



Minutes - ASHRAE MEETING – Summer 2024 (Indianapolis)
TC 2.3 - Gaseous Air Contaminants/Removal Equipment
TC Meeting

Time: 1:00 PM – 3:30 PM EDT

Date: Tuesday, June 25

Location: JW Marriott, White River IJ (1)

Link: <https://events.rdmobile.com/Sessions/Details/2303265>

TC 2.3 website link: <https://tc0203.ashraetcs.org/>

1. **Call to Order at 13:01 by Kevin Kwong**
2. **ASHRAE Code of Ethics**

The ASHRAE Code of Ethics is to be adhered to by those doing ASHRAE business whether or not they are an ASHRAE member. The Code of Ethics can be reviewed at the below link.

<https://www.ashrae.org/about-ashrae/ashrae-code-of-ethics>

- **ASHRAE Value Statement**

In ASHRAE meetings, we will act with honesty, fairness, courtesy, competence, inclusiveness and respect for others, which exemplify our core values of excellence, commitment, integrity, collaboration, volunteerism and diversity, and shall avoid all real or perceived conflicts of interest. Our culture is one of inclusiveness, acknowledging the inherent value and dignity of each individual. We celebrate diverse and inclusive communities, understanding that doing so fuels better, more creative and more thoughtful ideas, solutions and strategies for the Society and the communities our Society serves. We respect and welcome all.

- **Diversity Commitment**

ASHRAE is committed to providing a welcoming environment. Our culture is one of inclusiveness, acknowledging the inherent value and dignity of each individual. We proactively pursue and celebrate diverse and inclusive communities understanding that doing so fuels better, more creative, and more thoughtful ideas, solutions, and strategies for the Society and for the communities our Society serves. We respect and welcome all people regardless of age, gender, ethnicity, physical appearance, thought styles, religion, nationality, socio-economic status, belief systems, sexual orientation, or education.

3. **Introductions**

- i. Please mark on the sign-in sheet if you are YEA (≤ 35 years old) and/or if you are an international attendee (reside outside of US) for meeting attendance records.
- ii. Virtual attendees – Sign into chat with your Name, Affiliation, Email, and YEA and/or International designations

4. Voting Member Roll Call

Name	Present?
Kevin Kwong	Yes
Tori Binz	Yes
Paula Levasseur	Yes
Michael Corbat (NQVM)	Yes
Vivek Gaur (NQVM)	Yes
Mick Flom	Yes
Henry Greist	No
Chrystal Joliffe	Yes
Ashish Mathur	Yes
Kathleen Owen	Yes
Scott Parris	Yes
Dave Schaaf	Yes
Mengjia Tang	No
Marwa Zaatari	No
Jianshun Zhang	Yes

12 voting members in attendance 3 missing, Quorum met

5. ASHRAE Awards

- i. Distinguished Service Award – Brian Krafthefer
- ii. Exceptional Service Award – Brian Krafthefer
- iii. Standards Achievement Award – Marwa Zaatari
- iv. Donald Bahnfleth Environmental Health Award - Lan Chi Nguyen Weekes

6. Chair's Report

- i. Updates from TAC/TC Chair's Training Breakfast
 - a. ASHRAE Code Interaction Subcommittee (CIS)
 - b. Center of Excellence Building Decarbonization (CEBD)
 - c. Global Technical Interactions Committee (GTIC)
 - i. Started in July 2023. Replaces ILS/ISAS.
 - ii. Interfaces with ISO (U.S. TAGs), ASHRAE, Chapters/Regions, Technical Committees, Project Committees, and other international standards organizations.
 - d. Residential Buildings Committee (RBC)
 - i. Increase awareness of residential topics throughout ASHRAE

7. Section 2 Head – Lan Chi Nguyen Weekes – Please make sure your roster is finalized and have succession in place. Need to keep the activity sheet up to date. If you use language with decarbonization it might be considered with a preference, because the interest for decarbonization is very high. A question was made for the TC 2.3 research chair rolling off, if there are changes made before June 30th the roster should be updated.

8. Review and Approval of previous meeting minutes Kathleen made motion to approve, Tori seconds the motion 11-0-1-3-CNV (Approve-Disapprove-Abstain-Absent-Chair Voting Status) PASSED

9. Summary of votes between meetings

#	Motion	Vote (For-Against-Abstain-Absent-Chair Voting Status)
1	Co-sponsor TC 2.5 Seminar on Wildfires	(11-0-1-3-CNV)
2	Approval of TC 2.3 Handbook Subcommittee approval of Chapter 11 (Fundamentals) revisions	(12-0-1-2-CNV)
3	Sponsorship of RTAR "Ozone Removal Efficiency and Generation of Byproducts on VOC-Loaded Gas-Phase Air Cleaning Devices"	(13-0-1-1-CNV)

10. **Items to be voted on** – Seminar for Orlando on ventilation effectiveness, Michael makes the motion to approve, Tori seconds the motion to approve 11-0-1-3-CNV (Approve-Disapprove-Abstain-Absent-Chair Voting Status) PASSED

i. This item is awaiting a sponsorship vote by another TC and then the TC 2.3 can Co-Sponsor.

11. **Particle Party - Keith Chesson** – 6:30 Loughmillers Pub & Eatery

12. Subcommittee Reports

- i. Research - Subcommittee Chair – Paula Levasseur/Caitlin Naske – Saturday's meeting only had 3 RTARs and 7 WS to review, informed by Chris G they are very interested in filtration. 1869 is the only research project that has been accepted, the project already started and the phases are established with work already started. WS-1895 (Paula, Paolo, and Brian) has been sent in and came back with comments, the comments were minor and the WS was pretty much accepted. 1858 implementing comments from RAC and need to work on the budgeting portion of the RTAR. Paula will gather all of the research projects into a single spreadsheet so others are aware of who, where, and when the projects started.
- ii. Handbook - Subcommittee Chair -- Brian Krafthefer/Michael Sherber – Finished Chapter 11 (Fundamentals) and it was approved, updated probably a third of the chapter. There was an extension filed for Chapter 12, there was a conflict from 2.1 and 2.3 on who is responsible for managing this chapter. There are some out of date items relating to odors, for the future there is a chapter 37 which needs to be updated as part of the 4 year cutoff.
- iii. Membership - Subcommittee Chair -- Matt Middlebrooks – Soliciting additional members and provided an explanation of how to potentially how to become a voting members. There are currently 172 Corresponding Members and 18 Provisional Corresponding Members on the roster. 6 PCM have joined since our last meeting in Chicago.
 - a. 4 Voting Members rolling off on June 30, 2024: Mick Flom, Vivek Gaur, Ashish Mathur, Jianshun Zhang
 - b. Rotating on 4 Voting Members on July 1, 2024: Paolo Tronville, Chris Vizcaino, Michael Sherber, Gabrielle Davis
- iv. Planning - Subcommittee Chair – Tori Binz – Discussed how to better share the information about TC 2.3 or ASHRAE information in general, proposed how to gather information on the website. For the Standards subcommittee, Gemma will be vice chair in case of emergency.
- v. Program - Subcommittee Chair - KJ Choi – There are two seminars presented during the Indianapolis meeting. For Orlando there are four programs schedule and a co-sponsorship for TC 4.3 Aug 2nd
 - a. Website is open until August 2, 2024 for 2025 ASHRAE Winter Conference program submissions (<https://ashraem.confex.com/ashraem/w25/cfp.cgi>)

b. **September 4, 2024** – Conference Papers Due

- vi. Standards - Subcommittee Chair – Michael Sherber – Focused on getting Guideline 27 completed, have been delayed on getting the subcommittee established. Gemma - Had two meetings GPC 27 will have biweekly meetings to keep things on track. Gemma is now an emergency Vice Chair for Standards, however she is still seeking a successor.
 - a. We need a volunteer for Vice Chair of Standards

13. Other Updates

- i. ASHRAE Learning Institute – Marilyn Listvan – There are ten courses for building commissioning at Indianapolis, encourages others to view what opportunities exist for Orlando and is suggesting that IAQ could potentially become a course.
- ii. Publications - Subcommittee Chair -- Marilyn Listvan – Create a bibliography on the website, soliciting relevant papers for gaseous contaminants. Caitlin to determine if this is acceptable from ASHRAE code of conduct. Interested in a publication that Gemma proposed. There is also a Facebook page, encouraging others to view the content. Any articles that come up and are relevant to the TC2.3 group can also be posted there. Question about the LinkedIn page, there is one that exists. Ashish mentioned an outreach initiative that's happening with TC 2.9.
- iii. Website - Subcommittee Chair - Caitlin Naske – Discussion to make links for the hard-to-find articles such as RTAR guides and old research papers. More links are better for the website. How to access the LinkedIn page group.
- iv. SSPC 145 – Committee Chair – Tony Abate – Kevin to give update, last published in 2014 and needs an update
- v. SPC 145.4P – Subcommittee Chair – Caitlin Naske – Very close to getting this ready for public review, this might be ready before the next meeting.

14. Review of Action Items from Last Meeting

#	Action Item	Owner	Meeting Initiated	Update	Status
1	Collection of TC member bibliography papers for website posting	Marilyn Listvan	Atlanta	Soliciting additional information, and publications pertaining to TC2.3	In progress
2	Development of a course on gas phase filtration to be part of ASHRAE supported classes and send to chapters	Paula Levasseur	Atlanta	Marilyn will post "History of Filters" presentation. This was not completed, Paula will send additional info to Marilyn	In progress

#	Action Item	Owner	Meeting Initiated	Update	Status
3	Title/purpose /Scope for MTG or GPC on how to implement combined filtration systems	Brian Krafthefer	Houston	No update, unsure whether or not the MTG will be accepted, Brian to reach out again.	In progress

15. Report from TC liaisons

Henry Greist– TC 2.9 (UV Air and Surface Treatment)

- Possible PTAR idea on risk benefit analysis of Far UV / other wavelengths
 - Understanding photochemistry effects (by-products, secondary aerosols, etc.) for different UV-C wavelengths and intensity/dose levels (air vs surface) in a chamber – study impact of varying outdoor air conditions, ventilation rates.
 - Ozone may be one the main focal points.
 - Will seek TC 2.3 co-sponsorship once written.
 - Whole point of PTAR is for ASHRAE to sell in the bookstore.
 - May change this into some other format, lit review, could be an RTAR.
 - Live stream Seminar 21 discussion about ionization, Phil Arnold from Safe Traces
 - Emerging air purification part two will be presented in Orlando
 - Seeking co-sponsorship from TC 2.3

Marwa Zaatari - 62.1 (Ventilation and Acceptable IAQ – Commercial)

- Update on CMP to include V_{ACS} calculations in Informative Section F – Not approved but Kathleen may revise and resubmit.
- Update on CMP to remove 1,1,1-trichloroethane from design compounds table – Approved
- Update on CMP to remove naphthalene from design compounds table – Not approved. Naphthalene is commonly found and sampled at airports.
- Submitting continuous maintenance proposal to address the incoming air quality.
- Phenol design limit was increased
- Unofficial interpretation for E_f calculation.
- Appendix L proposed to update the definition of air cleaning devices to follow UL 2998 respective of ozone generating devices. One public review completed with push back from UV.

Marwa Zaatari / Jianshun Zhang – EHC (Environmental Health Committee)

- Update on change proposal to include language stating that any area that is non-attainment should be subject to NAAQS and require treatment of incoming air. Has not been submitted yet.

Nick Agopian – 62.2 (Ventilation and Acceptable IAQ – Residential) – No update

Nick Agopian – TC 5.5 (Air-to-Air Energy Recovery) – No update

Tori Binz – TRG4.IAQP (Indoor Air Quality Procedure) – Met on Sunday. Reviewing the IAQP. Discussed potentially how to present how IAQP is calculated and how to move this into the realm of enforceable code. Potentially looking into presenting the IAQP calculator, and how it works and case studies. Keeping an eye on all 62 committees.

Michael Sherber - TG2.RAST (Reactive Air and Surface Treatment) – Seminar will be presented in Indianapolis. Seminar 45 with speakers from 185.3, 145.4 & 185.5.



Tony Abate – TG2.IAQMP (Indoor Air Quality Monitoring Devices) – Discuss potentially changing this to accommodate schedule for TC2.3 members

Tony Abate – TC 4.3 (Ventilation Requirements and Infiltration) – No Update

Jon Rajala – TC 2.4 (Particulates) – No Update

Jon Rajala –ISO/TC 142 (Cleaning Equipment for Air and Other Gases) – Reach out to Matt Middlebrooks for more information on international standards. Plenary meeting in ATL in Oct at the ASHRAE headquarters. Working group 8 is going through review of ISO 10121-3 classification of outdoor air and starting classification for incoming air outdoor air. Not dealing with byproducts and might mimic the byproducts portion of the revised 145.2 test standard.

Brian Krafthefer – TC 4.10 (Indoor Environmental Modeling) – Working on variations of gases vs. particles RTAR.

Brian Krafthefer – TC 2.1 (Physiology and Human Environment) – No Update

Marilyn Listvan - TC 9.7 (Educational Facilities) – In the process of writing a guide like brochure for indoor air quality in educational settings. How to properly set up ventilation in educational buildings. Not even close to monitoring and investigation of IAQ just an awareness discussion at the moment. The design guide is made and is a free guide download on the TC 9.7 website.

Matt Middlebrooks – TC 2.2 (Plant and Animal Environment) – No Update

Matt Middlebrooks – TC 9.13 (Extraterrestrial and Deep Space Environmental Control Systems) – Concerned with HVAC systems for extraterrestrial applications with an emphasis on filtration. Soliciting ideas for research topics. Starting to hypothesize what a 62.1 standard would look like for these extraterrestrial applications.

16. New Business

- i. MTG for IEQ metric (Matt/Charlene) –looking to form a multi-technical group, members of TC2.3 could potentially contribute ideas for indoor environmental quality.

17. Adjourn – Meeting adjourned at 14:22