**Chapter 54 Ozone Gas-Generating Equipment**

54.1 Scope

54.1.1

Equipment having a maximum ozone-generating capacity of not less than 1/2 lb (0.23 kg) over a 24-hour period shall comply with Chapter 54 unless otherwise permitted by 54.1.2.

54.1.2

Chapter 54 shall not apply to ozone-generating equipment used in one- and two-family dwellings or lodging or rooming house occupancies.

54.2 Location

54.2.1 General

54.2.1.1

Ozone generators shall be located in approved cabinets or ozone generator rooms in accordance with Section 54.2 unless otherwise permitted by 54.2.1.2.

54.2.1.2

Ozone generators within approved pressure vessels located outside of buildings shall not be required to be located in a cabinet or ozone generator room.

54.2.2 Cabinets

54.2.2.1

Ozone cabinets shall be constructed of approved materials compatible with ozone in accordance with nationally recognized standards.

54.2.2.2\*

Cabinets shall display an approved sign stating: OZONE GAS GENERATOR — HIGHLY TOXIC — OXIDIZER.

54.2.2.3

Cabinets shall be braced for seismic activity in accordance with the building code.

54.2.2.4

Cabinets shall be mechanically ventilated in accordance with all of the following:

Not less than six air changes per hour shall be provided.

Exhausted air shall be directed to a treatment system designed to reduce the discharge concentration of the gas to one-half of the immediately dangerous to life and health (IDLH) value at the point of discharge to the atmosphere.

The average velocity of ventilation at makeup air openings with cabinet doors closed shall not be less than 200 ft/min (1.02 m/s).

54.2.3 Ozone Generator Rooms

Ozone generator rooms shall comply with all of the following:

Not less than six air changes per hour shall be provided.

Exhausted air shall be directed to a treatment system designed to reduce the discharge concentration of the gas to one-half of the IDLH value at the point of discharge to the atmosphere, or the ozone generator room shall be equipped with a continuous gas detection system that will shut off the ozone generator and sound a local alarm when concentrations above the permissible exposure limit occur.

Ozone generator rooms shall not normally be occupied, and such rooms shall be kept free of combustible and hazardous material storage.

Room access doors shall display an approved sign stating: OZONE GAS GENERATOR — HIGHLY TOXIC — OXIDIZER.

54.3 Piping, Valves, and Fittings

54.3.1 General

Piping, valves, fittings, and related components used to convey ozone shall be in accordance with Section 54.3.

54.3.2 Secondary Containment

54.3.2.1

Secondary containment, such as double-walled piping or exhausted enclosures, shall be provided for piping, valves, fittings, and related components, unless otherwise permitted by 54.3.2.3.

54.3.2.2

Secondary containment shall be capable of directing a sudden release to an approved treatment system.

Secondary containment shall not be required for welded stainless steel piping and tubing.

54.3.3 Materials

Materials shall be compatible with ozone and shall be rated for the design operating pressures.

54.3.4 Identification

Piping shall be identified: OZONE GAS — HIGHLY TOXIC — OXIDIZER.

54.4 Automatic Shutdown

Ozone generators shall be designed to automatically shut down when any one of the following occurs:

The dissolved ozone concentration in the water being treated is above saturation when measured at the point where the water is exposed to the atmosphere.

The process using generated ozone is shut down.

The ventilation system for the cabinet or ozone generator room fails.

The gas detection system fails.

54.5 Manual Shutdown

Manual shutdown controls shall be provided at the ozone generator and, if in a room, within 10 ft (3 m) of the main exit or exit access door.