**Section 175.450 Pumps, Dispensers and Other Product Transfer Equipment**

a) Pumps. Petroleum and hazardous substances shall be transferred from tanks by means of fixed pumps designed and equipped to allow control of the flow and to prevent leakage or accidental discharge. Systems that employ continuous air pressure on storage tanks in connection with gauging or venting devices are prohibited.

b) Gravity Flow Prohibitions and Precautions

1) Devices that discharge by gravity are prohibited and were to have been removed by January 1, 1986. The transfer of waste motor oil to or from USTs is not subject to the requirements for transfer by means of fixed pumps. Gravity transfer of waste motor oil is permitted. Gravity devices at motor fuel dispensing facilities, bulk facilities, motor vehicle repair shops and parking garages that are retained for their novelty or historical interest may be retained at the facility, but shall be rendered nonfunctional.

2) Where tanks are at an elevation that produces a gravity head on the dispensing device, the tank outlet shall be equipped with a device, such as a solenoid valve, positioned downstream as close as possible to the tank, installed and adjusted so that liquid cannot flow by gravity from the tank.

c) Siphon Bars. Siphon bars that are used to transfer petroleum and hazardous substances between tanks by means of gravity or negative atmospheric pressure shall be permitted subject to the following requirements:

1) The height of the tops of all tanks connected by the siphon bars shall be within 6 inches of each other;

2) Piping shall meet the requirements of Section 175.420; and

3) Release detection methods for tanks and piping shall be of a type approved for tanks connected by siphon bars, in accordance with Section 175.630.

d) Electrical Equipment and Requirements for Pumps and Dispensers. All pumps and dispensing devices for petroleum and hazardous substances and all connected electrical equipment shall be installed in accordance with Section 175.425. Dispenser discharge nozzles shall be constructed of nonferrous material or equipped with static wire hose.

e) Dispensers. All dispensers shall be required to comply with the following:

1) Under-dispenser Containment. Under-dispenser containment is required pursuant to Section 175.410.

2) Labeling. All dispensing devices used for drawing regulated substances from USTs shall be labeled in a conspicuous place with the name of the product.

3) Size Limits. With the exception of industrial or fleet facilities with no connection to any UST from which regulated products are sold at retail, dispensers shall not be connected, directly or indirectly, to any tank for which the total of all compartments is over 30,000 gallons capacity.

4) Hoses and Reels. Hoses shall be secured to protect them from damage. Mechanical retractable devices are required on dispenser hoses in excess of 18 feet in length. Hose length on mechanical retractors shall not exceed 50 feet without written approval of OSFM. Detection of any of the following conditions indicates permanent damage and shall require that the hose be replaced with the nozzle immediately bagged if any portion of the hose or nozzle is actively leaking:

A) hose cuts, abrasions or cracks in the hose cover that penetrates to the reinforcement;

B) blisters or loose cover;

C) soft spots in the hose, particularly adjacent to the coupling;

D) indication of coupling slippage or irregular coupling alignment; or

E) flattened or kinked hose resulting in permanent deformation.

5) Third-party Listed Latch-open Devices. When dispensing liquids into motor vehicle fuel tanks, dispenser nozzles shall be either manually held open or may be held open by a latch-open device that is an integral part of the listed nozzle assembly. An automatic self-closing type nozzle with a latch hold open device must be installed as an integral part of the listed nozzle assembly.

6) The dispensing nozzle must be an automatic closing type that has been tested and is third party listed for its intended use. Nozzles used to dispense diesel fuel at attended self-service and unattended self-service motor fuel dispensing facilities shall have large-diameter, "leaded" spouts to avoid dispensing diesel fuel into vehicles with gasoline tanks.

7) Prohibition on Unapproved Hold-open Devices. Temporary, portable or removable hold-open devices, including, but not limited to, plastic hooks, wires, wood blocks, gas caps and similar devices, shall not be used on dispenser nozzles. No person shall market, expose for sale, sell or distribute by any means whatsoever, in the State of Illinois, any temporary, portable or readily removable device designed or intended to be used for the purpose of holding open flammable or combustible liquid dispensing nozzles during dispensing operations at motor fuel dispensing facilities.

8) Requirements for a Secondary Means of Control. Any dispensing devices from which the flow of product is normally stopped by means other than by the closure of the nozzle valve shall further comply with either of the following:

A) The system shall be provided with equipment with a feature that causes or requires the closing of the nozzle valve before product flow may be resumed or before the nozzle can be replaced in its normal position in the dispenser; or

B) The nozzle valve latch-open device shall be removed.

9) Flow Shutoff

A) Hose nozzle valves shall be of the type that will close automatically, independent of the latch-open device, upon loss of pressure in the dispensing system. The latch-open device may only be engaged when the dispensing system is under pressure.

B) All dispensing devices shall be equipped with 2 methods of controlling the flow of fuel:

i) deactivation of the dispenser; and

ii) closing of the hand nozzle or some other secondary means to shut off flow.

C) The nozzle must be designed and maintained to cease the flow of product if the nozzle falls to the ground from the fill pipe of the motor vehicle being fueled.

D) A listed emergency breakaway device designed to retain liquid on both sides of the breakaway point shall be installed on each hose. If hoses are attached to a hose-retrieving mechanism, the listed emergency breakaway device shall be installed between the point of attachment of the hose-retrieving mechanism to the hose and the hose nozzle valve.

E) A control shall be provided that will permit the pump to operate only when a dispensing nozzle is removed from its bracket or normal position with respect to the dispensing device, and the switch on the dispensing device is manually activated. This control shall also stop the pump when all nozzles have been returned, either to their brackets or normal nondispensing position.

10) Rebuilt Hose Nozzles. Rebuilt hose nozzles may be used if they are listed for that purpose.

11) Spout Anchor Springs. Nozzles must be equipped with devices (e.g., wire or a spout anchor spring) designed to retain the nozzle spout in the vehicle fill pipe while refueling. These devices must be part of the listed nozzle assembly. The spout anchor spring shall be of the type recommended by the manufacturer of the hose nozzle valve and be installed and maintained in accordance with the manufacturer's recommendations.

12) Shear Valve. Pressurized piping systems require a listed rigidly anchored emergency shutoff (shear) valve installed per manufacturer's specifications in each supply line at the base of each individual dispenser. The valve shall incorporate a fusible link or other thermally activated device, designed to close automatically in the event of severe impact or fire exposure.

A) In addition to being rigidly anchored to structural supports, each shear valve shall also be:

i) Installed so as to align with the dispenser piping to avoid stresses on the connection between the shear valve and the dispenser supply piping;

ii) Installed so that the shearpoint of the valve is within ½ inch plus or minus of grade, with grade being the mounting plane of the dispenser base; and

iii) Installed so that the link arms can freely operate and the valve close without interference.

B) After October 13, 2018, any product piping manifolded beneath a dispenser must be manifolded so that each line connecting to dispenser supply piping is on its own separate shear valve.

i) Manifolding of piping under a dispenser shall not be done above a shear valve.

ii) Piping beneath a dispenser that was manifolded above a shear valve prior to October 13, 2018 may remain in that configuration until the piping is upgraded, provided that any single poppet shear valve beneath the dispenser is replaced with a double poppet shear valve. This shear valve replacement, if indicated, shall be completed by October 13, 2019. On or after May 2, 2023, manifolded piping above a shear valve must be removed upon dispenser replacement.

13) Collision Protection for Dispensers. All fuel dispensers shall be mounted or protected against collision damage by means of islands, posts or an equivalent means.

14) Secure Mounting of Dispensers. Dispensing devices shall be bolted to their mounting surface in accordance with the manufacturer's instructions.

15) Under-dispenser containments shall be factory manufactured and shall comply with the design requirements of Section 175.410(i).

f) Location of Pumps and Dispensers

1) Unless otherwise allowed under this Section or permitted at the time of installation, dispensers and pumps shall be located outside of buildings. Dispenser hoses shall not be able to reach to within 5 feet from any building or window or other building opening, such as a basement, cellar, pit, ventilated soffit or any air intake or exhaust of any building, and must be located to avoid pocketing of vapor or liquid. Dispensers installed after October 1, 1985 shall not be located below grade. A transfer pump is not considered a dispenser and may be located inside a pumphouse or industrial building. Bulk-load outs are not considered dispensing and shall comply with NFPA 30 (see 41 Ill. Adm. Code 174.310).

2) However, buildings used exclusively for fleet dispensing of motor fuels may house dispensers and dispensing equipment for combustible liquids (Class II and III) so long as the buildings and equipment are in compliance with NFPA 30A, NFPA 101, and NFPA 70, incorporated by reference in 41 Ill. Adm. Code 174.210. Such facilities shall also comply with all applicable OSFM administrative rules.

3) Indoor dispensing shall otherwise be allowed only if approved by OSFM in writing prior to November 29, 1993 and if the following requirements are met:

A) For dispensing units existing prior to September 15, 1978:

i) be separated from other areas by 2 hour fire resistive construction;

ii) be provided with a mechanical or gravity ventilation system electrically interlocked with the dispensing units so that the dispensing units cannot be operated, unless the ventilation fan motors are energized and operating. The system shall be upgraded to meet NFPA 30A not later than September 1, 2011; and

iii) have all openings beneath dispenser enclosures sealed to prevent the flow of leaking fuel to lower building spaces.

B) For dispensers existing as of October 1, 1985 and located within repair and parking garages:

i) be not below grade;

ii) be separated from motor vehicle repair areas, pits and basements by 2 hour fire resistive construction;

iii) be protected against physical damage from vehicles by mounting the dispensing unit on a concrete island or by equivalent means;

iv) be located in a position where the dispensers and pumps cannot be struck by an out-of-control vehicle descending a ramp or other slope;

v) be provided with an approved mechanical or gravity ventilation system, that shall be upgraded to meet NFPA 30A by not later than September 1, 2011; and

vi) be provided with a clearly identified emergency stop, readily accessible in case of fire or physical damage to any dispensing units to shut off the power to dispensing units and submersible pumps.

C) Existing dispensing units located below grade in repair and parking garages as of October 1, 1985 shall have independent mechanical ventilation systems and the entire dispensing area shall be protected by an automatic sprinkler system conforming to the requirements of NFPA 13, incorporated by reference in 41 Ill. Adm. Code 174.210. The sprinkler system shall be interconnected to an alarm system conforming to NFPA 72, incorporated by reference in 41 Ill. Adm. Code 174.210, and the sprinkler system shall be a wet system except in unheated areas. Facilities in existence as of September 1, 2011 shall have the option of complying with the Edition of NFPA 72 incorporated by reference in 41 Ill. Adm. Code 174.210 or the NFPA alarm and sprinkler system requirements in effect at the time of their installation.

i) The ventilation systems shall be electrically interlocked with the gasoline dispensing units so that the dispensing units cannot be operated unless the ventilation fan motors are energized and operating, and shall be upgraded to meet NFPA 30A by not later than September 1, 2011.

ii) Existing dispensing units located below grade within buildings shall also comply with subsection (f)(3)(B), as applicable.

4) Curb pumps or pumps located in any portion of a public street are prohibited, except that devices at motor fuel dispensing facilities, bulk facilities, vehicle repair garages and parking garages that are retained for their novelty or historical interest may be retained at the facility if rendered nonfunctional.

5) Dispensing devices at a motor fuel dispensing facility shall be located 10 feet or more from any property lines or buildings, so that all parts of the vehicle being served will be on the premises of the facility or garage.

(Source: Amended at 47 Ill. Reg. 6837, effective May 2, 2023)