

NFPA

513

# MOTOR FREIGHT TERMINALS 1978



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**NATIONAL FIRE PROTECTION ASSOCIATION**

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**See Official NFPA Definitions at the back of this pamphlet.**

**Standard for**  
**Motor Freight Terminals**

**NFPA 513 — 1978**

**1978 Edition of NFPA 513**

This document was proposed by the Committee on Motor Vehicle and Highway Fire Protection, and this present edition was adopted by the Association on May 18, 1978, at its Annual Meeting in Anaheim, CA. It was released by the Standards Council for publication on June 6, 1978.

**Origin and Development of NFPA 513**

The first edition of the standard was prepared by the NFPA Committee on Truck Transportation. It was tentatively adopted in 1958 and adopted by the Association as an official NFPA Standard in 1959. In 1967 the Committee was reorganized as the Committee on Motor Vehicle and Highway Fire Protection.

The 1973 edition was a complete revision and reorganization of the 1971 edition. The 1975 edition was a partial revision of the 1973 edition. This edition of the standard is a partial revision of the 1975 edition.

## Committee on Motor Vehicle and Highway Fire Protection

**Wesley L. D. Chisholm, Chairman**  
Liberty Mutual Insurance Company

<b>E. A. Bamford</b> , Factory Mutual Research Corporation	<b>Alfred W. Krulee</b> , Buckeye Fire Equipment Company
<b>Charles E. Boyd</b> , American Petroleum Institute	<b>Lawrence J. Lewis</b> , International Bridge, Tunnel, and Turnpike Assn.
<b>Deputy Chief Dominic Cardillo</b> , Jersey City Fire Department	<b>C. W. "Bill" Nickerson</b> , Fire Marshals Association of North America
<b>Neill Darmstadter</b> , American Trucking Association	<b>George Ralph</b> , Port Authority of New York and New Jersey
<b>A. L. Elliott</b> , Sacramento, California	<b>William J. Ronnan</b> , 12 Melvina, Algonquin, Illinois
<b>Clifford J. Harvison</b> , National Tank Truck Carriers, Incorporated	<b>W. J. Welsh</b> , Munitions Carriers Conference, Incorporated
<b>M. R. Kraus</b> , Fire Equipment Manufacturers Association	<b>Michael P. Wilson</b> , American Insurance Association

### Alternates

<b>Donald Maddock</b> , The Ansul Company (alternate to M. R. Kraus)	<b>W. M. Miller</b> , American Petroleum Institute (alternate to C. E. Boyd)
<b>A. B. Rosenbaum, III</b> , National Tank Truck Carriers, Incorporated (alternate to C. J. Harvison)	

*This list represents the membership at the time the Committee was balloted on the text of this edition. Since that time, changes in the membership may have occurred.*

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**Standard for**  
**Motor Freight Terminals**

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**NOTICE:** An asterisk(\*) following the number or letter designating a paragraph indicates explanatory material on that paragraph in Appendix A.

Information on referenced publications can be found in Appendix B.

## **Chapter 1 General Information**

### **1-1 Application and Scope.**

**1-1.1** This standard contains requirements for the prevention of loss of life and property damage from fires in motor freight terminals.

**1-1.2** This standard applies to the freight transfer areas, offices, employee facilities, and to vehicle maintenance and service areas.

**1-1.3** This standard applies to motor truck terminals handling freight of various types, including ordinary combustible materials and materials classified as hazardous by the U.S. Department of Transportation, except as noted in sections 1-1.4 and 1-1.5.

**1-1.4** Truck transportation of explosives shall be in accordance with the *Code for the Manufacture, Transportation, Storage, and Use of Explosive Materials*, NFPA 495, and the *Standard for Explosives Motor Vehicle Terminals*, NFPA 498.

**1-1.5** This standard does not specifically apply to bulk handling in terminals of liquids, solids and gases. Bulk shipments of flammable and combustible liquids shall comply with the *Flammable and Combustible Liquids Code*, NFPA 30. Bulk shipments of LP-Gas shall comply with the *Standard for the Storage and Handling of Liquefied Petroleum Gases*, NFPA 58.

**1-1.6** This standard does not cover buildings where commodities are left for storage or storage-in-transit, rather than transhipment. See the *Standard for Indoor General Storage*, NFPA 231.

**1-1.7\*** This standard does not cover fire protection for property-carrying motor vehicles.

**1-1.8** Where existing buildings, structures and installations meet the applicable requirements of the edition of this standard in effect at the time of construction or installation, they may be continued in use provided they do not constitute a distinct hazard to life or adjoining property.

## **1-2. Definitions**

**Approved** means acceptable to the authority having jurisdiction over design, equipment, installation or intended use as required by this standard. Devices having been tested and accepted for a specific purpose by a nationally recognized testing laboratory may be deemed to be acceptable.

**Class I Liquid** means a liquid having a flash point below 100° F.

**Hazardous Materials** means all materials listed as such in the *Hazardous Materials Regulations* of the U.S. Department of Transportation. See *Code of Federal Regulations, Title 49, Parts 170-189*.

**Fire Area** means a portion of a building that is separated from other portions by construction with sufficient fire resistance to prevent fire of maximum anticipated severity from entering or leaving the area, and with standard protection at all openings in the surrounding walls, floor and ceiling. See the *Standard for Fire Doors and Windows*, NFPA 80.

**Freight Transfer Area (Freight Platform; Freight Dock)** means the area wherein freight is received, sorted, shipped and held for distribution.

**Motor Freight Terminal** means the area wherein the overall operation of freight transfer, vehicle repair and service, truck parking, and administrative functions are performed. The motor freight terminal may also include facilities for repair of crates, cases, barrels, cartons or damaged goods; a storage area for undelivered freight or damaged goods pending settlement of claims; rest rooms; a dormitory for drivers; locker rooms and meal facilities.

**Office Area** means that part of the motor freight terminal used for administrative and general offices.

**Parking Area** means the lot or areas of the building used to park motor vehicles.

**Vehicle Service Area** means the area wherein vehicles are serviced, including refueling facilities. The area may include a lane in which vehicles are inspected before being dispatched.

**Vehicle Maintenance Area** means the area wherein vehicles are repaired.

## Chapter 2 Construction and Building Arrangement

### 2-1\* Freight Transfer and Administration Buildings.

**2-1.1** If not in separate buildings, freight transfer and office areas shall be cut off from vehicle maintenance and service facilities by walls constructed of noncombustible materials having a fire resistance rating of not less than two hours. The requirement need not apply to small offices 600 sq. ft. or less, located within the vehicle maintenance area.

**2-1.2** Walls required by Section 2-1.1 shall be parapeted at least three feet above the building roof, except that the parapet may be omitted where the wall fits tightly to the underside of a fire-resistive roof deck constructed of noncombustible materials.

**2-1.3** Necessary door and other openings in the walls required by 2-1.1 shall be protected by fire doors having a fire protection rating of not less than  $1\frac{1}{2}$  hours, installed in accordance with the *Standard for Fire Doors and Windows*, NFPA 80.

**2-1.4** Stairways and other vertical shafts shall be enclosed with construction specified in *Standard Types of Building Construction*, NFPA 220, or sealed off at each floor level with construction having the same fire resistance rating as the floor.

**2-1.5\*** Exits and other life safety features of freight transfer and administration buildings and sections of buildings shall comply with the requirements of sections 15-1 and 13-1, respectively, of the *Code for Safety to Life from Fire in Buildings and Structures*, NFPA 101.

**2-1.6** Power-operated doors that are installed in the terminals shall be arranged so that they can be operated manually from the floor in case of power failure.

**2-1.7** The floor of any freight transfer area shall be constructed of noncombustible materials without cracks or openings into which trash or other combustible material can fall. This provision shall not prohibit openings for integral freight handling equipment and appurtenances such as slots for the operation of draglines and platform scales. Any open space beneath the floor shall be enclosed with noncombustible material.

**2-1.8** Rooms for the storage, charging and servicing of batteries shall comply with Article 480, of the *National Electrical Code*, NFPA 70. "No Smoking" signs shall be posted at the entrance.

## **2-2\* Vehicle Maintenance and Service Buildings.**

**2-2.1** Service areas that are not located in separate buildings shall be separated from other terminal operations by walls and fire doors as indicated in Sections 2-1.2 and 2-1.3.

**2-2.2** Maintenance and service area floors shall be constructed of noncombustible material. Floors shall be graded and equipped with drains so as to minimize the possibility that water or fuel will stand on the floor.

**2-2.3** Floor drains shall be provided in areas where vehicles are maintained and serviced. Each floor drain shall be properly trapped and shall discharge through an oil separator to the sewer or outside vented sump.

**2-2.4** Pits and sub-floor work areas shall be constructed of masonry or concrete and floors and piers shall be of suitable non-combustible material.

**2-2.4.1** Pits shall have adequate exits to prevent trapping of personnel in the event of fire. Steps shall be noncombustible and slip proof and constructed with no accessible space underneath.

**2-2.4.2** Ventilation and drainage of pits shall be in accordance with Chapter 5.

**2-2.5\*** Exits from vehicle maintenance and service areas shall comply with the requirements of Section 15-2 of the *Code for Safety to Life from Fire in Buildings and Structures*, NFPA 101.

## **2-3 Employee Facilities.**

**2-3.1** Fire resistance ratings of walls or partitions separating the following rooms from surrounding areas shall be:

Employee locker rooms	1 hr
Recreation rooms	1 hr
Rest rooms	1 hr
Dormitories	2 hrs

**2-3.1.1** Door and other openings in the walls or partitions required by 2-3.1 shall be protected by self-closing fire doors having a fire protection rating of not less than 1 hour, installed in accordance with the *Standard for Fire Doors and Windows*, NFPA 80.

*Exception: Door and other openings in walls or partitions separating dormitories from surrounding areas shall be protected by self-closing fire doors having a fire protection rating of not less than 1½ hours.*

**2-3.2** Fire resistance ratings of floors separating employee locker rooms, recreation rooms, rest rooms, and dormitories from surrounding areas shall be the same as required for walls or partitions in 2-3.1.

**2-3.2.1** Openings in floors between the separated areas shall be enclosed in shafts with enclosing walls or partitions having the same fire resistance ratings as required for the walls or partitions in 2-3.1, except that ducts for heating, ventilating, and air conditioning shall be installed in accordance with the *Standard for the Installation of Air Conditioning and Ventilating Systems*, NFPA 90A.

**2-3.3** Exits and other life safety features of dormitory buildings and dormitory sections of buildings shall comply with the requirements of Section 11-4 of the *Code for Safety to Life from Fire in Buildings and Structures*, NFPA 101.

## Chapter 3 Building Services

### 3-1 Electricity.

**3-1.1** All electrical installations shall be in accordance with the provisions of the *National Electrical Code*, NFPA 70.

**3-1.2** For the purposes of determining the extent of the hazardous area where flammable liquids are stored or handled, Table 3-1.2 shall be used.

### 3-2 Heat.

**3-2.1** Heating equipment shall be installed to conform with the Standards of the National Fire Protection Association as applicable: *Standard for Installation of Air-Conditioning and Ventilating Systems*, NFPA 90A; *Standard for the Installation of Oil Burning Equipment*, NFPA 31; *National Fuel Gas Code*, NFPA 54; *Standard for Chimneys, Fireplaces and Vents*, NFPA 211; *Standard on Incinerators, Waste and Linen Handling Systems and Equipment*, NFPA 82.

**3-2.2** All heating equipment shall be of an approved type designed for the purpose. The use of makeshift or improvised heaters is prohibited.

**3-2.3** Fuels used shall be of the type and quality specified by the manufacturer of the heating appliance. Crankcase drainings shall not be used in oil-fired units.

**3-2.4** Heating equipment may be installed in a special room separated from an area classified as Class I, Division 1 or 2, by walls having a fire-resistive rating of at least one hour and without any openings in the wall within eight feet of the floor into the classified area. This room shall not be used for combustible storage, and all air for combustion purposes shall come from outside the building. In classifying the areas Table 3-1.2 shall be used.

NOTE: The area classifications are defined in Article 500 of the *National Electrical Code*, NFPA 70.

**3-2.5** Heating equipment using gas or oil fuel may be installed in maintenance service areas in which there is no dispensing or transferring of Class I liquids, provided that the bottom of the combustion chamber is at least 18 inches above the floor and the heating equipment is protected from physical damage.

Table 3-1.2

**Electrical Equipment Classified Areas**  
**(Extracted from Flammable and Combustible Liquids Code,**  
**NFPA 30)**

Location	NEC Class I, Group D Division	Extent of Classified Area
<b>UNDERGROUND TANK</b>		
Fill Opening	1	Any pit, box or space below grade level, any part of which is within the Division 1 or 2 classified area.
	2	Up to 18 inches above grade level within a horizontal radius of 10 feet from a loose fill connection and within a horizontal radius of 5 feet from a tight fill connection.
Vent — Discharging Upward	1	Within 3 feet of open end of vent, extending in all directions.
	2	Area between 3 feet and 5 feet of open end of vent, extending in all directions.
<b>DISPENSING UNITS</b> (except overhead type)		
Pits	1	Any pit, box or space below grade level, any part of which is within the Division 1 or 2 classified area.
Dispenser	1	The area within a dispenser enclosure up to 4 feet vertically above the base except that area defined as Division 2. Any area within a nozzle boot.
	2	Areas within a dispenser enclosure above the Division 1 area. Areas within a dispenser enclosure isolated from Division 1 by a solid partition or a solid nozzle boot but not completely surrounded by Division 1 area. Within 18 inches horizontally in all directions from the Division 1 area located within the dispenser enclosure. Within 18 inches horizontally in all directions from the opening of a nozzle boot not isolated by a vapor-tight partition, except that the classified area need not be extended around a 90° or greater corner.

Table 3-1.2 — *continued*

Location	NEC Class I, Group D Division	Extent of Classified Area
Outdoor	2	Up to 18 inches above grade level within 20 feet horizontally of any edge of enclosure.
INDOOR with Mechanical Ventilation	2	Up to 18 inches above grade or floor level within 20 feet horizontally of any edge of enclosure.
with Gravity Ventilation	2	Up to 18 inches above grade or floor level within 25 feet horizontally of any edge of enclosure.
DISPENSING UNITS, OVERHEAD TYPE	1	Within the dispenser enclosure and 18 inches in all directions from the enclosure where not suitably cut off by ceiling or wall. All electrical equipment integral with the dispensing hose or nozzle.
	2	An area extending 2 feet horizontally in all directions beyond the Division 1 area and extending to grade below this classified area.
	2	Up to 18 inches above grade level within 20 feet horizontally measured from a point vertically below the edge of any dispenser enclosure.
REMOTE PUMP — OUTDOOR	1	Any pit, box or space below grade level if any part is within a horizontal distance of 10 feet from any edge of pump.
	2	Within 3 feet of any edge of pump, extending in all directions. Also up to 18 inches above grade level within 10 feet horizontally from any edge of pump.
REMOTE PUMP — INDOOR	1	Entire area within any pit.
	2	Within 5 feet of any edge of pump, extending in all directions. Also up to 3 feet above floor or grade level within 25 feet horizontally from any edge of pump.

Table 3-1.2 — *continued*

Location	NEC Class I, Group D Division	Extent of Classified Area
LUBRICATION OR SERVICE ROOM — with Dispensing	1	Any pit within any unventilated area.
	2	Any pit with ventilation.
	2	Area up to 18 inches above floor or grade level and 3 feet horizontally from a lubrication pit.
Dispenser for Class I Liquids	2	Within 3 feet of any fill or dispensing point, extending in all directions.
LUBRICATION OR SERVICE ROOM — WITHOUT DISPENSING	2	Entire area within any pit used for lubrication or similar services where Class I liquids may be released.
	2	Area up to 18 inches above any such pit, and extending a distance of 3 feet horizontally from any edge of the pit.
SPECIAL ENCLOSURE INSIDE BUILDING PER 7-2.2 of NFPA 30	1	Entire enclosure.
SALES, STORAGE AND REST ROOMS	Non-classified	If there is any opening to these rooms within the extent of a Division 1 area, the entire room shall be classified as Division 1.
VAPOR PROCESSING SYSTEMS PITS	1	Any pit, box or space below grade level, any part of which is within a Division 1 or 2 classified area or which houses any equipment used to transport or process vapors.
VAPOR PROCESSING EQUIPMENT LOCATED WITHIN PROTECTIVE ENCLOSURES (See 7-4.5.7 of NFPA 30)	2	Within any protective enclosure housing vapor processing equipment.

Table 3-1.2 — *continued*

Location	NEC Class I, Group D Division	Extent of Classified Area
VAPOR PROCESSING EQUIPMENT NOT WITHIN PROTECTIVE ENCLOSURES (excluding piping and combustion devices)	2	The space within 18 inches in all directions of equipment containing flammable vapor or liquid extending to grade level. Up to 18 inches above grade level within 10 ft. horizontally of the vapor processing equipment.
EQUIPMENT ENCLOSURES	1	Any area within the enclosure where vapor or liquid is present under normal operating conditions.
	2	The entire area within the enclosure other than Division 1.
VACUUM ASSIST BLOWERS	2	The space within 18 inches in all directions extending to grade level. Up to 18 inches above grade level within 10 feet horizontally.

**3-2.6** Gas or oil heating equipment approved for use in garages may be installed in the maintenance and service areas where Class I liquids are dispensed provided the equipment is installed at least eight feet above the floor.

**3-2.7** Electrical heating equipment shall be installed in accordance with the provisions of 7-5 of the *Flammable and Combustible Liquids Code*, NFPA 30.

### 3-3 Ventilation.

**3-3.1 Vehicle Maintenance and Repair Areas.** All vehicles maintenance and repair areas when in operation shall be continuously ventilated by a ventilating system having positive means for exhausting indoor air at a rate of not less than  $\frac{3}{4}$  cubic foot of air per minute for each square foot of floor area. An approved means shall be provided for introducing an equal amount of outdoor air.

**3-3.2** Mechanical ventilating systems shall be installed in accordance with the *Standard for the Installation of Air-Conditioning and Ventilating Systems*, NFPA 90A. When blower and exhaust systems are installed for vapor removal, the system shall be installed in accordance with the *Standard for Blower and Exhaust Systems*, NFPA 91.

## Chapter 4 Freight Handling Operation

### 4-1 Freight Transfer.

**4-1.1** Aisles shall be provided to keep all portions of the freight handling areas readily accessible for fire fighting and to minimize the spread of fire.

**4-1.2\*** Freight classified as a hazardous material by the regulations of the U.S. Department of Transportation shall be handled in accordance with the *Code of Federal Regulations, Title 49, Chapter I, Parts 170-179*.

**4-1.3\*** Combustible contents shall not be piled in contact with columns that are not of fire-resistive construction.

**4-1.4** In sprinklered buildings, at least 18 inches clearance between sprinkler deflectors and top of storage shall be maintained. In non sprinklered buildings at least 36 inches shall be maintained between the top of the storage and underside of the roof or ceiling in order to allow sufficient space for effective use of hose streams.

**4-1.5\*** Clearance shall be maintained between heat-producing appliances and combustible stock in accordance with the *Manual on Clearances for Heat Producing Appliances*, NFPA 89M. Adequate clearance shall be maintained between incandescent lamps and combustible stock.

**4-1.6** A clearance of 24 inches shall be maintained around the path of travel of fire doors.

*Exception: If a barricade is provided, no clearance is needed.*

**4-1.7** Commodities shall not be stored within 36 inches of a fire door opening.

### 4-2 Mechanical Handling Equipment.

**4-2.1** Power-operated industrial trucks shall be of a type designated in Chapter 1 of the *Fire Safety Standard for Powered Industrial Trucks Including Type Designations, Areas of Use, Maintenance and Operation*, NFPA 505, in accordance with the hazards of the location in which they are used.

**4-2.2** Industrial trucks, powered either by liquid or gaseous fuels, or electricity, shall be inspected and maintained in accordance with Chapters 3 and 4 of the *Fire Safety Standard for Powered Industrial Trucks Including Type Designations, Areas of Use, Maintenance and Operation*, NFPA 505.

### **4-3 Motor Vehicles at Docks.**

**4-3.1\*** Parking of vehicles in terminals shall be in compliance with applicable local, state, and federal regulations.

**4-3.2** Accessibility to terminals and vehicle parking areas for fire fighting purposes shall be provided at all times. Vehicles shall be parked so that they will not block fire department access.

**4-3.3** There shall be an emergency plan in effect for the removal of vehicles from the dock to a safe area to minimize fire exposure and loss, and to assure improved accessibility for the fire fighting equipment.

## Chapter 5 Vehicle Maintenance and Service

### 5-1 General.

**5-1.1** Major maintenance and servicing of motor vehicles shall not be performed on floors below grade level. This requirement shall not prohibit the use of pits.

### 5-2 Spray Painting and Undercoating.

**5-2.1** Spray painting, drying and undercoating shall conform to the *Standard for Spray Finishing Using Flammable and Combustible Materials*, NFPA 33, and to the *Standard for Ovens and Furnaces*, NFPA 86A.

### 5-3\* Inspection and Repair Pits.

**5-3.1** Use of approved portable lights shall be minimized by installation of fixed lighting fixtures of the approved types in all pits in accordance with Article 511 of the *National Electrical Code*, NFPA 70.

*Exception: If gasoline is dispensed, Article 514 of NFPA 70 shall apply.*

**5-3.2** Drainage from inspection or repair pits shall not enter a storm or sanitary sewer system, unless it has passed through a separator to prevent flammable and combustible liquids from entering the sewer.

**5-3.3** Smoking in pits shall be prohibited.

**5-3.4** A scheduled maintenance program for the collection and removal of oil separators and traps shall be initiated to prevent it from being carried into the sewers.

### 5-4 Repair of Fuel Tanks.

**5-4.1** Repair work on fuel tanks of vehicles shall be in accordance with the *Standard Procedures for Cleaning or Safeguarding Small Tanks and Containers*, NFPA 327, and the *Standard for the Storage and Handling of Liquefied Petroleum Gases*, NFPA 58.

**5-4.2** Fuel drained from vehicle tanks and not discarded shall be stored in approved safety cans or returned to standard underground storage tanks.

### **5-5 Parts Cleaning.**

**5-5.1** Solvents, whether in pressurized equipment or at atmospheric pressure, having a flash point of less than 140° F shall not be employed for the cleaning of parts. Adequate ventilation shall be provided.

### **5-6 Welding and Open Flame Operations.**

**5-6.1** All operations involving open flame or electric arcs, including fusion gas and electric welding, shall be restricted to the designated repair area. This provision includes, but is not limited to, fuel tank and radiator repairs. Responsibility for cutting and welding, and related fire prevention precautions shall be in accordance with requirements of the *Standard for Fire Prevention in Use of Cutting and Welding Processes*, NFPA 51B.

**5-6.2** Welding equipment shall conform to Article 630 of the *National Electrical Code*, NFPA 70, and the welding operations shall conform to the *Standard for the Installation and Operation of Oxygen-Fuel Gas Systems for Welding and Cutting*, NFPA 51.

### **5-7 Storage and Handling of Flammable and Combustible Liquids.**

**5-7.1** The storage and handling of flammable and combustible liquids shall be in accordance with the *Flammable and Combustible Liquids Code*, NFPA 30. The storage and handling of liquefied petroleum gas shall be in compliance with the *Standard for the Storage and Handling of Liquefied Petroleum Gases*, NFPA 58.

### **5-8 Fueling of Vehicles.**

**5-8.1\*** Gasoline dispensing units shall be of an approved type and shall be at least 20 feet horizontally from any activity involving fixed sources of ignition.

**5-8.2** Approved dispensing units may be located inside buildings upon specific approval of the authority having jurisdiction. The dispensing area shall be separated from other areas in a manner approved by the authority having jurisdiction. The dispensing area shall be provided with an approved mechanical or gravity ventilation system.

**5-8.3** Class I liquids shall be transferred from tanks by means of fixed pumps designed and equipped to allow control of the flow and prevent leakage or accidental discharge.

**5-8.4** The dispensing unit and its piping, except those attached to containers, shall be mounted on a concrete island or protected against collision damage by suitable means. If located indoors, the dispenser shall also be mounted either on a concrete island or protected against collision damage by suitable means and shall be located in a position where it cannot be struck by a vehicle that is out-of-control descending a ramp or other slope.

**5-8.5** If dispensing of Class I liquids is to be done by a person other than the attendant, the hose nozzle valve shall be a listed automatic-closing type without a hold-open latch.

**5-8.6** One or more clearly identified and easily accessible switches or circuit breakers shall be provided at a location remote from dispensing devices, including remote pumping systems, to shut off the power to all dispensing devices in the event of an emergency. Controls shall not be more than 100 feet from dispensers.

**5-8.7** Operating instructions and "No Smoking" signs shall be conspicuously posted in the dispensing area.

**5-8.8** The storage and handling of flammable and combustible liquids shall be in accordance with the *Flammable and Combustible Liquids Code*, NFPA 30.

**5-8.9** Facilities for filling LP-Gas fuel tanks shall be located outside of any building. For requirements for LP-Gas fueling, see the *Standard for the Storage and Handling of Liquefied Petroleum Gases*, NFPA 58.

## Chapter 6 Fire Protection

### 6-1\* Automatic Sprinklers.

6-1.1 Where automatic sprinklers are provided, they shall be installed in accordance with the *Standard for the Installation of Sprinkler Systems*, NFPA 13.

### 6-2. Portable Fire Extinguishers.

6-2.1 Portable fire extinguishers shall be installed, inspected, maintained and used in accordance with the *Standard for Portable Fire Extinguishers*, NFPA 10.

### 6-3 Standpipes.

6-3.1 Where standpipe and hose systems are provided they shall conform to the *Standard for the Installation of Standpipe and Hose Systems*, NFPA 14.

### 6-4 Alarm Service.

6-4.1\* Where alarm service is provided, it shall be installed in accordance with the appropriate NFPA standard.

### 6-5. Outside Protection.

6-5.1\*. The fire fighting needs of the terminal buildings and the requirements for fighting fires that might involve loaded and un-loaded vehicles shall be considered when determining water supply and hydrant requirements.

6-5.2 Where private underground supply mains and hydrants are necessary, they shall be installed in accordance with the *Standard for Outside Protection*, NFPA 24.

## Appendix A

*This Appendix is not a part of this NFPA Standard 513, but is included for information purposes only.*

**A-1-1.7** Fire protection for property-carrying motor vehicles is the subject of *Standard for Truck Fire Protection*, NFPA 512.

**A-2-1** Freight transfer and administration buildings should be of fire resistive or noncombustible construction as defined in *Standard on Types of Building Construction*, NFPA 200. Consideration should be given to limitation of undivided fire areas in freight transfer facilities.

Factors to be considered when determining maximum sizes of undivided fire areas are: (a) type of fire protection provided; (b) mechanical conveying equipment such as drag-line operations; (c) surveillance of goods to prevent possible theft.

**A-2-1.5** The referenced sections of NFPA 101 include requirements for types and capacity of exits, travel distances to exits, access to exits, exit lighting and signs, protection of vertical openings, interior finish, alarms, and air-conditioning equipment.

**A-2-2** Areas used for repairing and servicing vehicles should be located in separate buildings from the freight transfer building. These buildings should be of fire-resistive or noncombustible construction.

**A-2-2.5** Section 15-2 of NFPA 101 includes requirements for types and capacity of exits, travel distances to exits, access to exits, exit lighting and signs, protection of vertical openings, interior finish and alarms.

**A-4-1.2** Certain commodities have characteristics which cause them to be classified as hazardous materials. These commodities are subject to special regulations governing packaging, storage, and transportation. Failure to abide by these requirements increases the danger of explosion, fire, the release of noxious or toxic fumes, damage to other freight, or other dangerous conditions. Section 177.848 of the Code of Federal Regulations, the Loading and Storage Guide, sets forth those combinations of hazardous materials which may not be loaded or stored together, or with certain other types of freight, in the same vehicle. The Loading and Storage Guide does not prohibit the presence of these combinations of commodities in the same motor freight terminal so long as they are not stored adjacent to each other.

**A-4-1.3** This requirement is necessary to permit water to wet columns during a fire to guard against column failure.