards Institute (ANSI), the Occupational Safety and Health Administration (OSHA) and the Underwriters Laboratory Code (UL) as applicable. Double check the ladder being used for the stamp with ANSI, OSHA, and UL approval of the ladder.
- Read the instruction labels. Labels have information on the weight limits, highest working levels, safety instructions, proper ladder set up and usage.
- Inspect the ladder before each use for defects such as missing, loose, damaged, corroded, or worn parts.
- Be sure that working parts move properly and that all connections are secure. Check spreaders, extension ladder locks, flippers and safety shoes.
- Damaged ladders should be tagged for repair or disposal.
- When wooden ladders are taken out of service they will be replaced by fiberglass ladders. All ladders used for electrical system components, maintenance ladders, will be fiberglass.
- Use and climb the ladder safely:
  - Fully open and lock both spreaders on stepladders.
  - Be sure that all ladder feet are on firm and level ground.
  - Both rails of extension ladders should be fully supported at the top and the locks engaged.
  - Extension ladders should be set back one foot for each four feet of length to the upper support.
  - Extension ladders should extend at least three feet above the parapet wall.
  - Keep your body centered on the ladder and hold the ladder with one hand whenever possible.

- Climb facing the ladder and maintain at least three points of contact with the ladder (i.e., 2 feet and one hand).
  - Haul materials up on a line rather than carry them.
  - Do not stand above the second step from the top of the stepladder and the fourth rung from the top of an extension ladder.
- By practicing basic maintenance you can keep ladders in proper working order.

For additional information, see the following:

- EH&S Website Policy - Portable Ladder Safety.

## **Life Safety**

- When you are at a work site, office, or meeting the location should be reviewed for the following:

### **Material Storage**

- Impeding automatic sprinkler protection operation.
- Impeding smoke detection system operation.
- Non-combustible construction materials should be noted and scheduled for removal and or clean-up to proper storage.
- Understand the methods of fire alarm notification.

### **Fire Exit Safety**

- Exits from offices, meeting rooms, and work sites are well marked and preferably lead outside to safe refuge.
- Pathways to exits should be clear and exit doors should be checked to assure operability.
- Locate the nearest fire extinguisher.

### **Communication**

- The emergency response procedures should be familiar to all employees, including location of storm shelter areas.
- All employees should read the evacuation procedures posted in the building.
- If you are not clear on the emergency response plan ask the location manager or contact your supervisor.

### **Safety apparatus**

- Locate eye wash and deluge showers available in labs and other areas that involve chemical use and/or storage.
- Locate the AED for building or work site.

## Confined Space Entry

- A space is classified as a **confined space** when it is large enough and its configuration allows personnel to bodily enter (i.e. breaking the plane of entry) to perform assigned work, and also meets the following requirements:
  - Has limited or restricted access or exit (i.e., tanks, cooling towers, boilers, ductwork, chilled water storage tanks and air handling units).
  - Is not designed for continuous employee occupancy.
- A **permit required confined space** has one or more of the following characteristics:
  - Contains or has the potential to contain a hazardous atmosphere or any other hazard capable of death or serious physical harm to an employee.
  - Contains a material that has the potential for engulfing an employee.
  - Has an internal configuration such that employees could be trapped or asphyxiated by inwardly converging walls or a floor that slopes downward to a smaller cross section.
  - Contains any other recognized serious safety or health hazard.
  - Confined space air sensing meters are available at the EH&S office.
- Available Confined Space Options:
  - 1) Facilities Management employees will, without entering the space, make every effort practical to eliminate hazards in a space. This is called **reclassifying** the space and thus avoids the need to implement one of the other permit confined space procedures.
  - 2) If the only actual or potential hazard that cannot be eliminated in the space is atmospheric in nature (i.e., oxygen deficiency, toxic fumes, etc.), then the OSHA **alternate** procedure may be used.
  - 3) If the space cannot be reclassified or the alternate procedure cannot be used then the **permit** confined space process will be used. A confined space permit is required for each entry. Permits are obtained at the front office of Facilities Management.
- Facilities Management employees will have completed training before they enter or deal with any confined space situations. Training is provided annually by EH&S.
- If a contractor's confined space entry requirements exceed OSHA requirements, and the contractor will not permit the implementation of the above options one or two to avoid implementing the permit process, then the contractor requirements will prevail.

For additional information, see the following:

- EH&S Website Policy - Confined Space Entry Program.

## **Electrical Safety**

- Lockout/tagout procedures will be followed per Facilities Management policy.
- Facilities Management requires the mandatory use of the ground fault current interrupters (GFCI) whenever any work using electrical tools, cord sets, extension lights, etc., is being performed. GFCIs are to be used on all portable electrical tools and equipment below 240 Volts when said tools and equipment are used in a wet or damp environment.
- The ground fault current interrupter is to be used in addition to, not in lieu of, the normal three- or four-wire equipment grounding conductor.
- The employee is required to become familiar with the required minimum Personal Protective Equipment (PPE), tools and equipment for service work require for several electrical items. (Multi-meter, insulated hand tools, double insulated or grounded electrical tools, Lock Out/Tag Out devices.)
- Electrical Safe Work Practices training will be provided to all employees.
- Facilities Management employees are prohibited from working on energized circuits greater than 240 Volts without express authorization of the supervisor.
- Conductive tools, equipment, jewelry, accessories and articles should not be used or worn if they have the potential to contact exposed, energized components.
- All portable power tools are required to be of the three wire grounded type or double insulated.

For additional information, see the following:

- EH&S Website Policy - General Electrical Safety Guidelines.

## Motor Vehicle Safety

- Motor vehicles are defined as licensed vehicles, pathway vehicles, tractors, and other lawn equipment regardless of fuel source.
- All occupants will wear safety restraints while operating or riding in any motor vehicle while on University business.
- Employees are to comply with all motor vehicle traffic laws while operating a University vehicle or any motor vehicle on University business. Individuals are responsible for satisfying the penalty associated with moving violations.
- All individuals driving a University vehicle or any motor vehicle while on business are required to have a valid driver's license and comply with all conditions affecting the license.
- Employees are prohibited from operating a University vehicle or any motor vehicle on University business, while their judgment or faculties are impaired. Such impairment may be caused by consumption of alcoholic beverages, drugs, medications, fatigue, lack of prescription lenses, etc.
- Driver will chock one set of wheels when the vehicle is parked at a dock or when the vehicle is being loaded or off loaded with aid of a mechanical device or lift truck.
- When transporting hazardous materials, the driver will comply with Department of Transportation (DOT) regulations.
- When two or more people are in the vehicle, one will leave the vehicle to assist the driver while backing.
- Never use a cell phone when operating a motor vehicle unless doing so does not pose a hazard. Weather, traffic and other driving conditions - as well as the complexity of the business being transacted - should determine if using a cell phone poses a hazard. When a hazard exists, pullover or use a hands-free device. Always comply with government regulations.
- Driving record reviews may be conducted on employees involved in motor vehicle accidents and all employees periodically.
- Freight or equipment extending 24" or more beyond the vehicle bumper is required to have a flag or other warning device.
- Employees are required to attend the annual training for vehicle operator safety.
- Inspect vehicle for safety concerns daily.

- Drivers not parking in a standard, regulation parking stall will position an 18” tall or taller safety cone at the rear of the vehicle.
- Use of tobacco in or near vehicles is prohibited.
- In the event of a vehicular accident, EH&S may conduct an accident investigation.

For additional information, see the following:

- EH&S Website Policy - Vehicle Safety Policy.



## **Hazardous Energy Sources**

- Lockout and tagout is required to be implemented for all energy sources that might cause unexpected movement, personal injury or property damage. This includes electrical, mechanical, hydraulic, thermal, pneumatic, compressed gas energy, potential energy from suspended or overhead objects and compressed springs.
- A tagout system will always be used in addition to the lockout system. Tagout devices must indicate the reason for the lockout; how that person may be reached; the identity of the person who applied the device; and the date and time the tag was placed.

See the Facilities Management Lockout and/or Tagout procedures for additional information and for tags. The following procedure will be referenced and used.

### **De-Energizing**

- 1) Locate and identify all energizing devices (disconnects, breakers, valves). If identification does not already exist, mark or tag each device indicating its function (i.e., Line #1, Chiller #4, 480 Volts).
- 2) Notify all affected employees that a lockout/tagout is scheduled to occur.
- 3) Know and follow shutdown procedures for the equipment or process that is to be locked or blocked out. Liquid or gaseous conveying pipe is required to be blocked or capped during times of lock out.
- 4) All the involved employees will install lockout and tagout devices on all energy sources.
- 5) Bleed or drain stored energy (capacitance, pressurized oil, water, steam, refrigerant, etc.).
- 6) Attempt to activate the device to ensure it is inoperable (except 3-phase equipment).
- 7) Double-check electrical circuits with a meter.

### **Re-Energizing**

- 1) Check that non-essential items have been removed from the work area.
- 2) Check that equipment components are operationally intact.
- 3) Ensure all employees are safely clear of equipment.
- 4) Notify all affected employees that the lockout/tagout devices will be removed.

## **Rigging Safety**

- Rigging equipment will be selected to fit the load and will be maintained in safe working condition.
- Equipment is required to be inspected for defects before and after each use. Defective equipment is to be tagged and sent out for inspection/repair or functionally incapacitated and disposed of. Chain hoists and lever pullers are to be inspected annually and cleaned per the manufacturer's recommendations. The inspection and cleaning will be performed by a qualified vendor.
- Equipment with any of the following defects are to be removed from service for repair or disposal.

### **Nylon and Polyester Slings**

- Broken or unraveled stitching
- Missing or illegible load rating tag
- Distortion, cracks, or sharp edges on metal hardware
- Snags, punctures, tears or cuts
- Wear abrasions revealing colored wear indicator thread
- Chemical deterioration
- Burns, melting, weld splatter or heat charring

### **Wire Rope Slings**

- Corrosion
- 10% loss of rope diameter
- 1/3 loss of outer wire diameter
- Broken wires
- Severe kinks
- Bird caged or crushed
- Weld splatter
- Electrical arc burns

### **Chains and Attachments**

- Nicks or gouges
  - Twisting or other distortions
  - Excess wear
  - Stretching
  - Pitting
  - Weld splatter damage
  - Cracks
  - Cracked, distorted or otherwise damaged components
  - Missing or distorted safety latches
- Rigging equipment is to be repaired using only components supplied from or approved by the manufacturer.

## Hazard Communication

- All employees will receive training on Hazard Communication within 30 days of starting work in their assigned position, and annually thereafter.
- The training will include a review of:
  - 1) The types of chemicals that may be used or encountered as part of the job duties.
  - 2) The physical and health risks of the chemicals.
  - 3) Symptoms of over exposure.
  - 4) How to determine the presence or release of hazardous chemicals.
  - 5) How to reduce or prevent exposure to hazardous chemicals through use of control procedures, work practices, and personal protective equipment (PPE).
  - 6) Procedures to follow if employees are over exposed to hazardous chemicals.
  - 7) How to obtain and read a *Material Safety Data Sheet (MSDS)*.
- Prior to introducing a new chemical, each employee will be given information and training as outlined above.
- All containers holding chemicals are required to be labeled to identify the contents, regardless if the chemical is hazardous or not. Containers holding hazardous chemicals must also indicate the appropriate hazard warning and the name and address of the manufacturer.
- Contractors and campus constituents who may be exposed to hazardous chemicals used by Facilities Management are to be provided with hazard information about each chemical. MSDS's will be provided if requested.
- MSDS's for all hazardous chemical use during work may be obtained from the supervisor and/or EH&S.

For additional information, see the following:

- EH&S Website Policy - Hazard Communication Plan.

## Respiratory Protection

- Know the hazardous materials you may be exposed to (through MSDS's, training, verbal and written communications). This knowledge is essential for assessing the need for respiratory protection.
- Mechanical ventilation should always be used to minimize the airborne concentrations of hazardous materials to safe levels.
- Be trained on the appropriate respiratory protection to use for each hazardous material you may be exposed to.
- Only approved respirators are to be used.
- Prior to using a respirator, each employee is required to pass a medical evaluation verifying they are physically fit to use a respirator. Evaluations are to be conducted on a periodic basis to identify changes in health status that could affect an employee's fitness to wear a respirator.
- Prior to using a respirator, each employee must pass a fit test on the specific model respirator they will use.
- An employee must perform a positive and negative fit test each time they don a respirator.
- Respirators are to be inspected for defects before and after each use by the employee using it, and identified components are to be replaced promptly.
- Respirators are to be cleaned after each use.
- Respirators must be stored in a sealed plastic bag or container in a manner that will protect it from damage.
- Facilities Management employees who **only use dust masks voluntarily** do not need to be in the formal respirator program. They only need to be provided a copy of Appendix D from 29 CFR 1910.134 in the Federal Register.

For additional information, see the following:

- EH&S Website Policy - Respiratory Protection Plan.

## Hearing Conservation

- If you are exposed to noise levels of 85 dBA or greater as part of your job you will receive training annually on:
  - The effects of over exposure to noise.
  - Methods to prevent over exposure.
  - The proper use and care of hearing protection equipment.
- Affected employees will be provided with hearing protection and are expected to wear it in all designated/posted high noise areas and whenever using equipment suspected to be greater than 85 dBA.
- Employees are expected to report symptoms of suspected hearing loss to their supervisor.
- In areas not posted or designated with high noise warnings, employees should apply the rule of thumb for wearing hearing protection. The rule of thumb is when noise levels prevent conversation at a normal voice level from a distance of up to three feet, you need hearing protection.
- Annual audiometric hearing evaluations may be made available to all employees exposed to work related noise above 85 dBA.
- Employees are expected to inspect hearing protection equipment for cleanliness, signs of wear or defects and replace identified components promptly. Do not re-use disposable hearing protection.
- All hearing protection used by Facilities Management employees will have a noise reduction rating (NRR) of 26 dBA or greater.
- Radio or other electronic music devices with speakers inserted in an individual's ear does not constitute proper hearing protection and can not be worn when hearing protection is required.

## **Material Handling and Safe Lifting Techniques**

- The first rule of material handling is to lighten the load whenever possible! This may mean that two trips to the destination will be necessary.
- Solicit help of another person when needed.
- Use material handling equipment whenever possible, such as loading ramps, two wheel handcarts, hoists/slings, fork trucks, or hydraulic lift-gates.
- Always push carts, hand trucks and dollies rather than pulling them.
- Periodically review and use safe lifting techniques:
  - Conduct a preliminary survey of your travel route to identify and address hazards and obstructions. Remove any obstructions not affixed to the structure.
  - For heavy lifting, perform appropriate back stretching exercises first to limber up your back muscles.
  - For repetitive lifting, take occasional breaks.
  - Face the load with your feet shoulder width apart and one foot slightly ahead of the other.
  - Bend your knees to squat down with your back straight and take a good grip on the load.
  - Lift the load slowly with your legs while keeping your back straight, do not jerk.
  - Keep the load close to your body.
  - Turn with your feet, not your waist.
  - Lower the load slowly with your legs while keeping your back straight.

For additional information, see the following:

- EH&S Website Training - Lifting Safety.

# **Blood-borne Pathogens**

## **Emergency Exposures**

- All employees will receive training on Blood-borne Pathogens within 30 days of their assigned position, and annually thereafter.
- All Facilities Management employees who assist/respond to a medical emergency are expected to follow universal precautions to prevent contact with blood and other potentially infectious materials. Using universal precautions means that you treat bodily fluids as if they are infectious.
- The following personal protective equipment (PPE) may be used when dealing with bodily fluids: gloves, eye protection, and an N-95 mask or a face shield depending on the size of the fluid mass and discretion of the employee.
- Where there is an area with a likelihood for potential exposure to bodily fluids, wash your hands as soon as possible and do not eat, drink, smoke or apply cosmetics when you are in that area.
- Contaminated clothing should be properly laundered, disposed of or replaced.
- All contaminated materials, bandages, clothing, etc., will be disposed of properly. See EH&S for details.

## **Routine Exposure**

- Training will be given to employees that have the potential for exposure to blood-borne pathogens.
- Hepatitis B inoculations are made available to those employees working in high risk areas at no cost to the employee. An example area is the Boyne Building.
- Contact EH&S with information about the incident as quickly as possible.

For additional information, see the following:

- EH&S Website Policy - Blood-borne Pathogens Standard.

## Used Oil Management

- Centrifugal Chillers
  - The employee should maintain responsibility for the proper disposal of used oil.
  - Facilities Management will contract with an approved vendor for disposal of waste oil. The vendor will pick up the oil directly from Facilities Management. The required paper work will have information on it, such as the EPA ID number, address, etc.
  - The vendor will supply the necessary testing, labels and seals for the drums.
- Reciprocal Chillers
  - This procedure **does not** apply to States that consider used oil a hazardous waste (i.e., RI, MA, CA). Use the centrifugal chiller process instead.
  - Used oil from the service of unitary equipment can be returned to the Facilities Management office for aggregation.
  - No more than five gallons can be transported at a time.
  - Used oil or other containers of less than five gallons must be transported in a sealed, DOT approved container and be labeled as used oil.
- At the Facilities Management office, used oil storage will have secondary containment, be labeled USED OIL and be disposed of after 55 gallons is accumulated. Oil will be recorded on the log sheet attached to the receiver drum.
- Vendors are to be encouraged to remove used oil from campus and dispose of same in an improved manner.



## Refrigerant Management

- Deliberate venting of refrigerants is strictly prohibited.
- Individuals who will service air conditioning or refrigeration equipment must have a valid EPA certification to do so.
- Refrigerant transportation and storage containers will be labeled with the EPA ozone depletion warning.
- Refrigerant recovery, reclaim and recycle equipment are required to meet the US-EPA standards.
- Only Facilities Management approved vendors will be used for the disposal of refrigerant.
- Refrigerant will be removed from equipment that is destined to be scrapped or otherwise disposed of.
- Only DOT approved cylinders, stamped with a certification date less than five years old, will be used for transporting refrigerant. Cylinders will not be filled over 80% of their total capacity.
- Employees working with CFC's are required to comply with the regulations in place within Facilities Management operating procedures.

For additional information, contact the Facilities Management CFC manager.

## **Hazardous Waste**

- Facilities Management is responsible for the proper disposal of hazardous wastes generated on site.
- Hazardous waste generated at job sites cannot be transported to Facilities Management for subsequent disposal. Used oil can be transported to Facilities Management for consolidation and recycling. Contact the EH&S Chemical Coordinator to facilitate a move of waste.
- All manifests for shipping hazardous waste must be signed by the Director of Facilities Management; the Director of EH&S or the EH&S Chemical Coordinator.
- Hazardous waste generated by Facilities Management must be disposed of per governmental regulations.
- Waste storage areas will have secondary containment and containers will be labeled.
- The University has an EPA identification number that must be used with waste disposal.
- Used oil can be consolidated for ease to transfer across campus.
- Waste will not be stored for more than 120 days. See the EH&S Policy on the web site.
- All hazardous waste must be disposed through EH&S.
- If an environmental spill occurs on the job, notify Public Safety, EH&S and your supervisor. The spill should be contained and cleaned up immediately using the appropriate spill kit. The proper PPE should be used while cleaning up a spill.
- A spill kit should be provided and used to cleanup spills generated by Facilities Management.

For additional information, see the following:

- EH&S Website Policy - Hazardous Materials Manual.

## **Water Pollution Control**

- Direct water discharges may include, but are not limited to, the following: roof drains, parking lot drains, floor drains, facility grounds, sink drains, etc.
- Typical water pollution sources include, but are not limited to, the following: chemical wastes (lithium bromide), boiler blow down, cooling water, wash water (coil cleaner), condensates, lawn care chemicals, etc.
- Indirect discharges include any of the above that are discharged into a sanitary drain that discharges to a sewer treatment plant.
- Facilities Management employees will communicate with EH&S utilizing the appropriate MSDS with regard to any task that may result in an actual or potential discharge of a chemical into a water supply or waste stream.
- If discharges are not authorized, the pollutants must be captured for disposal, through EH&S or alternate methods must be used that will not generate a pollutant.
- There will be no outside storage of chemicals or hazardous waste and covers will be closed on all trash containers.

## Disposal of Containers and Used Rags

- Empty containers or rags must be disposed of according to any regulations and requirements as long as they at least comply with all legal requirements. Consult with EH&S for further clarity.
- Containers are considered empty if all the materials have been removed, i.e., poured and/or pumped, and there is no more than an inch of residue on the bottom of the container.

### **OR**

- For containers 110 gallons or less, residue is no more than 3% by weight. For containers 110 gallons or more, residue is no more than 0.3% by weight.
- Empty containers are not regulated as hazardous waste except if they have held an acute hazardous material or waste, i.e., R-11, R-12, chlorinated solvents. Containers that have held materials or waste should be disposed of according to the Hazardous Waste section of this book.
- When rags are contaminated with solvents, paint or bromide, etc. they may be considered hazardous waste and need to be disposed of as such.
- Custodial rags used for building cleaning can be sent to the laundry or put in the trash if they are not hazardous waste or dripping wet.
- If industrial cleaning rags cannot be disposed of at the work site, they must be transported and stored in a fireproof safety container approved by the NFPA.

## Department of Transportation (DOT)

- The Materials of Trade (MOT) exception gives regulatory relief to companies that are not in the transportation business but need to transport small quantities of hazardous material in direct support of their principle business.
  - MOT allows 440 pounds of certain MOT materials in total aggregate with a maximum allowed cylinder weight of 220 pounds (i.e., 1 full size cylinder of oxygen & acetylene) to be transported in the original packaging without the DOT required paperwork and packaging requirements. Vendors transporting larger containers are encouraged to deliver to the work site.
- If the materials of trade exception cannot be used then the following must be done:
  - The vehicle driver is required to have a proper driver's license. The vehicle driver will fill out a DOT Bill of Lading. The Bill of Lading must be signed by the driver and must accurately reflect the true contents within the vehicle at all times.
  - The emergency telephone number indicated on the Bill of Lading is for CHEMTREC, who should be called if an emergency response is necessary.
  - For transporting materials of trade to a work site the emergency phone number is 280-2911.
  - Container packaging and labeling must meet the DOT requirements.
  - Service vehicles will not carry more than 1000 pounds aggregate of hazardous materials per DOT regulations without placarding the vehicle.
  - In the case of cylinders, drivers are required to indicate the number of units and the gross mass of the cylinders on the Bill of Lading.
- A fully charged fire extinguisher will be maintained on the service truck and inspected monthly by the assigned driver.
- Compressed gas cylinders will be secured (i.e., straps) at all times when on Creighton service vehicles.
- Flammable liquids should be stored in the original containers or in NFPA approved safety containers. When you are in the shop, put the flammables in the flammable liquid storage cabinet.

## Compressed Gases

- Compressed gas cylinders should always be handled as if they were full. Use a hand truck when you handle heavy cylinders manually.
- Store and transport cylinders in the upright position with the protective valve caps on. Some refrigerant cylinders may be stored horizontally provided they are secured from rolling.
- Keep cylinders from falling over by securing them to a wall, rack, fixture or cart with straps, chains or some other approved type of device. Do not use rubber or stretch bungee cords, use straps.
- Have the correct PPE and safety devices when you use compressed gases. Use eye and face protection, gloves, earplugs, flash back arrestors and regulators.
- When using compressed gases to blow out equipment, keep the air pressure at 30 psi.
- When storing gases, separate oxygen from flammable gases (i.e., acetylene, propane) by at least 20 feet or by a wall at least five feet high with a fire rating of at least one half hour per table 7.6.2. in NFPA 55. Storage should take place when the gases are not going to be immediately used. Storage will take place when cylinders are left overnight, if there are extra back-up cylinders or the cylinders are not going to be immediately used.
- Inspect gauges, hoses, valves and regulators to ensure they are in good working order.
- Never exceed the specified field leak or pressure test pressures and never use air or oxygen to leak test. Use nitrogen or another inert gas to leak and pressure test.
- Remember that many compressed gases can replace the air and cause oxygen deprivation.
- Be sure the compressed gas containers are labeled as to their contents.

## Scaffolds

- Scaffolds must be erected by a competent person who possesses a recognized degree, certificate or professional standing; or who, by extensive knowledge, training and experience, has successfully demonstrated their ability related to scaffolds.
- Scaffold users must be trained in the correct usage and maintenance for the type of scaffolding they will use.
- The footing or anchorage for scaffolds must be sound, rigid and capable of carrying the maximum intended load without settling or displacement.
- Scaffolds and their components are to be capable of supporting – without failure – at least four times the maximum intended load.
- Inspect the scaffold each time it is used. Look for worn or damaged parts and be sure that all the connections are tight, secure and fit correctly.
- Scaffolds are to be maintained in a safe condition and must not be altered or moved horizontally while they are in use or occupied.
- Scaffolds will not be loaded in excess of the working load for which they are intended. If you do not know what the working load is for the scaffold, it should not be used until the load is determined. If the load cannot be determined by contacting the manufacturer or a recognized expert then the scaffold will be cut up before disposal of it.
- Be sure to use fall protection when working on a scaffold. Fall protection can be in the form of a guardrail system (hand & midrail with a toe board) or a fall arrest system.
- Any scaffold damaged or weakened from any cause is required to be immediately repaired, tagged out of service and not used until repairs are completed.

For additional information, see the following:

- The scaffold manufacturer's instructions on setup, use and maintenance.

## **Welding, Cutting, Brazing, and Soldering**

- Always use your personal protective equipment – a welding helmet, face shields, goggles or glasses with the correct shade of lenses – and flame resistant clothing, gloves or apron at a minimum. A respirator may be required in areas with poor ventilation.
- Always complete the required hot work permit prior to starting any work that may generate a spark or flame. The hot work permit form can be obtained at the Facilities Management main office.
- Before welding, move flammable materials away from the area if possible or use shielding to prevent fires.
- Have a suitable fire extinguisher available i.e., type ABC five pound minimum and it is desirable to have a person as a fire watch.
- Be sure that ventilation is used whenever possible. In some cases, the best thing to do is to keep your head out of the smoke plume. When proper ventilation is not available an appropriate respirator must be worn.
- Inspect and maintain cylinders, gauges, hoses, valves, torches, regulators and check valves/flash back arrestors to ensure they are in good working order.
- The frame of case of all arc-welding machines must be grounded. Remember to use a GFCI when equipment is 240 Volts or less.
- Welding in confined spaces requires special attention to ventilation, as well as entry and exit procedures.
- Do not weld, braze, cut or solder on painted, plated or coated surfaces or on drums, tanks, piping or other containers until they are thoroughly cleaned or purged and inerted if necessary.
- Be sure the fuel gas and oxygen cylinders are labeled as to their contents.

For additional information, see the following:

- The Compressed Gas section of this book - page 28.



## Inspections

- Visually inspect the work area to recognize any potential hazards or risks that may be present. By recognizing and eliminating the hazards or risks you prevent injuries to yourself and to others.
- To eliminate the hazards or risks you need to identify what actions are necessary to correct the problem. The actions can be simple such as using safety glasses or other appropriate PPE. The best solution is one that gets rid of the hazard or risk permanently but temporary solutions are acceptable for brief periods of time and are reported to your supervisor.
- Facilities Management requires that employees conduct a safety inspection prior to the start of work.
- The inspection will be completed for each job assignment. Be sure to correct any problems that are found.

## Incident Investigation and Reporting

- Incidents are investigated for many reasons.
  - To learn what happened and how it happened.
  - To prevent any similar situations from happening again.
  - To supply information that may be necessary to help correct problems.
  - To help recognize any risks and or hazards.
  - To help employees return to work at full or limited capacity.
- **Report all work related safety, health or environmental incidents to your supervisor immediately.** Incidents can be actual or near miss injuries, illnesses, property damage, chemical spills or leaks and regulatory non-compliance. Supervisors are to report incidents to Environmental Health and Safety within 24 hours. Employee will also file an HR 24 form within the 24 hours.
- An incident investigation will be initiated within 24 hours and completed within seven days of the incident. A conference may be held within ten days of the incident to discuss it in detail.
- The investigation may involve the injured employee, the responsible supervisor or manager, witnesses and any other persons that need to be involved. A visit to the site may need to be conducted depending on the seriousness of the incident.
- The investigation should include pictures of the scene and/or diagrams as produced by EH&S to help describe the situation that occurred.
- In some cases incidents may need to be communicated to governmental regulators and Facilities Management upper management. In all cases the incidents with injuries will be reported to Risk Management and Facilities Management upper management.
- Motor vehicle incidents need to be reported to your supervisor and Public Safety or the local authorities immediately. The supervisor will inform Risk Management

For additional information, see the following:

- Your supervisor or member of EH&S staff.
- Motor Vehicle Safety section in this booklet - Page 13.

## Hand Tools

- DO NOT USE DAMAGED TOOLS.
- Inspect hand tools before each use. Look for bends, chips, mushroomed heads, cracks or other damage.
- Use tools only for their intended use. Do not use a screwdriver as a chisel or a pry bar or a wrench as a hammer, etc.
- Keep tools clean and store them correctly.
- Screwdrivers – make sure the tip fits the slot of the screw correctly and use the other hand to steady the blade.
- Sockets – use the proper size socket and never use a hand socket on a power wrench.
- Wrenches – never use a leverage extension on a wrench handle.
- Use box, open end, or adjustable wrenches correctly and for the right application.
  - Box wrenches should be used to loosen a frozen nut or for final tightening.
  - Open-end wrenches should never be tilted or cocked and make sure the nut/bolt is fully seated.
  - Adjustable wrenches should be tightly adjusted and pull so that the force is on the side of the fixed jaw.
- Hammers – strike the head parallel to the surface being struck and never strike a hammer with another hammer.
- Remember to use the proper tool and to use the tool properly.

## **Electric Powered Tools and Equipment**

- It is Facilities Management policy to use a Ground Fault Circuit Interrupter (GFCI) on any portable electrical tools and equipment that are 240 Volts and below when said tools and equipment are used in a wet or damp environment.
- Safe work practices require several electrical items be used when necessary (i.e., GFCI, Multi-meter, insulated hand tools, double insulated or grounded electrical tools, LO/TO devices).
- Electrical tools, extension cords and equipment will have grounding or be double insulated.
- Inspect your tools and extension cords before you use them. Look for cracks or other damage in the casing, frayed or damaged wiring or a damaged plug. Damaged tools and electric cords are to be provided with lock out/tag out device.
- A qualified person should repair damaged power tools and only UL listed manufacturer authorized replacement parts should be used for repairs.
- Extension Cords:
  - Multiple “Daisy Chaining” of extension cords is prohibited
  - Cords will be manufactured with water proof insulation
  - Cords will have three conductors and grounding plugs
  - Cords will be kept clean

# Safety Rules

## General

- These rules will be communicated to all employees and posted in a prominent location.
- Prior to starting work, a safety inspection will be conducted.
- Lockout/tagout procedures will be followed when working on any electrical, mechanical, hydraulic or pneumatic equipment.

## Electrical

- Ground fault circuit interrupters will be used on all portable electrical equipment when said equipment is used in a damp or wet environment. See the section on electrical safety elsewhere in this handbook.

## Working at Heights

- Applicable requirements for working *Above 6 Feet or 2 Meters* will be met prior to working at heights above 2 meters as described in Ladder Safety elsewhere in this handbook.

## Machine Guarding

These rules apply specifically to presses, benders, shears, expanders, saws and similar maintenance equipment. Other safeguarding requirements also apply to a wide range of equipment.

- The identified machines will not be used unless required guarding devices, controls and practices have been described visually and in writing, posted on each machine and are in effective operation.
- Safe setup, operating and maintenance procedures will be defined in writing and posted on each machine.

## Motor Vehicles

- Seatbelts will be worn during operation of the vehicle.

## **Mandatory Fatality Prevention Review: Electricity**

**Employees should have this list with them at every job and read through it before they start the job.**

Use the full 2 page Review format when you are on the job.

### **Lockout and Tagout**

- 1) I have notified affected employees of the shut down.
- 2) I have shut down the equipment.
- 3) I have disconnected and locked and tagged all energy sources.
- 4) I have released any stored energy such as capacitors, motor windings, transformers, etc.
- 5) All employees working on the equipment must have their own individual lock in place.
- 6) I have verified the absence of electrical current or voltage with a circuit testing device.
- 7) I have notified affected employees of the return of electrical power.

### **Working On or Near Energized Parts**

Is only allowed when:

- A significant operational problem would be created by the Lockout/Tagout.
- Diagnosing a problem where power is required.

For working on energized circuits:

- 1) I have removed all conductive clothing or accessories (jewelry, exposed zippers, belt buckles, etc.).
- 2) I am not using any conductive equipment. (e.g. no metal ladders, metal measuring tapes)
- 3) I am using insulated tools, insulated gloves, insulated hard hat and safety glasses.
- 4) The lighting is sufficient to see the work task.
- 5) I have no obstructions blocking my access and energized parts can be viewed directly.
- 6) I have covered energized equipment with an insulated blanket or mat if I have to work next to them.



## **Mandatory Fatality Prevention Review: Heights Above 6 Feet or 2 Meters**

**Employees should have this list with them at every job and read through it before they start the job.**

Use the full 2 page Review format when you are on the job.

### **Ladders**

- 1) I have inspected ladders prior to use for wear, cracks, loose or missing fittings and they are in good condition.
- 2) I am using only wood/fiberglass ladders during electrical work.
- 3) I have set up the extension or straight ladder so that it is secured – stable, positioned at the 4:1 ratio – 3 feet (1 meter) past landing when accessing landing.
- 4) I have not positioned the ladder near electrical installations. (A minimum clearance or 3.1 meters (10 feet) is maintained.)
- 5) Only one person at a time will climb the ladder.
- 6) I must not over-reach. (Keep center of body inside rails.)
- 7) I must not stand higher than 4<sup>th</sup> rung from top of an extension ladder.
- 8) Climb facing the ladder and maintain at least three points of contact with the ladder (i.e., 2 feet and one hand).
- 9) When working in high traffic areas, I must tape off the area immediately below.

### **Mobile Lifts**

- 1) I have inspected the mobile lift prior to use for top rails/mid-rails/toe boards, hydraulic oil leaks, condition of mechanical parts and that the entry gate is in place.
- 2) I understand how to use the equipment.
- 3) I must stand on the floor of the platform and wear personal fall protection.
- 4) When working in high traffic areas, I must tape off the area immediately below.



**Scaffolds**

- 1) I have reviewed the manufacturer’s instructions for assembly.
- 2) The scaffold is level, stable and properly secured.
- 3) A guardrail with mid-rail & toe board is in place on all open sides & ends.
- 4) When working in high traffic areas, I must tape off the area immediately below.
- 5) After setup, the scaffold is inspected. I’ve checked that locked wheels, top rails, mid rails and toe boards are in place, diagonal braces are in place, it is level and on a firm foundation.
- 6) I will only stand on the floor of the scaffold.

**Personal Fall Protection**

- 1) I am using fall protection if there is a potential to fall from a height above 6 feet or 2 meters.
- 2) I am using a full body harness with a lanyard.
- 3) I am using self-locking snap hooks for harness to lanyard to anchor point.
- 4) I am using a deceleration device (shock absorber or self-retracting).
- 5) The length of the lanyard and the deceleration device plus my height is less than the distance between the anchor point and the ground.
- 6) The anchor point is adequate to stop my fall.
- 7) I have inspected the equipment prior to use for wear, cuts and oil/grease.
- 8) I can be rescued if I fall.

If there are any questions or concerns contact your supervisor.

**Notes**
