Fire
Prevention
Program

Department of Environmental Health and Safety
Northern Illinois University

8/24/2015
Table of Contents

Introduction.........................................................................................................................4
Purpose...............................................................................................................................4
Application .........................................................................................................................4
Scope .................................................................................................................................5
References ........................................................................................................................5
Responsibilities ..............................................................................................................5
  □  NIU...............................................................................................................................5
  □  Supervisors..................................................................................................................6
  □  Employees and Students...........................................................................................6
Fire Prevention Planning .................................................................................................6
Identifying Common Fire Hazards .....................................................................................6
  Housekeeping .................................................................................................................7
  Electrical Hazards...........................................................................................................7
  Flammable and Combustible Materials..........................................................................7
  Compressed Gas Cylinders ............................................................................................7
  Open Flame Devices ......................................................................................................8
Response to Emergency ....................................................................................................8
  Fire Drills.......................................................................................................................8
  Hot Work.........................................................................................................................9
  Open Burn Permitting ...................................................................................................9
  Pyrotechnics ..................................................................................................................9
Fire Protection Equipment and Systems ..........................................................................9
  Fire Alarms .....................................................................................................................10
  Fire Rated Doors and Fire Resistant Barriers...............................................................10
  Fire Suppression Sprinkler Systems .............................................................................10
  Special Hazard Suppression Systems ...........................................................................10
  Kitchen Hood Suppression Systems ............................................................................10
  Portable Fire Extinguishers .........................................................................................11
Inspections ................................................................. 11
Buildings ........................................................................ 11
Residence Halls .............................................................. 11
Equipment/Mechanical Room .......................................... 11
Fire Protection and Suppression Systems ......................... 11
Fire and Life Safety Training ........................................... 12
Fire Extinguisher .......................................................... 12
Emergency Procedure Planning ....................................... 12
Places of Public Assembly ................................................. 12
## Review and Updates

<table>
<thead>
<tr>
<th>Date</th>
<th>Reviewed by</th>
<th>Changes Made</th>
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<tbody>
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Introduction

The Environmental Health and Safety Department (EH&S) offers this program as an information resource to help both individual employees and departments within the University community create and maintain a fire safe environment. This program will empower employees, students, and visitors to take appropriate action to enhance their own safety, the safety of co-workers, students and visitors in the event of a fire emergency. This program was developed to support EH&S's mission of helping individuals and departments to prevent incidents and achieve compliance with all state and federal regulations and University policies. Finally, this program directly supports Northern Illinois University’s mission to establish and maintain a safe and healthful living, learning and working environment.

Purpose

This program has been developed to promote awareness and practice of sound fire prevention principles by meeting the following goals.

1. Ensure employees and departments within the University community have the tools available and knowledge needed to assure work is performed safely.
2. Maintain work areas in a fire safe manner.
3. Be a resource for responsible parties to assure compliance with safety and health regulations.
4. Satisfy the code, legal obligations and insurance requirements of Northern Illinois University.
5. Mitigate hazards that have the potential to cause loss of life and property.

The Fire and Life Safety Program contains policies and procedures that, when implemented and maintained, will protect against loss of life and property due to fire and other emergencies. Successful implementation of the Fire and Life Safety Program can only be achieved with the full support of the entire community.

Application

This Program contains information useful to its reader on many levels. Fire and Life Safety should not be taken lightly, but should be a core value of the NIU community. Employees and student alike should keep fire and life safety in the forefront of thought to ensure a safe environment on Northern Illinois University property. Sound fire and life safety practices are often overlooked because – if there is no fire or injury nothing is to be reported and no further thought is given. This program is designed to ensure the NIU community stays diligent in its efforts to provide a safe environment to work and learn.
Scope

This program is applicable to all University faculty, staff, students, visitors, and contractors on NIU properties.

References

The following references are the primary sources used in the development of this program:

- Applicable Higher Education Opportunity Act statutes on campus fire safety
- Most current addition of applicable National Fire Protection Association (NFPA) standards and associated references, i.e. NFPA 101, NFPA 13, NFPA 72, NFPA 10, NFPA 25
- Applicable Occupational Safety and Health Administration standards as adopted by the Illinois Department of Labor
  - 1910: Subparts E, H, L, Q, and S
  - 1926: Subparts C (1926.24 and 1926.35), F, and J
- NIU Policies including the *Housing and Dining Guidepost* and the *NIU Emergency Guide*
- Illinois Administrative Code (425 ILCS) Fire Safety Statute

Responsibilities

NIU is responsible for the health and safety of University employees, students, and visitors. Their health and safety must be of paramount importance to the University. It directly impacts both the quality and value of the University. The concern the University displays for its employees, students, and visitors mirrors the character and strength of NIU’s commitment to its academic mission. Each employee and every department is expected to perform work in a safe and healthy manner and in compliance with the regulatory requirements.

- **NIU** - The Occupational Safety and Health Administration (OSHA) requires employers to provide each employee “a place of employment which is free from recognized hazards that are causing or are likely to cause death or serious physical harm.” Northern Illinois University is responsible for the health and safety of its employees, students, and visitors. This responsibility is met by providing all employees – including managers and supervisors – with proper training and tools to safely carry out their assigned duties. **EH&S** - EH&S personnel will assist other department representatives with the evaluation of their workplace and work processes and assist in obtaining proper approvals from regulatory authorities. EH&S personnel can assist supervisors in finding solutions for eliminating such fire and life safety hazards. EH&S offers fire safety training programs for faculty, staff, and students. The training topics available include, but are not limited to, fire safety, fire extinguishers and work place hazard identification. All employees should be made aware of this *Fire Prevention Program* so it may be referenced if questions arise related to fire and life safety.
• **Supervisors** - Supervisors shall implement the requirements of this program and be responsible for training as required by OSHA or other regulatory agencies to assure compliance with applicable fire and life safety codes, regulations, and policies. Supervisors shall inspect and/or coordinate the inspection of all workplaces and work practices to identify potential fire and life safety hazards.

• **Employees and Students** - Staff, faculty, and students play an important role in assuring fire safety; they must do what they can to protect themselves and others within the University community and respond appropriately to emergencies. Employees must avail themselves of information pertaining to the safe conduct in the workplace. Regardless of the setting, fire and life safety must be practiced and promoted.

**Fire Prevention Planning**

Prevention and preparation are the keys to a successful Fire and Life Safety Program. Awareness of the root causes of emergencies are crucial to prevention. Many emergency causes will be discussed and explained later. Suffice it to say, “To prevent an accident we must know what causes it.” Preparation and planning can take place once the cause of a hazard has been identified. As related to fire safety, a fire will occur when the three components of the fire triangle, in the proper proportions, are brought together. Fuel, an ignition source and oxygen are representative of the three sides of the fire triangle. In planning fire prevention we must think of ways to isolate the sides of the fire triangle. A fire is extinguished when the “fire triangle” is broken, and fire cannot start if the fire triangle is never established.

The most common causes of fire are:

- **Cooking** – or unattended cooking – “watch what you cook”
- **Open flame devices** - candles, incense burners, tiki torches, sterno pots, Bunsen burners, fireworks, or any other portable flame-producing device
- **Electric** inappropriate use of extension cords,
- **Overload** of electrical circuits.
- **Heating devices** -space heaters
- **Smoking** – Careless discard of smoking material.
- **Arson** - Too common on college or university campus. The #1 cause in campus housing.

Human activity is common in each of the above listed causes. There are very few fires that spontaneously ignite with no human intervention.

**Identifying Common Fire Hazards**

In order for a fire prevention program to be successful all participants must be actively engaged in attaining a fire safe environment. Being aware of our surroundings and on the lookout for the most common (and in most cases the most easily corrected) causes of fire will, by itself, reduce the likelihood of fire.
Housekeeping

Poor housekeeping can be a strong contributing factor in fire and life safety incidents. An orderly space, free of excessive combustibles will directly correlate with a reduced likelihood of a fire related incident occurring. The utilization of cabinets and shelving can limit a fire’s growth by reducing the exposure of a fuel source to heat.

Electrical Hazards

Electrical appliances and components can, when improperly used or maintained, contribute to the ignition of fire. Being aware of how electricity can be unsafe will reduce the likelihood of injury or fire. Overloaded electrical circuits, exposed conductors, or combustibles too close to properly operating equipment are all points to remember when inspecting a space for electrical safety. Extension cords should not be used in place of permanent wiring. Power strips, as all electrical equipment must be tagged with a proper UL listing of test and acceptance.

- Typically acceptable appliances (UL approved) include: computers, gaming systems, TVs, CD players, DVD players, stereos, razors, fans, etc. Some hairdryers/curling irons/flat irons may require additional power and need to be used in the public area bathrooms rather than individual resident rooms to avoid tripping circuit breakers.

- Use surge protectors/power strips for all electronics, particularly computers, gaming systems, televisions, DVD players, stereo equipment, and clock radios. Lightweight extension cords and multiple outlet plugs without surge protection creates a safety hazard and are prohibited.

- Open heating elements and electrical appliances that may pose a fire hazard, such as hot plates, hot pots, electric or contact grills, and unauthorized space heaters are prohibited. Electrical appliances with an enclosed heating element are permitted (i.e., popcorn makers and coffeepots) when used under continual supervision.

Flammable and Combustible Materials

Flammable/combustible materials shall be properly stored in a “Flammable” cabinet as is appropriate for the material being stored. Every effort should be made to contain combustibles in an enclosed cabinet or closet and limit quantities being stored.

Compressed Gas Cylinders

All compressed gas cylinders shall be properly stored and secured to assure the safety of occupants of the area. All cylinders must be chained or secured in an upright position to prevent “tip-over.” Cylinders that are not in use (with regulator in place) must be capped to prevent damage to valve assembly.
Open Flame Devices

Open flame devices such as candles and incense shall not be used in University buildings. Such items may be used in a decorative manor if the ability to sustain flame has been removed. The use of open flame devices can substantially increase the risk of a fire resulting in serious consequences when not used appropriately. Candles can be displayed in Menorahs and other religious articles but may not be used and should remain unlit with the wicks removed. Battery operated candles listed by UL or FM serve as an acceptable substitute.

Response to Emergency

How we respond during an emergency can influence the result. A plan must be in place and it must be practiced. If a plan is not practiced, chaos will become the prominent response to a fire emergency.

In the event of an emergency, occupants of the area should think R-A-C-E;

- **R** -escue or remove yourself and others in immediate danger or proximity to the emergency.
- **A** -ctivate the alarm by pulling a nearby fire alarm pull box or scream and shout for help. Once in a safe location call or have someone call 911.
- **C** –ontain the fire or emergency by closing doors as you leave the area. No matter what the emergency, fire or other, doors will give additional time for escape or rescue by restricting movement of the fire or emergency through the area.
- **E** –scape or extinguish.

When the fire alarm sounds, **EVACUATE THE BUILDING**. NIU buildings are protected by NFPA compliant fire alarm systems. The fire alarm systems consist of automatic detection, manual activation, and notification devices designed for early detection and notification of occupants. The fire alarm systems automatically report alarms to the fire department through NIU Public Safety. **ALWAYS** assume if the fire alarm is sounding, there is a fire somewhere in the building and evacuate or do not enter.

Fire Drills

Preparation is key to safety in an emergency incident. We must plan ahead and practice so the plan becomes automatic when the incident is “real”. Fire Drills **shall** be part of each department emergency plan. Student housing shall conduct at least one evacuation drill per semester per hall. All occupants are required to participate in the evacuation. Documentation of these fire drills will be included in the annual Cleary report and the annual NIU Fire Report. There should be no differentiation in response to fire alarm or fire alarm sounding due to scheduled drill.
Hot Work

The purpose of the Hot Work Program is to establish safety procedures for employees, contractors, and subcontractors engaging in any temporary operation involving open flame or producing heat and/or sparks capable of initiating fires or explosions on campus property outside designated Physical Plant shop areas. Such operations include, but are not limited to: torch cutting, brazing, grinding, open-flame soldering, oxygen cutting, arc welding/cutting, oxy-fuel gas welding, hot taps, thawing pipes, hot riveting, heat treating, powder-driven fasteners, torch-applied roofing. Hot work operations shall be conducted in accordance with the following standards and University safety and health procedures:

- Occupational Safety and Health Administration (OSHA) 1910 Subpart Q-Welding, Cutting and Brazing and 1926 Subpart J-Welding and Cutting.
- Applicable sections outlined in the NIU Contractor Safety Handbook

The complete Program is available for review at the Environmental Health & Safety, Fire Safety page of the NIU web site. http://www.niu.edu/ehs/health-safety/fire/index.shtml
If “Hot work” is being done a permit must be completed, signed by the foreman and remain at the jobsite until hot work is complete. The completed copy must be submitted to the Department of Environmental Health & Safety.

Open Burn Permitting

Recreational and bon fires will be allowed on campus with proper approvals. Permitting of recreational and bon fires is coordinated through Student Involvement and Leadership Development (SILD).

Pyrotechnics

Use of pyrotechnics will only be permitted after review and special consideration. All fireworks displays and proximate pyrotechnic displays are regulated and permitted through the authority of the Office of the State Fire Marshal. The authority is given to the Fire Chief of DeKalb Fire Department for permitting. The Fire Chief or his designee will review and inspect then allow or deny all pyrotechnic display requests.

Fire Protection Equipment and Systems

NIU maintains multiple fire suppression systems and fire containment/barriers throughout the campus. These systems work in concert to detect, notify, suppress, and contain fire emergencies in NIU buildings. Tampering with or disabling any of the fire protection systems is illegal and will not be tolerated.
Fire Alarms

The fire alarm systems in NIU buildings must comply with pertinent codes and standards related to installation. All fire alarm systems are inspected/tested and maintained annually by qualified service personnel.

Fire Rated Doors and Fire Resistant Barriers

All the doors in our buildings have at least a minimal fire rating. Doors should remain closed at all times, especially when the area is not occupied. A closed door is a passive fire and smoke containment system.

Fire Suppression Sprinkler Systems

Many of the existing buildings and all newly constructed buildings are at least partially covered by automatic fire sprinkler systems. These systems are designed to automatically activate when exposed to heat. Activation of the sprinkler system does not mean every sprinkler head in the structure will be spraying water, only those that are exposed to heat of between 165 and 200 degrees will spray. Inspection, testing, and maintenance shall be performed by qualified contractors at intervals specified by NFPA and insurance regulations.

Special Hazard Suppression Systems

Special Hazard and Clean Agent systems are used in several areas on campus where water is not the suppressive agent of choice. These special systems are installed in computer data rooms, paint booth, and areas storing substances reactive to water. Some of these systems use a dry chemical as a suppression agent. Others use Halon or other liquid/vapor clean agent that dissipates without leaving residue. Halon is an asphyxiant, if the system has been activated every effort should be made to vacate the area closing doors to contain the incident.

Kitchen Hood Suppression Systems

All NIU kitchen facilities shall be NFPA compliant for fire protection/prevention in that the “hood” designed for removal of “grease laden vapors” is equipped with properly designed suppression systems. The suppression systems shall be inspected and maintained semi-annually as required by NFPA. Further, the hood/duct systems are inspected and cleaned of grease build up a minimum of annually, more frequent cleaning as dictated by visual grease build up in excess of permissible amount. Regular cleaning can reduce or eliminate the possibility of fire originating in the hood or duct above the kitchen.
Portable Fire Extinguishers

All portable fire extinguishers on NIU properties are placed, maintained, and serviced in compliance with NFPA 10 Standard for Portable Fire Extinguishers. Code compliant training in the proper use of portable fire extinguishers is available to all NIU employees, faculty, and staff through the department of Environmental Health and Safety. Faculty, staff, and employees are responsible for knowing the location(s) and readiness of fire extinguishers in their respective work areas. The fire extinguisher should be considered ready for use if the following conditions exist:

- Service Tag is attached. Tag is current if “punched” and dated less than one year
- Safety pin and Tamper seal are in place
- Pressure gauge (if present) indicating “green”
- Hose doesn’t appear plugged/obstructed/damaged

If the above conditions are not present DO NOT assume the extinguisher will function properly if needed. It is appropriate to conduct a monthly inspection of fire extinguishers to assure the extinguishers are present and ready for use. Once the monthly inspection is complete, initial and date the attached service tag.

Inspections

Inspections of buildings and processes are part of any prevention/safety program. Inspections are intended to maintain a level of safety to the occupants within an area and to cooperatively resolve non-compliant issues.

Buildings – The focus of inspections of “building” is fire and life safety. Egress pathways must be clear of excessive combustibles or obstructions. Emergency and exit lighting must be functional. Doors in the egress path must not be obstructed or propped open.

Residence Halls – Inspections of residence hall student rooms are conducted by Hall Staff each semester. Staff should keep fire and life safety in mind, looking for restricted items not appropriate for student rooms (i.e. candles, incense, extension cords, hot plates, heating devices). Window and door operation is observed. A drawing of the egress path or escape route must be posted.

Equipment/Mechanical Room – Primary interest is safety of occupant of space. Fans and pulleys must be shielded to protect occupant from inadvertent contact. Electrical service panels and junction boxes must be covered to reduce the likelihood of contact with energized electrical conductors. The chance of fire is greatly reduced when mechanical/electrical systems are properly maintained and enclosed.

Fire Protection and Suppression Systems – All fire protection and suppression systems are inspected and maintained at intervals compliant with pertinent NFPA standards by properly trained and/or certified personnel.
Fire and Life Safety Training
NFPA 101 *The Life Safety Code* dictates employees are to be provided with training in the fire protection features of the workplace. The training must include University expectations of the employee in the event of an emergency. If equipment, such as fire extinguishers, is available for employee use, training must be provided in the proper use of that equipment.

**Fire Extinguisher** – There are approximately 3000 fire extinguishers of various types on the NIU campus. Fire extinguisher training is available to all NIU employees and students. Choosing the correct extinguisher, proper use of the extinguisher, and fire extinguisher inspection is some of the information to be discussed during fire extinguisher training sessions.

**Emergency Procedure Planning** – Training related to “Readiness” for an emergency is available to departments and groups across campus. Training of this type, is required by code and insurance regulatory standards. Contact EH&S for assistance in scheduling required training.

**Places of Public Assembly** – Emergency preparedness in places of assembly is important due to potential mass injury or death. Employees in “assembly” spaces must be well trained and practiced in emergency procedures unique to the area they serve. Then when an emergency occurs the employee can be assistive in evacuation of guests instead of contributing to the chaos that will be occurring.