

661—221.3(101) Flammable or combustible liquids. The International Fire Code, 2006 edition, published by the ICC, Chapter 34 and references contained therein, and NFPA 30, Flammable and Combustible Liquids Code, 2003 edition and references contained therein, are adopted by reference as the rules for transportation, storage, handling, and use of flammable or combustible liquids. In any case in which a provision of the IFC conflicts with a provision of NFPA 30, the IFC provision shall apply. Any refinery shall comply with the provisions of this rule and with any applicable provisions of 661—Chapter 201.

221.3(1) The IFC, 2006 edition, is adopted with the following amendments:

a. In section 3402.1, amend the following definitions:

(1) Delete the definition of combustible liquid and insert in lieu thereof the following:

COMBUSTIBLE LIQUID. A liquid having a closed cup flash point at or above 100°F (38°C) and below 200°F (93°C). Combustible liquids shall be subdivided as follows:

Class II. Liquids having a closed cup flash point at or above 100°F (38°C) and below 140°F (60°C).

Class IIIA. Liquids having a closed cup flash point at or above 140°F (60°C) and below 200°F (93°C).

The category of combustible liquids does not include compressed gases or cryogenic fluids.

(2) Delete the definition of refinery and insert in lieu thereof the following:

REFINERY. A plant in which flammable or combustible liquids are produced on a commercial scale from crude petroleum, natural gasoline or other sources, or in which flammable or combustible liquids are used to produce on a commercial scale fuels intended for use in motor vehicles, whether or not those fuels are flammable or combustible liquids.

b. Delete section 3403.1 and insert in lieu thereof the following:

3403.1 Electrical. Electrical wiring and equipment shall be installed and maintained in accordance with NFPA 70, National Electrical Code, 2005 edition, published by NFPA.

c. Add the following new sections:

3403.6.12 Each connection to an aboveground tank through which liquid can normally flow shall be provided with an external control valve that is located as close as practical to the shell of the tank. In addition to the control valve or any other normal tank valves, there shall be an emergency internal check valve at each pipe connection to any tank opening below normal liquid level. The emergency internal check valve shall be effectively located inside the tank shell and shall be operable both manually and by an effective heat-activated device that, in case of fire, will automatically close the valve to prevent the flow of liquid from the tank even though the pipelines from the tank are broken.

3403.6.13 Any device dispensing Class I or Class II flammable liquids shall not be constructed or installed less than 100 feet from any existing dwelling unit.

d. Delete section 3404.2.8.12 and insert in lieu thereof the following:

3404.2.8.12 Liquid removal. Means shall be provided to recover liquid from the vault. Where a pump is used to meet this requirement, the pump shall not be permanently installed in the vault. Electric-powered portable pumps shall be suitable for use in Class I, Division 1 locations, as defined in NFPA 70, National Electrical Code, 2005 edition.

e. Delete section 3404.2.8.17 and insert in lieu thereof the following:

3404.2.8.17 Classified area. The interior of a vault containing a tank that stores a Class I liquid shall be designated a Class I, Division 1 location, as defined in NFPA 70, National Electrical Code, 2005 edition.

f. Delete section 3404.2.9.1.1, introductory paragraph, and insert in lieu thereof the following:

3404.2.9.1.1 Required foam fire protection systems. Foam fire protection shall be provided at any refinery and for aboveground tanks, other than pressure tanks operating at or above 1 pound per square inch gauge (psig) (6.89 kPa) when such tank, or group of tanks spaced less than 50 feet (15,240 mm) apart measured shell to shell, has a liquid surface area in excess of 1,500 square feet (139 m²), and is in accordance with any of the following:

g. Delete section 3404.2.9.1.2.1, introductory paragraph, and insert in lieu thereof the following:

3404.2.9.1.2.1 Where foam fire protection is required, it shall be provided in accordance with NFPA 11, 2005 edition, and shall be of a type or types and amount appropriate to suppress fires involving types and amounts of flammable or combustible liquids found on the premises. Where the flammable

or combustible liquid contains more than 10 percent alcohol, the foam shall be alcohol-resistant. Fire-fighting foam shall be stored separately from any area in which flammable or combustible liquids are stored and in an area or areas that will be readily accessible to fire fighters responding to a fire at the facility.

h. Amend the exception to section 3404.2.9.1.2.1 by adding the following new numbered paragraphs:

6. The premises are not a refinery.

7. The premises do not include bulk storage of flammable or combustible liquids.

8. The premises do not contain total storage capacity to store one million gallons or more of flammable or combustible liquids.

i. Delete section 3404.3.1.1 and insert in lieu thereof the following:

3404.3.1.1 Approved containers. Only approved containers and portable tanks shall be used. No flammable or combustible liquid shall be placed into, stored in, or carried in any container other than one which is metal or hard plastic. No flammable or combustible liquid shall be placed into, stored in, or carried in any temporary or disposable container.

221.3(2) Amend NFPA 30, section 4.3.2.3.3, by adding the following new paragraphs:

(10) Each secondary containment tank shall have top-only openings and shall be either a steel double-walled tank or a steel inner tank with an outer containment tank wall constructed in accordance with nationally accepted industry standards, such as those codified by the American Petroleum Institute, the Steel Tank Institute and the American Concrete Institute. Each tank shall be listed by an independent testing laboratory.

(11) Each fill opening in a secondary containment tank shall be provided with a spill container that will hold at least 5 gallons.

(12) For any secondary containment tank, interstitial tank space shall be monitored by an approved, continuous, automatic detection system that is capable of detecting liquids, including water. An automatic detection system may be either electronically or mechanically operated.

221.3(3) Plans and plan review fees.

a. The owner of any premises on which flammable or combustible liquids are or will be stored or used is required to submit construction plans to the state fire marshal division, online or by mail as established in rule 661—221.1(101), prior to commencing initial construction of the facility or prior to commencing any construction at an existing facility which includes the addition or replacement of an aboveground flammable or combustible liquid storage tank. The construction plans shall be sealed by a licensed professional engineer if the facility at which the construction will occur is or will be a refinery or if preparation of the plans by a licensed professional engineer is required by another provision of Iowa law.

Construction for which plans are required to be submitted for review shall not commence until approval of the plan has been received from the state fire marshal.

EXCEPTION 1: Submission of construction plans is not required if the total flammable or combustible liquid storage capacity on the premises is or will be 1,100 gallons or less.

EXCEPTION 2: If an SPCC plan has been prepared pursuant to 40 CFR 112 for a facility other than a refinery, a copy of the SPCC plan may be submitted to the state fire marshal in lieu of submission of separate construction plans, provided that the SPCC plan includes all of the elements required to be included in construction plans for the specific facility in this subrule. If the state fire marshal agrees, copies of portions of the SPCC plan may be submitted in lieu of a copy of the complete plan provided that all elements of construction plans which are required for the specific facility by this subrule are included. If an SPCC plan or portions thereof are submitted to the state fire marshal, the person making the submission shall provide any additional information required by the state fire marshal to evaluate compliance with the provisions of this chapter and Iowa Code chapter 101. The copy of the SPCC plan or portions thereof submitted to the state fire marshal shall clearly identify the licensed professional engineer who prepared the plan or shall be accompanied by a letter making this identification.

b. Minimum requirements for plans submitted for review include the following:

(1) Drawings shall show the name of the person, firm or corporation proposing the installation, the location, and the adjacent streets or highways.

(2) In the case of refineries or bulk plants, the drawings shall show, in addition to any applicable features required under subparagraphs (4) and (5), the plot of ground to be utilized and its immediate surroundings on all sides; and a complete layout of buildings, tanks, loading and unloading docks, and heating devices, if any.

(3) In the case of service stations, the drawings shall show, in addition to any applicable features required under subparagraphs (4), (5), and (6), the plot of ground to be utilized; the complete layout of buildings, drives, dispensing equipment, and greasing or washing stalls; and the type and location of any heating device.

(4) In the case of aboveground storage, the drawings shall show the location and capacity of each tank; dimensions of each tank whose capacity exceeds 50,000 gallons; the class of liquid to be stored in each tank; the type of tank supports; the clearances; the type of venting and pressure relief relied upon and the combined capacity of all venting and pressure relief valves on each tank; and the tank control valves and the location of pumps and other facilities by which liquid is filled into or withdrawn from the tanks.

(5) In the case of underground storage, the drawings shall show the location and capacity of each tank; the class of liquids to be stored; and the location of fill, gauge, vent pipes, openings and clearances.

(6) In the case of an installation for storage, handling or use of flammable or combustible liquids within buildings or enclosures at any establishment or occupancy covered in this chapter, the drawing shall be in detail sufficient to show whether applicable requirements are to be met.

c. Fees for plan reviews shall apply as follows:

(1) \$100 plus \$25 for each new or replacement tank included in the plan, for any site or facility at which flammable or combustible liquids are or will be stored, except for new construction of a refinery.

(2) \$500 for review of the initial construction plans of a refinery if the projected construction costs are \$100,000,000 or less and \$1,000 for the initial construction plans for a refinery if the projected construction costs are greater than \$100,000,000.

(3) The owner shall submit payment of plan review fees electronically or in the form of a check, money order, or warrant payable to the Iowa State Fire Marshal Division as established in rule 661—221.1(101). Payment shall not be made in cash.

d. Plan review fees shall be refunded to the submitter if the plan review has not been completed and the submitter has not been notified of approval or disapproval of the plans within 60 days of receipt of the complete plans by the state fire marshal division.

221.3(4) Inspections.

a. Any facility at which flammable or combustible liquids are stored is subject to inspection by any state fire code official during the regular business hours of the facility. If the facility does not operate under regular business hours, a state fire code official shall have access to the facility between 8 a.m. and 4 p.m. on any day which is a business day for the state of Iowa, within four hours of notifying the owner of intent to inspect the facility.

b. Any inspection of a facility pursuant to this subrule conducted by an employee of the state fire marshal division of the department of public safety shall result in an inspection fee of \$100 plus \$25 for each aboveground flammable or combustible liquid storage tank, except that there shall be no fee for an initial inspection or the first reinspection after an initial inspection that is conducted pursuant to the receipt of a complaint alleging that the facility is in violation of any provision of this chapter, 661—Chapter 224 or Iowa Code chapter 101. The owner shall submit payment of inspection fees electronically or in the form of a check, money order, or warrant payable to the Iowa State Fire Marshal Division as established in rule 661—221.1(101). Payment shall not be made in cash.

c. Inspections may be initiated by the inspecting official at random or on any other basis; may be conducted at the request of the owner, operator, or manager of a facility; or may be conducted to investigate allegations made in a complaint. Such a complaint shall be in writing and submitted as established in rule 661—221.1(101) and shall specify the location and nature of the alleged violations.

The complainant may or may not be identified. Complainants who identify themselves may request to be notified of the outcome of the inspection conducted in response to the complaint.
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