Minnesota Department of Health

Proposed Permanent Rules Relating to Pool Operations

4717.0650 POOL OPERATION AND MAINTENANCE; OPERATOR TRAINING.

Subpart 1. **Pool maintenance.** A public pool, pool equipment, and related facilities and equipment must be maintained in a properly operating condition.

Subp. 2. **Responsibility for operation.** A public pool and the related facilities and equipment must be operated and maintained in working condition by a person who is designated as responsible for compliance with parts 4717.0150 to 4717.3975 and ensures that the pool poses no threat to public health or safety. The owner shall be responsible for the operation of the pool and related facilities and compliance with parts 4717.0150 to 4717.3975. Where another person has operational authority under an agreement with the owner, that person also has responsibility for the operation of the pool and related facilities and for compliance with parts 4717.0150 to 4717.3975.

Subp. 3. **Designation of trained operator.** The owner or operator of the pool must designate a trained operator who is responsible for the direct operation of the pool whenever the pool is open for use.

A. The trained operator must be responsible for the daily operation of the pool and ensure that required testing is done and records are maintained. The trained operator, or a designated alternate trained operator, must be able to respond to emergency, unsafe and unsanitary conditions at any time the pool is open for use.

B. The trained operator must assure that other individuals who assist with chemical monitoring and pool equipment operation are trained for those functions.

Subp. 4. **Operations manual.** An operations manual must be available that provides operational information relating to all pool equipment.

Subp. 5. **Operator training.** The owner or operator must ensure that the designated trained operator is trained to operate the pool in compliance with parts 4717.0150 to 4717.3975.

A. The trained operator must be trained in safe chemical handling and the use of protective equipment in addition to pool operation and sanitation described in items B to F.

B. Until January 1, 1997, any operator is eligible for certification through attendance at and successful completion of a pool operator's training course.

C. After January 1, 1997, the trained operator must be certified as successfully completing a pool operator training course as specified in item E.

D. A certified trained operator must successfully complete a training course as specified in item E at least once every five years after January 1, 1997.

E. Acceptable training courses are:

(1) the National Swimming Pool Foundation Certified Pool Operator course;

(2) the National Spa and Pool Institute Tech I and Tech II courses (both required); ~~or~~

(3) the National Recreation and Park Association Aquatic Facility Operator course~~.~~;

(4) the Aquatic Training Institute Certified Pool Technician course; or

(5) the Human Kinetics Starfish Aquatics Institute Aqua Tech course.

F. After January 1, 1997, a copy of the trained operator's training certificate must be posted at the facility whenever the pool is open for use.

4717.1350 POOL FACILITY CAPACITY.

Subpart 1. **Posting pool facility capacity.** The capacity for the pool, determined according to subpart 2, must be posted in the pool enclosure area.

Subp. 2. **Pool user capacity.** User capacity must be determined as specified in this subpart.

A. One person is permitted for each 15 square feet of pool water surface in areas of the pool with five feet or less in water depth.

B. One person is permitted for each 25 square feet of pool water surface in areas of the pool over five feet in water depth.

~~C. Three hundred square feet of pool water surface area must be reserved around each diving board, diving platform, or slide. The area in this item must not be included when computing the user capacity in item B. Ten persons must be included in the user capacity for each diving board, diving platform, and slide.~~

~~D~~ C. Spa pools must be limited to one user for each three linear feet of seating space provided in the spa pool, measured along the front edge of the seats.

4717.1750 POOL WATER CONDITION.

Subpart 1. **Maximum water temperature.** The water temperature in a pool must not be more than 104 degrees Fahrenheit.

Subp. 2. **Test kits.** Each pool must have the testing equipment specified in this subpart:

A. a DPD (Diethyl-P-Phenylene Diamine) test kit to measure the concentration of disinfectant in water, accurate within 0.1 parts per million;

B. a phenol red pH testing kit accurate to the nearest 0.2 pH unit;

C. a test kit to measure alkalinity using the methyl orange or equivalent method; and

D. where cyanuric acid is used, a test kit to test cyanuric acid concentration.

Subp. 3. **Disinfection residual.** When in use, a pool must be continuously disinfected with a chemical that imparts an easily measured, free available residual.

A. When chlorine is used, a free chlorine residual of at least 1.0 parts per million must be maintained throughout the pool.

B. When bromine is used, a bromine residual of at least 2.0 parts per million must be maintained throughout the pool.

C. The disinfectant concentration in an operating pool must not exceed ten parts per million for chlorine and 20 parts per million for bromine.

D. If other halogens are used, residuals of equivalent disinfectant strength must be maintained.

E. If the concentration of combined chlorine residual exceeds 0.5 parts per million, the pool must be superchlorinated or treated to reduce the concentration of the combined chlorine residual to not exceed 0.5 parts per million.

~~F. Where a cyanuric acid compound is used to stabilize chlorine, the concentration of cyanuric acid in the pool must not exceed 100 parts per million.~~

Subp. 4. **Disinfection of spa pools.** The disinfectant residual in a spa pool must be at least 2.0 parts per million for free chlorine and 4.0 parts per million for bromine throughout the pool when in use.

Subp. 5. **pH.** Water in the pool must be maintained with a pH of not less than 7.2 and not more than 7.8.

Subp. 6. **Alkalinity.** The alkalinity of the water in the pool must be at least 50 parts per million.

Subp. 7. **Water clarity.** Whenever the pool is open for use, the pool water must be clear enough so the bottom drain is easily visible.

Subp. 8. **Use of nontoxic chemicals; chemical container security.** Chemicals used to control water quality must not impart toxic properties to the water. All containers used for chemicals must be kept in a secure location, inaccessible to pool users, and properly labeled and stored according to the manufacturer's instructions.

Subp. 9. [See repealer.]

Subp. 10. [See repealer.]

Subp. 11. **Use of cyanuric acid.**

A. Use of cyanuric acid in any new indoor pool is prohibited after the effective date of this rule.

B. Use of cyanuric acid in any existing indoor pool is prohibited two years after the effective date of this rule.

C. Use of cyanuric acid in any pool requires testing and recording of the cyanuric acid level at least once a week.

D. Where cyanuric acid is used to stabilize chlorine, the concentration of cyanuric acid in the pool must not exceed 100 parts per million.

4717.2570 RECIRCULATION EQUIPMENT.

Subpart 1. **General.** Equipment which is part of the installation or alteration of a pool recirculation system must comply with Standard 50 "Circulation System Components for Swimming Pools, Spas or Hot Tubs" of the NSF International.

Subp. 2. **Recirculation system strainers.** The recirculation system must include a strainer to prevent debris such as hair and lint from reaching the pump and filters. The strainer must:

A. be corrosion-resistant;

B. have openings not more than one-eighth inch;

C. provide a free flow area at least four times the area of the pump suction line; and

D. be readily accessible for frequent cleaning.

Subp. 3. **Recirculation system piping.** Recirculation system piping must:

A. carry the recirculation quantity of water required in part 4717.2650 at a velocity not exceeding six feet per second for suction piping, eight feet per second for discharge piping, and three feet per second for gravity flow piping;

B. be nontoxic and corrosion-resistant, and able to withstand operating pressures; and

C. be identified by a label, color code, tag, or other distinguishing marking.

Subp. 4. **Rate-of-flow indicator.** A rate-of-flow indicator, reading in gallons per minute, must be installed and located, preferably on the pool return line, so the rate of recirculation and backwash rate are indicated. The indicator must ~~be capable of reading flows measuring at least 1-1/2 times the design flow rate,~~ be accurate within ten percent of the true flow~~,~~ and be easy to read.

Subp. 5. **Pumps.** Pumps must provide the number of turnovers of pool water specified in part 4717.2560.

If the pump or suction piping is located above the overflow level of the pool, the pump must be self-priming. The pump or pumps must be capable of providing flow to backwash filters.

Under normal conditions, the pump or pumps must supply the recirculation rate of flow specified in part 4717.2560 at a dynamic head of at least 50 feet for pressure filters.

Subp. 6. **Heaters.** Pools equipped with heaters must have a fixed thermometer in the recirculation line to measure the temperature of the water returning to the pool.

Subp. 7. **Valves.** Valves must be provided on the main drain and skimmer lines to permit balancing the recirculation flow.

4717.2595 SKIMMERS.

Subpart 1. **Skimmers.** Skimmers are permitted in lieu of a gutter if the suction outlets induce enough motion to the pool water to remove floating oil and waste from the entire pool surface, and the edge of the pool deck provides a handhold for swimmers.

A. Skimming devices must be built into the pool wall.

B. At least one skimming device must be provided for each 400 square feet of water surface area or fraction thereof.

C. Where two or more skimmers are used, they must not interfere with each other and must ensure skimming of the entire pool surface.

D. The flow through rate must be no less than 30 gallons per minute.

E. Skimmer piping and other components must be designed for a total capacity of at least 80 percent of the required filter flow of the recirculation system.

F. The skimmer weir must automatically adjust and operate freely with continuous action to variations in water level over a range of at least four inches.

(1) The weir must operate at all flow variations.

(2) The weir must be of a buoyancy and design to permit effective skimming velocity.

~~G. Provision must be made to prevent airlock in the skimmer suction line.~~

~~(1) Where an equalizer pipe is used, it must be sized to meet the capacity requirements of the filter and pump and not be less than two inches in diameter. If equalizer lines are not provided on skimmers, the main drain must be sized based on the total recirculation flow. The equalizer pipe must be located at least one foot below the lowest overflow level of the skimmer. It must be provided with a valve or equivalent device that automatically opens when the water level drops below the lowest weir level.~~

~~(2) If any other device, surge tank, or arrangement is used, enough water for pump suction must be assured.~~

~~(3) Equalizer pipe is not required on a pool with an automatic water level control and on spa pools with less than a 1,000 gallon capacity.~~

G. If skimmer equalizer pipes exist, or are constructed, they must include an ASME/ANSI VGB approved suction fitting, or be permanently plugged.

Subp. 2. **Screen.** Skimmers must have an easily removable and cleanable basket or screen through which all overflow water passes to trap large solids.

4717.3450 LIGHTING, VENTILATION, AND ELECTRICAL REQUIREMENTS.

Subpart 1. **Lighting.** Lighting must meet the criteria in this part.

~~A. When underwater lighting is used, not less than 0.5 watts shall be employed per square foot of pool water surface area.~~

~~B~~ A. Light must be located to provide illumination so all portions of the pool, including the bottom, may be seen without glare.

~~C~~ B. Area lighting must provide at least ten footcandles of illumination at all locations on the pool surface and on any deck within five feet of the pool whenever the pool is in use.

~~D~~ C. A pool used for education, training, or competition must have at least 30 footcandles of illumination on the pool surface and on any deck within five feet of the pool.

~~E. Security lighting, when provided, must illuminate the entire pool area to make it readily visible.~~

Subp. 2. **Ventilation.** All indoor pools, dressing rooms, shower rooms, and toilet space must be ventilated by mechanical means.

A. Pool equipment rooms must have natural or mechanical ventilation.

B. For new installations, ventilation must comply with the Minnesota Building Code.

C. Gas chlorine rooms must have mechanical ventilation as specified in part 4717.2630, subpart 2.

Subp. 3. **Electrical.** All electrical installations must conform with the standards of the Board of Electricity effective at the time of installation.

4717.3850 SPA POOLS.

Subpart 1. **Applicability.** Spa pools must comply with parts 4717.0150 to 4717.3975, except as modified in this part.

Subp. 2. **Recirculation rate.** The recirculation system must recirculate a water volume equal to the pool volume in 30 minutes or less, except that a minimum rate of 35 gallons per minute is required.

Subp. 3. **Inlets.** The recirculation system must have at least two remote inlets to the pool.

Subp. 4. **Main drain.** The main drain must consist of:

A. a grate-covered bottom opening at least 100 square inches in size; or

B. a bottom opening with an antivortex cover.

Subp. 5. **Agitation system.** The agitation system must have a separate pump. If sidewall suction fittings are used, at least two inlets, remotely located, must be provided.

Subp. 6. **Timer.** The agitation system must be controlled by a timer with the control switch accessible to pool users but at least five feet from the pool. The maximum time setting must be 15 minutes.

Subp. 7. **Access.** Access to a spa pool must be provided according to this subpart.

A. Access to the pool must be provided by an unobstructed deck, at the pool elevation, which extends at least five feet from the pool around the entire perimeter.

B. Where a deck cannot be provided as specified in item A, a five-foot wide deck at the pool elevation must extend along at least 25 percent of the pool perimeter. The remaining perimeter must be one foot or less to a wall, partition, or other effective barrier to restrict access. The deck must provide complete and unobstructed access to the steps in the pool.

C. Where access is provided by sitting on the edge of a raised pool and swinging the legs into the pool:

(1) the deck requirement in item A or B must be met;

(2) the pool must be no less than 18 inches nor more than 20 inches above the deck;

(3) steps with equal risers and 12-inch minimum treads must be provided outside the pool which line up with the steps inside the pool; and

(4) the pool edge must not exceed 12 inches in width.

Subp. 8. **Steps.** The requirements for steps in this subpart apply to spa pools.

A. Steps for access to an elevated spa pool must have a handrail and a finished surface that meets the requirements for decks in part 4717.3350.

B. Steps within manufactured spa pools may vary from the dimensions in part 4717.3250, subpart 2, if the commissioner determines that the design is safe.

Subp. 9. **Disinfectant.** The disinfection residual must be maintained in accordance with part 4717.1750, subpart 4.

Subp. 10. **Signs.** In addition to the signs required in parts 4717.1050, ~~4717.1250,~~ 4717.1350, and 4717.1650, signs with the warnings in items A to C must be posted and plainly visible in the spa pool area.

A. Pregnant women, small children, or persons with heart disease, diabetes, high blood pressure, or low blood pressure should not enter the spa except under advice of a physician.

B. Avoid use while under the influence of alcohol or drugs.

C. Exposure may result in nausea, dizziness, or fainting. Observe a reasonable time limit.

4717.3970 POOL CLOSURE.

When any of the conditions in items A to E are found, a public pool must be immediately closed to use when so ordered by the commissioner. The owner of the pool or the owner's agent must place a sign at the entrance to the pool indicating that the pool is closed. The pool must remain closed until the condition is corrected and approval to reopen is granted by the commissioner. A pool must be closed when:

A. the units of lifesaving equipment specified in part 4717.1450 are not provided;

B. the water clarity standard specified in part 4717.1750, subpart 7, is not met;

C. the disinfection residual specified in part 4717.1750, subpart 3, item A or B, is not met;

D. the pool has been constructed or physically altered without approval of plans as required by part 4717.0450; or

E. there is any condition that endangers the health or safety of the public.

REPEALER. Minnesota Rules, parts 4717.0310; 4717.1250; 4717.1450, subpart 5; and 4717.1750, subparts 9 and 10, are repealed six months after adoption of this rule.

EFFECTIVE DATE. The amendments to Minnesota Rules, parts 4717.0650 to 4717.3970, are effective six months after adoption.