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## Summary of TRC Call Agenda for 6/8

The following is a summary of phone-based discussions for Change Requests (CRs) addressed by the Technical Review Committee (TRC) for the week of 6/8/2020. A link the recording of the call can be viewed at the CMAHC's Youtube channel by visiting our website at <https://cmahc.org/technical-review-committee.php>.

**Members Present:** James Amburgey, Kevin Boyer, Jodi Jensen, Joe Laco, Ellen Meyer, Tina Moore, Chris Nelson, Jason Schallock, Joe Stefanyak, Amanda Tarrier, Miklos Valdez

**Members Absent:** Michele Hlavsa, Cindy Marshall

The primary agenda consisted of CRs concerning cyanuric acid, a number of which were submitted by all, or some of, the CMAHC Chlorine Stabilizers Ad Hoc Committee. Ad Hoc Committee member Richard Falk provided an overview of cyanuric acid and the various CRs at the start of the call.

**3.2-0033:** This CR from the Ad Hoc Committee proposes to add definitions for combined chlorine, cyanurate-bound available chlorine, DPD free chlorine, and total available chlorine. The DPD-free chlorine definition was especially important as the currently used "Free Available Chlorine" does not include cyanurate-bound available chlorine. Several of the CRs submitted by the Ad Hoc Committee rely on the inclusion of the definition of DPD-Free Chlorine. The TRC felt that this was an important distinction and unanimously recommended a "Yes" vote on this CR. One TRC member abstained from the vote as she was on the CMAHC Chlorine Stabilizers Ad Hoc Committee.

**3.2-0034:** This CR from the Ad Hoc Committee proposes to revise the definition of agitated water to make it consistent with the same definition later in the section. This CR was straightforward and the TRC unanimously recommended a "Yes" vote. One TRC member abstained from the vote as she was on the CMAHC Chlorine Stabilizers Ad Hoc Committee.

**5.7.3.1.1.2-0001:** This CR proposes to 1) change the minimum free chlorine residual for facilities using cyanuric acid (CYA) from 2 to 1 ppm, and 2) require aquatic venues using CYA to maintain a minimum DPD-FC concentration of 0.05 times the total CYA concentration (both expressed as ppm (mg/L)),

equivalent to a CYA:DPD-FC ratio that does not exceed 20:1. The TRC had a lengthy discussion about the various CRs proposing a similar change but with different DPD-FC:CYA ratios. Members agreed that the requirement of a ratio was a step forward, and ultimately decided to select the 20:1 ratio, which was the example in the journal article published by several Ad Hoc Committee members. The TRC unanimously recommended a “Yes” vote on this CR; one TRC member abstained from the vote as she was on the CMAHC Chlorine Stabilizers Ad Hoc Committee.

**5.7.3.1.1.2.1-0001:** This CR accompanies CR 5.7.3.1.1.2-0001, and proposes to require all aquatic venues maintain a minimum DPD-FC concentration of 1.0 ppm (mg/L), instead of just those not using cyanuric acid. The TRC unanimously recommended a “Yes” vote on this CR; one TRC member abstained from the vote as she was on the CMAHC Chlorine Stabilizers Ad Hoc Committee.

**5.7.3.1.1.2-0002:** This CR proposes to require aquatic venues using CYA to maintain a minimum DPD-FC concentration equivalent to a CYA: DPD-FC ratio that does not exceed 15:1. Several TRC members preferred the 15:1 ratio over the 20:1 ratio, but in the interest in achieving TRC consensus for a DPD-FC:CYA ratio agreed to go with recommending the 20:1 ratio. The TRC unanimously recommended a “No” vote on this CR; one TRC member abstained from the vote as she was on the CMAHC Chlorine Stabilizers Ad Hoc Committee.

**5.7.3.1.1.2.2-0001:** This CR proposes to require aquatic venues using CYA to maintain a minimum FAC concentration to provide an HOCL concentration of 0.32 ppm (mg/L) based on the Steady-State Pathogen Dose Response Model available online at <http://www.mdpi.com/2073-4441/11/6/1314/s1>

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. The TRC members felt that this was too drastic a change. The TRC unanimously recommended a “No” vote on this CR; one TRC member abstained from the vote as she was on the CMAHC Chlorine Stabilizers Ad Hoc Committee.

**5.7.3.1.1.2.2-0002:** This CR proposes to require aquatic venues using CYA to maintain a minimum DPD-FC concentration equivalent to a CYA: DPD-FC ratio that does not exceed 50:1. The TRC felt that the risk level with this ratio was still too high, and unanimously recommended a “No” vote on this CR. One TRC member abstained from the vote as she was on the CMAHC Chlorine Stabilizers Ad Hoc Committee.

**5.7.3.1.3.1-0002:** This CR proposes to add indoor pools to the list of aquatic venues types where use of cyanuric acid is prohibited. The current list includes spas and therapy pools. Members discussed how a use of a small amount of cyanuric acid in indoor pools is a tool used to improve air quality. The TRC

discussed the possibility of adding a CR in a future change request cycle to allow only a very low level of CYA for this purpose. Ultimately 5 TRC members recommended a “Yes” vote and 5 members recommended a “No” vote. Therefore, the TRC was unable to reach consensus, and Abstains from a voting recommendation on this CR. One TRC member abstained from the vote as she was on the CMAHC Chlorine Stabilizers Ad Hoc Committee.

**5.7.3.1.3.1-0003:** This CR proposes to delete the prohibition of CYA or stabilized chlorine products for new construction, substantial alteration, or disinfection equipment replacements of spas and therapy pools. The TRC unanimously recommended a “No” vote on this CR; one TRC member abstained from the vote as she was on the CMAHC Chlorine Stabilizers Ad Hoc Committee.

**5.7.3.1.3.2-0001:** This CR proposes to change the maximum allowable level of CYA from 90 ppm to 25 ppm. The TRC felt that with the recommended “Yes” vote on the 20:1 ratio the existing maximum level was acceptable. The TRC unanimously recommended a “No” vote on this CR; one TRC member abstained from the vote as she was on the CMAHC Chlorine Stabilizers Ad Hoc Committee.

**5.7.3.1.3.2-0002:** This CR proposes to change the maximum allowable level of CYA from 90 ppm to 40 ppm. The TRC felt that with the recommended “Yes” vote on the 20:1 ratio the existing maximum level was acceptable. The TRC unanimously recommended a “No” vote on this CR; one TRC member abstained from the vote as she was on the CMAHC Chlorine Stabilizers Ad Hoc Committee.

**5.7.3.1.3.2-0003:** This CR proposes to change the maximum allowable level of CYA from 90 ppm to 60 ppm, and to change the minimum required free chlorine level for aquatic venues using cyanuric acid from 2 ppm to 3 ppm. The TRC felt that with the recommended “Yes” vote on the 20:1 ratio the existing maximum CYA level was acceptable. The TRC unanimously recommended a “No” vote on this CR; one TRC member abstained from the vote as she was on the CMAHC Chlorine Stabilizers Ad Hoc Committee.

**5.7.3.1.3.2-0004:** This CR proposes to delete the requirement that CYA levels at all aquatic venues remains at or below 90 ppm. The TRC felt that deleting this requirement would make it even more difficult for operators to respond to diarrheal fecal incidents, and that with the 20:1 ratio 90 ppm CYA would correspond to a minimum free chlorine ratio of 4.5 ppm. The TRC unanimously recommended a “No” vote on this CR; one TRC member abstained from the vote as she was on the CMAHC Chlorine Stabilizers Ad Hoc Committee.

**5.7.5.8.2-0002:** This CR proposes to change the minimum required testing frequency for CYA from once every two weeks to daily. The TRC discussed the testing frequency needed in light of the fact that CYA levels do not change rapidly, and the Ad Hoc Committee’s recommendation was for weekly, or more

frequent testing as needed. The TRC unanimously recommended a “No” vote on this CR; one TRC member abstained from the vote as she was on the CMAHC Chlorine Stabilizers Ad Hoc Committee.

**5.7.5.8.2-0003:** This CR, submitted by the Ad Hoc Committee, proposes to change the minimum required testing frequency for CYA from once every two weeks to weekly or more frequently as necessary to ensure compliance with MAHC 5.7.3. Given the importance of knowing the CYA level to maintain the proper FC-DPD ratio, the TRC unanimously recommended a “Yes” vote on this CR. One TRC member abstained from the vote as she was on the CMAHC Chlorine Stabilizers Ad Hoc Committee.

**6.1.2.1.1.5-0001:** This CR proposes to add response curves showing the impact of CYA concentrations on HOCl concentrations to the necessary subject matter in qualified swimming pool operator courses. The TRC felt this made sense and went along with their recommendation to add a required ratio to be maintained between FC-DPD and CYA. The TRC unanimously recommended a “Yes” vote on this CR; one TRC member abstained from the vote as she was on the CMAHC Chlorine Stabilizers Ad Hoc Committee.

**6.6.3.1-0003:** This CR proposes to modify the minimum disinfection residual imminent health hazard to specify bromine as listed in section 5.7.3.1.2 of this code, for pools DPD-FC level below 1 ppm or where the CYA:DPD-FC ratio exceeds 45:1, and for spas, DPD-FC level below 3 ppm. The TRC felt that failure to maintain this ratio of CYA to DPD-FC would not be an imminent risk to patron health or safety and therefore should not be considered an imminent health hazard requiring immediate correction or closure. The TRC unanimously recommended a “No” vote on this CR; one TRC member abstained from the vote as she was on the CMAHC Chlorine Stabilizers Ad Hoc Committee.

**6.6.3.1-0004:** This CR proposes to add as an imminent health hazard exceeding the maximum CYA levels as listed in various sections of the MAHC. The TRC felt that exceeding 90 ppm CYA would not be an imminent risk to patron health or safety and therefore should not be considered an imminent health hazard requiring immediate correction or closure. The TRC unanimously recommended a “No” vote on this CR; one TRC member abstained from the vote as she was on the CMAHC Chlorine Stabilizers Ad Hoc Committee.

**6.6.3.1-0005:** This CR proposes 1) to modify the minimum disinfection residual imminent health hazard to specify DPD-FC concentrations below 1 ppm, for spas, DPD-FC concentrations below 3 ppm, and aquatic venues using bromine the minimum required levels as listed in 5.7.3.1.2, and 2) CYA concentrations above 300 ppm. TRC members felt that this would be difficult to assess during an inspection as most test kits don’t measure above 90 ppm unless dilutions are performed. The TRC unanimously recommended a “No” vote on this CR; one TRC member abstained from the vote as she was on the CMAHC Chlorine Stabilizers Ad Hoc Committee.

The TRC was unable to address the remainder of the CRs on the agenda; they will be moved to the end of the 6/15 agenda.