



MINUTES

APPROVED

TC8.03 Absorption and Heat Operated Machines

2022 ASHRAE ANNUAL MEETING - TORONTO
Hybrid

Monday, June 27, 2021: 2:30 – 4:30 PM (ET)
Location: Sheraton, Wentworth(2); WebEx

TC8.03 Subcommittee Meeting (Research/Program/Handbook) – Tuesday, June 21, 2022 12:00-2:00 PM
(ET)
Location: WebEx

Note: These draft minutes have not been approved and are not the official, approved record until approved by the Technical Committee.

Minutes

1. Call to order

Ziviani

Meeting was called to order at 2:33 p.m.

2. Review Scope

Ziviani

Technical Committee 8.03 is concerned with the design, performance and application of equipment energized by a heat source and using a thermodynamic cycle to provide an air-conditioning, refrigerating or heating function; with the properties of absorbent solutions or special working fluids used in these cycles; and with components of the cycle requiring specific design characteristics.

3. ASHRAE Code of Ethics Commitment

Ziviani

In this and all other ASHRAE meetings, we will act with honesty, fairness, courtesy, competence, integrity and respect for others, and we shall avoid all real or perceived conflicts of interests. (See full Code of Ethics: <https://www.ashrae.org/about-ashrae/ashrae-code-of-ethics>)

4. Introductions

All
Fronk

- a. Establishment of a Quorum

VOTING MEMBERS FOR THIS MEETING (Need 4 for a Quorum)

VOTING MEMBERS FOR THIS MEETING

	Douglas Davis	(6/2025)	x	Davide Ziviani, Chair	(6/2022)
X	Brian Fronk	(6/2024)			
x	Kyle Gluesenkamp	(6/2024)			
X	Christopher Keinath	(6/2024)			
X	Jay Kohler	(6/2024)			

The TC presently has 6 voting members. A roll call of the voting members was taken, and a quorum was/was not established with 4 of 6 Voting Members present with chair non-voting.

- b. Total Attendees: 5 (In person) and 14 (online); 2 new member; YEA members: 2

5. Agenda additions

All

[Davide Ziviani] Basecamp TC8.3

6. Liaison reports (as they arrive)

Liaisons

TAC Section 8 Head

Kevin Mercer

RAC Liaison Section 8

Chris Seeton

Chris Seeton is rolling off as Liaison for Section 8 and new Liaison TBD
Activity form July 5th, 2022

7. Minutes Approval

Ziviani

Motion to approve the minutes from 2022 Winter Hybrid meeting: Brian

Second: Jay

The motion passed. (4-0-0-1, CNV)

8. Chair's Report

Ziviani

- **TC Chairs' Breakfast & Training Meeting** (Sunday June 26, 2022). Chair attended the meeting.
 - Functional Group Leadership Training
 - Revised FG and MTG Manual of Procedures
 - Strategic planning (www.ashrae.org/about/strategic-plan)
 - Think like a leader presentations (www.ashrae.org/tac)
 - Updates on TC/TG/TRG/MTG

- TC/TG/TRG/MTG now separated into FG MOP and MTG MOP (www.ashrae.org/tac)
- Changes to FG MOP
 - Requires balance for voting membership and known financial interests in other entities. This was incorporated in June 2021. "...shall maintain a balance of Members in these stakeholder interest categories. No single stakeholder interest category shall constitute a majority...."
 - Requires that the Chair, Vice-Chair, and all voting members are also members of ASHRAE
 - Both balance and ASHRAE membership can be waived with your section heads approval
 - Recommendation to conduct virtual meetings between the Annual and Winter meetings 2021 ASHRAE Research Strategic Plan (Link: <https://www.ashrae.org/technical-resources/research/research-strategic-plan>):
- MTG MOP re-imagines the MTG FG to be responsive to emerging problems
 - Advancement of the arts and sciences of HVAC&R for the benefit of humanity
 - ASHRAE Strategic Plan
 - Proposed timeline for completion
 - Along with a short list of expectations, the MTG organizational structure is left to the MTG leadership to suit the purpose for its formation.
 - Effective 7/1/2022
 - Section Head will reach out to existing MTGs to transition to the new MOP
 - New MTG & FG MOP at www.ashrae.org/tac
- FG Strategic plan (Envision, Equip, Empower, Edify, Evaluate)
 - Rostering voting members and FG leadership is crucial to succession plan implementation
- Change in Communication Character Rostering:
 - At least three weeks prior to the Society Winter Meeting, the Administrative Assistant for Technical Services sends each FG Chair and TAC Section Head a Roster Update link
 - FG Chair reviews the Roster Update Webform, making changes and additions, and clicks SAVE (do not click SUBMIT)
 - FG Chair notifies the appropriate TAC Section Head (no later than the Wednesday of the Winter Conference) that the proposed changes are completed
 - Section Head reviews, approves and SUBMITS the Roster Update Webform or returns it to the FG Chair for corrections by February 15
 - Section Head and FG Chair finalize and SH SUBMITS by February 25
 - If no roster update is submitted, voting members rolling off will automatically be dropped off the roster
 - Staff sends draft roster to Section Head for review against the approved Roster Update Webform
 - Repeat until the Section Head has approved the draft roster
 - The purpose of this procedure is to minimize Emergency Roster Actions
 - All roster changes take effect at the close of the Annual Conference
- ASHRAE continues to encourage additional (Virtual) meetings between Annual and Winter meetings
- **Research Subcomm. Chair's Breakfast** (Monday June 6/27/2022): **Kyle and Davide attended the meeting**
 - Reviewed general questions on operations
 - Updates on RAC Membership for SY2021-2022 and SY2022-2023
 - ExCom Chair: Omar Abdelaziz
 - Vice-Chair: Bill Murphy
 - Liaisons:
 - Section1: Ahmed Kashef
 - Section2: William Hutzell

- Section3: Chee Sheng Ow
- Section4: Natascha Milesi-Ferretti
- Section5: Jin Wen
- Section6: Stefan Elbel
- Section7: James Bogart
- **Section8: TBD**
- Section9: Roland Charneux
- Section10: Lorenzo Cremaschi
- Research budget:
 - Typically \$2.6-2.7M per year. Funds normally covers 12-15 projects per year along with IRG, NIA, GIA
 - Funds collected thus far **\$1.8M** and covers current contract commitments only
 - IRG, NIA, GIA are suspended till SY2022-23; URPs are stopped for the time being
 - the Research Promotion (RP) was very successful; The RP campaign supports ASHRAE Research, Education, YEA programs, Scholarships, Endowed Funds, the RP General Fund and Special Initiatives; Total of \$2,300,519 for SY 20-21 including \$1,769,785 for Research.
- RAC Reviews for SY 2021-22 to date:
 - **Fall 2021 meeting:** Approved Research Strategic Plan; 6 Research Topic Acceptance Requests (RTARs); 5 Work Statements; 3 Released for Bid
 - **Winter 2022 Meeting:** 1 RTAR (carry over from Fall 2021); 0 WS; 17 TRPs that are ready to bid in Spring 2022 – impact SY22-23 budget
 - **Spring 2022 Meeting:** 3 RTARs; 2 Publication Topic Acceptance Request (PTAR); 1 WS; 8 Projects released for Bid
 - **Annual 2022 Meeting:** 2 WS; 2 RTARs; 8 Research projects awarded for Bid (pending)
- **Web-based initiatives**
- **TC Program Subcommittee Training** (Tuesday 2/1. 11:15 am – 12:00 pm; Milano VIII)
- **Handbook Training**

9. Membership/Roster

Doug Davis

- a. Davide Ziviani continued to clean up the roster and update contacts.
- b. TC leadership and current positions held by various members were reviewed.
 - **Chair continue till 06/2023**
- c. Discussion on potential voting members from **07/2022**:
 - **Bill Ryan**
 - **Saeed Moghaddam, UFL**
 - **[Davide] send a note to seek for an additional voting member. Eric Smith**

10. Subcommittee reports

a. Programs

Bill Ryan

2022 Toronto Annual Conference. Tracks:

- Fundamentals and Applications
- HVAC&R Systems and Equipment
- **Research Summit (Chair: Brian Fronk)**
- Connected Buildings, Connected Communities
- Cold Climate Building System Design, Operation and Resilience (**Chair: Davide Ziviani**)
- IAQ, Energy Use, Comfort and Health of Sustainable Buildings
- Professional Development and Education
- Buildings in the Aftermath of COVID-19

Seminar “Thermally Driven Heat Pumping and Cooling to Enable Decarbonization” was approved but pulled from the program due to lack of in-person presenters.

2023 Atlanta Winter Conference. Tracks:

- 1) Fundamentals and Applications
- 2) HVAC&R Systems and Equipment
- 3) Refrigerants & Refrigeration (Chair: Brian Fronk)
- 4) Grid Resilience and Thermal Storage
- 5) Pathways to Zero Energy Emissions and Decarbonization
- 6) Multifamily and Residential Buildings
- 7) Operations and Maintenance
- 8) Building Simulations and Virtual Design in Construction
- 9) Mini-Track: Innovative responses to supply chain challenges

Debate, Panel, Seminar Form, Workshop Proposals Due: **August 9, 2022**

Forum proposal (Brian, Moderator) [Track 5]: Decarbonization by Thermally Driven Heat Pumping and Cooling. Speakers: Paul Glanville (PGlanville@gti.energy) [Saeed will follow up on 6/29 with Paul], Doug Davis (d.davis@2-g.com) [OK] Moghaddam, Saeed (saeedmog@ufl.edu) Tentative: Jürgen Scharfe (js@jseb.de) / Amit Vatsa

Motion (Title/track) Forum: Decarbonization by Thermally Driven Heat Pumping and Cooling / Track 5; Brian Fronk
Second: Davide Ziviani
Vote: approved (4-0-0-1 CNV)

Seminar [Track 5]: "Thermally Driven Heat Pumping and Cooling to assist the Grid in Decarbonization"
Chair: Kyle G.
Speaker: S. Garimella, Amit Vatsa, Saeed M. (dehumidification option?!)

Motion (Title/track) Seminar: Thermally Driven Heat Pumping and Cooling to assist Grid Decarbonization / Track 5; Brian Fronk
Second: Davide Ziviani
Vote: approved (4-0-0-1 CNV)

Topic for Tampa 2023 [Brian]: CHP (TC1.10) + TES (TC6.9) + sorption systems; reach out to the chairs
[Eric Smith] what are applications for heat driven refrigeration systems (e.g., case studies) / could be triggen.
[Rich Sweetser / Eric Smith/ John Randtke] ORC application (waste-heat-to-power) [TC1.10 + TC8.3 seminar]; Exergy, Turboden, Ormat

b. Research

Kyle Gluesenkamp

- 2021 ASHRAE Research Strategic Plan
(Link: <https://www.ashrae.org/technical-resources/research/research-strategic-plan>)
 - 1) Resilience
 - 2) IEQ – Environmental Quality in Occupied Spaces and Impacts on Work and Learning Health and Well Being, and Transmission of Airborne Infectious Viruses
 - 3) Sustainably, Decarbonization, Energy and Resources
 - 4) HVAC&R Equipment, Components and Materials
 - 5) Tools and Applications
 - 6) Education and Outreach
- Ongoing RTAR/WS/TRP:
 - **WS-1796**: Application Guide for Absorption Chillers and Heat Pumps
Suggestion from Chris Seeton to submit as PTAR. Kyle to check on the procedure for applying/bidding. Checked with Chris on 6/27
 - **WS-1842**: Development of Co-Generation Tools for Building Designers (eQuest):
Resubmit WS with updates.
[Kyle/Davide/ Haotian] Update WS to remove eQuest specific package.
- New research ideas aligned with Research Strategic Plan:

[Saeed M.] Case studies on utilization of hydrogen, using heat vs. converting it back to electricity (e.g., carbon effects); LCA studies [development of a tool ?! or case studies a PTAR]

[Kyle G] tool for assessing the potential of technologies for clients

[Saeed M.] Resiliency: Hydrogen storage vs. severe weather events vs. thermally driven systems

[Davide] heat recovery from data centers [TC9.9]

Proposed research titles [Saeed]:

- 1) Techno Economical Analysis of Hydrogen-Driven Emerging Ionic Liquid Desiccant Dehumidification Systems for Enhanced IAQ, Efficiency and Resiliency
- 2) Analysis of Roundtrip Efficiency and Economics of Hydrogen Powered Absorption-based Cooling and Heating Systems.

c. Handbook

Juergen Sharfe

[Davide Ziviani] Two manuscripts:

- Application Guide for Absorption Cooling/Refrigeration Using Recovered Heat (1995) – RP-773

Notes from Subcomm. meeting: seeking for support on drafting PTAR proposal. Doug volunteered to help Davide. Proposed a new title “Application Guide for Thermal Cooling and Refrigeration Systems”

Fundamentals Chapter 2 needs to be reworked.

d. Standards

Jay Kohler

- SPC 40 – [Ahmad AbuHeiba]: Currently working on the draft of the document and it is expected to go out for public review on or around Nov 30, 2022
[Jay] Suggested to send the draft to TC8.3 for comments
- SPC 182 – Published (2020 version).
 - Amit Vatsa raised the topic of writing standards for large size Absorption Heat Pump used in the industrial applications and how it could be initiated with ASHRAE under TC 8.3.
 - Motion to approve a project committee to revise Standard 182 to add large size heat pump with Amit as Chair was voted and approved in Las Vegas

Note from Mark Weber”

“ASHRAE Standard 182-2020, Method of Testing Absorption Water-Chilling and Water-Heating Packages In accordance with the requirements of Section 13 of the Standards Committee Reference Manual, TC 8.3 (the cognizant Technical Committee) is asked to vote to recommend to the Standing Reaffirmation Subcommittee (SRS) of the Standards Committee whether the subject standard should be

- Revised,
- Reaffirmed, or
- Withdrawn

Section 13.1.3 of the Standards Committee Reference Manual states: “Following an interval of not more than three years after publication of each Standard or Guideline, the cognizant committee shall be requested to recommend to SRS reaffirmation, revision or withdrawal of the SCD.” The three-year date for Standard 182-2020 is 9/30/2023.”

[Davide Ziviani] Received the form from Jay to be completed. Ask for clarifications on the procedure

[Amit Vatsa] list of members joining SPC 182

1. Amit Vatsa / BROAD USA
2. Gluesenkamp, Kyle R (ORNL)
3. James Schettler, PE, Mechanical Engineer, Brown and Caldwell [Lifetime ASHRAE member]
4. Jason Jiang / BROAD Europe
5. Lars Sonderby Neilson / Enxio, Denmark (EPC Company)
6. Jurgen Scharfe / JS Energie & Beratung, Germany (EPC Company)

e. Website

Chris Keinath

- Website is up-to-date
- Research Projects was said to be taken up by Kyle and he confirmed to investigate it.

11. Old Business

- a. The Chair asked opinions from the members if anything is pending from old meetings.
None

12. New Business

[Eric Smith] small absorption refrigerator business caught on fire due to overheating; safety concerns from manufacturers (testing method ?!). Applicable standard
[Jay Kohler] UL listing (of listing agency) and check with the manufacturer
[Michael Garrabrant] ANSI Z21.19 Refrigerators using gas fuel

13. Adjournment

- Motion to adjourn made by Brain and seconded by Jay.
- Meeting was adjourned at 4:17 p.m. (ET)