Ind 8.51 Buildings. (1) GENERAL CONSTRUCTION. Class I and Class II flammable liquids shall not be stored or handled within a building having a basement or pit into which flammable vapors may travel, unless such basement or pit is provided with ventilation designed to prevent the accumulation of flammable vapors therein.

(2) EXITS. Rooms storing flammable liquids or in which flammable liquids are handled by pumps shall have exit facilities arranged to prevent occupants being trapped in the event of fire.

(3) HEATING. Rooms in which Class I or Class II flammable liquids are stored or handled shall be heated only by means not constituting a source of ignition, such as steam or hot water. Rooms containing heating appliances involving sources of ignition shall be located and arranged to prevent entry of flammable vapors.

(4) VENTILATION. Ventilation shall be provided for all rooms, buildings, or enclosures in which Class I or Class II flammable liquids are pumped or dispensed. Design of ventilation systems shall take into account the relatively high specific gravity of the vapors. Ventilation may be provided by adequate openings in outside walls at floor level unobstructed except by louvers or coarse screens. Where natural ventilation is impracticable, mechanical ventilation shall be provided.

Note: National Fire Protection Association No. 91, Standards for the Installation of Blower and Exhaust Systems, provides information on the installation of mechanical exhaust systems.
(This reference is available in the offices of the industrial commission, the secretary of state, and the revisor of statutes.)

(5) FILLING AND EMPTYING CONTAINERS. Containers of Class I or Class II flammable liquids shall not be drawn from or filled within buildings unless provision is made to prevent the accumulation of flammable vapors in hazardous concentrations.

History: Cr. Register, May, 1959, No. 41, eff. 6–1–59.

Ind 8.52 Loading and unloading facilities. (1) TRUCK LOADING RACKS. (a) *Location.* Truck loading racks installed after effective date of these regulations dispensing Class I or Class II flammable liquids shall where practicable be separated from tanks, warehouses, other plant buildings, and nearest line of property that may be built upon by a clear distance of not less than 25 feet, measured from the nearest position of any fill stem. A truck loading rack for Class I or II liquids shall not be erected nearer than 10 feet, measured as aforesaid from any of the aforementioned objects. Buildings for pumps or for shelter of loading personnel may be part of the loading rack.

(b) *Static protection.* The following types of truck loading racks shall be equipped with protection against static sparks during truck filling: Racks dispensing Class I or Class II flammable liquids into open domes of tank trucks which may contain flammable vapors from previous cargoes of Class I or Class II flammable liquids. Protection shall consist of a flexible metallic bond-wire permanently electrically connected to the fill stem or some part of the fill stem piping. The free end of such wire shall be provided with a clamp or similar device for convenient attachment to some metallic part of the cargo tank of the tank truck. The bond-wire connection shall be made prior to opening the dome covers. It shall be maintained in place during the entire filling operation and the dome covers shall be securely closed before the bond-wire is disconnected from the cargo tank.

Note: Drag chains and straps formerly specified for the purpose of eliminating static charges have been shown to be ineffective and their elimination is recommended.

(2) TANK CAR RACKS. Class I and Class II flammable liquids shall not be discharged from or loaded into tank cars unless protection against stray currents has been provided and is used.

(a) Liquids having a flash point below 150° F. shall not be withdrawn from tank cars from bottom outlets, but shall be unloaded through dome (manhole) only.

1. **Exception.** Bottom outlet unloading of fuel oil will be permitted subject to the written approval of the industrial commission.

(b) The use of compressed air to discharge the contents of tank cars shall be prohibited, but this shall not be construed to prevent the use of an approved system employing an inert gas, such as carbon dioxide or nitrogen, as pressure generating medium for this purpose.

(c) Unloading from tank cars into tank trucks or any portable container is prohibited.

(d) 1. Before unloading operations are started and before any connection or contact is made with piping or other unloading equipment, the tank car or other transport shall be electrically bonded in an effective manner.

2. Permanent electrical connection of not less than No. 0 copper cable shall be made between the rails on which the tank cars stand and the piping system used in connection with handling of flammable liquids.

Note: This connection may be accomplished in one of two ways: The rails may be bonded by means of standard rail bonds, and connected to the permanent piping system with No. 0 electric cable connections at each end of the loading or unloading section; or a similar connection may be made between each rail on which cars stand and the permanent piping system.

(3) CONTAINER FILLING FACILITIES. Class I and Class II flammable liquids shall not be run into containers unless the nozzle and container are electrically interconnected. Where the metallic floorplate on which the container stands while filling is electrically connected to the fill stem or where the fill stem is bonded to the container during filling operations by means of a bond-wire, the provisions of this section shall be deemed to have been complied with.

(4) VEHICLE REFUELING AT BULK PLANTS. No motor fuel or special fuel as defined in chapter 78, Wis. Stats., shall be dispensed at any bulk plant directly into the fuel tanks of customers' motor vehicle when such tanks are connected to the carburetor system of such vehicle; except that such vehicles may be serviced by qualified bulk plant personnel through an approved dispensing pump connected with an underground storage tank.

History: Cr. Register, May, 1959, No. 41, eff. 6–1–59; cr. (2) (d), Register, December, 1960, No. 60, eff. 1–1–61; cr. (4), Register, February, 1962, No. 74, eff. 3–1–62; r. and recr. (4), Register, August, 1962, No. 80, eff. 9–1–62.

Ind 8.53 Electrical equipment. All wiring and electrical equipment including motors and electrical switch gear for pumps handling flammable liquids, having a flash point below 100° F. and located within the possible path of vapor travel shall be designed and installed so as not to create an ignition hazard.

Note: The Wisconsin state electrical code provides information on the design and installation of electrical equipment for hazardous locations.

History: Cr. Register, May, 1959, No. 41, eff. 6–1–59.

Ind 8.54 Sources of ignition. Class I or Class II flammable liquids shall not be handled, drawn or dispensed where flammable vapors may reach a source of ignition. Smoking shall be prohibited except in designated localities. "NO SMOKING" signs shall be conspicuously posted where hazard from flammable liquid vapors is normally present.

History: Cr. Register, May, 1959, No. 41, eff. 6–1–59.