



MINUTES

DRAFT

TC8.03 Absorption and Heat Operated Machines

2021 ASHRAE WINTER MEETING
Virtual

Wednesday, January 13, 2021: 3:00 – 5:00 PM
Location: Zoom

TC8.03 Subcommittee Meeting (Research/Handbook) – Monday, January 11, 2021 3:00-5:00 PM
Location: Zoom

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 3:05 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 5 for a Quorum)

Timothy Wagner-2021 (Absent)	Christopher Keinath – 2024 (Present)
William Ryan-2021 (Present)	Brian Fronk – 2024 (Present)
Kumar Sivagnanam-2021 (Absent)	Jay Kohler-2024 (Absent)
Eric Smith-2021 (Present)	Davide Ziviani, Chair – 2022 (Present)
Kyle Gluesenkamp-2024 (Present)	

The TC presently has 9 voting members. A roll call of the voting members was taken and a quorum was established with 7 of 9 Voting Members present.

- b. Total Attendees: 26; 1 new member.
5. **Agenda additions** **All**
a. Davide Ziviani suggested a discussion on Handbook Chair replacement

6. **Chair's Report** **Ziviani**
a. Chair shared TC Chair's report with the members on the Chair's goals, TC Chair's Breakfast Meeting held on Dec 11, 2020 and further informed that the TC 8.3 Research Subcommittee Chair Meeting shall be held on Feb 11, 2021 8-10 AM EST. \
- b. Chair shared the information on ASHRAE George Hightower Tech. Architect Award Nomination and ASHRAE Strategic Plan 2019-2024 for Resilient Building and Indoor Environment Quality. Then the Chair discussed CPCC and updated the members about RAP which kicked off in Nov 2019. He also updated on Research Admin Committee along with RAC updates and fiscal impact observed due to COVID 19.
- c. Discussion on TC Reorganization:
- TC member Srinivas Garimella suggested to change the title of TC8.3 and add Adsorption Technology too in it. William Ryan shared the info to the members the presence of Desiccant based TC and Kyle Gluesenkamp shared the relevant TC number for information.
 - Doug Davis suggested if TC 8.3 could be merged with some other committee having a similar topic such as TC 1.10 (Cogeneration) for more discussions on the topic with respect to its use and applications

7. **Liaison reports (as they arrive)** **Liaisons**
a. Kevin Mercer (Carrier), Section 8 Head
b. Chris Seaton (Shrieve), RAC Liaison for Section 8

- i. ASHRAE Research is in lack of funding.

8. Minutes Approval

Ziviani

- a. The Chair brought up the pending point of the minutes approval of last 3 meeting is held in Kansas (Summer 2019), Orlando (Winter 2020) and Virtual Summer Meeting of June 2020. The Chair announced that as the quorum was available in today's meeting let it be motioned and approved. Kyle Gluesenkamp motioned the request to approve the minutes for Kansas, Orlando, and Austin-Virtual which Vice-Chair Brian Frank seconded. The motion passed. **(6-0-0-2, CNV)**

9. Membership/Roster

Doug Davis

- a. to clear the name of those old members whose old email address in the TC 8.3 database bounces back.
- b. TC leadership and current positions held by various members were reviewed.
- c. **Action Item: New Handbook Subcommittee Chair.** The Chair suggested that a substitute was required for this post as the existing gentleman has not been a regular attendee for a while and shared that as Zhi has volunteered for this post and shall be regular in the TC 8.3 meetings, he should be considered instead.
- d. Kyle suggested that the old chair has done a tremendously great work in this section of the TC and helped reviving the chapter so we should once again check his interest and then decide about this in our next meeting in Summer 2021. Kyle and Doug Davis were requested to check again with the existing chair's interest and availability in next sessions and give time till Summer to act on this topic.

10. Subcommittee reports

a. Programs

Bill Ryan

- i. 2021 Chicago (Programs due August 3)
 - 1. HVAC Fundamentals & Applications
 - 2. Systems and Equipment
 - 3. Refrigeration and Refrigerants
 - 4. Environmental Health through IEQ
 - 5. Building Performance and Commissioning for Operation and Management
 - 6. Energy Conservation
 - 7. International Design
- Forum title of The Role of Thermally Driven.... Could not be approved in time by ASHRAE as had some issues with the scheduling and so asked to move it to next summer session.
- The Chair said he will check with the coordinators and apprehended if it would be possible to schedule it in Summer/Winter 22 and wanted to discuss under which track number ASHRAE will approve it for. Brian Fronk motioned for this moving to Summer 2021 and Kyle Gluesenkamp seconded it. Motion was approved **(6-0-0-2, CNV)**
- Michael suggested that the message of this Forum is important and if it could be possible to have it in Las Vegas Winter 2022.
- The Chair then suggested that a seminar is already set for Summer along with a Q&A session and so would need to check if Las Vegas is possible for the Forum or not otherwise it will go to the next conference.
- Brian Fronk raised the point if Electrification could be changed rather to Decarbonization to which Bill opiniated to change it as was a good idea in the given trend going in the market and so we should apply again with a change of name of the Forum.
- The Chair accepted the idea and asked for voting for this Forum to be part of the Las Vegas session. Chris Keinath motioned it and Kyle Gluesenkamp seconded it. The motion was approved **(6-0-0-2, CNV)**
- the Chair asked the members to vote now and motioned it for removing it from the panel of Phoenix session to which Brian Fronk seconded. The motion passed **(6-0-0-2, CNV)**

- Kyle asked the committee if there is any apprehension expected with the CEC on removing it to which the Chair suggested it should not be an issue as we did not get approved before.
- ii. 2021 Phoenix Annual Conference
- Abstracts due date has been extended and new date was let known to the members.
 - The Chair suggested to pick out of Track #1 or Track #7 for the Seminar of Phoenix and members decided that the later was suiting the topic of TC 8.3 and hence were suggested to submit the description of the Seminar topic and finalize the speaker by Feb 22nd, 2021.
 - Bill Ryan suggested the name of the Seminar's topic for the Phoenix meeting as "State of the Art of Thermally Driven Heat Pumping & Cooling System in the Age of Decarbonization".
 - Bill motioned to have this topic as a Seminar at Summer Conference 2021 in Phoenix and was seconded by the Chair Davide. The motion passed (**6-0-0-2, CNV**). It was decided that the Chair will inform the ASHRAE committee that now there would not be any Panel anymore in January 2021.
 - Bill Ryan requested for updating the email addresses of TC8.3 database and sent to him for sending the Call Invites for this Seminar topic's Abstracts.
 - The Chair then asked the members if anything else is on the Program list and as there was none the meeting proceeded ahead.

b. Research

Kyle Gluesenkamp

- i. Current 8.03 RPs
- Kyle updated the committee on 1842-WS and 1796 -WS and suggested to keep it alive till COVID 19 is gone behind us.
- ii. Ideas/Discussions:
- Hydrogen and Absorption technology Thermal Storage and Absorption technology: Doug Davis discussed about this zero-carbon fuel Hydrogen gas and the buzz about it going presently worldwide about 'Hydrogen Economy' among the manufacturers of Gas engines and requested to look seriously into this fuel as an alternate to fossil fuel and the possibility of including this fuel option in TC 8.3. As it can fire directly into the Absorption chiller or can come from heat recovery of hydrogen fired prime movers there should be some guidelines by ASHRAE covered on this alternate new fuel also.
 - Amit from BROAD USA suggested to investigate the COP provided by such fuel and the safety issues related /attached to this fuel as Hydrogen being highly inflammable. The Chair suggested that we should check this fuel with reference to performance and economy it has to offer to the industry.
 - Michael Garrab suggested how and why hydrogen makes more sense and gave an overview on it.
 - Ingemar suggested that we should check the usage of different machines on hydrogen, economy of this fuel and if it could be used as a backup for battery usage.
 - Kyle suggested to make Hydrogen as a research topic/ such as 'the ways to work with it'.
 - The Chair suggested to make a techno commercial analysis and see the economic trade off given by this fuel.
 - Doug Davis suggested that as there is a fast change seen in the industrial domain on Hydrogen gas feasibility and usage, so it is imperative to look into it being made a part of TC. Hydrogen is a catalyst of change and is seen as the best alternative to the fossil fuel deficit and a green solution to the crisis of climate change. The Chair asked Doug Davis to put a paragraph on this idea and Saeed took the leadership to draft a synopsis on Hydrogen fuel.
- iii. Update Research Section of the Website:
- Kyle requested the members to find the database on any past research work which was funded by ASHRAE. Bill shared with the members that in

1990s a research was done on an application guide for Absorption Chillers.

- Srinivas raised a point that in the past he used to see more active participation by various manufacturers and more ideas were shared and practical problems discussed. The need of the industry in terms of Heat operated machines and how various fuel application is moving in the industry was made understood but disappointed to see that nothing that sort of happening anymore now.
- The Chair made a note of it. Saeed suggested he would bring an industry expert and known colleague with knowledge in the utility and absorption technology to this committee. Doug also suggested he will reach out to his industrial network advocating the advantage to join TC8.3.
- Ray Keller suggested that low-cost NG may be a barrier for new fuel but mixing low-cost fuel with green and zero carbon hydrogen can make it more feasible for absorption technology. It could be part of the Research.

c. Handbook

Ziviani (Juergen Sharfe was absent)

- i. Davide attended the Handbook Training Section
- ii. Further, on the Handbook update and publishing, the members in attendance were asked to volunteer for this section. Eventually, Doug Davis, Brian and Kyle were suggested to nominate industry people to volunteer for the handbook section

d. Standards

Jay Kohler

- i. SPC 182 – Jay Kohler updated that this is done and published in Fall 2020.
- ii. SPC 40 – Ahmed shared that some more activity shall be done this year on it.
- iii. 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
- iv. Michael updated that ASHRAE 2140 and G2140 ANSI 40.4 had this product's standards covered. Jay Kohler updated that Heat Pump was earlier the part of SPC 182 but recently has been excluded from it for the time being anticipating that in the future if such applications are commonly used then could be taken up again.
- v. It was suggested to Amit to write to the Chair about this product and information shared so that could be seen how it be taken up.
- vi. Kyle supported the writing of large size Heat Pumps standards and Amit was asked to spearhead this and find the modalities for making it a part of SPC 182 again for the large sized Absorption Heat Pumps.
- vii.

e. Website

Chris Keinath

- Draft minutes uploaded
- Davide notes that we need to update the website with Program activities, need to update research activities with.
- 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. There were none.

12. New Business

Basecamp joining by all members was requested by the Chair for easy sharing of the information amongst us with respect to ASHRAE related developments. The Chair said that a fresh request to all the members would be sent for joining the Basecamp.

13. Adjournment

- a. **Motion to adjourn made by Brian Fronk and seconded by Jay Kohler..**
 - i. Meeting was adjourned at 4:50 p.m.