

15A NCAC 18C .0404 WATER TREATMENT FACILITIES

(a) Physical Security and Facility Protection. Treatment equipment and chemicals shall be secured against unauthorized access and shall be protected against the weather as follows:

- (1) Structures shall comply with provisions of state and local building codes.
- (2) Drainage shall be provided by floor drain, wall drain, or slope to door.
- (3) Access to the structure shall be a doorway with minimum dimensions of 36 inches wide and 80 inches high. The doorway shall be large enough to accommodate installation or removal of equipment.
- (4) The structure shall have space to facilitate operation and maintenance of treatment equipment, storage of chemicals, required piping and appurtenances, electrical controls, and laboratory testing.

(b) Mixing and Dispersion of Chemicals. Provisions shall be made for mixing and dispersion of chlorine and other chemicals applied to the water. Facilities treating surface water or ground water influenced by surface water shall comply with the disinfection requirements in Rule .2002 of this Subchapter.

(c) Chemical Feed Machines:

- (1) Durable chemical feed machines designed for adjustable accurate control of feed rates shall be installed for application of all chemicals necessary for treatment of the water. Sufficient stand-by units to assure uninterrupted operation of the treatment processes shall be provided. Continuous chemical application shall be protected from electrical circuit interruption that could result in overfeed or underfeed or otherwise interrupt the feed of chemicals.
- (2) Chemical feed lines from the feeders to the points of application shall be of material sized for the design flow rate and corrosion resistant and shall be accessible for cleaning and protected against freezing. The length and the number of bends shall be reduced to a minimum.
- (3) Piping and appurtenances shall be constructed of suitable material for the chemical being added and the specific application.
- (4) A separate feeder shall be used for each chemical applied.

(d) Disinfection Equipment:

- (1) Equipment designed for application of chlorine or some other approved, equally efficient disinfectant shall be provided. Spare units shall be available. The plans and specifications shall describe the equipment.
- (2) Chlorinators shall be installed in tightly constructed, above ground rooms with mechanical ventilation to the outside air. The capacity of exhaust fans shall be sufficient to discharge all air in the rooms every 60 seconds. The fans or their suction ducts shall be located not more than eight inches above floor level. Provisions for entrance of fresh air shall be made. The point of discharge shall be so located as not to contaminate the air in any building or inhabited areas. Electrical switches for operation of fans shall be located outside the chlorinator rooms. Rooms used for storage of chlorine cylinders shall be designed as described in this Subparagraph.

(e) Meters and Gauges. Meters and gauges, including raw and finished water meters, shall be installed to indicate and record water flow entering the treatment facility and water pumped or conducted to the distribution system.

(f) Prevention of Backflow and Backsiphonage. Water treatment facilities shall not have submerged inlets and interconnections whereby non-potable water, water of questionable quality, or other liquids may be siphoned or forced into or otherwise allowed to enter the finished water supply.

(g) Chemical Storage. Separate space for storing at least a 30-day supply of chemicals shall be provided. A separate room or partitioned space shall be provided for storage of dry fluoride chemicals or liquid fluoride chemicals in portable containers.

(h) Laboratory. Space, equipment, and supplies shall be provided for daily chemical and bacteriological tests. A layout of laboratory furniture and equipment shall be included in the plans.

(i) Waste Handling and Disposal:

- (1) Provisions shall be made for disposal of water treatment plant wastes, such as clarification sludge, softening sludge, iron-manganese sludge, filter backwash water, and brines. Untreated waste shall not be returned to the head of the water treatment plant.
- (2) Recycling of supernatant or filtrate from waste treatment facilities treating filter wash water, sedimentation basin sludge, or clarifier basin sludge to the head of the water treatment plant may be allowed if the following conditions are met:
 - (A) The water recycled shall be less than 10 percent by volume of the raw water entering the water treatment plant.

- (B) A permit has been issued by the appropriate regulatory authority for discharge of wastes to sanitary sewer, stream, lagoon or spray irrigation.
- (C) The raw water does not contain excessive algae, finished water taste and odor problems are not encountered, and contaminant levels do not exceed allowable levels as set forth in this Subchapter.

*History Note: Authority G.S. 130A-315; 130A-317; P.L. 93-523;
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