

**R.61-58.7 OPERATION AND MAINTENANCE**

A. Applicability.

This regulation applies to all public water systems, no matter when constructed, and establishes minimum requirements for the operation and maintenance of the system in order to ensure the delivery of safe, potable water to the public. Existing systems may be required to upgrade to comply with regulations 61-58.2, 58.3, or 58.4:

- (1) when no construction permit exists, or;
- (2) when required by the Department as the result of a sanitary survey.

B. General Requirements for Operation and Maintenance of Public Water Systems.

(1) All water systems must be operated and maintained in accordance with their construction and operating permit(s) and any approved modifications.

(2) Each system shall have and maintain up-to-date written Standard Operating Procedures for the operation and maintenance of its system. These procedures shall include but not be limited to:

- (a) detailed instructions for the operation of all major components of the water system, including wells and/or intakes, pumps, chemical feed equipment, etc.
- (b) detailed instructions on starting and stopping any treatment plant;
- (c) preventive maintenance schedules on equipment;
- (d) reporting and public notification requirements;
- (e) water quality monitoring, including frequency of monitoring and sampling and analytical procedures for any monitoring conducted by the water system;
- (f) sample siting plans;
- (g) disinfection requirements for the new construction of, or the repair of, wells, tanks and water lines;
- (h) valve and fire hydrant maintenance;
- (i) distribution system flushing program;
- (j) leak detection and repair program;
- (k) cross connection control program; and,
- (l) safety procedures.

(3) All chemical feed systems that are in operation shall be monitored as often as necessary to ensure proper operation. Documentation must be maintained.

(4) The water from each treatment process shall be sampled and analyzed as often as

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necessary to ensure that the treatment process is functioning properly, but in no case less than once a day. The operator shall maintain a written record of all analyses conducted. These records shall be kept for a minimum of three (3) years. Except where otherwise noted, any analyses conducted for compliance with the monitoring requirements of R.61-58.5, R.61-58.10, R.61-58.11 and R.61-58.13, shall be performed by a laboratory certified by the Department and the records of these analyses kept on file in accordance with the retention schedules outlined in the regulations. All other monitoring conducted for the purpose of process control shall be performed using equipment and methodology acceptable to the Department.

(5) If a combined phosphate or poly-phosphate chemical is used, total phosphate residual monitoring may be conducted once every two weeks in lieu of the daily monitoring as required in R.61-58.7(B)(4).

(6) The operator shall measure the amounts of chemicals used each day and calculate the dosages. The operator shall maintain a written record of all measurements and dosage calculations. These records shall be kept for a minimum of 3 years.

(7) The system shall have immediate access to parts for routine repairs and shall repair any malfunctioning equipment as soon as possible.

(8) Chemical spills shall be cleaned up promptly and disposed of properly. Any chemical spills which are not contained and reach the environment shall be reported to the Department immediately.

(9) Where chlorine gas is used, the following shall apply:

(a) Chlorine gas feed and storage rooms shall be maintained in a reasonably air tight condition. The louvers on the air inlet and on the discharge side of the ventilating fan shall be maintained to ensure proper closure when the fan is not in use. Weather stripping on the door shall be maintained in good condition and no opening shall be allowed to exist between the rooms and other parts of the treatment plant. If a floor drain is provided, a water seal or removable plug must be maintained to prevent escaped gases from exiting through the building sewer.

(b) The doors to the chlorine gas feed and storage rooms shall be kept closed except while being occupied by authorized personnel.

(c) The chlorine gas feed and storage rooms shall be well lighted.

(d) Ammonia shall not be stored in the same room with chlorine gas cylinders or feed equipment.

(e) The ventilating fans for the chlorine gas feed and storage rooms shall work properly at all times, and be manually controlled only. If the fans should ever malfunction, they shall be repaired or replaced promptly.

(f) The vents from the feeders and storage shall be maintained free of any debris.

(g) All cylinders (full and empty) shall be restrained.

(h) The chlorinator room shall be heated to maintain proper temperature for operation.

- (i) There shall be no equipment housed in the chlorine feed room except chlorinators, chlorine cylinders, [weighing scales](#), heater, ventilation fan, light(s), chlorine gas leak detector(s), and chlorinator appurtenances.
  - (j) [Scales for weighing cylinders shall be calibrated yearly and properly maintained.](#)
  - (k) The chlorine feed system shall be operated to ensure continuous feed of chlorine when the plant is operating.
  - (l) A chlorine leak detection and alarm system shall be in service at all times.
  - (m) The public water system shall have an emergency action plan for addressing chlorine leaks.
- (10) Where ammonia gas is used, the following shall apply:
- (a) Ammonia gas feed and storage rooms shall be maintained in a reasonably air tight condition. The louvers on the air inlet and on the discharge side of the ventilating fan shall be maintained to ensure proper closure when the fan is not in use. Weather striping on the door shall be maintained in good condition and no opening shall be allowed to exist between the rooms and other parts of the treatment plant.
  - (b) The doors to the ammonia gas feed and storage rooms shall be kept closed except while occupied by authorized personnel.
  - (c) The ammonia gas feed and storage rooms shall be well lighted.
  - (d) The ventilating fans for the ammonia gas feed and storage rooms shall work properly at all times, and be manually controlled only. If the fans should ever malfunction, they shall be repaired or replaced promptly.
  - (e) Chlorine shall not be stored in the same room with ammonia gas cylinders or feed equipment.
  - (f) The vents from the feeders and storage shall be maintained free of any debris.
  - (g) All cylinders (full and empty) shall be restrained.
  - (h) The ammoniator room shall be heated to maintain proper temperature for operation.
  - (i) There shall be no equipment housed in the [ammonia feed](#) room except ammoniators, ammonia cylinders, [weighing scales](#), heater, ventilation fan, light(s), ammonia gas leak detector(s), and ammoniator appurtenances.
  - (j) [Scales for weighing cylinders shall be calibrated yearly and properly maintained.](#) Where bulk storage tanks are installed a pressure gauge shall be maintained.
  - (k) The ammonia feed system shall be maintained and operated to ensure continuous feed of ammonia when the plant is operating.
  - (l) An ammonia leak detection and alarm system shall be in service at all times.

- (m) The public water system shall have an emergency action plan for addressing ammonia leaks.
- (11) Where fluoride is added to the water the following shall apply:
  - (a) The fluoride content of the water shall be maintained between eight-tenths (.80) and one and two-tenths (1.20) milligrams per liter.
  - (b) Finished water shall be analyzed daily for fluoride content in accordance with methodology specified in Section C(17) of R.61-58.5.
  - (c) Should a public water system cease fluoridating for any reason the Department shall be notified immediately.
  - (d) A public water system which fluoridates must notify their service population and all local dental and public health practices prior to ceasing fluoridation.
- (12) Adequate safety equipment for handling of chemicals used in treatment shall be provided.
- (13) Chemical dosages shall not exceed the maximum dosage specified by the Department.
- (14) All emergency power equipment shall be operated at least once per month under load and records of this operation kept on file with the water system.
- (15) All chemicals and products added to a public water supply as part of the treatment process shall be certified as meeting the specifications of the American National Standard Institute/National Sanitation Foundation Standard 60, Drinking Water Treatment Chemicals - Health Effects. The certifying party shall be accredited by the American National Standards Institute.
- (16) All materials and products installed in a public water system after December 31, 1995, which comes into contact with drinking water during the treatment, storage, transmission or distribution of the water, shall be certified as meeting the specifications of the American National Standard Institute/National Sanitation Foundation Standard 61, Drinking Water System Components - Health Effects. The certifying party shall be accredited by the American National Standards Institute.
- (17) All storage and de-watering facilities for water treatment plant residuals shall be maintained in good operating condition. Equipment shall be cleaned and lubricated according to manufacturer's recommendations and the operation and maintenance manual for the plant. Records shall be kept of maintenance performed. There shall be no bypassing of any treatment process to the environment. The facilities shall be monitored in accordance with any operating permit(s) issued by the Department.
- (18) Security shall be provided and maintained for all intake, treatment, storage and pumping facilities so as to prevent the entrance of unauthorized persons.
- (19) Sampling taps shall be maintained so that representative water samples can be obtained from:
  - (a) each raw water source;
  - (b) appropriate locations throughout the treatment process so that the operator can