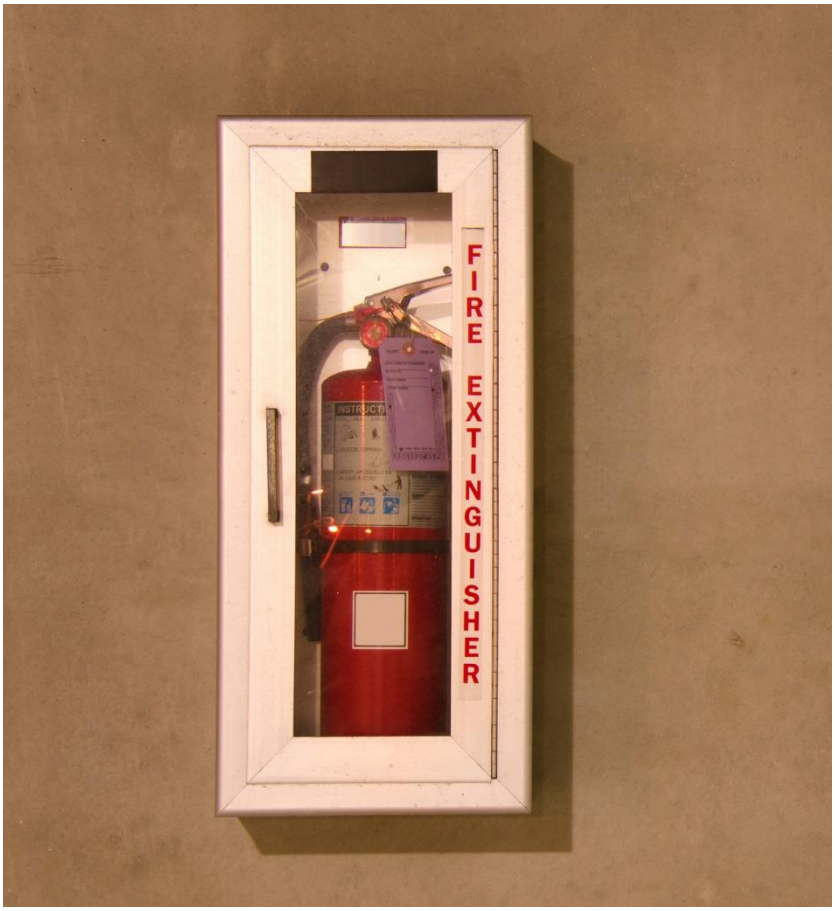
Workplace Fire Prevention and Fire Extinguishers



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Introduction

The risk of fire in the municipal workplace is a serious concern, both from a property loss and an injury hazard standpoint. Even if a fire injures no employees or building occupants, the disruption to municipal services can be considerable and important information can be lost.

According to the United States Fire Administration from 2009 to 2018, there are on average 1.3 million reported fires – explosions, 3,645 deaths, 15,200 injuries and approximately $38.8 billion dollars in fire losses annually.

The good news is that only about 15% of workplace fires result from a catastrophic failure of equipment. 85% are caused by factors related to human behavior of not following best practices. This means that by being pro-active, with a simple Fire Prevention Plan, your municipality can greatly reduce the likelihood of a fire or explosion in your workplace. Also, with a simple emergency plan as well as proper detection and fire extinguishers, you can greatly reduce the chances of injury or serious loss, should a fire occur.

The Fire Prevention Plan

To develop an effective fire prevention plan, evaluate each municipal facility using the list of common and special fire hazards on the following pages. For each that exists in a particular facility, assign control measures to reduce the risk and assign an individual or group to be responsible for maintaining these control measures.

For maximum effectiveness, fire prevention plan items should be included in a periodic hazard inspection program as part of your overall safety and health program. It is also recommended to invite your local Fire Department in to see your operations and what chemicals, flammables and combustibles you have on hand and how and where they are stored so in the event of a fire they will be better prepared.

Fire is the most likely emergency exposure for employees. OSHA standard CFR 1910.39 requires that employers having more than 10 employees develop a written Fire Prevention Plan and provide initial training.

> **OSHA 29 CFR 1910.39**
> https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.39
>
> **Fire Prevention Plan** – requires that the plan must be in writing, be kept in the workplace, and be made available to employees for review. However, an employer with 10 or fewer employees may communicate the plan orally to employees.

The basic elements of a fire prevention plan shall include:

- A listing of all major fire hazards and their locations. **See Appendix A**
- Assigns responsibilities of the employer and all employees.
- Provides training on fire hazards and preventative measures.
- Procedures for proper handling and storage of hazardous materials including waste.
- Procedures for proper storage and disposal of munitions, explosives, and fireworks

- Identification of potential ignition sources, how they can be controlled, and the type of fire protection equipment necessary to control each major hazard.
- Procedures for storing Flammables and Acids in liquid form.
- Procedures for regular maintenance of safeguards installed on heat-producing equipment to prevent accidental ignition of combustible materials or flammable liquids.
- The name or job title of employees responsible for weekly facility Fire Prevention Safety Audits. **See Appendix B**
- The name or job title of employees responsible for maintaining equipment to prevent or control sources of ignition or fires.
- The name or job title of employees responsible for the control of fuel source hazards.
- The name or job title of employees responsible for the overall testing and maintenance of heat, fire and smoke detection systems.

The employer must inform employees of the fire hazards to which they are exposed when initially assigned to a job. An employer must also review with each employee those parts of the fire prevention plan necessary for the employee's self-protection. The plan must also be reviewed with employees when new fire hazards are identified with new processes or hazardous chemicals into the workplace. The Safety Data Sheets are a good reference for information pertaining to fire hazards whenever a new hazardous chemical is introduced into the workplace.

Fire Prevention / Fire Emergency Plan

Fire is the most probable emergency exposure for employees. The employee breakrooms, office workstations, mechanical spaces, metal fabrication shops, woodworking shops, mechanic bays, spray booths, storage spaces, computer server rooms, kitchen areas and electrical sources are the most likely originators of fire **(amend as appropriate)**. OSHA standard 29CFR 1910.39 requires that employers having more than 10 employees develop a written Fire Prevention Plan.

Fire Prevention

To reduce the likelihood of fires, the following rules and workplace practices have been adopted:

1. **(Location)** is a non-smoking facility. Employees and visitors may smoke outside and when smoking, must be at least 25 feet away from the building, propane tanks and refueling stations – or where specified in the Smoking Policy. Do not congregate near or obstruct exits and properly dispose of cigarette butts in containers provided for that purpose.
2. Combustible materials such as paper and cardboard waste will be kept at a minimum by daily disposal or more frequently as required. Do not store paper or cardboard waste in a manner that will obstruct building exits, fire extinguishers, fire alarm pull stations, suppression system activation stations or electrical panel boxes.
3. Combustible materials (paper, cardboard, wood, etc.) shall not be stored in stairwells, under stairwells, designated mechanical rooms or boiler rooms.
4. Coffee makers, hot plates or other small cooking appliances must be switched off and unplugged when not in use. Cooking appliances must never be left unattended when in use. Safe use of appliances is the responsibility of the user.

5. The use of personal appliances not owned or approved by **(place municipal name here)** in the workplace is prohibited and will be removed immediately by the user.
6. Do not overuse extension cords and only use industrial type with a wire thickness of 14 or 12 gauge wire that have been approved by a Nationally Recognized Testing Laboratories such as Underwriters Laboratories.
7. Never run electrical cords under carpeting, through windows, walls, doorways or fasten them with staples or unapproved fasteners. If an extension feels warm to the touch, stop and unplug; this is an early indication the cord is undersized and a fire hazard.
8. Do not block access to travel aisles, fire extinguishers, fire alarm pull stations, suppression system activation stations or electrical panel boxes.
9. (Municipality, School, Utility or District Name) prohibits the burning of candles, incense in any area of the facility or any other open flame unless in an approve laboratory.
10. (Municipality, School, Utility or District Name) prohibits the use of electric or other portable space heaters that do not have an automatic "shut-off" switch if the unit tips over and an automatic temperature shut-off switch. The unit must meet Underwriters Laboratories Ratings or other nationally recognized testing laboratories.
11. Never refuel vehicles with the motors operating.
12. Do not use a cell phone when refueling. Cell phones are a source of ignition.
13. Always let small equipment cool off prior to refueling or storing.

Common Fire Hazards and Their Control

A. **Heating Equipment**- Improperly installed, operated, or maintained furnaces and other heating equipment can lead to a fire.

a) Heating equipment should be installed and serviced annually by a licensed technician.

b) Every furnace or heater has required 3 foot minimum clearance distances on all four sides and above and at least 5 feet from the burner's fuel tank. All material and building components must be kept out of this area.- **Refer to NFPA 31**

c) Combustible material or flammable items must never be stored in furnace rooms. Some furnace malfunctions can cause sparks and embers. FURNACE ROOMS ARE NOT STORAGE ROOMS. – **Refer to NFPA 31**

d) Temporary heating units should generally not be used in public buildings. If they must be used, they should be Underwriters Laboratories or other Nationally Recognized Testing Laboratory listed, equipped with tip-over protection and the manufacturer's recommendations for use strictly followed- especially clearances around the unit! Electric heaters can easily overload electrical branch circuits, causing another fire hazard. An electrician should be consulted to ensure that current amperage limits are not being exceeded. **See the following MMA Safety Short for more guidance:** https://www.memun.org/DesktopModules/Bring2mind/DMX/Download.aspx?PortalId=0&EntryId=647

Nationally Recognized Testing Laboratories Symbols

B. **Electrical**- Misused, overloaded, damaged, or improperly maintained electrical equipment is a very common cause of workplace fires.

a) Extension cords are only to be used for temporary power and removed immediately after completion of the task. If a long term power is needed then contact a licensed electrician to add a fix circuit with receptacle.

Refer to OHSA 29CFR1910.305-a-2-ii:

"Temporary wiring shall be removed immediately upon completion of the project or purpose for which the wiring was installed." and OSHA 29CFR1910.305(g)(1)(iv): "Unless specifically permitted otherwise in paragraph (g)(1)(ii) of this section, flexible cords and cables may not be used:" 1910.305(g)(1)(iv)(A) "As a substitute for the fixed wiring of a structure;"

They should never be used:

a) To power equipment on a semi-permanent basis in lieu of plugging the equipment directly into an approved outlet.

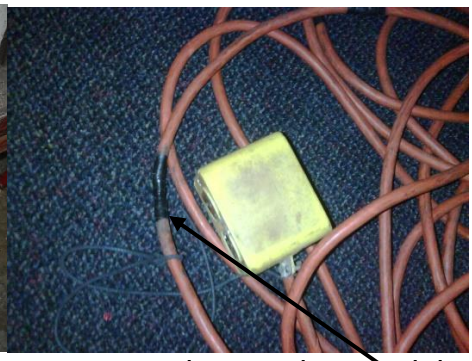
b) Run through walls, above ceilings or other concealed areas.

c) Attached to building surfaces.

d) Where subject to crushing or pinching.

e) If the extension cord is damaged.

Missing ground pin



Damaged protective conduit

f) Extension cords should never be left coiled up while plugged in. This can cause inductive heating that will damage the insulation and can cause fires.

g) Multiple outlet strips should be used only where equipped with a surge suppressor and used to power only computer equipment. They must never be used to power appliances or other electric equipment. Doing so can overload outlets and branch circuits.

Extension cord and multiple outlet strip misuse is the most common cause of office fires! See the following MMA Safety Shorts;

https://www.memun.org/DesktopModules/Bring2mind/DMX/Download.aspx?PortalId=0&EntryId=638

and

https://www.memun.org/DesktopModules/Bring2mind/DMX/Download.aspx?PortalId=0&EntryId=652

h) Romex type wiring must be properly secured and supported. It should never be used as flexible temporary wiring. Damaged conduit, wires, junction boxes, outlets and switches must be de-energized and repaired by a qualified electrician immediately.

Damaged Junction Box; Damaged Cover plate. Flexible cords through window and ceiling tiles.

i) Air vents on electrical and electronic equipment such as computers must never be blocked and should be kept clear of dust and lint; always vacuum whenever possible.

j) Circuit breakers should be “exercised” every six months, by turning them off and on, to ensure proper function.

k) If a circuit breaker opens expectantly there may be a “Short” in the branch circuit’s wiring or the circuit has been overloaded with too many electrical appliances or tools. Lockout the circuit breaker and have a licensed electrician evaluate.

l) Circuits must not be overloaded. Warm or hot circuit breakers indicate an overloaded circuit and a serious fire hazard.

j) Circuit breakers should never be used in place of a light switch unless it is “SWD” rated. This is a heavy duty breaker designed to be switched open and closed on a regular basis. Refer to **29CFR1910.304(f)(1)(ix);**

“Circuit breakers used as switches in 120-volt and 277-volt, fluorescent lighting circuits shall be listed and marked "SWD."

C. **Conventional Cooking**- Microwave ovens, toaster ovens, hotplates, coffee makers and stoves used for food warming can cause fires if misused.

a) NEVER leave cooking unattended.

b) Clean the stove ventilation screens and backsplash periodically with a degreasing cleaner.

Keep clean of grease and oil

c) All breakrooms, kitchenette or kitchens shall be equipped with smoke detectors.

d) Combustible material and flammables including aerosols must be kept away from stovetops, toaster ovens, hotplates, and any other heat source.

e) Follow microwave container recommendations and popcorn instructions carefully.

f) Never plug appliances such as a microwave, toaster oven or refrigerators into a power strip; these power strips are designed for computer use with small amperage draws. Appliances are to be plugged directly into approved wall receptacles with proper amperage circuit breakers. Refer to the tag on the rear of appliance.

D. **Laundry**- Misused or improperly maintained washers and dryers can cause fires.

a) Do not overload washers or dryers; refer to manufacture's operations manual for proper use.

b) Clean lint traps before and after use. Clean and inspect dryer ducts periodically; items can accumulate in bends in the duct.

c) Follow laundering instructions on garments. Some synthetics are a fire hazard if dried improperly.

d) Use only dryer duct approved for that purpose. Many hardware stores sell ventilation duct that is not rated for dryer exhaust temperatures; look for a Nationally Recognized Testing Laboratory label such as Underwriters Laboratories.

e) Do not launder clothing contaminated with gasoline or other flammable liquids including cooking oil. Items that contain foam, rubber or plastic need to be line dried.

Dryer Safety Warning Label inside door.

f) Periodically check the dryer plug as vibrations may cause the plug to move and cause mini arcs thus creating a fire hazard. As the dryer receptacle ages the spring steel connectors inside become fatigued and do not hold the plug blades tight allowing movement.

Dryer Plug Blades that may move over time.

E. **Mechanical Friction**- Improperly maintained or cleaned mechanical equipment can lead to fires.

a) Bearings on ventilation equipment and conveyors should be kept properly lubricated, aligned and free of debris that could combust when heated. Refer to manufactures' operations manual for recommended maintenance schedule.

b) Conveyors and mobile equipment such as trucks, loaders and forklifts are to be kept cleaned and free of accumulations of combustible material.

c) Mobile equipment with hydraulic power is to be inspected prior to use and maintained as required by manufacture.

d) Check all equipment's hydraulic hoses for wear and cracks; check fittings for leaking and components such as rams and pumps for leaks around the seals.

e) Insure all mobile equipment including trucks, cars, lawnmowers and others have periodic maintenance and inspections as required by manufacture and the Maine Department of Labor. Several vehicle fires have destroyed vehicles and in some cases the buildings they were stored in. If there are any odors of burning fluids, hot metal parts or electrical parts remove the equipment from service and leave in an isolated area.

The Maine Department of Labor has several forms to use on their website link: http://www.safetyworksmaine.com/safe_workplace/sample_programs/index.shtml

f) Ensure there is a reporting deficiencies program in place for equipment operators to report equipment malfunctions or needed repairs.

A fire in the right rear wheel of a truck hauling ash on I-95 at mile 56 on Thursday morning was probably cause by overheated bearings, according to Maine State Police on the scene. – CentralMaine.com 07-16-2015.

F. **Housekeeping**- Poor housekeeping can lead to fires and increase the severity of fires from other causes.

a) Excessive storage of boxes and other combustible material increases fuel loading that can increase fire severity and decrease the time occupants have to let out in the event

of a fire.

b) Stored material must not obstruct egress routes, exits, walkways, electrical panels, or emergency equipment.

c) Combustibles should not be stored within 3 feet to heat or ignition sources.

d) Stored material must not be within a radius of 18 inches of the sprinkler heads.

e) Clean wood dust and metal fines collection systems and work areas periodically as recommended by the manufacturer. Develop safety procedures for proper cleaning and train employees on the use of specialized equipment if needed.

f) Periodic cleaning of the process areas is required when materials' dust collects at a level no greater than 1/8" on surfaces; Use an approved vacuum cleaner.

g) **OSHA and NFPA 654 has provided the following guidance:**

Dust Control

NFPA 654, *Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, Processing, and Handling of Combustible Particulate Solids*, contains comprehensive guidance on the control of dusts to prevent explosions. The following are some of its recommendations:

- Minimize the escape of dust from process equipment or ventilation systems;
- Use dust collection systems and filters;
- Utilize surfaces that minimize dust accumulation and facilitate cleaning;
- Provide access to all hidden areas to permit inspection;
- Inspect for dust residues in open and hidden areas, at regular intervals;
- Clean dust residues at regular intervals;
- Use cleaning methods that do not generate dust clouds, if ignition sources are present;
- Only use vacuum cleaners approved for dust collection;
- Locate relief valves away from dust hazard areas; and
- Develop and implement a hazardous dust inspection, testing, housekeeping, and control program (preferably in writing with established frequency and methods).

Ignition Control

NFPA 654, *Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, Processing, and Handling of Combustible Particulate Solids*, also contains comprehensive guidance on the control of ignition sources to prevent explosions. The following are some of its recommendations:

- Use appropriate electrical equipment and wiring methods; Refer to OSHA Standards 29CFR1910.304 and 305; Link to **1910.304** https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.304 Link to **1910.305** https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.305
- Control static electricity, including bonding of equipment to ground;
- Control smoking, open flames, and sparks;
- Control mechanical sparks and friction;
- Use separator devices to remove foreign materials capable of igniting combustibles from process materials;
- Separate heated surfaces from dusts;
- Separate heating systems from dusts;

- Proper use and type of industrial trucks; Refer to OSHA Standard 29CFR1910.178(C)(2)(iv) Table N-1 https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.178
- Proper use of cartridge activated tools;
- Adequately maintain all the above equipment.

G. **Proximity Hazards**- Hazards outside of buildings can expose them to the risk of fire.

a) Other buildings within 100' pose a risk and should be evaluated for fire risk and considered in Fire Prevention Plans.

b) Fuel tanks, natural gas and liquefied gas valves near buildings should be installed to current codes and protected from vehicle collisions by barricades. **Refer to NFPA - 30**

c) Dumpsters are to be at least 30 feet from buildings to prevent dumpster fires from exposing a structure.

d) Weeds, tall grass, brush, and any fell trees shall be kept mowed back or removed at least 30 feet from buildings to avoid fire exposure in rural areas with heavy woodland presence. **Refer to NFPA – 80 and 80A**

H. **Smoking**- Unauthorized smoking or poor setup of smoking areas can cause fires.

a) Smoking is prohibited in all Maine public buildings. Unauthorized smoking in buildings must be addressed and stopped if it exists.

b) Outside smoking areas must be kept away from all types of fuel tanks, landscaping that has chips or mulch, dumpsters and building air intakes.

c) Butt cans should be of the self-extinguishing type.

Special Fire Hazards

"Special" fire hazards are special because of the severe risk of fire loss that they present, the special or unusual safety controls required to effectively prevent severe fires from them, and the fact that they *usually* are not common in office or residential occupancies.

A. **Cutting/Welding and other "Hot Work"**- Lack of proper safety equipment and safety procedures during work that produces flames, slag or sparks, such as welding, torch burning or grinding, can lead to serious fires with high injury risk. **Refer to OSHA 29CFR 1910 Subpart Q. 1910.251-255.**

1. Hot work should be restricted to two types of areas approved by supervision:
   a) Permanent hot work areas, such as fabrication shops, which are kept free of combustible material and posted as approved hot work areas.
   b) Locations that have been inspected and have a written "hot work permit" issued. **See Appendix C**
2. All combustible material within a 35 foot radius of hot work must be removed or protected with fire resistant coverings.
3. Special attention should be given to floor openings that slag and sparks can fall into within a 35 foot radius of hot work must be covered with a fire resistant covering.
4. Any hot work performed adjacent to ducts or conveyors that may allow travel of sparks to combustible materials must be protected or shut down.
5. Do not weld or perform any type of hot work on used drums, barrels, tanks, or other containers; it may be necessary to inert drums or fill them with water to eliminate flammable/explosive vapors prior to welding or cutting.
6. Protection must be provided within a 35 foot radius of hot work for combustible walls and walls with openings.
7. A "Fire Watch" shall be provided for hot work; employees shall be trained in fire extinguisher use, and means of fire notification. It is a good practice to perform cutting and welding in the morning hours. Never perform at or near the end of a shift.
8. An individual should stand "fire watch" for 30 minutes after "hot work" is done.

   Refer to 29CFR1910.252 "General Requirements for more details; https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.252
9. Welding leads must be frequently inspected and free from damage. Do not repair leads with electrical tape.
10. Cables with splices within 10 feet of the holder shall not be used.
11. Welding rod holders shall have end tips protect with ceramic covers.
12. The operator should report any equipment defect or safety hazard to his supervisor and the use of the equipment shall be discontinued until its safety has been assured. Repairs shall be made only by qualified personnel.

    Refer to 29CFR1910.254 "Arc welding and cutting" for more details;

    https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.254
13. All torches should be equipped with flashback arresters and inspected for damage to torch tip, fuel piping to torch tip and handles.
14. Inspect the hoses before and after use for age related cracks, cuts and burns.

15. Never use an open flame to light a torch only an approved striker.
16. Before opening the oxygen on the torch, light the acetylene first.
17. Never stand in front of a regulator when opening a valve on a pressurized tank.
18. Only use approved valve opening wrenches supplied by the vendor; no vice-grips!
19. Acetylene gas shall not be used at pressure greater than 15 psig.
20. Cylinders should be shut off and the system bled down when not in use.
21. Cylinders shall be kept away from radiators and other sources of heat.
22. Inside of buildings, cylinders shall be stored in a well-protected, well-ventilated, dry location, at least 20 feet from highly combustible materials such as oil or excelsior.
23. Cylinders should be stored in definitely assigned places away from elevators, stairs, or gangways.
24. Assigned storage spaces shall be located where cylinders will not be knocked over or damaged by passing or falling objects, or subject to tampering by unauthorized persons.
25. Cylinders shall not be kept in unventilated enclosures such as lockers and cupboards.
26. Oxygen and fuel gas cylinders in storage (not on a torch cart) should be properly secured, capped and separated by 20 feet or a ½ hour fire barrier, such as a cement block wall or ¼ inch steel plate that is at least 5 feet high.
27. Torch cylinders should be capped at all times when regulators are not attached.

Refer to 29CFR1910.253 "Oxygen-fuel gas welding and cutting." for more details; https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.253

B. **Flammable and Combustible Liquid Storage and Handling** - Improper handling and storage of flammable liquids, such as gasoline, aerosols and solvents can lead to dangerous "flash" fires.

1. Flammable or combustible liquids should not be used or stored inside buildings unless it is absolutely necessary to operations. If it is necessary to store flammable or combustible liquids inside buildings, the quantity should be limited to the minimum necessary.
2. **DO NOT** store flammable or combustible liquids in furnace, mechanical, electrical, or kiln rooms.
3. All electrical equipment shall be intrinsically safe; including branch circuits, receptacles, lighting, equipment activation switches, fuel pumps, junction boxes and conduit must be the correct type based on the flammable or combustible liquid classification. **Refer to NFPA – 70 Chapter 5, National Electrical Code, NFPA 30 Chapter 7 and OSHA 29CFR1910.307 and 1910.399. Refer to the following links:**

   https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.307 and

   https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.399
4. If 30 or more gallons of flammable liquids must be stored in one building, a UL listed or other "Nationally Recognized Testing Laboratory" flammable liquid cabinet should be used. An alternative is a separate storage shed at least 30 feet from the main building. If venting is required; a vent pipe from the bottom of the cabinet is to be vented to the exterior. All vents holes in the cabinet that are not used for venting are to have approved

plugs.

Refer to the NFPA – 30 Table 9.6.1 for other combustible and flammable quantities.

Classification Examples

Classification	Term	Flash Point and Boiling Point	Examples
Class IA	Flammable	Below 73F Boils below 100F	Ethyl ether, acetaldehdye, methyl formate, pentane
Class IB	Flammable	Below 73F Boils above 100F	Gasoline, acetone, benzene, carbon disulfide, ethanol, toluene
Class IC	Flammable	Above 73F Boils below 100F	Turpentine, xylene, butyl alcohol, amyl acetate
Class II	Combustible	At or above 100F	No. 2 Heating Oil, Diesel Fuel, Kerosene, glacial acetic acid, formaldehyde, hydrazine
Class IIIA	Combustible	At or above 140F	naphthalene, octyl alcohol
Class IIIB	Combustible	At or above 200F	SAE No. 10 Lube Oils, glycerine, propylene glycol

Capacity Allowed per NFPA 30 and OSHA 1910.106

Table 9.6.1 MAQ of Flammable and Combustible Liquids per Control Area

	Liquid Class(es)	Quantity gal	Quantity L	Notes
Flammable liquids	IA	30	115	1, 2
	IB and IC	120	460	1, 2
	IA, IB, IC combined	120	460	1, 2, 3
Combustible liquids	II	120	460	1, 2
	IIIA	330	1,265	1, 2
	IIIB	13,200	50,600	1, 2, 4

Notes:
(1) Quantities are permitted to be increased 100 percent where stored in approved flammable liquids storage cabinets or in safety cans in accordance with the fire code. Where Note 2 also applies, the increase for both notes is permitted to be applied accumulatively.
(2) Quantities are permitted to be increased 100 percent in buildings equipped throughout with an automatic sprinkler system installed in accordance with NFPA 13. Where Note 1 also applies, the increase for both notes is permitted to be applied accumulatively.
(3) Containing not more than the maximum allowable quantity per control area of Class IA, Class IB, or Class IC flammable liquids, individually.
(4) Quantities are not limited in a building equipped throughout with an automatic sprinkler system installed in accordance with NFPA 13 and designed in accordance with the protection criteria contained in Chapter 16 of this code.

5. Gasoline should only be stored in UL Type I or Type II safety cans; OSHA definition of a "safety can", 29CFR1910.106(a)(29); ***"Safety can shall mean an approved container, of not more than 5 gallons capacity, having a spring-closing lid and spout cover and so designed that it will safely relieve internal pressure when subjected to fire exposure."***

Gasoline Diesel Kerosene Oil –Lubricant

6. If flammable liquids are dispensed from drums or portable tanks, proper bonding and grounding techniques must be used. Always set portable containers on the ground before filling.

Grounding Wire Bonding Wire

7. Parts washer covers must rest on their fusible link when open.
8. Interior and exterior designated for designated flammable and combustible storage rooms and buildings are to be designed and constructed per NFPA 30 Chapter 9 Section 9.9 and OSHA 29CFR1910.106(d)(4); **Refer to the following link:**

   https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.106

C. **Spontaneous Combustion**- Improper storage of oily rags, chemicals, hay, straw, leaves, or coal can result in a fire.

1. Oily rags should be disposed of in an airtight metal container, which is regularly emptied to an outside container at least 30 feet from buildings. Plant based oils such as linseed oil and wood stains are the most hazardous.
2. Oxidizers, such as pool treatments, tile cleaners, and disinfection/fluoridation chemicals should not be stored near combustible or flammable liquids. If they mix, a fire can result. **Refer to the Safety Data Sheet for storage information.**
3. Damp hay, straw, mulch, wood chips or leaves can spontaneously ignite. Store only in outside structures at least 30 feet from main buildings. Never allow hay/straw bales as decorations inside buildings.

D. **Commercial Cooking Equipment**- Commercial cooking, especially that which generates grease laden vapors, is a serious fire loss hazard.

1. Fryers, griddles and other equipment generating grease laden vapors must have a hood and ventilation system meeting the requirements of **NFPA- 96**.
2. Grease baffles must be properly installed when the equipment is in use.
3. Grease baffles and duct work must be washed frequently; best practices are to complete this task at least 2 times per year depending on use.
4. Grease vents must not discharge horizontally through a combustible wall.
5. Open flame equipment, such as char broilers and gas stove burners, must be separated from the grease surface by 8", horizontally, vertically, or by use of an 8" high metal divider.
6. Fryers, griddles and other equipment generating grease laden vapors must have a Class K wet agent automatic fire extinguishing system that meets the performance requirements of UL 300. DRY CHEMICAL extinguishing systems are not effective against modern vegetable based oils!
7. Annual suppression system inspections are required by **NFPA- 96.**
8. All suppression system activation devices must not have their access blocked.
9. A Class K wet agent portable extinguisher should be installed in all kitchens where any frying takes place; annual maintenance and monthly visual inspections must be performed and document on the affixed tag.

E. **LPG ("Propane") and Natural Gas**- Improper use of portable gas fueled equipment and inadequate maintenance of piped in gas equipment and systems can lead to serious fires and facility threatening explosions.

1. Only gas fired portable equipment that is approved for indoor use should be used indoors. The use of portable gas fired equipment indoors should be limited to essential operations only with a proper exhaust system in place.
2. Grills, portable stoves and LP fueled heater should never be used inside without proper ventilation. A by-product of this equipment is Carbon Monoxide which cannot be detected and can cause severe health issues and even death.
3. Interior LPG appliances and equipment are required to have auto fuel line shut-off valves that are accessible to employees; if a system manifold shut-off switch is used it must be kept accessible at all time. At the time of installation and after a repair is made to a gas line, a leak test must be conducted.

4. LPG and Natural Gas valves and tanks must be protected from damage from vehicles and snow and ice from rooftops. When possible, tanks should be installed at the gable end of a building.



5. All gas fired equipment and fuel systems should be serviced annually by a qualified technician.
6. Regulators must be kept clear of ice, spider webs etc.
7. Storage of LPG Cylinders should be stored outside in a well ventilated area, be carried and stored upright at all times.
8. L.P gas cylinders are not to be stored above 80% capacity.
9. Gas cylinders must never be stored within 50’ of exits.
10. Do not store or use petrol, flammable liquids or aerosols within 20 feet of LPG cylinders or refueling stations or fixed tanks.
11. Any facility with a propane or natural gas dispensing station used to fill vehicles, equipment or portable tanks needs to have at least one State of Maine Dispensing Licensed employee on staff who is authorized to provide safety training to employees doing the dispensing. Contact your gas supplier for assistance and the Department of Professional and Financial Regulation; Propane and Natural Gas Board. They will issue a two year Dispensing License. More information is available at the following link:

    https://www.maine.gov/pfr/professionallicensing/professions/fuel/dispensing_station.html#renewal
12. The dispensing stations’ equipment shall be installed by a State of Maine licensed technician.
13. Electrical components used to dispense product shall meet the appropriate class and division for natural gas or liquefied propane.
14. When deliveries are made an odorant check shall be made and documented.
15. Other Dispensing Station requirements include; Class B fire extinguisher at dispensing station, controls at the dispensing pump, emergency shut-off at dispensing transfer location (3 feet to 100 feet), and automatic shut-off in pump when flow exceeds set flow rate, pipe and dispensing hose with hydrostatic relief valve. **Refer to NFPA 58 for more details.**

16. Anyone dispensing fuel must wear appropriate PPE as outlined in the corresponding Safety Data Sheet.
17. The facility emergency evacuation plan should clearly require immediate evacuation in the event of a suspected leak. All evacuated personnel should be moved at least 100' from the building ASAP.

F. Fireworks and Safe Disposal

If you have unused, misfired or "dud" fireworks, following these safe disposal steps will help ensure the protection of you, your family and waste haulers and handlers:

1. Completely submerge fireworks in a large bucket of water and soak until thoroughly saturated. This may take 15 minutes for small fireworks or as long as overnight for larger ones.
2. Double wrap the completely soaked fireworks in plastic wrap or two plastic bags so they do not dry out.
3. Place the double-bagged fireworks in the household trash or take them to your local solid waste facility.
4. You can contact your local fire department or solid waste facility as other disposal options may be available in your community.
5. If you plan to store unused fireworks that have not yet expired, keep them in a cool, dry place such as a garage and out of the reach of children. Never place fireworks on top of an electrical appliance, such as a refrigerator or freezer. The appliance could be struck or damaged through extreme weather events such as lightning or power surges, resulting in the possible ignition of the fireworks.

For more information on safe fireworks handling and disposal, please contact the State Fire Marshal's office at (207) 626-3880 or (207)626-3870 or the Maine DEP Division of Materials Management at the nearest regional office:

Augusta, Main Office and Central Maine Regional Office
(207)287-7688 - (800)452-1942

Bangor, Eastern Maine Regional Office
(207)941-4570 - (888)769-1137

Portland, Southern Maine Regional Office
(207)822-6300 - (888)769-1036

Presque Isle, Northern Maine Regional Office
(207)764-0477 - (888)769-1053

Refer to the following link: https://www.maine.gov/dep/how-do-i/how-do-i.html?id=440736

Fire Protection Systems

NOTE: Amend this section to fit your location.

The building is equipped with a number of fire protection and emergency alerting systems; these include:

Sprinkler System - The building is 100% sprinkler protected. The "wet" (or "dry") system automatically discharges through heads activated by high temperature. Activation of the system triggers the building fire alarm (or other alarm system) and notifies the fire department (or other location, such as a contracted monitoring company). The system is inspected and maintained by an outside vendor the _____ contracts. Records are kept by _____. (Include specialized sprinkler or extinguishing systems as in place.)

Alarm System – The building is (is not) provided with security/intrusion and smoke/heat sensors as well as "pull box" fire alarm stations *(Edit as needed)*. Fire alarms are both audible and visual within the building and are monitored by (System Monitoring Service) _____. *If there are no central alarm systems, identify that a verbal alarm is in use to alert others of a serious event. If the building has a Fire Pull station which does not go to a central dispatch, then identify that it is a local alarm only and will NOT alert emergency responders.*

Egress Routes –Emergency exits and travel routes to them are marked with EXIT signage which may be illuminated internally, illuminated by a reliable light source (emergency lighting), or is reflective *(Identify which apply)*. Emergency lighting of travel aisles and exits is also provided in the event of power failure *(Include only if emergency lighting is in place, or identify that a generator will automatically activate and provide lighting)*.

"Area of Rescue Assistance" *–this is to be used only if you have an "Area of Rescue Assistance".* The stairway at the top of the stairs is designated as an "Area of Rescue Assistance". In the event that the top floor cannot be evacuated through the main lobby, this stairway is the secondary means for emergency egress. It should be used by handicapped or other individuals as a safe area. It has a one hour fire rated designation and is provided with a communication system to summon assistance.

Self-closing fire doors – *this is to be used only if you have self-closing fire doors.* Self-closing fire doors (normally open) are located at various points throughout the building. The doors will close automatically when the fire alarm activates. The purpose of the doors is to insure safe travel to emergency exits and to prevent fire spread. Self-closing fire doors and fire rated doors leading to the rear stairway (normally closed) should never be secured in the open position or otherwise blocked from closing.

NOTE: When automatic fire doors have closed they can be opened manually to allow travel.

Fire Extinguishers - Fire extinguishers are located throughout the building for use by first responders or others so trained in extinguishing beginning stage fires. *Only persons who have been trained should consider using a fire extinguisher*. Extinguishers are inspected monthly by _____ (town manager, custodian, town clerk, etc.) and annually by a contracted qualified company for availability and operability. The monthly checks should be documented either on the tag on the extinguisher or in a dedicated notebook.

Training, is provided annually. A list of employees trained in the use of fire extinguishers is maintained as an administrative policy/procedure. Employee training records are located in (Location) _____.

Portable Fire Extinguishers

The proper selection, location, maintenance and use of portable fire extinguishers can greatly reduce the risk of a serious injury or a serious property loss in the event of a fire. As an employer, you have three choices when it comes to employee use of portable extinguishers:

1. Prohibit their use in the emergency plan. Require evacuation of all employees immediately. In this case, no employee training is required.
2. Allow all employees to use extinguishers and train them annually.
3. Train a selected group of employees annually (an "incipient fire brigade"). Prohibit their use by other employees.

If employees will be allowed to use extinguishers, an annual training program must be implemented. As a minimum, this training should include selection, operation of extinguishers and the hazards associated with incipient firefighting. Good training will include the entire Fire Defense Triad and spend a major part of the training on proper "fight or flee" decision making. While not specifically required by safety regulations, "hands on" live fire training greatly increases employee effectiveness if they must ever use an extinguisher. It should be considered occasionally, even if not practical every year.

The selection and placement of extinguishers is based on the types of fire hazards present in any work area:

- **Class A** hazards are ordinary combustibles such as wood, paper, and plastics.
- **Class B** hazards are flammable/combustible liquids such as gasoline, fuel oil, solvents, as well as flammable gases such as LPG and acetylene.
- **Class C** hazards are any type of fire in the presence of energized electrical equipment.
- **Class D** hazards are combustible metals such as magnesium, titanium and aluminum.
- **Class K** hazards are commercial cooking equipment, especially fryers and griddles.

Placement of extinguishers should be as follows:

- **Class A** fire hazards (most areas of most buildings) should be protected by a Class A rated extinguisher within 75'.
- **Class B** fire hazards should be protected by a properly sized Class B rated extinguisher within 50'.
- **Class C** rated extinguishers should be installed in areas where fires involving electrical equipment are likely or in any area where an untrained member of the public might grab an extinguisher in an emergency.
- **Class D** rated extinguishers, approved for the specific metals present, should be installed where combustible metals are worked in a manner creating a hazard. In most cases, this involves handling powdered metals, grinding or machining.
- **Class K** rated extinguishers should be installed in or near areas where frying or other cooking with oils/grease takes place.

The coverage areas for Class A and Class B extinguishers are circles with the extinguisher in the middle. When placing extinguishers of any type, look at the area that it will protect and mount it toward the exit access from that area.

All extinguishers must be mounted using an approved bracket or hanger. Safety standards

require that extinguishers not be mounted higher than 60".

All extinguishers must be properly maintained and inspected to ensure proper operation in the event of an emergency. The requirements are:

- **Maintenance**- A qualified fire equipment vendor must conduct annual maintenance of each extinguisher. This must be documented, usually by attaching a tag.
- **Inspection-** The employer must conduct monthly visual inspections ("quick checks") of all extinguishers in the workplace. This should be documented on attached tags or in a logbook. A monthly inspection includes ensuring that: the unit is mounted in its place and not blocked, the gauge (if so equipped) is in the "green", the pin seal is intact, and the unit appears overall ready for use.

Types of extinguishers that are available are:

- **Pressurized Water-** Class A only. These units come in a standard 2 ½ gallon size and generate a 25 foot reach with a water stream that is highly effective at quenching trash and other ordinary combustible fires. The key disadvantage is that they are unsafe, potentially lethal, around energized electrical equipment or flammable/combustible liquids. For this reason pressurized water extinguishers are useful at transfer stations and similar occupancies where the staff are trained in proper extinguisher selection, but ***should never be provided where the public or untrained staff have ready access to them***.
- **Loaded Stream** extinguishers are pressurized water units with a special anti-freeze for use at locations where freezing temperatures are possible.
- **Foam-** Class A and B. Several different types of foam are available, with AFFF and FFFP being the most common. They are effective, in trained hands, at suppressing flammable/combustible liquid fires, but will not extinguish such fires if dripping or squirting fuel is present. One big advantage to this type of extinguisher, however, is that foam can be used to "secure" gasoline spills and prevent ignition until the fire department arrives. Foam conducts electricity so they should not be used around energized electrical equipment and ***should never be provided where the public or untrained staff have ready access to them***.
- **Carbon Dioxide-** Class B C. Carbon dioxide extinguishers have the shortest range, lowest extinguishing capacity pound for pound, and require well trained users to successfully extinguish a fire with them. They are popular for use around electrical equipment, though, since they leave no residue and the gas easily penetrates electrical cabinets and motors.
- **Dry Chemical-** Class B C or Class A B C ("Multiple Purpose Dry Chemical"). Pound for pound, these are the most effective extinguishers for suppressing fires. Since they are safe for use around energized electrical equipment, Multiple purpose dry chemical extinguishers are recommended in any general hazard location where the public, tenants, or untrained staff may misguidedly grab them in an emergency.
- **Halon Replacements-** Class B C or Class A B C. Halogenated hydrocarbon, or "halon" fire extinguishers are still in use in some buildings, with Halon 1211 being the most common. These extinguishers are being phased out, though, due to concerns about damage to the ozone layer. Several halon replacements are available, at higher than dry chemical cost, for situations where the powdered agent from a dry chemical extinguisher might damage sensitive equipment. "Haleotron" is the most common of these agents.

- **Class D extinguishers-** Also called “dry powder” extinguishers come in several types for specific types of metals. Selection of an agent must be based on the metals present in the work area.

Resources

OSHA 29CFR1910.39 – Fire Prevention Plan
https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.39

OSHA 29CFR1910.106 – Flammable Liquids
https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.106

OSHA 29CFR1910.109 – Explosives and Blasting Agents
https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.109

OSHA 29CFR1910.110 – Storage and Handling of LPG
https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.110

OSHA 29CFR1910.178(C)(2)(iv) Table N-1 – Forklift Selection Hazardous Areas
https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.178

OSHA 29CFR1910.252 - General Requirements for Welding and Cutting
https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.252

OSHA 29CFR1910.253 - Welding, Cutting and Brazing
https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.253

OSHA 29CFR1910.254 -Arc Welding and Cutting
https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.254

OSHA 29CFR1910.304 – Wiring Design and Protection
https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.304

OSHA 29CFR1910.305 – Wiring Methods, Components, and Equipment for General Use
https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.305

OSHA 29CFR1910.307 – Hazardous Locations Classifications
https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.307

OSHA 29CFR1910.399 – Hazardous Locations Definitions
https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.399

Office of Maine State Fire Marshal:
https://www.maine.gov/dps/fmo/home

National Fire Protection Association:
https://www.nfpa.org/Codes-and-Standards/All-Codes-and-Standards/List-of-Codes-and-Standards

Maine Bureau of Labor- Sample Microsoft Word Forms and Safety Forms:
http://www.safetyworksmaine.com/safe_workplace/sample_programs

MMA Safety Shorts:
Portable Space Heaters:
https://www.memun.org/DesktopModules/Bring2mind/DMX/Download.aspx?PortalId=0&EntryId=647

Safe Use of Extension Cords:
https://www.memun.org/DesktopModules/Bring2mind/DMX/Download.aspx?PortalId=0&EntryId=638
Improper Use of Multiple Outlet Devices:
https://www.memun.org/DesktopModules/Bring2mind/DMX/Download.aspx?PortalId=0&EntryId=652

Proper Disposal of Fireworks:
https://www.maine.gov/dep/how-do-i/how-do-i.html?id=440736
Department of Professional and Financial Regulation; Propane and Natural Gas Board:
https://www.maine.gov/pfr/professionallicensing/professions/fuel/dispensing_station.html#renewal

Insert Company Name Here

1910.39
Fire Prevention Plan

The following fire prevention plan is provided only as a guide to assist employers and employees in complying with the requirements of the Occupational Safety and Health Administration's (OSHA) Fire Prevention Plan Standard, 29 Code of Federal Regulations (CFR) 1910.39, as well as to provide other helpful information. It is not intended to supersede the requirements of the standard. An employer should review the standard for particular requirements that are applicable to their individual situation, and make adjustments to this program that are specific to their company. An employer will need to add information relevant to their particular facility in order to develop an effective, comprehensive program.

Table of Contents

Company Name
Date

I. OBJECTIVE

The purpose of this Fire Prevention Plan is to eliminate the causes of fire, prevent loss of life and property by fire, and to comply with the Occupational Safety and Health Administration's (OSHA) standard on fire prevention, 29 CFR 1910.39. It provides employees with information and guidelines that will assist them in recognizing, reporting, and controlling fire hazards.

II. BACKGROUND

Company Name is committed to minimizing the threat of fire to employees, visitors, and property. ***Company Name*** complies with all applicable laws, regulations, codes, and good practices pertaining to fire prevention. ***Company Name's*** separate Emergency Action Plan spells out the procedures for responding to fires. This Fire Prevention Plan serves to reduce the risk of fires at ***Company Name/Location*** in the following ways:

A. identifies materials that are potential fire hazards and their proper handling and storage procedures;
B. distinguishes potential ignition sources and the proper control procedures of those materials;
C. describes fire protection equipment and/or systems used to control fire hazards;
D. identifies persons responsible for maintaining the equipment and systems installed to prevent or control ignition of fires;
E. identifies persons responsible for the control and accumulation of flammable or combustible material;
F. describes good housekeeping procedures necessary to insure the control of accumulated flammable and combustible waste material and residues to avoid a fire emergency; and provides training to employees with regard to fire hazards to which they may be exposed.

III. ASSIGNMENT OF RESPONSIBILITY

Fire safety is everyone's responsibility. All employees should know how to prevent and respond to fires, and are responsible for adhering to company policy regarding fire emergencies.

A. Management

Management determines the ***Company Name*** fire prevention and protection policies. Management will provide adequate controls to provide a safe workplace, and will provide adequate resources and training to its employees to encourage fire prevention and the safest possible response in the event of a fire emergency.

B. Plan Administrator

Insert title of responsible person shall manage the Fire Prevention Plan for ***Company Name***, and shall maintain all records pertaining to the plan. The Plan Administrator shall also:

1. Develop and administer the *Company Name* fire prevention training program.
2. Ensure that fire control equipment and systems are properly maintained.
3. Control fuel source hazards.
4. Conduct fire risk surveys (see Appendix A) and make recommendations.

C. Supervisors

Supervisors are responsible for ensuring that employees receive appropriate fire safety training, and for notifying ***Position or Responsible Person(s)*** when changes in operation increase the risk of fire. Supervisors are also responsible for enforcing ***Company Name*** fire prevention and protection policies.

D. Employees

All employees shall:

1. Complete all required training before working without supervision.
2. Conduct operations safely to limit the risk of fire.
3. Report potential fire hazards to their supervisors.
4. Follow fire emergency procedures.

IV. PLAN IMPLEMENTATION

A. Good Housekeeping

To limit the risk of fires, employees shall take the following precautions:

1. Minimize the storage of combustible materials.
2. Make sure that doors, hallways, stairs, and other exit routes are kept free of obstructions.
3. Dispose of combustible waste in covered, airtight, metal containers.
4. Use and store flammable materials in well-ventilated areas away from ignition sources.
5. Use only nonflammable cleaning products.
6. Keep incompatible (i.e., chemically reactive) substances away from each other.
7. Perform “hot work” (i.e., welding or working with an open flame or other ignition sources) in controlled and well-ventilated areas.
8. Keep equipment in good working order (i.e., inspect electrical wiring and appliances regularly and keep motors and machine tools free of dust and grease.
9. Ensure that heating units are safeguarded.
10. Report all gas leaks immediately. ***Position or Responsible Person(s)*** shall ensure that all gas leaks are repaired immediately upon notification.
11. Repair and clean up flammable liquid leaks immediately.
12. Keep work areas free of dust, lint, sawdust, scraps, and similar material.
13. Do not rely on extension cords if wiring improvements are needed, and take care not to overload circuits with multiple pieces of equipment.
14. Ensure that required hot work permits are obtained.
15. Turn off electrical equipment when not in use.

B. Maintenance

Position or Position or Responsible Person(s) will ensure that equipment is maintained according to manufacturers' specifications. ***Company Name*** will also comply with requirements of the National Fire Protection Association (NFPA) codes for specific equipment. Only properly trained individuals shall perform maintenance work.

The following equipment is subject to the maintenance, inspection, and testing procedures:

1. equipment installed to detect fuel leaks, control heating, and control pressurized systems;
2. portable fire extinguishers, automatic sprinkler systems, and fixed extinguishing systems;
3. detection systems for smoke, heat, or flame;
4. fire alarm systems; and
5. emergency backup systems and the equipment they support.

V. TYPES OF HAZARDS

The following sections address the major workplace fire hazards at ***Company Name's*** facilities and the procedures for controlling the hazards.

A. Electrical Fire Hazards

Electrical system failures and the misuse of electrical equipment are leading causes of workplace fires. Fires can result from loose ground connections, wiring with frayed insulation, or overloaded fuses, circuits, motors, or outlets.

To prevent electrical fires, employees shall:

1. Make sure that worn wires are replaced.
2. Use only appropriately rated fuses.
3. Never use extension cords as substitutes for wiring improvements.
4. Use only approved extension cords [i.e., those with the Underwriters Laboratory (UL) or Factory Mutual (FM) label].
5. Check wiring in hazardous locations where the risk of fire is especially high.
6. Check electrical equipment to ensure that it is either properly grounded or double insulated.
7. Ensure adequate spacing while performing maintenance.

B. Portable Heaters

All portable heaters shall be approved by ***Position or Responsible Person(s)***. Portable electric heaters shall have tip-over protection that automatically shuts off the unit when it is tipped over. There shall be adequate clearance between the heater and combustible furnishings or other materials at all times.

C. Office Fire Hazards

Fire risks are not limited to ***Company Name's*** industrial facilities. Fires in offices have become more likely because of the increased use of electrical equipment, such as computers and fax machines. To prevent office fires, employees shall:

1. Avoid overloading circuits with office equipment.
2. Turn off nonessential electrical equipment at the end of each workday.
3. Keep storage areas clear of rubbish.
4. Ensure that extension cords are not placed under carpets.
5. Ensure that trash and paper set aside for recycling is not allowed to accumulate.

D. Cutting, Welding, and Open Flame Work

Position or Position or Responsible Person(s)(s) will ensure the following:

1. All necessary hot work permits have been obtained prior to work beginning.
2. Cutting and welding are done by authorized personnel in designated cutting and welding areas whenever possible.
3. Adequate ventilation is provided.
4. Torches, regulators, pressure-reducing valves, and manifolds are UL listed or FM approved.
5. Oxygen-fuel gas systems are equipped with listed and/or approved backflow valves and pressure-relief devices.
6. Cutters, welders, and helpers are wearing eye protection and protective clothing as appropriate.
7. Cutting or welding is prohibited in sprinklered areas while sprinkler protection is out of service.
8. Cutting or welding is prohibited in areas where explosive atmospheres of gases, vapors, or dusts could develop from residues or accumulations in confined spaces.
9. Cutting or welding is prohibited on metal walls, ceilings, or roofs built of combustible sandwich-type panel construction or having combustible covering.
10. Confined spaces such as tanks are tested to ensure that the atmosphere is not over ten percent of the lower flammable limit before cutting or welding in or on the tank.
11. Small tanks, piping, or containers that cannot be entered are cleaned, purged, and tested before cutting or welding on them begins.
12. Fire watch has been established.

E. Flammable and Combustible Materials

Position or Responsible Person(s) shall regularly evaluate the presence of combustible materials at ***Company Name*** (see Appendix D).

Certain types of substances can ignite at relatively low temperatures or pose a risk of catastrophic explosion if ignited. Such substances obviously require special care and handling.

1. Class A combustibles.

These include common combustible materials (wood, paper, cloth, rubber, and plastics) that can act as fuel and are found in non-specialized areas such as offices.

To handle Class A combustibles safely:

a. Dispose of waste daily.
b. Keep trash in metal-lined receptacles with tight-fitting covers (metal wastebaskets that are emptied every day do not need to be covered).
c. Keep work areas clean and free of fuel paths that could allow a fire to spread.
d. Keep combustibles away from accidental ignition sources, such as hot plates, soldering irons, or other heat- or spark-producing devices.
e. Store paper stock in metal cabinets.
f. Store rags in metal bins with self-closing lids.
g. Do not order excessive amounts of combustibles.
h. Make frequent inspections to anticipate fires before they start.

Water, multi-purpose dry chemical (ABC), and halon 1211 are approved fire extinguishing agents for Class A combustibles.

2. Class B combustibles.

These include flammable and combustible liquids (oils, greases, tars, oil-based paints, and lacquers), flammable gases, and flammable aerosols.

To handle Class B combustibles safely:

a. Use only approved pumps, taking suction from the top, to dispense liquids from tanks, drums, barrels, or similar containers (or use approved self-closing valves or faucets).
b. Do not dispense Class B flammable liquids into containers unless the nozzle and container are electrically interconnected by contact or by a bonding wire. Either the tank or container must be grounded.
c. Store, handle, and use Class B combustibles only in approved locations where vapors are prevented from reaching ignition sources such as heating or electric equipment, open flames, or mechanical or electric sparks.
d. Do not use a flammable liquid as a cleaning agent inside a building (the only exception is in a closed machine approved for cleaning with flammable liquids).
e. Do not use, handle, or store Class B combustibles near exits, stairs, or any other areas normally used as exits.
f. Do not weld, cut, grind, or use unsafe electrical appliances or equipment near Class B combustibles.
g. Do not generate heat, allow an open flame, or smoke near Class B combustibles.
h. Know the location of and how to use the nearest portable fire extinguisher rated for Class B fire.

Water should not be used to extinguish Class B fires caused by flammable liquids. Water can cause the burning liquid to spread, making the fire worse. To extinguish

a fire caused by flammable liquids, exclude the air around the burning liquid. The following fire-extinguishing agents are approved for Class B combustibles: carbon dioxide, multi-purpose dry chemical (ABC), halon 1301, and halon 1211. (**NOTE:** Halon has been determined to be an ozone-depleting substance and is no longer being manufactured. Existing systems using halon can be kept in place.)

F. Smoking

Smoking is prohibited in all ***Company Name*** buildings. Certain outdoor areas may also be designated as no smoking areas. The areas in which smoking is prohibited outdoors are identified by NO SMOKING signs.

VI. TRAINING

Position or Responsible Person(s) shall present basic fire prevention training to all employees upon employment, and shall maintain documentation of the training, which includes:

A. review of 29 CFR 1910.38, including how it can be accessed;
B. this Fire Prevention Plan, including how it can be accessed;
C. good housekeeping practices;
D. proper response and notification in the event of a fire;
E. instruction on the use of portable fire extinguishers (as determined by company policy in the Emergency Action Plan); and
F. recognition of potential fire hazards.

Supervisors shall train employees about the fire hazards associated with the specific materials and processes to which they are exposed, and will maintain documentation of the training. Employees will receive this training:

A. at their initial assignment;
B. annually; and
C. when changes in work processes necessitate additional training.

VII. PROGRAM REVIEW

Position or Responsible Person(s) shall review this Fire Prevention Plan at least annually for necessary changes.

Appendix B

Facility:_____ Date:_____

Completed by:_____

Location	Hazard	Controls	Responsible

Appendix C

Company Name Here

Flammable and Combustible Material Checklist Pg. 1 of 2

Use this checklist to evaluate ***Company Name's*** compliance with OSHA's standards on flammable and combustible materials:

□Yes □No Are combustible scrap, debris, and waste materials such as oily rags stored in covered metal receptacles and removed from the worksite daily?

□Yes □No Are UL approved containers and tanks used for the storage and handling of flammable and combustible liquids?

□Yes □No Are all connections on drums and combustible liquid piping vapor and liquid tight?

□Yes □No Are all flammable liquids kept in closed containers when not in use?

□Yes □No Are metal drums of flammable liquids electrically grounded during dispensing?

□Yes □No Do storage rooms for flammable and combustible liquids have appropriate ventilation systems?

□Yes □No Are NO SMOKING signs posted on liquefied petroleum gas tanks?

□Yes □No Are all solvent wastes and flammable liquids kept in fire-resistant covered containers until they are removed from the worksite?

□Yes □No Is vacuuming used whenever possible rather than blowing or sweeping combustible dust?

□Yes □No Are fuel gas cylinders and oxygen cylinders separated by distances or fire-resistant barriers while in storage?

□Yes □No Are fire extinguishers appropriate for the materials in the areas where they are mounted?*

□Yes □No Are appropriate fire extinguishers mounted within 75 feet of outside areas containing flammable liquids and within 10 feet of any inside storage area for such materials?*

□Yes □No Are extinguishers free from obstruction or blockage?*

□Yes □No Are all extinguishers serviced, maintained, and tagged at least once a year?*

□Yes □No Are all extinguishers fully charged and in their designated places?*

Company Name Here_____

Flammable and Combustible Material Checklist Pg. 2 of 2

□Yes □No Where sprinkler systems are permanently installed, are the nozzle heads directed or arranged so that water will not be sprayed into operating electrical switchboards and equipment?

□Yes □No Are NO SMOKING signs posted in areas where flammable or combustible materials are used or stored?

□Yes □No Are safety cans utilized for dispensing flammable or combustible liquids at the point of use?

□Yes □No Are all spills of flammable or combustible liquids cleaned up promptly?

□Yes □No Are storage tanks adequately vented to prevent the development of an excessive vacuum or pressure that could result from filling, emptying, or temperature changes?

*(NOTE: Use of fire extinguishers is based on company policy regarding employee fire fighting in your Emergency Action Plan and local fire code.)

Completed by:_____ Date:_____

Appendix C

Issue Date_____ Permit # _____

Welding and Torch Cutting Permit Pg. 1of 2

Building/ Area:	Date:
Department:	Floor/Level

Description of Work to be done:

Time Started:	Time Complete:
Employee to be doing “Hot Work”:	Fire Watch Employee:

Cutting and Welding Safety Checklist

- Hot Work permit posted on site.(1 Copy)
- Equipment and hoses free from damage and leaks. Cylinders supported.
- Work area clear of all combustibles within a radius of **35’**. Cover holes and openings with fire retardant materials.
- Conveyors and suction systems in the area must be shut down.
- Area wet down except when arc welding.
- Lower areas wet down thoroughly.

During Cutting and Welding

- Fire Watch has fire-fighting equipment and is train on its use.
- Fire watch knows fire notification procedures.

After Cutting and Welding

- Area wet down thoroughly.
- Equipment stored properly.
- Fire watch is posted on site for 30 minutes after cutting and welding is done.
- File permit with Safety manager.

Permit Issued by_____ Date_____

Supervisor to Complete Part 2 of 2 Issue Date_____ Permit # _____

Welding and Torch Cutting Permit Pg. 2 of 2

Supervisor Responsibility

- Verify precautions listed on part 1 of permit.
- Complete parts 1 and 2.
- Issue Part 1 to employee doing hot work and post on site and retain part 2.
- After watch is complete, verify area is safe and retain Part 1 and attach together.

Job Description:		
Safety Procedures reviewed with Welder	Y	N
Safety Procedures reviewed with Fire Watch	Y	N

Comments:

Supervisor Sign Off_____Date_____

Work Completed Date_____ Time_____