**Section 820.340 Operation and Maintenance**

a) Swimming Facility

1) The pool and aquatic features shall be maintained free from sediment, lint, dirt and hair. Cracks and other defects in the pool and aquatic features shall be repaired. The walls, ceilings, floors, equipment and swimming facility proper shall be maintained so that they are protected from deterioration. All equipment shall be maintained in proper condition, with all required components in place. Equipment required to be NSF Standard 50 certified, including filters, skimmers and chemical feeding equipment, shall not be altered or modified in any way.

2) Swimming facility decks shall be rinsed daily. Indoor swimming facility decks shall be disinfected at least weekly. The walks, overflow gutters, counters, lockers, equipment, furniture, interior partitions and walls shall be kept in good repair, clean, and sanitary. No furniture, plants or other furnishings shall be placed within 4 feet of the swimming facility. This area shall be kept free of obstructions such as chairs and baby strollers. The deck shall be kept free of tripping hazards, such as deck surface irregularities, hoses, baby strollers, and maintenance equipment. The deck, walkways and floors shall be free of areas with poor drainage that retain water.

3) Floats or tubes not in use shall be removed from the swimming facility.

4) Starting Platforms. Starting blocks shall not be used for any purpose other than competitive swimming activities. Starting blocks shall be securely anchored when in use but removed or prohibited from use when not being used in conjunction with competitive swimming or training. The maximum height of the platform above the water shall be 30 inches where the water depth is 4 feet or greater and 20 inches when the water depth is less than 4 feet.

5) Safety ropes shall be kept in place except when the swimming facility is being used exclusively for lap swimming or competition.

6) Access to grass areas shall be prevented when bare areas develop, when the grass is not regularly maintained, when debris is allowed to accumulate, or an unsightly condition, offensive odor, or a muddy condition exists.

b) Perimeter Overflow, Suction Outlet Covers and Skimmers. The perimeter overflow systems, suction outlet covers or automatic surface skimmers shall be clean and free of leaves or other debris that would restrict flow. The strainer baskets for skimmers shall be cleaned daily. Broken or missing skimmer weirs shall be replaced. Broken or missing suction outlet covers shall be replaced immediately and installed in accordance with the manufacturer's requirements. The flow through each skimmer shall be adjusted as often as necessary to maintain a vigorous skimming action that will remove all floating matter from the surface of the water. The pool water shall be maintained at an elevation so that effective surface skimming is accomplished. A higher water level may be maintained during official swimming competition. For pools with perimeter overflow systems, adequate surge storage capacity shall be maintained so that flooding of the perimeter overflow system does not occur during periods of peak usage. The flow returning from the pool shall be balanced or valved so that the majority of flow is returned through the perimeter overflow or skimmer system.

c) Inlet Fittings. Inlets shall be checked frequently so that the rate of flow through each inlet establishes a uniform distribution pattern. Inlets in pools with surface skimmers shall be adjusted as necessary to provide vigorous skimming.

d) Bather Preparation Facilities

1) Floors shall be cleaned and disinfected daily.

2) Toilet rooms and fixtures shall be kept clean, free of dirt and debris and in good repair. Floors shall be maintained in a slip-resistant condition. Soap dispensers shall be filled and operable. A supply of toilet paper shall be provided at each toilet at all times.

e) Foot Baths. Foot baths shall be free of dirt, debris and other floating matter and shall be operated by continuously introducing fresh water and discharging used water to waste.

f) Security. Doors or gates in the swimming facility enclosure shall be kept closed and locked when the swimming facility is closed.

g) Bather Loads. The number of persons within a swimming facility enclosure shall not exceed the permissible bather load established by the Department. Additional patrons may be allowed at other recreational features within the swimming facility enclosure, such as sand play areas, turf sun-bathing areas and picnic areas, if additional toilet facilities are provided. However, the number of patrons in swimming facilities or their decks shall not exceed the bather load. The bather load shall be posted at the swimming facility entrance or at a location where it can be seen by all patrons and shall be enforced by the manager/operator.

h) Electrical Systems. Electrical systems shall be maintained in accordance with the National Electrical Code.

i) Diving Equipment. Diving equipment shall be maintained in a safe condition, be securely anchored, and have a slip-resistant surface.

j) Vacuum Cleaners. Vacuum cleaning shall not be conducted when the swimming facility is in use.

k) Operation of Mechanical Equipment

1) Manufacturers' instructions for operation and maintenance of mechanical and electrical equipment, as well as pump performance curves, shall be kept available at the swimming facility. All valves and piping in the equipment room shall be permanently identified as to use and direction of flow. A valve operating procedure shall be provided in the equipment room for each operation (e.g., recirculation, filtration, backwashing).

2) Pumps, filters, disinfectant feeders, flow indicators, gauges, and all related components of the swimming facility water recirculation system shall be kept in continuous operation 24 hours a day. A recirculation and filtration flow rate that will result in a turnover period as specified in Section 820.210 shall be maintained at all times. For wading areas in swimming facilities constructed prior to May 20, 1999 where the specified flow rate cannot be attained without alteration of the recirculation system, a recirculation flow rate that will result in a turnover period of no more than 6 hours shall be maintained in the wading area.

3) Recirculation Pumps. The pump shall not be throttled on the suction side during normal operation except for necessary regulation of flow through main drain piping. Recirculation pumps shall be kept in good repair and condition. The pump discharge or inlet supply line valve shall be adjusted as necessary to maintain the design flow rate.

4) Filtration

A) The filtration flow rate shall not exceed the maximum filtration design flow rate specified by the filter manufacturer for public swimming facility use in accordance with NSF Standard 50. If this rate is not known or has not been determined, the flow rate shall not exceed 15 gallons per minute per square foot of filter area for high-rate sand filters, 3 gallons per minute per square foot for other sand filters, 1.5 gallons per minute per square foot for diatomaceous earth filters, or 0.375 gallons per minute per square foot for cartridge filters. A filtration flow rate of up to 2.0 gallons per minute per square foot may be allowed where continuous feeding of diatomaceous earth is used with a diatomaceous earth filter in accordance with subsection (k)(3)(C)(iii).

B) Sand Filters

i) The filter air release valve shall be opened as necessary, to remove air that collects in the filter, and following each backwash.

ii) The filter shall be backwashed when the design flow rate can no longer be achieved, or when specified by the filter manufacturer, whichever occurs first.

C) Diatomaceous Earth Filters

i) The dosage of diatomaceous earth pre-coat shall be at least 1½ ounces per square foot of element surface area. Pressure diatomaceous earth filters shall be backwashed when the design flow rate can no longer be achieved or when specified by the filter manufacturer, whichever occurs first. Whenever the recirculation pump stops or is shut off, the filter shall be thoroughly backwashed and the elements shall be pre-coated before placing the pump back into operation. Vacuum diatomaceous earth filters shall be washed when the design flow rate can no longer be achieved or when specified by the filter manufacturer, whichever occurs first. Backwashing shall not be performed when the swimming facility is in use.

ii) During the pre-coating operation, either the initial filter effluent shall be recirculated through the filter until the filter effluent is clear, or the initial filter effluent shall be discharged to waste until properly clarified water is produced.

iii) When continuous diatomaceous earth feed is used so that a filter may be operated at a filtration rate higher than would otherwise be allowable, it shall be applied at a rate of ½ to 1½ ounces per square foot of surface area per day, or as needed to extend filter cycles.

D) Cartridge Filters. A clean extra set of filter cartridges shall be available at the swimming facility.

5) Hair and Lint Strainers. Hair and lint strainers shall be cleaned to prevent clogging of the suction line and cavitation. The pump shall be stopped before the strainer is opened to avoid drawing air into the pump and losing the prime. In the case of diatomaceous earth filters, the hair strainer basket shall be cleaned immediately prior to pre-coating the filter.

6) Flow Meters. Flow meters shall be maintained in an accurate operating condition and shall be readable.

7) Vacuum and Pressure Gauges. The lines leading to the gauges shall be bled occasionally to prevent blockage.

8) Gas Chlorinators

A) Gas chlorinators shall be repaired only by a person trained in servicing these units. The manager/operator shall post the telephone numbers of the appropriate emergency personnel to contact in a chlorine gas emergency.

B) Chlorine cylinders shall be stored indoors in the area designed for that purpose and away from a direct source of heat. They shall be chained or strapped to a rigid support to prevent accidental tipping. Cylinders shall not be moved unless the protection cap is secured over the valve. A gas mask that is approved by the National Institute of Occupational Safety and Health (NIOSH) or Mine Safety and Health Administration (MSHA) for use in a chlorine atmosphere shall be kept outside the chlorine room in an unlocked container at all times. The gas mask canister shall be replaced regularly per the manufacturer's recommendations.

C) Chlorinators, gas lines, injectors, vent lines and cylinders shall be checked daily for leaks. In case of a chlorine leak, corrective measures shall be undertaken only by trained persons wearing proper safety equipment. All other persons shall leave the dangerous area until conditions are again safe.

9) Positive Displacement Feeders

A) Positive displacement feeders shall be periodically inspected and serviced.

B) When a chemical feeder is used with calcium hypochlorite solution, to minimize sludge accumulation in the unit, the lowest practicable concentration of solution shall be used, and this concentration shall not exceed 5 percent (about 20 pounds of 65 percent chlorine powder in 50 gallons of water). If liquid chlorine solution is used, the dilution with water is not critical to the operation of the unit. After first thoroughly rinsing with water, a small amount of mild acid solution may be fed through the unit periodically to dissolve sludge accumulations.

10) Safety Vacuum Release System and Safety Vent Pipe. Safety vacuum release systems shall be maintained in operable conditions and in accordance with the manufacturer's requirements. Safety vent pipes and atmospheric vents for gravity drainage systems shall be maintained free of blockages.

l) Chlorinated Cyanurates. The use of chlorinated cyanurates is subject to the following requirements:

1) Superchlorination shall be accomplished by using a chlorine product other than a cyanurate; and

2) When the cyanuric acid level exceeds the maximum permissible limit of 100 p.p.m., 50 percent of the water shall be drained and replenished with potable water until the cyanuric acid concentration is less than 50 p.p.m.

m) pH Adjustment

1) Soda ash or caustic soda may be used to raise the swimming facility water pH.

2) Caustic soda shall be used only in accordance with the manufacturer's instructions. Protective equipment and clothing, including rubber gloves and goggles, shall be available for the handling and using this chemical.

3) Sodium bisulfate, carbon dioxide gas or muriatic acid shall be used to lower swimming facility water pH. Carbon dioxide cylinders shall be securely chained or otherwise restrained in a manner that will prevent tipping.

4) Hydrochloric (muriatic) acid shall be used only in accordance with the manufacturer's instructions. Protective equipment and clothing, including rubber gloves and goggles, shall be available for handling this chemical.

5) The Department shall be consulted if unusual pH problems occur, including corrosion or scaling or wide fluctuations in pH.

n) Algae Control

1) Algae shall be eliminated by superchlorinating to 10 p.p.m. and maintaining this level for several hours. The swimming facility shall not be open for use during this treatment. If this fails to eliminate the algae, the Department shall be consulted for further advice.

2) Treated algae that cling to the floor and sides of the swimming facility shall be brushed loose and removed by the suction cleaner and filtration system.

o) Miscellaneous Chemicals

1) Chemicals shall be kept covered and stored in the original labeled container, away from flammables and heat and in a clean, dry, well-ventilated place that prevents unauthorized access to the chemicals.

2) The chemicals used in controlling the quality of water shall be used only in accordance with the manufacturer's instructions.

3) If polyphosphates are used for sequestering iron, the concentration of polyphosphates shall not exceed 10 p.p.m.

p) Acoustics. If noise is excessive, so that safety instructions cannot be heard, corrective action shall be taken.

q) Slides

1) Water slide equipment shall be maintained in a safe condition and securely anchored.

2) Only one rider at a time shall be allowed to enter a slide, unless the slide is designed by the manufacturer for two or more riders.

3) For water slides and drop slides, if the plunge area is not visible from the top of the slide, a means of communication shall be provided between the attendant at the top and the lifeguard at the bottom.

4) At the entrance to water slides and drop slides, a sign shall be posted at the top of the slide warning all sliders not to proceed down the slide until instructed to do so by the slide attendant.

(Source: Amended at 37 Ill. Reg. 16539, effective October 4, 2013)