



Don H. Mahaffey Drilling Co.

FIRE PROTECTION & PREVENTION PLAN



YOUR OSHA COMPLIANCE SOLUTION

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1 INTRODUCTION

Don H. Mahaffey Drilling Co. is committed to protecting employees utilizing a comprehensive fire protection and prevention program that includes a proactive effort directed at recognizing and evaluating fire safety risks and the initiation of appropriate steps to eliminate or reduce these risks. The accompanying Fire Prevention Plan's purpose is to identify and control fire hazard within the workplace.

2 ADMINISTRATORS

2.1 Fire Prevention Plan

Don H. Mahaffey Drilling Co. has designated Ashley Mahaffey Tullius as the administrator for this plan. Ashley Mahaffey Tullius will be responsible for:

- a. Completion of the Fire Prevention Plan;
- b. Selecting and implementing the appropriate fire protection system(s);
- c. Maintaining records pertaining to the plan;
- d. Evaluating the plan; and
- e. Updating the written plan as needed.

2.2 Ignition Source Maintenance

Ashley Mahaffey Tullius is responsible for ignition source management. Methods of ignition source maintenance may include, but are not limited to:

- a. Ensuring the use of suitably-rated electrical equipment;
- b. Ensuring electrical equipment is effectively maintained;
- c. Ensuring electrical equipment is properly grounded; and
- d. Implementation of administrative controls.

2.3 Fuel Source Control

Ashley Mahaffey Tullius is responsible for fuel source control. Methods of fuel source control may include, but are not limited to:

- a. Avoidance of splash filling;
- b. Keeping lids open for the minimum amount of time possible;
- c. Ensuring incompatible materials are separated; and
- d. Minimizing the temperature of liquids being transferred or processed.

3 FIRE PROTECTION

Fire protection refers to measures taken to prevent fire from becoming destructive, reduce the impact of uncontrolled fire and save lives and property. Don H. Mahaffey Drilling Co. may opt to use any combination of the following methods contained within this section as a means of fire protection.

3.1 Fire Detection Systems

3.1.1 Installation and Restoration

- a. All devices and equipment constructed and installed to comply with this program will be approved for the purpose for which they are intended.
- b. All fire detection systems and components will be restored to normal operating condition as promptly as possible after each test or alarm. Spare detection devices and components which are normally destroyed in the process of detecting fires will be available on the premises or from a local supplier in sufficient quantities and locations for prompt restoration of the system.

3.1.2 Maintenance and Testing

- a. All systems will be maintained in an operable condition except during repairs or maintenance.
- b. It will be assured that fire detectors and fire detection systems are tested and adjusted as often as needed to maintain proper reliability and operating condition except that factory calibrated detectors need not be adjusted after installation.
- c. Pneumatic and hydraulic operated detection systems installed after January 1, 1981 will be equipped with supervised systems.
- d. The servicing, maintenance and testing of fire detection systems, including cleaning and necessary sensitivity adjustments, will be performed by a trained person knowledgeable in the operations and functions of the system.
- e. Fire detectors that need to be cleaned of dirt, dust or other particulates in order to be fully operational will be cleaned at regular periodic intervals.

3.1.3 Protection of Fire Detectors

- a. Fire detection equipment installed outdoors or in the presence of corrosive atmospheres will be protected from corrosion. A canopy, hood or other suitable protection for detection equipment requiring protection from the weather will be provided.
- b. Detection equipment will be located or otherwise protected from mechanical or physical impact which might render it inoperable.
- c. Detectors will be supported independently of their attachment to wires or tubing.

3.2 Employee Alarm Systems

3.2.1 The employee alarm system will provide warning for necessary emergency action as called for in the Emergency Action Plan or for reaction time for safe escape of employees from the workplace or the immediate work area, or both.

3.2.2 The employee alarm will be capable of being perceived above ambient noise or light levels by all employees in the affected portions of the workplace. Tactile devices may be used to alert those employees who would not otherwise be able to recognize the audible or visual alarm.

- 3.2.3 The employee alarm will be distinctive and recognizable as a signal to evacuate the work area or to perform actions designated under the Emergency Action Plan.
- 3.2.4 Emergency telephone numbers will be posted near telephones, or employee notice boards, and other conspicuous locations when telephones serve as a means of reporting emergencies. All emergency messages will have priority over all non-emergency messages where a communication system also serves as the employee alarm system.
- 3.2.5 Procedures will be established for sounding emergency alarms.
- 3.2.6 Installation and Restoration
 - a. All devices, components, combinations of devices or systems constructed and installed to comply with this section are approved.
 - b. All employee alarm systems will be restored to normal operating condition as promptly as possible after each test or alarm. Spare alarm devices and components subject to wear or destruction will be available in sufficient quantities and locations for prompt restoration of the system.
- 3.2.7 Maintenance and Testing
 - a. All employee alarms systems will be maintained in operating condition except when undergoing repairs or maintenance.
 - b. A test of the reliability and adequacy of non-supervised employee alarm systems will be made every 2 months. A different actuation device will be used in each test of a multi-actuation device system so that no individual device is used for 2 consecutive tests.
 - c. Power supplies will be maintained and replaced as often as is necessary to assure a fully operational condition. Back-up means of alarm, such as employee runners or telephones, will be provided when systems are out of service.
 - d. Employee alarm circuitry installed after January 1, 1981, which is capable of being supervised, is supervised so that it will provide positive notification to assigned personnel whenever a deficiency exists in the system. All supervised employee alarm systems will be tested at least annually for reliability and adequacy.
 - e. The servicing, maintenance and testing of employee alarms will be done by persons trained in the designed operation and functions necessary for reliable and safe operation of the system.
- 3.2.8 Manually operated actuation devices for use in conjunction with employee alarms will be unobstructed, conspicuous and readily accessible.

3.3 Portable Fire Extinguishers

- 3.3.1 General Requirements
 - a. Portable fire extinguishers will be provided and will be mounted, located and identified so that they are readily accessible to employees without subjecting the employees to possible injury.
 - b. Only approved portable fire extinguishers will be used.

- c. Portable fire extinguishers using carbon tetrachloride or chlorobromomethane extinguishing agents will not be used.
- d. All portable fire extinguishers will be maintained in a fully charged and operable condition and kept in their designated places at all times except during use.
- e. All soldered or riveted shell self-generating soda acid or self-generating foam or gas cartridge water type portable fire extinguishers which are operated by inverting the extinguisher to rupture the cartridge or to initiate an uncontrollable pressure generating chemical reaction to expel the agent will not be used.

3.3.2 Selection and Distribution

- a. Portable fire extinguishers will be provided for employee use and selected and distributed based on the classes of anticipated workplace fires and on the size and degree of hazard which would affect their use.

Type of Fire	Extinguisher
Ordinary materials such as cloth, wood and paper	A
Combustible and flammable liquids like grease, gasoline, oil and oil-based paints	B
Electrical equipment such as appliances, tools or other equipment that is plugged in	C
Flammable metals such a magnesium, titanium, potassium and sodium	D
Vegetable oils, animal oils and fats in cooking appliances	K

- b. Portable fire extinguishers will be distributed for use by employees on Class A fires so that the travel distance for employees to any extinguisher is 75 feet (22.9 m) or less.
- c. Portable fire extinguishers will be distributed for use by employees on Class B fires so that the travel distance from the Class B hazard area to any extinguisher is 50 feet (15.2 m) or less.
- d. Portable fire extinguishers will be distributed for use by employees on Class C hazards on the basis of the appropriate pattern for the existing Class A or Class B hazards.
- e. Portable fire extinguishers or other containers of Class D extinguishing agent will be distributed for use by employees so that the travel distance from the combustible metal working area to any extinguishing agent is 75 feet (22.9 m) or less. Portable fire extinguishers for Class D hazards are required in those combustible metal working areas where combustible metal powders, flakes, shavings or similarly sized products are generated at least once every 2 weeks.

3.3.3 Inspection, Maintenance and Testing

- a. Don H. Mahaffey Drilling Co. is responsible for the inspection, maintenance and testing of all portable fire extinguishers.
- b. Portable fire extinguishers will be visually inspected monthly.

- c. Portable fire extinguishers are subjected to an annual maintenance check. Stored pressure extinguishers do not require an internal examination.
- d. Stored pressure dry chemical extinguishers that require a 12-year hydrostatic test will be emptied and subjected to applicable maintenance procedures every 6 years. Dry chemical extinguishers having non-refillable disposable containers are exempt from this requirement. When recharging or hydrostatic testing is performed, the 6-year requirement begins from that date.
- e. Alternate equivalent protection will be provided when portable fire extinguishers are removed from service for maintenance and recharging.

3.3.4 Hydrostatic Testing

- a. Hydrostatic testing will be performed by trained persons with suitable testing equipment and facilities.
- b. Portable fire extinguishers will be tested at the intervals listed in the table below:

Type of Extinguisher	Test interval (years)
Soda acid (stainless steel shell)	5
Cartridge operated water and/or antifreeze	5
Stored pressure water and/or antifreeze	5
Wetting agent	5
Foam (stainless steel shell)	5
Aqueous Film Forming Foam (AFFF)	5
Loaded stream	5
Dry chemical with stainless steel	5
Carbon dioxide	5
Dry chemical, stored pressure, with mild steel, brazed brass or aluminum shells	12
Dry chemical, cartridge or cylinder operated, with mild steel shells	
Halon 1211	12
Halon 1301	12
Dry powder, cartridge or cylinder operated with mild steel shells	12

Exceptions:

1. *When the unit has been repaired by soldering, welding, brazing or use of patching compounds;*
2. *When the cylinder or shell threads are damaged;*
3. *When there is corrosion that has caused pitting, including corrosion under removable name plate assemblies;*
4. *When the extinguisher has been burned in a fire; or*
5. *When a calcium chloride extinguishing agent has been used in a stainless steel shell.*

- c. In addition to an external visual examination, an internal examination of cylinders and shells to be tested is made prior to the hydrostatic tests.
- d. Portable fire extinguishers will be hydrostatically tested whenever they show new evidence of corrosion or mechanical injury, except under the conditions listed in Section 3.3.4 (b)(1) – (b)(5).
- e. Hydrostatic tests will be performed on extinguisher hose assemblies which are equipped with a shut-off nozzle at the discharge end of the hose. The test interval will be the same as specified for the extinguisher on which the hose is installed.
- f. Carbon dioxide hose assemblies with a shut-off nozzle will be hydrostatically tested at 1,250 psi (8,620 kPa).
- g. Dry chemical and dry powder hose assemblies with a shut-off nozzle will be hydrostatically tested at 300 psi (2,070 kPa).
- h. Hose assemblies passing a hydrostatic test do not require any type of recording or stamping.
- i. Hose assemblies for carbon dioxide extinguishers that require a hydrostatic test will be tested within a protective cage device.
- j. Carbon dioxide extinguishers and nitrogen or carbon dioxide cylinders used with wheeled extinguishers will be tested every 5 years at 5/3 of the service pressure as stamped into the cylinder. Nitrogen cylinders which comply with OSHA Standard 49 CFR 173.34(e)(15) may be hydrostatically tested every 10 years.
- k. All stored pressure and Halon 1211 types of extinguishers will be hydrostatically tested at the factory test pressure not to exceed 2 times the service pressure.
- l. Acceptable self-generating type soda acid and foam extinguishers will be tested at 350 psi (2,410 kPa).
- m. Air or gas pressure will not be used for hydrostatic testing.
- n. Extinguisher shells, cylinders or cartridges which fail a hydrostatic pressure test, or which are not fit for testing, will be removed from service and from the workplace.
 - 1. The equipment for testing compressed gas type cylinders will be of the water jacket type. The equipment will be provided with an expansion indicator which operates with an accuracy within 1% of the total expansion or .1cc (.1mL) of liquid.
 - 2. The equipment for testing non-compressed gas type cylinders will consist of the following:
 - A. A hydrostatic test pump, hand or power operated, capable of producing not less than 150% of the test pressure, which will include appropriate check valves and fittings;
 - B. A flexible connection for attachment to fittings to test through the extinguisher nozzle, test bonnet or hose outlet, as applicable; and
 - C. A protective cage or barrier for personal protection of the tester, designed to provide visual observation of the extinguisher under test.

3.4 Automatic Sprinkler Systems

3.4.1 Design

- a. All automatic sprinkler designs will provide the necessary discharge patterns, densities and water flow characteristics for complete coverage in a particular workplace or zoned subdivision of the workplace.
- b. Only approved equipment and devices will be used in the design and installation of automatic sprinkler systems.

3.4.2 Maintenance

- a. All automatic sprinkler systems installed will be properly maintained.
- b. A main drain flow test will be performed on each system annually. The inspector's test valve will be opened at least every 2 years to assure that the sprinkler system operates properly.

3.4.3 Acceptance Tests

Proper acceptance tests will be conducted on sprinkler systems installed for employee protection after January 1, 1981 and the dates of such tests will be recorded. Acceptance tests will include the following:

- a. Flushing of underground connections;
- b. Hydrostatic tests of piping in system;
- c. Air tests in dry-pipe systems;
- d. Dry-pipe valve operation; and
- e. Test of drainage facilities.

3.4.4 Water Supplies

Every automatic sprinkler system will be provided with at least one automatic water supply capable of providing design water flow for at least 30 minutes. An auxiliary water supply or equivalent protection will be provided when the automatic water supply is out of service, except for systems of 20 or fewer sprinklers.

3.4.5 Hose Connections for Firefighting Use

Hose connections may be attached for firefighting use to wet pipe sprinkler systems provided that the water supply satisfies the combined design demand for sprinkler and standpipes.

3.4.6 Protection of Piping

Automatic sprinkler system piping will be protected against freezing and exterior surface corrosion.

3.4.7 Sprinklers

- a. Only approved sprinklers will be used on systems.
- b. Older style sprinklers will not be used to replace standard sprinklers without a complete engineering review of the altered part of the system.
- c. Sprinklers will be protected from mechanical damage.

3.4.8 Sprinkler Alarms

On all sprinkler alarms having more than 20 sprinklers, a local water flow alarm will be provided which sounds an audible signal on the premises upon water flow through the system equal to the flow from a single sprinkler.

3.5 Fixed Extinguishing Systems

3.5.1 Fixed extinguishing systems components and agents will be designed and approved for use on the specific fire hazards they are expected to control or extinguish.

3.5.2 If, for any reason, a fixed extinguishing system becomes inoperable, employees will be notified and the necessary temporary precautions will be taken to assure their safety until the system is restored to operating order. Any defects or impairments will be properly corrected by trained personnel.

3.5.3 A distinctive alarm or signaling system which complies with Section 3.2 and is capable of being perceived above ambient noise or light levels will be provided on all extinguishing systems in those portions of the workplace covered by the extinguishing system to indicate when the extinguishing system is discharging. Discharge alarms are not required on systems where discharge is immediately recognizable.

3.5.4 Effective safeguards to warn employees against entry into discharge areas where the atmosphere remains hazardous to employee safety or health will be provided.

3.5.5 Warning or caution signs will be posted at the entrance to, and inside of, areas protected by fixed extinguishing systems which use agents in concentrations known to be hazardous to employee safety and health.

3.5.6 Fixed systems will be inspected annually by a person knowledgeable in the design and function of the system to assure that the system is maintained and in good operating condition.

3.5.7 The weight and pressure of refillable containers will be checked at least semi-annually. If the container shows a loss in net content or weight of more than 5%, or a loss in pressure of more than 10%, it will be subjected to maintenance.

3.5.8 Factory charged non-refillable containers which have no means of pressure indication will be weighed at least semi-annually. If a container shows a loss in net weight of more than 5%, it will be replaced.

3.5.9 Inspection and maintenance dates will be recorded on the container, on a tag attached to the container, or in a central location. A record of the last semi-annual check will be maintained until the container is checked again or for the life of the container, whichever is less.

3.5.10 Chlorobromomethane or carbon tetrachloride will not be used as an extinguishing agent where employees may be exposed.

- 3.5.11 Systems installed in the presence of corrosive atmospheres will be constructed of non-corrosive material or otherwise protected against corrosion.
- 3.5.12 Automatic detection equipment will be approved, installed and maintained in accordance with California Code of Regulations, Title 8, Section 6183 (Fire Detection Systems).
- 3.5.13 All systems designed for, and installed in, areas with climatic extremes will operate effectively at the expected extreme temperatures.
- 3.5.14 At least one manual station will be provided for discharge activation of each fixed extinguishing system.
- 3.5.15 Manual operating devices are identified as to the hazard against which they will provide protection.
- 3.5.16 Personal protective equipment needed for immediate rescue of employees trapped in hazardous atmospheres created by an agent discharge will be provided and its use will be required.

4 FIRE PREVENTION

4.1 Accumulation Control Procedures

- 4.1.1 All combustible and flammable materials will be stored:
 - a. Only in appropriate closed containers;
 - b. In appropriate areas that are away from potentially incompatible materials; and
 - c. In minimum amount of quantities as practicable.
- 4.1.2 The storage area will be:
 - a. Well-ventilated;
 - b. Free from open flames and other ignition sources;
 - c. Away from process and/or production areas;
 - d. Labeled with suitable warning signs;
 - e. Supplied with adequate firefighting and spill cleanup equipment; and
 - f. Inspected regularly for any inadequacies such as leaking containers, non-approved equipment or poor ventilation.
- 4.1.3 Safe handling procedures include, but are not limited to:
 - a. Keeping no more than one day's supply of flammable and combustible liquids in the immediate work area;
 - b. Returning any leftover material to storage at the conclusion of each workday; and
 - c. Ensuring that spills are immediately cleaned up procedures recommended by the manufacturer.

- 4.1.4 Combustible waste material will:
- a. Be stored in waste containers that are clearly labeled with their contents;
 - b. Never be poured down sinks or drains;
 - c. Be disposed of through hazardous waste collection and disposal companies; and
 - d. Be disposed of in accordance with local environmental laws.

4.2 Safeguard Maintenance

Regular maintenance of safeguards installed on heat-producing equipment will be conducted by a competent person in order to prevent the accidental ignition of combustible materials. All maintenance will be conducted in accordance with the manufacturer's instructions.

4.3 Major Fire/Fuel Hazards, Ignition Sources and Fire Control

Fire/Fuel Source Hazard	Ignition Source Hazard	Handling/Storage/Control Procedure	Fire Protection System/Equipment
<i>Specific fire or fuel source hazard. (e.g., oily rags, office trash, combustible wastes)</i>	<i>Specific ignition source. (e.g. smoking, electrical equipment, hot work, flame-producing equipment)</i>	<i>Specific control procedure (e.g., hot work permit, ventilation, closed containers, chemical segregation)</i>	<i>Specific system or equipment (e.g., sprinklers, fire extinguishers [types])</i>
Acetylene	Grinding Operations, Torch, Welder(s)	Keep away from all ignition sources. Store in a well-ventilated area. Segregate from oxidizing materials. Cylinder temperatures should not exceed 125° F.	ABC Fire Extinguisher
Argon		Store and use with adequate ventilation. Cylinders should be stored upright with valve protection cap in place and firmly secured to prevent falling or being knocked over. Protect cylinders from physical damage. Do not allow storage area temperature to exceed 125 °F.	
Batteries - Industrial		Store batteries under roof in cool, dry, well-ventilated areas separated from incompatible materials and from activities that may create flames, spark, or heat. Keep away from metallic objects that could bridge the terminals on a battery and create a dangerous short-circuit.	
Combustible Dust		Store in cool, dry location as well as sealed containers. Provided ventilation for containers. Store away from oxidizing agents. Store away from combustible materials.	
Compressed Gases		Store in cool, dry, well-ventilated area of non-combustible construction away from heavily trafficked areas and emergency exits. Keep at temperatures below 125 °F.	

Coolant/Antifreeze	Grinding Operations, Torch, Welder(s)	Add dry absorbent, shovel or sweep up. Place in an appropriate container and seal. Wash all contaminated clothing before reuse. In the event of a large spill, call the emergency telephone number shown on the front of this sheet.	ABC Fire Extinguisher
Diesel		Keep away from all ignition sources. Store in a well-ventilated area. Avoid storing near incompatible materials.	
Gasoline		Keep away from all ignition sources. Store in a well-ventilated area. Avoid storing near incompatible materials.	
Hydraulic Fluid		Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use. Do not store near heat, sparks, flame or strong oxidants.	
Hydraulic Oil		Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use. Do not store near heat, sparks, flame or strong oxidants.	
Industrial Degreaser		Store in a cool, dry place out of direct sunlight. Keep only in the original container. Store in a well-ventilated place. Store away from incompatible materials. Keep away from strong acids and may react with oxidizing agents and corrosive to metals.	
Lubricant Oil		Do not smoke when using this product. Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition.	
Lubricating Grease		Do not store in open or unlabeled containers. Store away from incompatibles.	

Machine Oil	Grinding Operations, Torch, Welder(s)	Keep containers closed when not in use. Do not store in open or unlabeled containers. Store away from strong oxidizing agents and combustible materials. Do not store near heat, sparks, flame or strong oxidants.	ABC Fire Extinguisher
Mineral Spirits		Store in a segregated and approved area. Keep in the original container protected from direct sunlight in a dry, cool and well-ventilated area away from incompatible materials. Do not store in unlabeled containers. Store and use away from heat, sparks, open flame or any other ignition source. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material.	
Oxygen		Keep away from all ignition sources. Store in a well-ventilated area. Separate from acids, alkalis, reducing agents and combustibles. Cylinder temperatures should not exceed 125° F.	
PVC Glue		Store locked up. Keep away from heat, sparks and open flame. Prevent electrostatic charge build-up by using common bonding and grounding techniques. Store in a cool, dry place out of direct sunlight. Store in a well-ventilated place. Store away from incompatible materials.	
Plywood		Keep away from ignition sources. Store in well-ventilated, dry place away from open flame.	
Solvent		Use in a well-ventilated area. Do not use with incompatible substances. Store in a cool, well-ventilated area out of direct sunlight. Eliminate all ignition sources.	

Transmission Fluid	Grinding Operations, Torch, Welder(s)	Store in properly closed containers that are appropriately labeled and in a cool, well-ventilated area. Store away from incompatible materials.	ABC Fire Extinguisher
WD-40		Keep away from all ignition sources. Store in a well-ventilated area. Avoid storing near incompatible materials. Do not store above 120° F or indirect sunlight.	

5 EMPLOYEE INFORMATION AND TRAINING

5.1 Training Topics

All employees will be trained in the following:

- a. The fire hazards to which they are exposed;
- b. The general principles of fire extinguisher use; and
- c. The hazards involved with incipient stage firefighting.

5.2 Fixed Extinguishing Systems

Employees designated to inspect, maintain, operate or repair fixed extinguishing systems will be properly trained and an annual review will be conducted to keep them up to date in the functions they will perform.

5.3 Training Frequency

All employees will receive the required training:

- a. Upon initial assignment to a job;
- b. At least annually thereafter; and
- c. As necessary to ensure employee compliance with this program.

6 DOCUMENTATION AND RECORDKEEPING

6.1 Portable Fire Extinguishers

- 6.1.1 Annual maintenance of all portable fire extinguishers will be recorded and this record retained for 1 year after the last entry or the life of the shell, whichever is less. The record will be available to the Assistant Secretary upon request.
- 6.1.2 Evidence that the required hydrostatic testing of fire extinguishers has been performed at the time intervals shown in the table in Section 3.3.4(b) will be maintained and provided, upon request, to the Assistant Secretary. Such evidence will be in the form of a certification record which includes the date of the test, the signature of the person who performed the test and the serial number, or other identifier, of the fire extinguisher that was tested.
- 6.1.3 Such records will be kept until the extinguisher is hydrostatically retested at the time interval specified in the table in Section 3.3.4(b) or until the extinguisher is taken out of service.

6.2 Training Record Retention

All training records will be maintained for 3 years from the date on which the training occurred.

APPENDIX 1 – DEFINITIONS

Aqueous film forming foam (AFFF) – A fluorinated surfactant with a foam stabilizer which is diluted with water to act as a temporary barrier to exclude air from mixing with the fuel vapor by developing an aqueous film on the fuel surface of some hydrocarbons which is capable of suppressing the generation of fuel vapors.

Automatic fire detection device – A device designed to automatically detect the presence of fire by heat, flame, light, smoke or other products of combustion.

Carbon dioxide – A colorless, odorless, electrically nonconductive inert gas (chemical formula O₂) that is a medium for extinguishing fires by reducing the concentration of oxygen or fuel vapor in the air to the point where combustion is impossible.

Dry chemical – An extinguishing agent composed of very small particles of chemicals such as, but not limited to, sodium bicarbonate, potassium bicarbonate, urea-based potassium bicarbonate, potassium chloride, or monoammonium phosphate supplemented by special treatment to provide resistance to packing and moisture absorption (caking) as well as to provide proper flow capabilities. Dry chemical does not include dry powders.

Dry powder – A compound used to extinguish or control Class D fires.

Extinguisher rating – The numerical rating given to an extinguisher which indicates the extinguishing potential of the unit based on standardized tests developed by Underwriters' Laboratories, Inc.

Fire Extinguishers, Portable – Portable fire extinguishers are classified for use on certain classes of fires and rated for relative extinguishing effectiveness at a temperature of plus 70 degrees Fahrenheit by nationally recognized testing laboratories. This is based upon the classification of fires and the fire-extinguishment potentials as determined by fire tests. The classification and rating system described in this standard is that used by Underwriters' Laboratories, Inc., and Underwriters' Laboratories of Canada and is based on extinguishing preplanned fires of determined size and description as follows:

1. Class A Rating--Wood and excelsior.
2. Class B Rating--Two-inch depth n-heptane fires in square pans.
3. Class C Rating--No fire test. Agent must be a nonconductor of electricity.
4. Class D Rating--Special tests on specific combustible metal fires.

Fires –

- A. Class A. Fires in ordinary combustible materials, such as wood, cloth, paper, rubber, and many plastics.
- B. Class B. Fires in flammable or combustible liquids, gases, greases and similar materials and some rubber and plastic materials.
- C. Class C. Fires which involve energized electrical equipment where the electrical nonconductivity of the extinguishing media is of importance. (When electrical equipment is de-energized, extinguishers for Class A or B fires may be used safely.)
- D. Class D. Fires in combustible metals, such as magnesium, titanium, zirconium, sodium, and potassium.

Fixed Extinguishing System – A permanently installed system that either extinguishes or controls a fire at the location of the system.

Flame resistance – The property of materials, or combinations of component materials, to retard ignition and restrict the spread of flame.

Foam – A stable aggregation of small bubbles which flow freely over a burning liquid surface and form a coherent blanket which seals combustible vapors and thereby extinguishes the fire.

Gaseous Agent – A fire extinguishing agent which is in the gaseous state at normal room temperature and pressure. It has low viscosity, can expand or contract with changes in pressure and temperature, and has the ability to diffuse readily and to distribute itself uniformly throughout an enclosure.

Halon 1211 – A colorless, faintly sweet smelling, electrically nonconductive liquefied gas (chemical formula CBrClF_2) which is a medium for extinguishing fires by inhibiting the chemical chain reaction of fuel and oxygen. It is also known as bromochlorodifluoromethane.

Halon 1301 – A colorless, odorless, electrically nonconductive gas (chemical formula CBrF_3) which is a medium for extinguishing fires by inhibiting the chemical chain reaction of fuel and oxygen. It is also known as bromotrifluoromethane.

Inspection – A visual check of fire protection systems and equipment to ensure that they are in place, charged and ready for use in the event of a fire.

Local application system – A fixed fire suppression system which has a supply of extinguishing agent, with nozzles arranged to automatically discharge extinguishing agent directly on the burning material to extinguish or control a fire.

Maintenance – The performance of services on fire protection equipment and systems to assure that they will perform as expected in the event of a fire. Maintenance differs from inspection in that maintenance requires the checking of internal fittings, devices and agent supplies.

Multipurpose dry chemical – A dry chemical which is approved for use on Class A, Class B and Class C fires.

Pre-discharge employee alarm – An alarm which will sound at a set time prior to actual discharge of an extinguishing system so that employees may evacuate the discharge area prior to system discharge.

Small Hose System – A system of hose ranging in diameter from 5/8-inch to 1 1/2-inch (1.8 cm to 3.8 cm) which is for the use of employees and which provides a means for the control and extinguishment of incipient stage fires.

Sprinkler alarm – An approved device installed so that any water flow from a sprinkler system equal to or greater than that from a single automatic sprinkler will result in an audible alarm signal on the premises.

Sprinkler system – A system of piping designed in accordance with fire protection engineering standards and installed to control or extinguish fires. The system includes an adequate and reliable water supply and a network of specially sized piping and sprinklers which are interconnected. The system also includes a control valve and a device for actuating an alarm when the system is in operation.

Standpipe systems:**A. Class.**

1. Class I. For use by fire departments and those trained in handling heavy fire streams (not less than 2 1/2-inch hose). Class I Service will be capable of furnishing the effective fire streams required during the more advanced stages of fire on the inside of buildings or for exposure fire.
2. Class II. For use primarily by the building occupants until the arrival of the fire department (1 1/2-inch hose). Class II Service will afford a ready means for the control of incipient fires by the occupants of buildings during working hours, and by watchmen and those present during the night time and holidays.
3. Class III. For use by either fire departments and those trained in handling heavy hose streams or by the building occupants. Class III Service will be capable of furnishing the effective fire streams required during the more advanced stages of fire on the inside of buildings as well as providing a ready means for the control of fires by the occupants of the building.

B. Type. Standpipe systems may be of the following types:

1. Wet standpipe system having supply valve open and water pressure maintained at all times.
2. Standpipe system so arranged through the use of approved devices as to admit water to the system automatically by opening a hose valve.
3. Standpipe system arranged to admit water to the system through manual operation of approved remote control devices located at each hose station.
4. Dry standpipe having no permanent water supply. (Title 24, T8-6150)

Total flooding system – A fixed suppression system which is arranged to automatically discharge a predetermined concentration of agent into an enclosed space for the purpose of fire extinguishment or control.