

and all piping, pumps, hoses and meters connected thereto have been completely drained and flushed.

*Exception: When approved by the Enforcing Agency, the procedures prescribed in API (API-RP-2003) Recommended Practices 2003 entitled: Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents may be used for changing tank contents.*

**3406.5.1.12 Loading racks.** Where provided, loading racks, stairs or platforms shall be constructed of noncombustible materials. Buildings for pumps or for shelter of loading personnel are allowed to be part of the loading rack. Wiring and electrical equipment located within 25 feet (7620 mm) of any portion of the loading rack shall be in accordance with Section 3403.1.1.

**3406.5.1.13 Transfer apparatus.** Bulk and process transfer apparatus shall be of an approved type.

**3406.5.1.14 Inside buildings.** Tank vehicles and tank cars shall not be located inside a building while transferring Class I, II or IIIA liquids, unless approved by the fire code official.

*Exception:* Tank vehicles are allowed under weather protection canopies and canopies of automobile motor vehicle fuel-dispensing stations.

**3406.5.1.15 Tank vehicle and tank car certification.** Certification shall be maintained for tank vehicles and tank cars in accordance with DOTn 49 CFR, Parts 100-178.

**3406.5.1.16 Tank vehicle and tank car stability.** Tank vehicles and tank cars shall be stabilized against movement during loading and unloading in accordance with Sections 3406.5.1.16.1 through 3406.5.1.16.3.

**3406.5.1.16.1 Tank vehicles.** When the vehicle is parked for loading or unloading, the cargo trailer portion of the tank vehicle shall be secured in a manner that will prevent unintentional movement.

**3406.5.1.16.2 Chock blocks.** At least two chock blocks not less than 5 inches by 5 inches by 12 inches (127 mm by 127 mm by 305 mm) in size and dished to fit the contour of the tires shall be used during transfer operations of tank vehicles.

**3406.5.1.16.3 Tank cars.** Brakes shall be set and the wheels shall be blocked to prevent rolling.

**3406.5.1.17 Monitoring.** Transfer operations shall be monitored by an approved monitoring system or by an attendant. When monitoring is by an attendant, the operator or other competent person shall be present at all times.

**3406.5.1.18 Security.** Transfer operations shall be surrounded by a noncombustible fence not less than 5 feet (1524 mm) in height. Tank vehicles and tank cars shall not be loaded or unloaded unless such vehicles are entirely within the fenced area.

**Exceptions:**

1. Motor fuel-dispensing facilities complying with Chapter 22.
2. Installations where adequate public safety exists because of isolation, natural barriers or other factors as determined appropriate by the fire code official.
3. Facilities or properties that are entirely enclosed or protected from entry.

**3406.5.2 Bulk transfer.** Bulk transfer shall be in accordance with Sections 3406.5.1 and 3406.5.2.1.

**3406.5.2.1 Vehicle motor.** Motors of tank vehicles or tank cars shall be shut off during the making and breaking of hose connections and during the unloading operation.

*Exception:* Where unloading is performed with a pump deriving its power from the tank vehicle motor.

**3406.5.3 Process transfer.** Process transfer shall be in accordance with Section 3406.5.1 and Sections 3406.5.3.1 through 3406.5.3.3.

**3406.5.3.1 Piping, valves, hoses and fittings.** Piping, valves, hoses and fittings which are not a part of the tank vehicle or tank car shall be in accordance with Section 3403.6. Caps or plugs which prevent leakage or spillage shall be provided at all points of connection to transfer piping.

**3406.5.3.1.1 Shutoff valves.** Approved automatically or manually activated shutoff valves shall be provided where the transfer hose connects to the process piping, and on both sides of any exterior fire-resistance-rated wall through which the piping passes. Manual shutoff valves shall be arranged so that they are accessible from grade. Valves shall not be locked in the open position.

**3406.5.3.1.2 Hydrostatic relief.** Hydrostatic pressure-limiting or relief devices shall be provided where pressure buildup in trapped sections of the system could exceed the design pressure of the components of the system.

Devices shall relieve to other portions of the system or to another approved location.

**3406.5.3.1.3 Antisiphon valves.** Antisiphon valves shall be provided when the system design would allow siphonage.

**3406.5.3.2 Vents.** Normal and emergency vents shall be maintained operable at all times.

**3406.5.3.3 Motive power.** Motors of tank vehicles or tank cars shall be shut off during the making and breaking of hose connections and during the unloading operation.

*Exception:* When unloading is performed with a pump deriving its power from the tank vehicle motor.