



Shaping Tomorrow's
Built Environment Today

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Reply To: Haven Cassidy, P.E.
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ASHRAE Chair TC 8.6

TC 8.6 Minutes for 2025 Annual Phoenix Meeting
DRAFT - SUBJECT TO APPROVAL IN LAS VEGAS

Date/Time: Main Committee Meeting: Monday, June 23, 2025, 2:30-4:15 PM MST

Location: Phoenix, Sheraton Phoenix Downtown, Estrella (Level 2)

Meeting Link for Virtual Participants: Teams Meeting, [Join the meeting now](#);
Meeting ID = 235 284 054 281 and Passcode = o476yG9R

Scope: Technical Committee 8.6, Cooling Towers and Evaporative Condensers

Technical Committee TC 8.6 is concerned with open and closed circuit cooling towers, evaporative liquid coolers and condensers, adiabatic condensers and fluid coolers, spray ponds, and other types of contact type liquid-to-air heat exchangers and applications to rejection equipment along with their application and impact on complete HVAC, Industrial, and Refrigeration systems, including the associated energy and water usage as well as water treatment requirements.

1. Call to Order [Haven]

1.1. Meeting called to order at 3:30 MST

2. Roll call and introductions [Haven]:

- 2.1. Voting members are:
 - 2.1.1. Haven Cassidy (government) - present
 - 2.1.2. Mihir Kalyani (Evapco) - present
 - 2.1.3. Joe Ham (DuBois Chemicals) – present
 - 2.1.4. Rick Heiden (Trane) - absent
 - 2.1.5. Stephanie Mages (consulting) present
 - 2.1.6. Philip Yu (Veolia) present
 - 2.1.7. Frank Morrison (BAC) - present
- 2.2. Roll call indicated 6 of 7 voting members present, attaining a quorum.

3. APPROVAL OF MINUTES [Haven]

- 3.1. Philip motion, Stephanie second, minutes passed 6-0-0
 - 3.1.1. Change title to 2025 winter meeting
 - 3.1.2. Approval with date change noted

4. REVIEW OF TC Chair Breakfast [M. Kalyani]

- 4.1. AI policy approved on Feb 9, 2025
 - 4.1.1. Summary - ASHRAE prohibits the entry of content from any ASHRAE publication or related to ASHRAE IP into any AI tool including but not limited to ChatGPT.
 - 4.1.2. Creating derivative works of ASHRAE IP using AI is prohibited without expressed written permission from ASHRAE
 - 4.1.3. Full ASHRAE policy found at [ashrae-ai-policy-feb-2025](#)
- 4.2. ASHRAE encourages TC's hold interim virtual subcommittee meetings.
 - 4.2.1. Current preferences on future subcommittee meetings – if requested they will go on winter meeting schedule.
 - 4.2.2. Program meetings would like to have a virtual meeting (Joe Ham).
 - 4.2.3. Tyler recommended general subcommittee meeting and include everyone on the list. Block a time and provide allotted time to various subcommittees (30 minutes to each of the subcommittees (over 2 hour)). Early January current thinking
- 4.3. 2026 Winter Meeting – held in Las Vegas Jan 31 – Feb 4, 2026.
 - 4.3.1. Seminar and forum proposals are due by Fri August 1st
 - 4.3.2. Tracks at Vegas
 - 4.3.2.1. Fundamentals & Applications
 - 4.3.2.2. HVAC Systems & Equipment
 - 4.3.2.3. Refrigeration & Refrigerants
 - 4.3.2.4. Research Summit
 - 4.3.2.5. Energy Storage & Grid Resiliency
 - 4.3.2.6. Pathways to Building Decarbonization
 - 4.3.2.7. Artificial Intelligence
 - 4.3.2.8. Indoor Environmental Quality for Healthy Buildings
 - 4.3.2.9. Future-Proofing the Built Environment
 - 4.3.3. Haven read the ASHRAE value statement

5. Membership [Haven]

- 5.1. Current roster effective through end of Phoenix meeting – new roster will be effective July 1st
- 5.2. Voting membership
 - 5.2.1. Changes needed:
 - 5.2.1.1. Gary Stauffer resigned from TC. Mark Pfeifer to roll on to replace him as SPX voting member for Las Vegas meeting.
 - 5.2.1.2. We need to add John Aykroyd replacing Tyler as Chem Aqua voting member
 - 5.2.2. Upcoming changes to consider after Las Vegas:
 - 5.2.2.1. Joe Ham & Rick Heiden voting memberships expire June 30, 2026
- 5.3. Chair membership effective July 1, 2025:
 - 5.3.1. Chair: Haven Cassidy
 - 5.3.2. Vice Chair: Mihir Kalyani
 - 5.3.3. Secretary: Mark Pfeifer
 - 5.3.4. Handbook Subcommittee Chair: Stephanie Mages
 - 5.3.5. Program Subcommittee Chair: Joe Ham
 - 5.3.6. Research Subcommittee Chair: Tyler Anderson
 - 5.3.7. Web: Haven Cassidy

5.3.8. Standards Subcommittee Chair: Frank Morrison

6. Handbook [Recently Vacated by Gary Stauffer]

- 6.1. Stephanie Mages volunteered to chair. Frank Morrison and Mike Sherber also volunteered to assist. Frank requested other manufacturers look for volunteers within their organizations.
- 6.2. Handbook up for renewal in 2028 but bulk of TC 8.6 deadlines approaching in 2026 & 2027 (as 2028 is for HQ final proofing and printing).

7. Research [T. Anderson]

- 7.1. Only project currently of interest is 1889-TRP Greywater Use in Healthcare Facilities – determining risk and appropriate design responses. Relevant to 8.6 since greywater often is reused in cooling towers. Identify if there are specific issues (or not) to healthcare facilities. Intent is to produce a design guide that will be more water treatment related. Project is funded, bidder has been chosen, first update expected in September. Should have more preliminary research results to share in January. TC 9.6 Healthcare Facilities is the sponsoring TC and 3.6, 8.6 possibly co-sponsored.
- 7.2. Any interest in research topics Tyler is available to assist with writing RTAR or PTARs. ASHRAE is always looking for new research projects as funding has been good the last few years. Making it fit into one of their research objectives increases chances of funding.

8. Programs [J. Ham]

- 8.1. 8.6 members presented a program in Phoenix (and was live streamed) a session titled “Decarbonization and Water Do Mix.” Amr spoke about his research, Brandon talked about healthcare perspective, Frank talked about cooling towers. Attendance was roughly 40 people, successful event, more on-line. Joe will check on the on-line attendance. Joe thanked all who participated on this successful event.
- 8.2. Future programs – we have until Aug 1 to propose a program for Vegas
- 8.3. Do not currently have much in the hopper. If no luck in Vegas hopefully come up with something for summer meeting in 2026.
- 8.4. Numerous program tracks to consider including decarbonization, general topics.
- 8.5. Indoor Environmental Quality for Healthy Buildings may be the best track for water related topics
- 8.6. Potentially work with 3.6 with their disinfection program (with 8.6 discussing disinfection of cooling towers).
- 8.7. Since we are in Las Vegas, consider a topic on their ban on evaporative cooling. Perhaps a touchy topic but necessary topic. Discuss negative impacts or argue the need to maintain evaporative systems. Discussion topics to consider include:
 - 8.7.1. Sites can replace evaporative unit if it does not use more water than existing equipment. There are incentives to replace a cooling tower with a hybrid cooling tower that would use less water.
 - 8.7.2. However, cannot come in on new buildings with hybrid or adiabatic. Need to use air cooled.
- 8.8. For a program session, suggested 3 speakers where we discuss the benefits of evaporative cooling. Discuss consequences of the ban.
 - 8.8.1. Recognize Las Vegas does have a sewer water recycle program, leak program to minimize leaks, encourage natural landscapes vs turf grass. They are doing everything they can to protect their watershed.
 - 8.8.2. Concerned they are ignoring advances in hybrid and adiabatic cooling.
- 8.9. Mike Arrozi of govt affairs, BAC, discussed progress of working being done with AHRI along with ASHRAE and CTI. AHRI is currently developing a policy position.
 - 8.9.1.1. Issue is not limited to Las Vegas as Henderson has passed a similar ban.
 - 8.9.1.2. We will want to objectively present information that is data driven.

- 8.10. Working group formed to develop a program for Las Vegas. They will meet and are targeting a submission for the August submission deadline.
 - 8.10.1. Volunteers include Frank, Miyar, Mitchel, Tyler, Brandon Gross, Mike Sherber (Frank to send email to Joe with list of volunteers).
 - 8.10.2. One angle to present is Ways to reduce water within heat rejection (e.g. increase cycles, options to lower water consumption without fully going air cooled).
 - 8.10.3. Chem Aqua may have user in Vegas
 - 8.10.4. Tentatively looking at a seminar with speakers (3 to possibly 4), 90 minutes seminar to address restrictions on water use systems in water scarce environments.
 - 8.10.5. Frank motion to move forward with seminar, Joe second. Passed 6-0-0
1:14
- 8.11. Program Discussion prompted additional research ideas such as water & energy effects of moving from evaporative heat rejection equipment to air cooled heat rejection equipment
 - 8.11.1. Independent 3rd party research is better for research.
 - 8.11.2. Mihir mentioned a study evaluating power plant water usage which he will circulate that may help us trigger questions to ask in our research.

9. Standard 64 [F. Morrison/J. Vadder]

- 9.1. TC8.6 is the custodian of Standard 64, Testing of Evaporative condensers and is up for periodic review.
- 9.2. We are in process of submitting periodic maintenance recommendation to SRS that was voted on previously.
- 9.3. 4 perspective members include Frank, Mihar, Alain, Stephanie & Joe V.
- 9.4. Next step is approval of the project (Joe will send emails to team)
- 9.5. Send Joe email if you have interest in helping.

10. TC 9.6 [T. Anderson]

- 10.1. Nothing of relevance to report out

11. MTG RAC Plant Sustainability Guide [G. Harbison]

- 11.1. We can safely take this item off to remove from future meeting agenda

12. TC 3.6 Water Treatment [J. Cohen]

- 12.1. Alain attended subcommittee last week
- 12.2. Handbook is working on revising their chapter for next year
- 12.3. Programs – focus on disinfection of buildings.
 - 12.3.1. How manageable it is with routine
 - 12.3.2. Discussed if 8.6 interested in co-sponsoring.
 - 12.3.3. Concerned if we broaden topic too much if we add in non-potable and we don't have too much time.
- 12.4. TC 3.6 Main committee meeting tomorrow

13. TC 2.8 Building Environmental Impacts and Sustainability [TBD]

- 13.1. No report out

14. STD 189.1 [S. Buckley]

- 14.1. Per Frank they put out addendum for public review to set flow monitoring down to 50 tons. BAC, Evapco, SPX and others all submitted comments.

15. STD 90.1 [P. Lindahl/F. Morrison]

- 15.1. Copy of liaison report sent to Haven for distribution to committee members (Haven to send out liaison report). Significant activity. Highlights include:
 - 15.1.1. added adiabatic into minimum efficiency table with updated thermal conditions
 - 15.1.2. Increased minimum efficiency on open towers by 5% to match CA Title 24
 - 15.1.3. Adiabatic and dry cooler certification is coming up hopefully in 2028 addition
 - 15.1.4. Important to 90.1 meeting their efficiency goal to ASHRAE board of directors
 - 15.1.5. Addendum went out for ballot that includes energy credit for energy savings for cooling towers. No comments were made on the cooling tower
 - 15.1.6. Benefit with new approach - If the designer has space, budget and the need they can use more efficient. Does not force people that do not have space or budget. Does not take models out of the marketplace
 - 15.1.7. Currently 50 points on energy credits – looking to improve building energy efficiency by 5%. Will increase in future cycles to 7.5% All of the equipment for 2028 standard will increase.

16. Title 24 [F. Morrison]

- 16.1. Frank sent in ideas from 90.1 to Title 24 and they are amenable to making these changes such as adding in adiabatic fluid coolers, other changes in 90.1 that were never adopted in Title 24 like fan speed control, etc.

17. STD 191 Building Water Efficiency [Allyn Troisi (replaced J. Cohen)]

- 17.1. Haven has not heard back from section about making official change from Jon to Allyn
- 17.2. Finished up 5th ISC public review
 - 17.2.1. Had 18 comments
 - 17.2.2. No 191 meeting in Phoenix
 - 17.2.3. Targeting Mid July next meeting to review comments and respond to those as a committee

18. Working Group for 205 Committee [F. Morrisson/P. Lindahl]

- 18.1. 205 is asking for models for all HVAC equipment
- 18.2. 205 standard is format for the data that modelers can pull in for a specific chiller and place into their building model
- 18.3. They already have a chiller model and is looking for open circuit cooling tower models
- 18.4. Paul & Frank are working with committee to resolve some issues
- 18.5. Data security
- 18.6. Paul and Frank are working with committee to resolve issues
 - 18.6.1. Data security – do not have good answer
 - 18.6.2. CTI has 49 point table published and selection programs available to users.
 - 18.6.3. Chiller model is done but getting a 205 model can be challenging.
 - 18.6.4. Chiller side reaction – no one will provide that data except on product that is already sold
 - 18.6.5. Evaluations should be done before sold to decide what to do
 - 18.6.6. We are cooperating but protection of data must happen. We do want to be involved to help craft the model otherwise others may do so without us (which has happened in Europe with a University and the resulting model does not work very well).

19. Website [Haven]

- 19.1. Currently up to date. The liaison report will be published.

20. Old Business

- 20.1. TC 8.6's name change was approved by vote during our meeting in Orlando. The next step in the process is to approve the Orlando meeting minutes to formally document that vote. The name change request has already been submitted to the Section Head via the TC Activity Form from that meeting. Haven will draft the rationale for the change, which will accompany the request as it moves forward for review by TAC. If approved, ASHRAE will update the official TC roster and reflect the new name in ASHRAE records, and we will receive formal notification of the name change approval from ASHRAE staff or TAC.
- 20.2. Haven may reach out to get rationale correctly defined.

21. New Business

- 21.1. Research liaison with section 8 (Carl Huber) reported out:
- 21.2. Key items from research breakfast presentation (presentation will be shared with Tyler)
 - 21.2.1. Submittals of RTAR or work statements moving to online portal (currently being demoed)
 - 21.2.2. Should be online by year end for use in 2026
 - 21.2.3. Research Advisory panel established (but have not met yet) to develop strategic plan
 - 21.2.4. Research budget for 2024-2025 is \$3.9M with 37 active work statement in process
 - 21.2.5. RAC concerned only 1 RTARs that came through this spring so are encouraging TC's to submit RTARs to use funds coming in
 - 21.2.6. Deadline for submittals is August 15 if you want it quoted on in the fall
 - 21.2.7. Anyone interested in PES or PMS training it is available on-line

22. Adjourn

- 22.1. Meeting adjourned at 4:03 MST