

Industry Training for 2018 Aquatic Health Regulations

Chapter 1– Glossary, Acronyms
and Initialisms, Definitions





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Training Materials

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New Regulations- General Information

The Nevada Administrative Code Sections 444.010 - 444.546 is being replaced with a 117-page document which is based on the CDC's Model Aquatic Health Code (MAHC). The contents of the MAHC were modified in some places to accommodate the unique needs of aquatic health venues in Clark County.

New Regulations – Implementation and Orientation



The complete set of Aquatic Health Regulations can be found on the SNHD website at www.southernnevadahealthdistrict.org.

Implementation for **new** facilities under construction and orientation for **existing** facilities will begin in August, 2018.

After the one-year orientation period, enforcement of new regulations will begin July 1, 2019.

New Regulations -History

The Nevada Administrative Code Sections 444.010 - 444.546 served as SNHD's governing document to regulate the operation of public bathing places. Due to changes to industry and safety standards, SNHD developed and proposed regulations based on the CDC's Model Aquatic Health Code.

Following more than 3 years of collaboration with industry groups including HOAs, resort representatives, pool companies and other interested parties, the 2018 Aquatic Facility Regulations were approved by the Board of Health in April 2018 and approved by the Nevada State Board of Health on June 8, 2018.

New Regulations - Overview

Chapter 1: Glossary, Acronyms and Initialisms, Definitions

Chapter 2: Facility Design and Construction

Chapter 3: Facility Operation and Maintenance

Chapter 4: Policies and Management

Chapter 5: Compliance and Enforcement

Appendix A: Residential Facility Self-Management Program

This presentation only covers Chapter 1 revisions.

Scope of Training Materials

- This presentation covers major changes from the NAC. Regulations that have not changed may not be mentioned, but are still required. Not all language revisions are included. The complete set of regulations can be found here: www.southernnevadahealthdistrict.org
- Your management has the right to be more strict than the regulations. If the information in this presentation contradicts your operational practices, please see your management for guidance.

1-201 Glossary Terms

“AGITATED WATER” means an AQUATIC VENUE with mechanical means (AQUATIC FEATURES) to discharge, spray, or move the water's surface above and/or below the static water line of the AQUATIC VENUE so people are standing or playing vertically. Where there is no static water line, movement shall be considered above the DECK plane.

“AIR HANDLING SYSTEM” means equipment that brings in outdoor air into a building and removes air from a building for the purpose of introducing air with fewer contaminants and removing air with contaminants created while BATHERS are using AQUATIC VENUES. The system contains components that move and condition the air for temperature, humidity, and pressure control, and transport and distribute the air to prevent condensation, corrosion, and stratification, provide acceptable indoor air quality, and deliver outside air to the breathing zone.

“AQUATIC FEATURE” means an individual component within an AQUATIC VENUE. Examples include SLIDES, structures designed to be climbed or walked across, and structures that create falling or shooting water.

1-201 Glossary Terms

“ATTENDANT” means an employee who monitors and controls the flow of BATHERS at the entrance and exits of aquatic attractions such as WAVE POOLS, LAZY RIVERS, SLIDES and FLUMES.

“AUTOMATED CONTROLLER” means a system of at least one chemical probe, a controller, and auxiliary or integrated component that senses the level of one or more water parameters and provides a signal to other equipment to maintain the parameters within a user-established range.

“AVAILABLE CHLORINE” means the amount of CHLORINE in the +1 OXIDATION state, which is the reactive, oxidized form. In contrast, chloride ion (Cl^-) is in the -1 OXIDATION state, which is the inert, reduced state. AVAILABLE CHLORINE is subdivided into FAC and combined AVAILABLE CHLORINE. POOL chemicals containing AVAILABLE CHLORINE are both oxidizers and DISINFECTANTS. Elemental CHLORINE (Cl_2) is defined as containing 100 percent AVAILABLE CHLORINE. The concentration of AVAILABLE CHLORINE in water is normally reported as PPM “as Cl_2 ”, that is, the concentration is measured on a Cl_2 basis, regardless of the source of the AVAILABLE CHLORINE.

1-201 Glossary Terms

"BACKFLOW" means a hydraulic condition caused by a difference in water pressure that causes an undesirable reversal of the flow as the result of a higher pressure in the system than in its supply.

"BARRIER" means an obstacle intended to prevent direct access from one point to another.

"BATHER COUNT" means the number of BATHERS in an AQUATIC VENUE at any given time.

"BATHER OCCUPANCY" means the total number of BATHERS in an AQUATIC FACILITY ENCLOSURE at any given time both in the water and on the DECK.

1-201 Glossary Terms

“BREAKPOINT CHLORINATION” means the conversion of inorganic CHLORAMINE compounds to nitrogen gas by reaction with FAC. When CHLORINE is added to water containing ammonia (from urine, sweat, or the environment, for example), it initially reacts with the ammonia to form monochloramine. If more CHLORINE is added, monochloramine is converted into DICHLORAMINE, which decomposes into nitrogen gas, hydrochloric acid and CHLORINE. The apparent residual CHLORINE decreases since it is partially reduced to hydrochloric acid. The point at which the drop occurs is referred to as the “breakpoint.” The amount of free CHLORINE that must be added to the water to achieve BREAKPOINT CHLORINATION is approximately ten times the amount of combined CHLORINE in the water. As additional CHLORINE is added, all inorganic combined CHLORINE compounds disappear, resulting in a decrease in eye irritation potential and “CHLORINE odors.”

1-201 Glossary Terms

“**BULKHEADS**” means a movable partition that physically separates a POOL into multiple sections.

“**CHEMICAL STORAGE SPACE**” means a space in an AQUATIC FACILITY used for the storage of POOL chemicals such as acids, salt, or corrosive or oxidizing chemicals.

“**CHLORINE**” refers to hypochlorous acid and hypochlorite ion in aqueous solution derived from CHLORINE gas or a variety of CHLORINE-based disinfecting agents.

“**CHLORAMINE**” means a DISINFECTION BY-PRODUCT formed when CHLORINE binds to nitrogenous waste in POOL water to form an amine-containing compound with one or more CHLORINE atoms, known as combined CHLORINE.

“**CLEANSING SHOWER**” means a SHOWER located within a HYGIENE FACILITY providing warm water and soap. The purpose of these SHOWERS is to remove contaminants including perianal fecal material, sweat, skin cells, personal care products, and dirt before BATHERS enter the AQUATIC VENUE.

1-201 Glossary Terms

“COMBUSTION DEVICE” means any appliance or equipment using fire such as gas or oil furnaces, boilers, POOL heaters, domestic water heaters, etc.

“CONTAMINATION RESPONSE PLAN” means a plan for handling contamination from formed-stool, diarrheal-stool, vomit, and blood.

“CROSS-CONNECTION” means a connection or arrangement, physical or otherwise, between a potable water supply system and a PLUMBING FIXTURE, tank, receptor, equipment, or device, through which it may be possible for non-potable, used, unclean, polluted and contaminated water, or other substances to enter into a part of such potable water system under any condition.

1-201 Glossary Terms

“DEEP WATER” means any part of a POOL with a depth greater than five (5) feet.

“DESIGN PROFESSIONAL” means a Nevada licensed professional engineer or a Nevada registered architect. A licensed professional engineer or a registered architect shall include his or her seal and signature on any plans and specifications submitted to the HEALTH AUTHORITY.

“DESIGNATED WALKWAY” means an exterior or interior way of passage from one part of an AQUATIC FACILITY to another for pedestrians, including, but not limited to walkways, pathways, DECKS, and stairways. This must be considered in relation to the ADA.

“DICHLORAMINE” means a DISINFECTION BY-PRODUCT formed when CHLORINE binds to nitrogenous waste in POOL water to form an amine-containing compound with two CHLORINE atoms (NHCl_2). It is a known acute respiratory and ocular irritant.

1-201 Glossary Terms

“DISINFECTION” means a treatment that kills or irreversibly inactivates microorganisms (e.g., bacteria, viruses, and parasites); in water treatment, a chemical (commonly CHLORINE, CHLORAMINE, or ozone) or physical process (e.g., UV radiation) can be used.

“DISINFECTION BY-PRODUCT” means a chemical compound formed by the reaction of a DISINFECTANT (e.g. CHLORINE) with a precursor (e.g. natural organic matter, nitrogenous waste from BATHERS) in a water system (POOL AND water supply).

“DIVING POOL” means a POOL used exclusively for diving.

“DROP SLIDE” means a SLIDE that drops BATHERS into the water from a height above the water versus delivering the BATHER to the water entry point.

1-201 Glossary Terms

“DRY DECK” means all pedestrian surface areas within the AQUATIC VENUE ENCLOSURE not subject to frequent splashing or constant wet foot traffic. The DRY DECK is not PERIMETER DECK or POOL DECK, which connect the POOL to adjacent amenities, entrances, and exits. Landscape areas are not included in this definition.

“FREE AVAILABLE CHLORINE or FAC” means the portion of the total AVAILABLE CHLORINE that is not “combined CHLORINE” and is present as hypochlorous acid (HOCl) or hypochlorite ion (OCl⁻). The PH of the water determines the relative amounts of hypochlorous acid and hypochlorite ion. HOCl is a very effective bactericide and is the active bactericide in POOL water. OCl⁻ is also a bactericide, but acts more slowly than HOCl. Thus, CHLORINE is a more effective bactericide at low PH than at high PH. A FAC must be maintained for adequate DISINFECTION.

1-201 Glossary Terms

“EMERGENCY ACTION PLAN or EAP” means a plan that identifies the objectives that need to be met for a specific type of emergency, who will respond, what each person’s role will be during the response, and what equipment is required as part of the response.

“EPA REGISTERED” means all products regulated and registered under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) by the U.S. Environmental Protection Agency. EPA REGISTERED products will have a registration number on the label (usually it will state “EPA Reg No.” followed by a series of numbers). This registration number can be verified by using the EPA National Pesticide Information Retrieval System.

“EQUIPMENT ROOM” means a space intended for the operation of POOL pumps, filters, heaters, and controllers. This space is not intended for the storage of hazardous POOL chemicals.

“EXIT GATE” means an emergency exit, which is a gate or door allowing free exit at all times.

1-201 Glossary Terms

“EXPANSION JOINT” means a watertight joint provided in a POOL vessel used to relieve flexural stresses due to movement caused by thermal expansion/contraction.

“FLAT WATER” means an AQUATIC VENUE in which the water line is static except for movement made by BATHERS usually as a horizontal use as in swimming. Diving spargers do not void the FLAT WATER definition.

“FOOT CANDLES” means a measurement of light equivalent to one lumen per square foot.

“GROUND-FAULT CIRCUIT INTERRUPTER or (GFCI)” means a device for protection of personnel that de-energizes an electrical circuit or portion thereof in the event of excessive ground current.

“HAND WASH STATION” means a location which has a hand washing sink, adjacent soap dispenser, paper towel dispenser or hand dryer, and trash receptacle.

1-201 Glossary Terms

“HOT WATER” means an AQUATIC VENUE with a water temperature over 90°F.

“HYGIENE FACILITY” means a structure or part of a structure that contains toilet(s), SHOWER(S), HAND WASH STATION(S), and dressing capabilities serving BATHERS and PATRONS at an AQUATIC FACILITY.

“HYGIENE FIXTURES” means all components necessary for HYGIENE FACILITIES including PLUMBING FIXTURES, HAND WASH STATIONS, trash receptacles, soap dispensers, paper towel dispensers or hand dryers, and toilet paper dispensers.

“IMMINENT HEALTH HAZARD” means a serious threat to the public health or safety that is considered to exist when there is evidence indicating that a product, practice, circumstance, or event creates a situation that requires immediate correction or cessation of operation to prevent injury based on the number of potential injuries and the nature, severity, and duration of the anticipated injury or illness. See [Section 5-6](#)

1-201 Glossary Terms

“INCREASED RISK AQUATIC VENUE” means an AQUATIC VENUE which, due to its intrinsic characteristics and intended use has a greater likelihood of affecting the BATHERS of that venue by being at increased risk for microbial contamination (e.g., by children less than five (5) years old) or being used by people that may be more susceptible to infection (e.g., therapy patients with open wounds). Examples of INCREASED-RISK AQUATIC VENUES include spray pads, WADING POOLS, CHILD AMUSEMENT LAGOONS, and other AQUATIC VENUES designed for children less than five (5) years old as well as THERAPY POOLS.

“INDOOR AQUATIC FACILITY” means a physical place that contains one or more AQUATIC VENUES and the surrounding BATHER and SPECTATOR/STADIUM SEATING areas within a structure that meets the definition of “Building” per the 2012 International Building Code. It does not include equipment, chemical storage, or BATHER hygiene rooms or any other rooms with a direct opening to the AQUATIC FACILITY.

1-201 Glossary Terms

“INFINITY EDGE” means a POOL wall structure and adjacent PERIMETER DECK that is designed in such a way where the top of the POOL wall and adjacent DECK are not visible from certain vantage points in the POOL or from the opposite side of the POOL. Water from the POOL flows over the edge and is captured and treated for reuse through the normal POOL filtration system.

“INLET” means wall or floor fittings where treated water is returned to the POOL.

“ISLAND” means a structure inside a POOL where the perimeter is completely surrounded by the POOL water and the top is above the surface of the POOL.

“LANDING POOL” means an AQUATIC VENUE or designated section of an AQUATIC VENUE located at the exit of one or more WATERSLIDE FLUMES. The body of water is intended and designed to receive a BATHER emerging from the FLUME for the purpose of terminating the SLIDE action and providing a means of exit to a DECK or walkway area. Also known as a splash POOL or catch POOL.

1-201 Glossary Terms

“LAZY RIVER” means a channeled flow of water of near-constant depth in which the water is moved by pumps or other means of propulsion to provide a river-like flow that transports BATHERS over a defined path. A LAZY RIVER may include AQUATIC FEATURES and devices. A LAZY RIVER may also be referred to as a tubing POOL, leisure river, leisure POOL or a current channel.

“LIFEGUARD” means an individual who has successfully completed a recognized LIFEGUARD training course offered by a recognized training agency, holds a current certificate for such training, has met the pre-service requirements, and is participating in continuing in-service training requirements of the AQUATIC FACILITY.

“LIFEGUARD STATION” means a designated stand or roving zone established to monitor BATHERS in a body of water.

“LIFEGUARD SUPERVISOR” means an individual responsible for the oversight of LIFEGUARD performance and emergency response at an AQUATIC FACILITY.

1-201 Glossary Terms

“MONITORING” is the regular and purposeful observation and checking of systems or facilities and recording of data, including system alerts, excursions from acceptable ranges, and other facility issues. MONITORING includes human or electronic means.

“MOVEABLE FLOORS” means a POOL floor whose depth varies through the use of controls.

“OOCYST” means the thick-walled, environmentally resistant structure released in the feces of infected animals that serves to transfer the infectious stages of sporozoan parasites (e.g., *Cryptosporidium*) to new hosts.

“OWNER” means any person, individual, partnership, corporation, company, association or like entity who owns, leases, or proposes to own or lease an AQUATIC VENUE or AQUATIC FACILITY.

1-201 Glossary Terms

“OXIDATION” means the process of changing the chemical structure of water contaminants by either increasing the number of oxygen atoms or reducing the number of electrons of the contaminant or other chemical reaction, which allows the contaminant to be more readily removed from the water or made more soluble in the water. It is the “chemical cleaning” of POOL water. OXIDATION can be achieved by common disinfectants (e.g., CHLORINE, bromine), SECONDARY DISINFECTION SYSTEMS (e.g. ozone) and oxidizers (e.g. potassium monopersulfate).

“OXIDATION REDUCTION POTENTIAL or ORP” means a measure of the tendency for a solution to either gain or lose electrons; higher (more positive) OXIDATION REDUCTION POTENTIAL indicates a more oxidative solution.

“PATRON” means a BATHER or other person or occupant at an AQUATIC FACILITY who may or may not have contact with AQUATIC VENUE water either through partial or total immersion. PATRONS may not have contact with AQUATIC VENUE water, but could still be exposed to potential contamination from the AQUATIC FACILITY air, surfaces, or aerosols.

1-201 Glossary Terms

“PENINSULA or WING WALL” means a structural projection into a POOL intended to provide separation within the body of water.

“PERMIT” means the document issued by the HEALTH AUTHORITY that authorizes a PERSON or authorized agent of the OWNER to operate an AQUATIC VENUE.

“PERMIT HOLDER” means the person or entity that is legally responsible for the operation of the AQUATIC FACILITY.

“pH” means the negative log of the concentration of hydrogen ions. When water ionizes, it produces hydrogen ions (H^+) and hydroxide ions (OH^-). If there is an excess of hydrogen ions the water is acidic. If there is an excess of hydroxide ions the water is basic. PH ranges from 0 to 14. Pure water has a PH of 7.0. If PH is higher than 7.0, the water is said to be basic, or alkaline. If the water’s PH is lower than 7.0, the water is acidic. As PH is raised, more ionization occurs and CHLORINE disinfectants decrease in effectiveness.

1-201 Glossary Terms

“PLUMBING FIXTURE” means a receptacle, fixture, or device that is connected to a water supply system or discharges to a drainage system or both and may be used for the distribution and use of water; e.g. toilets, urinals, SHOWERS, and hose bibs. Such receptacles, fixtures, or devices require a supply of water, discharge liquid waste or liquid-borne solid waste, or require a supply of water and discharge waste to a drainage system.

“POOL DECK” means surface areas serving the AQUATIC VENUE, beyond PERIMETER DECK, which is expected to be regularly trafficked and made wet by BATHERS. to a water supply system or discharges to a drainage system or both and may be used for the distribution and use of water; e.g. toilets, urinals, SHOWERS, and hose bibs. Such receptacles, fixtures, or devices require a supply of water, discharge liquid waste or liquid-borne solid waste, or require a supply of water and discharge waste to a drainage system.

1-201 Glossary Terms

“POOL SLIDE” means a SLIDE having a configuration as defined by the Code of Federal Regulations in 16 CFR §1207, or is similar in construction to a playground SLIDE used to allow BATHERS to SLIDE from an elevated height to a POOL. They shall include children’s (tot) SLIDES and all other non-FLUME SLIDES that are mounted on the POOL DECK or within the basin of a public swimming POOL.

“RECIRCULATION SYSTEM” means the combination of the main drain, gutter or SKIMMER, INLETS, piping, pumps, controls, surge tank or balance tank to provide POOL water recirculation to and from the POOL and the treatment systems.

“REDUCTION EQUIVALENT DOSE BIAS or RED” means a variable used in UV system validation to account for differences in UV sensitivity between the UV system challenge microbe (e.g., MS2 virus) and the actual microbe to be inactivated (e.g., Cryptosporidium).

1-201 Glossary Terms

“RINSE SHOWER” means a SHOWER typically located in the POOL DECK area with ambient temperature water. The main purpose is to remove dirt, sand, or organic material prior to entering the AQUATIC VENUE to reduce the introduction of contaminants and the formation of DISINFECTION BY-PRODUCTS.

“ROBOTIC CLEANER” means a modular vacuum system consisting of a motor-driven, in-POOL suction device, either self-powered or powered through a low voltage cable, which is connected to a DECK-side power supply.

“SAFETY PLAN” means a written document that has procedures, requirements and/or standards related to safety which the AQUATIC FACILITY staff must follow. These plans include training, emergency response, and operations procedures.

“SANITIZE” means reducing the level of microbes to that considered safe by public health standards (*usually 99.999%*). This may be achieved through a variety of chemical or physical means such as chemical treatment, physical cleaning, or drying.

1-201 Glossary Terms

“SECONDARY DISINFECTION SYSTEMS” means those DISINFECTION processes or systems installed in addition to the STANDARD systems required on all AQUATIC VENUES, which are required to be used for INCREASED RISK AQUATIC VENUES.

“SHALLOW WATER” means any part of a POOL with a depth that does not exceed five (5) feet.

“SHOWER” means a device that sprays water on the body.

“SKIMMER” means a device installed in the POOL wall whose purpose is to remove floating debris and surface water to the filter. They shall include a weir to allow for the automatic adjustment to small changes in water level, maintaining skimming of the surface water.

“SKIMMER POOL” means a POOL using a SKIMMER SYSTEM.

1-201 Glossary Terms

“SKIMMER SYSTEM” means periodic locations along the top of the POOL wall for removal of water from the POOL’s surface for treatment.

“SLIDE” means an AQUATIC FEATURE where BATHERS SLIDE down from an elevated height into water.

“SPECIAL USE AQUATIC VENUE” means AQUATIC VENUES that do not meet the intended use and design features of any other AQUATIC VENUE or POOL listed/identified in these Regulations.

“SURF POOL” means any POOL designed to generate waves dedicated to the activity of surfing on a surfboard or analogous surfing device commonly used in the ocean and intended for sport as opposed to the general play intent of WAVE POOLS.

“SPECTATOR” means any individual at an AQUATIC FACILITY who is present to observe an event without the potential of entering the water of any AQUATIC VENUE.

1-201 Glossary Terms

“STADIUM SEATING” means an area of high-occupancy seating provided above the POOL level for observation.

“STRUCTURAL CRACK” means a break or split in the POOL surface that weakens the structural integrity of the vessel.

“SUBSTANTIALLY SIMILAR” means equipment that performs to the same manufacturer’s specifications with identical hydraulic characteristics.

“SUPERCHLORINATION” means the addition of large quantities of CHLORINE-based chemicals to raise the FAC levels for water quality maintenance such as to kill algae, destroy odors, or improve the ability to maintain a DISINFECTANT residual.

“SUPPLEMENTAL DISINFECTION SYSTEMS” means those DISINFECTION processes or systems which are not required on an AQUATIC VENUE for health and safety reasons. They may be used to enhance overall system performance and improve water quality.

1-201 Glossary Terms

“THEORETICAL PEAK OCCUPANCY” means the anticipated peak number of BATHERS in an AQUATIC VENUE or the anticipated peak number of PATRONS of the DECK of an AQUATIC FACILITY. This is the lower limit of peak occupancy to be used for design purposes for determining services that support occupants. THEORETICAL PEAK OCCUPANCY is used to determine the number of SHOWERS. For AQUATIC VENUES, the THEORETICAL PEAK OCCUPANCY is calculated around the type of water use or space.

“THERAPY POOL” means a POOL used exclusively for aquatic therapy, physical therapy, and/or rehabilitation to treat a diagnosed injury, illness, or medical condition, wherein the therapy is provided under the direct supervision of a licensed physical therapist, occupational therapist, or athletic trainer. This could include wound patients or immunocompromised patients whose health could be impacted if there is not additional water quality protection.

1-201 Glossary Terms

“TRICHLORAMINE” means a DISINFECTION BY-PRODUCT formed when CHLORINE binds to nitrogenous waste in POOL water to form an amine-containing compound with three CHLORINE atoms (NCl_3). It is a known acute respiratory and ocular irritant. It has low solubility in water and is rapidly released into the air above POOLS where it can accumulate, particularly in indoor settings.

“TRANSMISSIVITY” means the percentage measurement of UV light able to pass through a solution.

“UNBLOCKABLE DRAIN COVER” has the meaning ascribed in ANSI/APSP-16 2011 Standard.

“UNDERWATER BENCH” means a submerged seat with or without hydrotherapy jets.

“UNDERWATER LEDGE” means a continuous step in the POOL wall that allows swimmers to rest by standing without treading water.

1-201 Glossary Terms

“WAIVER” means a written agreement between the HEALTH AUTHORITY and the PERMIT HOLDER that authorizes a modification of one or more regulatory requirements and has no impact on the health and safety of PATRONS.

“WATER QUALITY TESTING DEVICE or WQTD” means a product designed to measure the level of a parameter in water. A WQTD includes a device or method to provide a visual indication of a parameter level, and may include one or more reagents and accessory items.

“WAVE POOL” means any POOL designed to simulate breaking or cyclic waves for the purposes of general play.

“ZERO DEPTH ENTRY” means a sloped entry into a POOL from DECK level into the interior of the POOL as a means of access and egress.