Model Aquatic Health Code

Risk Management/Safety Module ANNEX Section for the First 60-day Review

Posted for Public Comment on 09/16/2011

Currently Open for Public Comment that Closes on 11/18/2011

In an attempt to speed the review process along, the MAHC steering committee has decided to release MAHC draft modules prior to their being fully complete and formatted. These drafts will continue to be edited and revised while being posted for public comment. The complete versions of the drafts will be available for public comment again when all MAHC modules are posted for final public comment. The MAHC committees appreciate your patience with the review process and commitment to this endeavor as we all seek to produce the best aquatic health code possible.

This information is distributed solely for the purpose of pre dissemination public comment under applicable information quality guidelines. It has not been formally disseminated by the Centers for Disease Control and Prevention. It does not represent and should not be construed to represent any agency determination or policy.

MAHC Risk Management/Safety Module Abstract

Increased vigilance is needed at aquatic venues to reduce injuries in the water, chemical storage room, and around the pool and facility. The Risk Management/Safety Module outlines steps to be taken to manage and reduce these risks and associated health problems. The Risk Management/Safety Module contains new guidelines covering:

1) Controlled access aquatic venues (e.g., lazy rivers) not requiring depth markers throughout.
2) Expanded employee training to cover fecal- and vomit-related pathogen response and clean-up.
3) Potential sources of glare and ways to prevent glare in aquatic venue design.
4) Consideration of water temperature and patron use.
5) Expanded chemical storage and handling.
6) Use of remote monitoring systems.
7) Employee illness policies.
8) Inspection items for daily opening and closing of aquatic features or venues.

MAHC Risk Management/Safety Module Review Guidance

The **Model Aquatic Health Code (MAHC) Steering** (http://www.cdc.gov/healthywater/swimming/pools/mahc/steering-committee/) **and Technical** (http://www.cdc.gov/healthywater/swimming/pools/mahc/technical-committee/) **Committees** appreciate your willingness to review this draft MAHC module. Your unique perspectives and science-based suggestions will help ensure that the best available standards and practices for protecting aquatic public health are available for adoption by state and local environmental health programs.

Review Reminders:

- Please download and use the **MAHC Comment Form** (http://www.cdc.gov/healthywater/swimming/pools/mahc/structure-content/) to submit your detailed, succinct comments and suggested edits. Return your review form by November 18, 2011 as an email attachment to **MAHC@cdc.gov**.

- If part of a larger group or organization, please consolidate comments to speed the MAHC response time to public comments.

- To provide context for this module review, please consult the **MAHC Strawman Outline** (http://www.cdc.gov/healthywater/pdf/swimming/pools/mahc/structure-content/mahc-strawman.pdf). Section headers of related content have been included in this draft module to assist reviewers to see where each section fits into the overall MAHC structure. Additional MAHC draft modules that contain this content will be or already have been posted for your review.

- MAHC Grading System
  - A grading system is provided for the recommended standards. It is based on the perceived reliability and accuracy of the material presented. This grading system is divided into three levels. The MAHC grading system is as follows:
    - Grade A: Practice supported by science/research/data.
    - Grade B: Generally accepted practice not supported by science/research/data.
    - Grade C: No generally accepted practice. Proposed language not yet supported by science/research/data.

- The complete draft MAHC, with all of the individual module review comments addressed will be posted again for a final review and comment before MAHC publication. This will enable reviewers to review modules in the context of other modules and sections that may not have been possible during the initial individual module review.

- The published MAHC will be regularly updated through a collaborative all-stakeholder process.

Please address any questions you may have about MAHC or the review process to **MAHC@cdc.gov**. You may also request to be on the direct email list for alerts ("Get Email Updates" is in a box on the right hand side of the Healthy Swimming website at www.cdc.gov/healthyswimming) on the other draft MAHC modules as they are released for public comment.

Thank you again, and we look forward to your help in this endeavor.
Sincerely,

Douglas C. Sackett, Director
MAHC Steering Committee

The Risk Management Code Module shows a Table of Contents giving the context of the Risk Management Design, Construction, Operation and Maintenance in the overall Model Aquatic Health Code's Strawman Outline (http://www.cdc.gov/healthywater/pdf/swimming/pools/mahc/structure-content/mahc-strawman.pdf).

Reviewer Note on Module Section Numbering:

Please use the specific section numbers to make your comments on this Draft Model Aquatic Health Code module. These numbers may eventually change during the editing of the compiled Draft that will be issued for a final round of comments.

Reviewer Note on the MAHC Annex

Rationale

The annex is provided to:

(a) Give explanations, data, and references to support why specific recommendations are made;
(b) Discuss the rationale for making the code content decisions;
(c) Provide a discussion of the scientific basis for selecting certain criteria, as well as discuss why other scientific data may not have been selected, e.g. due to data inconsistencies;
(d) State areas where additional research may be needed;
(e) Discuss and explain terminology used; and
(f) Provide additional material that may not have been appropriately placed in the main body of the model code language. This could include summaries of scientific studies, charts, graphs, or other illustrative materials.

Content

The annexes accompanying the code sections are intended to provide support and assistance to those charged with applying and using Model Aquatic Health Code provisions. No reference is made in the text of a code provision to the annexes which support its requirements. This is necessary in order to keep future laws or other requirements based on the Model Aquatic Health Code straightforward. However, the annexes are provided specifically to assist users in understanding and applying the provisions uniformly and effectively. They are not intended to be exhaustive reviews of the scientific or other literature but should contain enough information and references to guide the reader to more extensive information and review.

It is, therefore, important for reviewers and users to preview the subject and essence of each of the annexes before using the document. Some of the annexes (e.g., References, Public Health Rationale) are structured to present the information in a column format similar to the code section to which they apply. Other annexes or appendices provide information and materials intended to be helpful to the user such as model forms that can be used, recreational water illness outbreak response guidelines, and guidelines for facility inspection.

Appendices

Additional information that falls outside the flow of the annex may be included in the Model Aquatic Health Code Annex

Acronyms in this Module: See the Risk Management/Safety Module, Code Section

Glossary Terms in this Module: See the Risk Management/Safety Module, Code Section

Preface: *This document does not address all health and safety concerns, if any, associated with its use. It is the responsibility of the user of this document to establish appropriate health and safety practices and determine the applicability of regulatory limitations prior to each use.*

Model Aquatic Health Code
Risk Management Annex

Keyword	Section	Annex
	4.0	**Design Standards and Construction**
	4.1	**Plan Submittal**
	4.2	**Materials**
	4.3	**Equipment Standards**
	4.4	**Aquatic Venue Operation and Facility Maintenance**
	4.5	**Aquatic Venue Structure (Shell)**
	4.5.1	**Shape**
	4.5.2	**Access Ladders/Recessed Steps/Stairs**
	4.5.3	**Color and Finish**
	4.5.4	**Walls**
	4.5.5	**Depth Markers and Markings**
Depth Measurements	4.5.5.1	Non-traditional AQUATIC VENUES such as activity pools and lazy rivers may have designated entry and exit points and are generally consistent in depth throughout the experience. Other AQUATIC VENUES may have landscaping or other barriers so that there is a defined entry such as lazy river. These venues should install depth markers on the AQUATIC VENUE wall and in lieu of where defined entry points are provided then post on entry signs. Consider a variance process. Should we require depth markers on the wall of lazy rivers in CODE? If so, would not need to restate in Annex. (This added text is from a comment that was in movable depth POOLS.) This requirement is not intended to apply to competition AQUATIC VENUES where skilled divers train and compete in 4-6 feet (1.3-2m) of water and are under the supervision of a certified instructor.
Maximum Perimeter Distance	4.5.5.1.5	AQUATIC VENUE size and geometry may necessitate additional depth marking placements about all sides of the AQUATIC VENUE to meet this requirement.
Color and height	4.5.5.2.1	Depth markers at 4 inches (10cm) in height is common among several state CODES and found in ANSI/IAF-9 and ANSI/NSPI-1. Also, Human Factors STANDARDS recommends 1 inch (2.54cm) of letter height to 10 feet (3m) of viewing distance for oversized letters or 1 inch of letter height to 16.6

Keyword	Section	Annex
		feet (5m) which is ideal. A 1 inch letter height to 30 feet (9m) of viewing distance is the minimum.
Abbreviations	4.5.5.2.7	Note: Some states may require both units of measurement in feet, inches and meters. Some states do not allow for abbreviation of units.
No Diving Symbol	4.5.5.2.8	Diving boards are permitted only when the diving envelope conforms to the standards of the certifying agency that regulates diving at the facility - National Collegiate Athletic Association (NCAA), the National Federation of State High School Associations (NFSHSA), the Federation Internationale de Natation Amateur (FINA), or U.S. Diving. If the venue does not have competitive diving, then the diving envelope must conform to these diving envelope standards. "No Diving" symbols are not required in spas less than 200 square feet (61m) due to its small size in nature and the minimal distance to the next the WADING POOLS or activity POOLS. This requirement is not intended to apply to competition AQUATIC VENUES where skilled divers train and compete in 4-6 feet (1.3-2m) of water and are under the supervision of a certified instructor. The symbol is required as it is the universally recognized symbol for "no diving" and can be understood by those who do not read and non-English speaking individuals. The attached link has additional information provided by The New York Health Department Diving Fact Sheet called, "Minimum Water Depths for Head First Diving From Pool Decks, Starting Blocks, Docks and Similar Low Fixed Platforms": http://www.nyhealth.gov/environmental/outdoors/camps/aquatics/minimum_water_depths_for_head_first_diving.htm
	4.5.6	**AQUATIC VENUE shell Maintenance [N/A]**
	4.6	**Indoor/Outdoor Environment**
	4.6.1	**Lighting**
Glare	***4.6.1.1***	Consider sun positioning for different seasons and window

Keyword	Section	Annex
		placement to avoid glare. Consider moveable lifeguard stands or positions to avoid glare in different seasons. Consider tint and shades when natural light causes glare. Avoid glare by keeping overhead lighting directed 60-90 degrees horizontal of the eye. Glare on water can be avoided by direct lighting. The more direct, the less opportunity for glare. Also consider maintaining a close ratio of the lighting underwater and overhead to obtain a balance thus avoiding glare.
Light Levels	4.6.1.2	When designing lighting for an aquatic environment, consider the placement of landscaping as in time, it may become an obstruction. Also consider any decorative elements around the lighting fixtures as they may reduce the amount of light designed for the facility. (This may come out of the FD&C Committee as well.)
Underwater Lighting	4.6.1.3	Current regulations specify an under-water light level equivalent to ½ watt per square foot of AQUATIC VENUE surface area. This value is based on outdated incandescent lighting technology. For today's light sources for higher-efficiency lamps (i.e., more light output per watt), this requirement no longer makes sense. Consider using a measure of light output (e.g., lumens) instead. Based on an existing 300W General Electric R40 AQUATIC VENUE lamp that produces 3,750 initial lumens of light output, the conversion between watts and lumens is as follows: 0.5 watts/sq.ft. x 3,750 lumens/300 watts = 6.25 lumens/sq.ft. **Example:** Lighting comparison between Incandescent & LED lamps for a 2,400 square foot AQUATIC VENUE. <u>300watt Incandescent Lamps (@ 12.5 lumens per watt = 3,750 lumens per lamp)</u> 2,400sq.ft. x 0.5 watts/sq.ft. x lamp/300watts = 4 lamps

Keyword	Section	Annex
		30watt LED Lamps (125 lumens per watt = 3,750 lumens per lamp) 2,400sq.ft. x 6.25 lumens/sq.ft. x lamp/3,750 lumens = 4 lamps Notice that LED lamps are 90% more efficient (lumens/watt) than Incandescent lamps. *"A replacement lamp will need to provide 6.25 lumens per square foot of surface area."* Additional information: The incandescent lamp has an average life of 2,000 hours. For a AQUATIC VENUE that is operational 12 hours per day for 365 days (4,380 hours per year), the incandescent lamp failure rate would be approximately 2 times a year. Note that in-water AQUATIC VENUE lighting remains on when the AQUATIC VENUE is closed to swimming. For the 50,000 hour life of an LED lamp, the failure rate would be 11.4 years. The AQUATIC VENUE surface replacement would be a determination of replacement lamps and not the lamp itself. Annual energy savings per lamp would be 1,183 KWH.
	4.6.2	**Ventilation**
	4.6.3	**Electrical**
	4.6.4	**Heating**
	4.6.5	**First Aid Room**
	4.6.6	**Emergency Exit**
	4.6.7	**Drinking Fountains**
	4.6.8	**Garbage Receptacles**
	4.6.9	**Food and Drink Concessions**
	4.6.10	**Spectator Areas**
	4.6.11	**Telephone**
Emergency Capabilities	4.6.11	Consider larger facilities or other types of facilities who may have a phone in the nearby building. Consider a telephone labeled with location of phone/address.
	4.7	**Recirculation and Water Treatment**
	4.8	**Decks and Equipment**

Keyword	Section	Annex
	4.8.1	**Decks**
Deck Drains	4.8.1.1.1	This requirement prevents sewage from backing up into the AQUATIC VENUE water. This isolates the treated system and does not allow mixing of other sources of water that could contaminate.
Materials/ Slip Resistance	4.8.1.2.1	At this time, ASTM is developing a STANDARD to define a method to test for slip resistance.
Size/Width	4.8.1.3	[Note: Need research that supports clear deck space distances.] Traditional AQUATIC VENUEs should be surrounded by clear deck space to allow for operational flow (foot traffic) as well as space to perform in the event of an emergency situation. Non-traditional AQUATIC VENUEs such as lazy rivers, wave pools, etc. are not required to have clear space around due to the need to control access by providing a barrier to block access into unapproved entry areas. Both guarded and unguarded AQUATIC VENUEs should have the same clear space requirements.
	4.8.2	**Diving Boards and Platforms**
	4.8.3	**Starting Blocks**
	4.8.4	**Deck Slides**
	4.8.5	**Lifeguard-Related**
	4.8.6	**Fencing**
	4.8.7	**AQUATIC VENUE Cleaning System**
	4.9	**Filter/Equipment Room**
	4.9.1	**Chemical Storage and Handling**
Chemical Storage and Handling	4.9.1.1	Recommended content includes CDC Recommendations for Preventing Pool Chemical-Associated Injuries: http://www.cdc.gov/healthywater/swimming/pools/preventing-pool-chemical-injuries.html
No Flow Deactivation	4.9.1.4	If concentrated solutions of CHLORINE and acid are mixed, CHLORINE gas will be formed. The CHLORINE gas could be released into the AQUATIC VENUE when the pump is turned on again or in the pump room if there is an opening in the line. To prevent the hazardous release of CHLORINE gas, the chemical feed system shall be designed so that the chlorine

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and pH feed pumps will be deactivated when there is no flow in the recirculation system.

4.10 Hygiene Facilities

4.11 Water Supply/Wastewater Disposal

4.12 Specific Venues – Special Requirements

Model Aquatic Health Code
Risk Management Module
5.0 Operation and Maintenance

Keyword	Section	Annex
	5.0	**Operation and Maintenance**
	5.1	**Plan Submittal**
	5.2	**Materials**
	5.3	**Equipment Standards**
	5.4	**AQUATIC VENUE Operation and Facility Maintenance**
	5.5	**AQUATIC VENUE Structure (Shell)**
	5.6	**Indoor/Outdoor Environment**
	5.6.1	**Lighting**
	5.6.2	**Ventilation**
	5.6.3	**Electrical**
	5.6.4	**Heating**
	5.6.5	**First Aid Room**
	5.6.6	**Emergency Exit**
Emergency Exit Routes	5.6.6.1	Need some annex discussion references on Emergency Exit route research.
	5.6.7	**Drinking Fountains**
	5.6.8	**Garbage Receptacles**
	5.6.9	**Food and Drink Concession**
	5.6.10	**Spectator Areas**
	5.7	**Recirculation and Water Treatment**
	5.7.1	**Recirculation Systems and Equipment**
	5.7.2	**Filtration**
	5.7.3	**Disinfection**
	5.7.4	**Water Quality**

Keyword	Section	Annex
Water Temperature	5.7.4.6	Water varying from 83-86°F (28-30° C) is the most comfortable temperature for typical water fitness classes. This allows the body to react and respond normally to the onset of exercise and the accompanying increase in body temperature. Cooling benefits are still felt and there is little risk of overheating. Program modifications will be required for water temperature outside the recommended range. Aquatic Fitness Professionals should know the water temperature and modify the program accordingly based upon the population and the program format. Water temperature below the recommended range requires modifications in programming. The primary focus of the warm up should be large, lower impact, rhythmic movements that gradually elevate core temperature of the body and should last for at least 9-15 minutes. The main segment must be of adequate intensity to maintain proper body temperature and prevent injury. Participants may find it necessary to wear specialized clothing to maintain body heat. The cool down and post-stretch must be adjusted, in overall length as well as activity, according to the environmental conditions. Water temperature above the recommended range also requires modifications in programming. The intensity and length of the main segment should be adjusted to prevent overheating. Encourage proper hydration and apparel (e.g. avoid swimming caps that prevent heat dissipation). An extended cool down with emphasis on stretching and relaxation is appropriate. Specialized populations may require specific water temperatures for safe and effective programming. Some general guidelines are as follows: Cold water can affect both mental and bodily functions, possibly preventing clear thinking and restricting normal physical activity. It is uncomfortable and can be painful, and puts a strain on the body as you try to rewarm. By definition, water below 70°F (21°C) is considered cold, due to the fact that body heat is absorbed twenty-five times faster in water than air." Per Scuba Schools International, Scuba-Doc Online.

Keyword	Section	Annex
Temperature for usage	5.7.4.6.3	Specialized populations may require specific water temperatures for safe and effective programming. Some general guidelines are provided here and additional information is included in the annex. Multi use AQUATIC VENUES are usually kept at 83°F – 86°F (28°C – 30°C), while competitive AQUATIC VENUES are usually maintained at cooler temperatures between 78°F – 82°F (25.5°C – 27.5°C). Depending on the target population, instructional and THERAPY POOL water temperatures usually range between 86°F – 94°F (30°C – 34°C). The following table from USA Swimming provides guidelines for water temperatures based on activity and population:

Swim Team & Lap Swim	78-82 F = 25.5-27.5 C	Slightly warmer may be workable
Resistance Training	83-86 F = 28-30 C	
Therapy & Rehab	91-95 F = 33-35 C	Can be as low as 87 F for many types of therapy
Multiple Sclerosis	80-84 F = 26.5-29 C	Warmer water can cause adverse affects
Pregnancy	78-84 F = 25.5-29 C	Warmer water can cause adverse affects
Arthritis	84-90 F = 29-31 C 86-90 F = 28-32 C	Arthritis Foundation min/max ATRI low function program
Fibromyalgia	86-96 F = 30-35.5 C	ATRI
Aerobic activity	84-88 F = 29-31 C	
Older adults – vertical	83-86 F = 28-30 C 86-88 F = 30-31 C	Moderate to high intensity Low intensity
Children, fitness	83-86 F= -30 C	
Children's swim lessons	82+ F = 27.5+ C	Varies with age and class length
Obese	80-86 F = 26.5-30 C	

Keyword	Section	Annex
	5.8.1	**Spectator Areas (Decks)**
Deck Drains	5.8.1.1.1	Verify that the drain line will not allow back flow into the AQUATIC VENUE water and to prevent cross contamination.
	5.9	**Decks and Equipment**
Chemical Handling and Storage	**5.9.1**	**Chemical Storage**
Compliance with local codes	5.9.1.1	All chemical containers must be labeled with the following information: • Chemical identity, • Manufacturer's name and address, • Physical hazards, • Health hazards, and • Degree or type of risk. The label should explain necessary precautions to take; how to handle, store, and dispose of chemicals; and sometimes indicate hazard potential with a number from 0 to 4. This number indicates the degree of risk, with the number 4 representing the greatest risk, and shows the hazard categories (see NFPA 704).
Compliance with OSHA and EPA	5.9.1.2	Chemicals shall never be pre-mixed with water by hand before adding the chemical to the AQUATIC VENUE unless specified by the manufacturer. If a dissolution or feed tank is used to dissolve product for feeding into the AQUATIC VENUE, the tank must be equipped with a mechanical mixer, dedicated to a single chemical and clearly labeled to prevent the introduction of incompatible chemicals to the tank. Chemicals shall be added to water, water shall never be added to chemicals. Pre-mixing in containers that are not clean can result in the generation of heat and toxic gases and may result in fire or explosion. Oxidizers such calcium hypochlorite, monopersulfate or bleach shall not be mixed with any other chemicals.

Keyword	Section	Annex
Compliance with MSDS	5.9.1.3	A material safety data sheet (MSDS) is a form containing data, potential hazard information, and instructions for the safe use of a particular material or product. An important component of product stewardship and workplace SAFETY, it is intended to provide workers and emergency personnel with procedures for handling or working with that substance in a safe manner, and includes information such as physical data (melting point, boiling point, flash point, etc.), toxicity, health effects, impact on the environment, first aid, reactivity, STORAGE, disposal, protective equipment, and spill handling procedures. The exact format of an MSDS can vary from source to source. It is important to use an MSDS that is supplier-specific as a product using a generic name (e.g. oxidizer) can have a formulation and degree of hazard which varies between different manufacturers. MSDSs should be filed anywhere chemicals are being used. An MSDS for a substance is not primarily intended for use by the general consumer, focusing instead on the hazards of working with the material in an occupational setting. In the U.S., the Occupational Safety and Health Administration (OSHA) requires that MSDSs be available to employees for potentially harmful substances handled in the workplace under the Hazard Communication regulation. The MSDS is also required to be made available to local fire departments and local and state emergency planning officials under Section 311 of the Emergency Planning and Community Right-to-Know Act. The MSDS will typically contain the hazard ratings according to either the NFPA or HMIS systems. The NFPA system may be found in NFPA 704: Standard System for the Identification of the Hazards of Materials for Emergency Response. In the NFPA system, the chemicals are rated according to their health, flammability, instability, and special hazards. The degree of hazard is indicated by a number from 0 to 4, with 0 being the least hazardous and 4 being the most hazardous. Either HMIS or NFPA ratings are useful to include on product labels. Most fire CODEs require these ratings to be posted on chemical STORAGE room doors.

Keyword	Section	Annex
Protection from getting wet	5.9.1.5	In addition to the requirements listed in section 5.9.1.5, the following BEST PRACTICEs are recommended: Place all chemical containers, drums, boxes, and bags on pallets to raise them off the floor. Containers should not be stacked so that they will easily fall over. A general rule of thumb is that they should not be stored more than three high. Containers of chemicals shall be closed securely to prevent contamination. Any shelving units used to store chemicals should be sturdy enough to support the weight of the chemicals being stored.
No mixing of incompatibles	5.9.1.6	Particularly keep chlorinated cyanurates, hydantoin bromine, and calcium hypochlorite away from other chemicals, paper, water, petroleum products, or other organic compounds to avoid possible cross-contamination. No liquids should be stored above solids. Chemicals must be stored in the original manufacturers' labeled container. STORAGE containers that held other chemicals previously are unacceptable. Chemicals may be transferred from the original container to a new container if that container was manufactured for the STORAGE of that chemical and properly labeled.
Storage of ignition sources	5.9.1.7	National Fire Protection Association (NFPA), Hazardous Material Identification System (HMIS), or equivalent hazard rating systems may be used.
Lighting in room	5.9.1.9	Horizontal-plane illumination must be adequate for SAFETY and navigation, as well as for reading documents. The Illuminating Engineering Society of North America (IESNA) recommends a 30 footcandle minimum for Motor & Equipment Observation.

Keyword	Section	Annex
PPE	5.9.1.10	Common components of PPE for chlorinated AQUATIC VENUE chemicals are as follows:

- Respiratory Protection: Wear a NIOSH approved respirator if levels above the exposure limits are possible.
- Respirator Type: A NIOSH approved full-face air purifying respirator equipped with combination chlorine/P100 cartridges. Air purifying respirators should not be used in oxygen deficient or IDLH atmospheres or if exposure concentrations exceed ten (10) times the published limit.
- Skin Protection: Wear impervious gloves to avoid skin contact. A full impervious suit is recommended if exposure is possible to a large portion of the body. A SAFETY shower should be provided in the immediate work area.
- Eye Protection: Use chemical goggles. Emergency eyewash should be provided in the immediate work area.
- Protective Clothing Type: Neoprene, Nitrile, Natural rubber (This includes: gloves, boots, apron, protective suit).

5.9.2 Chemical Handling

5.10 Hygiene Facilities

5.11 Water Supply/Wastewater Disposal

5.12 Specific Venues, Special Requirements

Model Aquatic Health Code:
Risk Management Module
6.0 Policies and Management

Keyword	Section	Annex
	6.0	***Policies and Management***
	6.1	**Operator Training**
Body fluid exposure	6.1.1.8	See OSHA 1910.1030 Bloodborne Pathogens: http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=10051. CDC's Healthy Swimming Site contains additional information on Recreational Waterborne Illnesses (RWI). Employees should not swallow the AQUATIC VENUE water and should thoroughly wash their hands after the response. http://www.cdc.gov/healthywater/swimming/ CDC's guidance on Cleaning Up Body Fluid Spills on Pool Surfaces is another useful reference: http://www.cdc.gov/healthywater/swimming/pools/cleaning-body-fluid-spills.html
	6.2	**Lifeguard Training**
	6.3	**Facility Staffing**
	6.3.1	**Operators: Staff Requirements and Availability**
	6.3.2	**Lifeguards: Staff Requirements and Availability**
Staff Management *EAP training and documentation*	**6.3.3** 6.3.3.1.5	**Staff Management** It is recommended that EAP Drills are conducted with the staff on a quarterly basis as specified by the American Heart Association; however each operation is unique. Some operations may only be open during specific seasons, etc.
Notification Procedures	6.3.3.1.8.2	Consolidated List of Chemicals Subject to the Emergency Planning and Community Right-To-Know Act: (EPCRA) and Section 112(r) of the Clean Air Act http://www.epa.gov/ceppo/pubs/title3.pdf

Keyword	Section	Annex
Inclement Weather Plan	6.3.3.1.9	It is recommended that employees monitor real time weather sources along with other techniques recommended by organizations such as NOAA. Also, include guidance on securing equipment in preparation for inclement weather. Consider having an evacuation plan to relocate patrons to a safe location during the storm. Be prepared by monitoring weather and closing the facility in time to evacuate.
Remote Monitoring Systems	6.3.3.2	Remote monitoring systems should be used as a tool and not to replace an operator from their duties.
Operator-Based	6.3.3.2.3	Operator-based remote monitoring systems shall not be in absence of manual testing of the AQUATIC VENUE.
Lifeguard-Based	6.3.3.2.4	The following excerpts from a YMCA guidance provide an overview and discussion of lifeguard-based remote monitoring systems: "Speed is critical in recognizing and responding to aquatic emergencies. Time lost in the recognition phase of an emergency action plan can prevent lifeguards from quickly reaching a swimmer in trouble and reduces the likelihood of a positive outcome. Appropriate protocols, combined with aquatic SAFETY technology, such as a surveillance system or alarms, may save valuable time during an emergency. The following are types of aquatic SAFETY technology currently available on the market: • Video Camera Surveillance Systems – Underwater and surface video monitoring systems can help analyze activity in the AQUATIC VENUE and be used to assist lifeguards in monitoring swimmers. Some systems can alert the lifeguard when a swimmer is in trouble. • Wireless Alarm or Water Activated Alarms Systems – A water-activated alarm or wireless sensor button is a portable aquatic emergency summoning device. Such a device allows the lifeguard and/or others to be notified almost immediately to a potential aquatic emergency. Lifeguards can immediately respond,

Keyword	Section	Annex
		rather than having to first travel to the emergency call button and counselors and day care staff can immediately notify lifeguards of an unintentional submersion. These technology systems DO NOT replace the need for continuous lifeguard surveillance, but they can assist a lifeguard in their surveillance duties. Use of these systems requires assessment and evaluation of current emergency protocols to incorporate the system within your emergency action planning. Integration of technology requires new approaches to lifeguard in-service training programs to emphasize recognition, surveillance, and prevention of over reliance on technology. Additionally, plans to address power outages or other system failures should be developed." Source: YMCA of the USA, June 19, 2009 Aquatics Safety & Risk Reduction Document, Topic: Aquatic Safety Technology.
Employee Illness Policy	6.3.3.3	Open wounds may not be permitted in the water but if covered other roles may be appropriate.
	6.4 Facility Management **6.4.1 Operators** ***6.4.1.1 Operations Manual*** ***6.4.1.2 System Check Program*** ***6.4.1.3 Recordkeeping***	
Daily Operating Records	6.4.1.3	It is recommended to retain such for a minimum of two (2) years. Records shall include at least the following: • Results of the water quality tests • Date and Time of filter backwash • Dates that the AQUATIC VENUE was emptied and/or cleaned • Periods of recirculation equipment operation and/or malfunction and repair
	6.4.2 Patron-Related Management Aspects ***6.4.2.1 Bather Load*** ***6.4.2.2 Signage***	
Signage	6.4.2.2	The purpose of this is to limit the spread of communicable

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		disease spread by direct contact with objects/fomites. Healthy swimming messages can also be put on posters hung in bathroom stalls and at the facility entrance, on the back of ticket stubs, and in group-event contracts. Ideally, signage should be provided to encourage BATHERS to take a second shower after using the toilet before reentering the AQUATIC VENUE. While this requirement may be difficult to enforce, the posting of such signs may encourage compliance.
Sign Messages	6.4.2.2.4	Suggested content for waterslides should include content on their signs to comply with the manufactures recommendations. Minimum content should include: • Rider position, • Number of riders allowed at a time, • Dispatch instructions, • Water depth at slide exit, and • Height requirement if specified by manufacturer.
Spa Venue Signs	6.4.2.2.6	Suggested spa sign content. • Post signs with suggested time limits. (15 minutes) • Place time clocks with numbers large enough to read from a distance on a nearby wall in clear view of all users. • Place a thermometer on the wall with numbers large enough to read from a distance or place one in the spa itself. • Place a 10-minute timer on the water jets. The reset button should be placed at least 10 feet (3m) from the tub so users must physically leave the tub to turn the water jets on again. • It is recommended that all spas have the following statement included on the signage. “Depth of spa is variable. Enter with caution.”
User Guidelines	6.4.2.3	Equipment should be designed to permit sanitary operation of the facility based on reasonable patron use. Consider increasing the frequency of water chemistry testing,

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the inspection of restrooms and hygiene facilities, and the chlorine and pH set points to accommodate the higher BATHER load.

6.6 Inspections