



DRAFT MINUTES - ASHRAE MEETING - Atlanta
TC 2.3 - Gaseous Air Contaminants/Removal Equipment
TC Meeting

Tuesday (1/15/19), 1:00 pm - 3:30 pm
GWCC Bldg B B208 2nd Floor

Meeting membership attendee list is as follows:

Last Name	Name	Member Status	Position	Present
Total Voting Members = 14 out of 16 in attendance at Voting				
Abate	Mr. Anthony Abate	VM	Member	P
Agopian	Mr. Nick Agopian	VM	Member	P
Bayer	Dr. Charlene W. Bayer, PhD	VM	Member	P
Freeman	Mr. Peter Freeman	VM-NQ	Standards Chair	P
Haas	Mr. Daniel Haas	VM	Member	P
Hingorani	Dr. Sanjeev Hingorani, PhD	VM	Vice Chair	P
Krafthefer	Mr. Brian Krafthefer	VM	Handbook Chair	P
Kerr	Dr. Gemma Kerr, PhD	VM	Member	P
Kwong	Mr. Kevin Kwong	VM	Member	P
Lee	Dr. Chang Seo Lee, PhD	VM-NQ	Member	-
Levasseur	Ms. Paula Levasseur	VM	Chair/Webmaster	P
Muller	Mr. Christopher Muller	VM	Member	-
Roseberry	Mr. Jeffrey Roseberry	VM	Member	P
Sun	Dr. Christine Sun, PhD	VM	Member	P
Tronville	Dr. Paolo M. Tronville, PhD	VM	Member	P
Zaatari	Dr. Marwa Zaatari, PhD	VM	Secretary	P

Summary of Motions

#	Motion	Vote (For-Against-Abstain-Absent-Chair Voting Status)
1	Motion to approve TC 2.3 minutes from Houston. Sanjeev Hingorani 1st, Nick Agopian 2nd	10-0-0-5-CNV
2	Motion to nominate Ashish Mathur as the TC 2.3 representative for the MTG on Health and Wellness in the Built Environment Nick Agopian 1st, Sanjeev Hingorani 2nd	10-0-0-5-CNV
3	Motion to co-sponsor the TC 2.4 sponsored workshop titled "Filters Do Not Use Energy" Marilyn Listvan 1st, Sanjeev Hingorani 2nd	9-1-0-5-CNV
4	Motion for Gemma Kerr to take over the role of PMS Chair of RP-1720 and for Marilyn Listvan to join the PMS Paula Levasseur 1st, Christine Sun 2nd	11-0-0-5-CV
5	Motion to reject the concept of merging TC 2.3, TC 2.4, and TC 2.9 Sanjeev Hingorani 1st, Jeff Roseberry 2nd	13-0-0-2-CV



6	Motion to maintain face-to-face meetings for brainstorming Marilyn Listvan 1st, Charlene Bayer 2ns	13-0-0-2-CV
---	---	-------------

1. Meeting was called to order by Chair @ 12:57pm

- a. The ASHRAE Code of Ethics was reviewed.
 - i. 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.
 - ii. <https://www.ashrae.org/about-ashrae/ashrae-code-of-ethics>
- b. Members and guests were introduced.
- c. It was determined that there was a Quorum with 11 of 16 voting members present at roll call.
 - i. Voting Members for this meeting: Anthony Abate, Nick Agopian, Charlene Bayer, Pete Freeman VNQ, Daniel Haas, Sanjeev Hingorani, Gemma Kerr, Brian Krafthefer, Kevin Kwong, Chang-Seo Lee VNQ, Paula Levasseur, Christopher Muller, Jeff Roseberry, Christine Sun, Paolo Tronville, Marwa Zaatari
 - ii. 16 Voting Members and 2 NQM
 - iii. > ½ Voting Members Present (8) (Yes – 11/16)
 - a. Absent: Charlene Bayer, Brian Krafthefer, Chang-Seo Lee, Christopher Muller, Marwa Zaatari
- d. Chair's Report
 - i. Congratulations to Jianshun Zhang for receiving the Service to ASHRAE Research Award
 - ii. Congratulation to Kathleen Owen for becoming an ASHRAE Fellow
 - iii. TC/TRG/MTG/TRG reorganization (table and discuss under new business)
- e. No reports from ASHRAE liaisons.

2. Review and Approval of previous meeting minutes from Houston.

- a. Motion to approve minutes from Houston by Sanjeev Hingorani
- b. Seconded by Nick Agopian
- c. 10-0-0-5-CNV (For-Against-Abstain-Absent-Chair Voting Status)

3. Summary of votes between meetings:

- a. RTAR-1869 "Evaluation of Indoor Air Contaminants with respect to Development of a Revised Indoor Air Quality Procedure (IAQP) Design Compound and Design Target Lists for Standard 63.1" Vote to Sponsor Approved 11-0-1-3
- b. RTAR "Development and validation of a model for assessing the corrosion risk of Datacom equipment under different pollution and thermal environmental conditions" Vote to Cosponsor Approved 9-4-1-1
 - i. This RTAR was submitted but rejected by RAC (5-0) due to an existing related research project.
- c. ASHRAE-Corp-proposal-CO2-study-2018-2020-V-May-15-final. Vote to Cosponsor Approved 8-6-1-0
 - i. No status update.

4. Review of Action Items from Last Meeting



#	Action Item	Owner	Meeting Initiated	Update at Last Meeting	Status
1	Workshop on performance rating system summary to be sent out.	Ashish Mathur	Atlanta, Summer 2015	No update	Open
2	Collection of TC member bibliography papers for website posting	Marilyn Listvan	Atlanta, Summer 2015	Work in progress. Please send any publications related to TC 2.3 to Marilyn.	Ongoing
3	Development of a course on gas phase filtration to be part of ASHRAE supported classes and send to chapters	Brian Krafthefer	Atlanta, Summer 2015	Paula and Brian will pick this up before Summer 2019 ASHRAE meeting in Kansas City.	Open
4	Title/purpose /Scope for MTG or GPC on how to implement combined filtration systems	Matt Middlebrooks	Houston, Summer 2018	Matt wrote the TPS but has not yet submitted. This will be sent to TC 2.3, 2.4, and 2.9 for votes of approval/interest. Each TC should send a list of people who are interested in participating and vote on nominees for representation on the group. Scope of MTG or GPC: Guideline for how to use various technologies for air cleaning together.	Ongoing
5	PowerPoint Presentation to describe T.C. 2.3	Marilyn Listvan, Kevin Kwong, Nick Agopian, Matt Middlebrooks, Sanjeev	Houston, Summer 2018	No updates. Matt may have some previous presentations. Added Matt and Sanjeev to this group.	Ongoing
6	Setup BaseCamp site for TC2.3 Research	Charlene Bayer	Las Vegas, Winter 2017	Paula will talk to ASHRAE to get this restarted. It is currently locked.	Ongoing
7	Twitter account	Marwa Zaatari	Long Beach, Summer 2017	Please send TC 2.3 related info to Marwa.	Ongoing

5. Subcommittee Reports

- a. Handbook - Subcommittee Chair -- Brian Krafthefer
 - i. Gemma provided the Handbook updates to the committee in Brian's absence.
 - ii. Chapter 46 in HVAC Applications is finished.
 - iii. Initial discussions have been started for Chapter 11 – Fundamentals.
 - iv. There is a publication deadline of 2021 with a revision deadline of Summer 2020.
 - v. The goal is to finish reviews by February 2019. Brian will set up a conference call for some time around March 2019.
 - vi. Chapter 11 will be sent to reviewers outside of TC 2.3 for feedback. There is also interest in getting input from younger people who may use the chapter as an educational tool.
 1. Kathleen Owen, Russell Taylor, and Jeff Roseberry volunteered to review the chapter.
 - vii. Gemma is currently the acting Vice Chair, however she does not want to become Chair. A new Chair is needed once Brian's term is complete.
 1. Michael Sherber volunteered for Chair.
- b. Membership - Subcommittee Chair -- Matt Middlebrooks
 - i. There are currently 16 Voting Members with 2 NQVM.
 - ii. There remains strong participation in the TC and subcommittees.
 - iii. The 4 Voting Members designated to roll off after the Summer 2019 Kansas City meeting are Paula, Peter, Chris, and Sanjeev.
 1. Sanjeev will be extended due to being the incoming Chair.
 - iv. The 3 Voting Members designated to roll on after Kansas City are KJ Choi, Dan Mason, and Matt Middlebrooks.
 - v. If anyone is interested in joining and receiving all TC updates, they should join the committee as a corresponding member.
 - vi. Voting Members are drawn from the list of active corresponding members with some preference towards YEA members.
- c. Planning - Subcommittee Chair – Sanjeev Hingorani
 - i. There were 10 meeting attendees.
 - ii. An Excel sheet of the TC 2.3 research roadmap was completed. This will be uploaded to the TC 2.3 website.
 - iii. Ashish volunteered to represent TC 2.3 for the MTG on Health and Wellness in the Built Environment.
 1. Motion to nominate Ashish Mathur as the TC 2.3 representative for the MTG on Health and Wellness in the Built Environment by Nick Agopian
 2. Seconded by Sanjeev Hingorani
 3. 10-0-0-5-CNV (For-Against-Abstain-Absent-Chair Voting Status)
 - iv. Charlene will be a backup TC 2.3 representative for the MTG.
 - v. The ASHRAE TC combination proposal was also discussed. All 10 meeting attendees were against this proposal.
- d. Professional Development Coordinator -- Barney Burroughs
 - i. No updates
- e. Program - Subcommittee Chair -- KJ Choi

-
- i. There is a TC 2.3 sponsored seminar on Wednesday at 8am. The title is "Room Air Cleaner: Will It Improve IAQ?"
 - ii. There will be 1 seminar for Kansas City.
 - iii. TC 2.4 is sponsoring a workshop titled "Filters Do Not Use Energy". TC 2.4 has asked TC 2.3 for co-sponsorship.
 - 1. Motion to co-sponsor the TC 2.4 sponsored workshop titled "Filters Do Not Use Energy" by Marilyn Listvan
 - 2. Seconded by Sanjeev Hingorani
 - 3. 9-1-0-5-CNV (For-Against-Abstain-Absent-Chair Voting Status)
 - 4. **Update from Marilyn: This workshop has been withdrawn. TC 2.3 will drop co-sponsorship.**
 - iv. The TC 2.3 co-sponsored Debate 2 at 8am on Tuesday was well attended with over 30 participants.
- f. Publications - Subcommittee Chair -- Marilyn Listvan
- i. There will no longer be formal subcommittee meetings.
 - ii. Marilyn will try to compile a bibliography of articles of interest to TC 2.3. Please send articles to Marilyn.
- g. Research - Subcommittee Chair -- Kathleen Owen
- i. The Chair (Kartik Potukuchi) of active research project RP-1720 is stepping down. A new Chair needs to be voted on.
 - 1. Motion for Gemma Kerr to take over the role of PMS Chair of RP-1720 and for Marilyn Listvan to join the PMS by Paula Levasseur.
 - 2. Seconded by Christine Sun
 - 3. 11-0-0-5-CV (For-Against-Abstain-Absent-Chair Voting Status)
 - ii. Kathleen provided various project funding updates from the Research Subcommittee Chair breakfast. Please see the Research Subcommittee minutes for these and all TC 2.3 project updates.
 - iii. There is a Manual of Procedures (MOP) for research.
 - iv. All PMS members are required to go through ASHRAE's PMS training. Training is held twice a year by webinar. Training slides are also available online.
- h. Standards - Subcommittee Chair – Peter Freeman
- i. An online meeting was held prior to the Atlanta meeting. There were 8 attendees.
 - ii. GPC 27P – This will possibly be sent out in February.
 - iii. SSPC 52.2 – A change proposal was submitted to include PM1, PM2.5, and PM10 calculations
 - iv. ISO/TC142 – There is a Wednesday afternoon meeting of WG11 and IEC subcommittees to discuss performance methods of testing standalone air cleaners. Gemma will find out when this group intends to start on gaseous contaminants.
- i. Website - Subcommittee Chair -- Paula Levasseur
- i. Paula has put together an Excel spreadsheet of ongoing ideas and projects. This will be going up on the TC 2.3 website. Paula cannot upload any materials that contain an email address per ASHRAE rules.
 - ii. Paula would like to upload a list of awards for TC 2.3 committee members.

-
- j. SSPC145 – Committee Chair – Matt Middlebrooks
 - i. No updates to 145.1
 - ii. 145.2 is in the midst of removing the restrictions of only testing of sorbent-based devices.
 - iii. 145.2 will remain a single-pass test.
 - iv. Chamber test methods were discussed but will need to be separate from 145.2. There is an ISO/IEC group working on a chamber-type test method.

6. Report from TC liaisons

- a. Research Liaison - Pawel Wargocki
 - i. 1579-RP will start soon.
 - ii. 1720-RP is ongoing.
 - iii. WS-1838 was approved with comments. Will move to TRP and out for bid once comments are addressed to Pawel.
 - iv. RTAR-1858 will try for resubmission before Kansas City.
 - v. RTAR-1869 was returned with comments. Pawel needs to approve comments before WS can be started.
 - vi. There were a few issues brought up during this Atlanta meeting.
 - 1. Issue 1: There were concerns at the TC 2.3 Research Subcommittee meeting that authors of WS would not be able to bid on projects. Pawel has not heard anything about this issue and it is likely not true. This concern may have been related to the writing of guidelines.
 - 2. Issue 2: ASHRAE is doing well financially but has not approved application to extend RAC funding by \$400,000. This means not all projects could be approved and initiated this year. WS-1838 may not be initiated until 2020. Older projects will be initiated first.
 - vii. Research submission deadlines are March 15th and May 15th.
 - viii. Pawel's term on RAC will end after the Summer 2019 meeting.
 - ix. Thanks to Pawel for help on getting research through RAC.
 - x. Thanks for Barney for ASHRAE tenure.

7. New Business

- a. Discuss having a vice chair for all subcommittees so that we can maintain continuity and cover for unforeseeable absences at meetings
 - i. New MOPs stress having a Vice Chair for all subcommittees. Vice Chairs are important for continuity.
 - ii. Paula is requesting all subcommittee Chairs to seek a Vice Chair.
- b. Matt Middlebrooks – New MTG
 - i. This was discussed earlier in the meeting.
- c. TC/TRG/MTG/TRG reorganization
 - i. ASHRAE is proposing the combination of TC 2.3/2.4/2.9 and to have one Main 2-hour meeting.
 - ii. All Voting Members have received a comment sheet.
 - iii. Paula wants to take comments back to TC 2 Chair and head of TAC.
 - iv. No positive comments on TC combinations but we will propose:

-
1. Reduce total time of TC 2.3 meetings by 4.5 hours using virtual meetings and by reducing timeslots. If all TCs could do this, we would help ASHRAE with reducing meeting room costs while still maintaining TC participation.
 2. Marilyn suggested adding the specifics of cutting in-person meeting timeslots.
- v. Negative comments to TC combinations include:
1. Large web meetings are difficult to manage
 2. Virtual meetings are difficult to accommodate for various time zones and international members
 3. Reduced participation from visitors currently attending technical meetings or ASHRAE show.
 4. Reduced participation by voting members which greatly decreases the effectiveness of TC and subcommittees.
 5. Less advancement in state-of-the-art technologies. Less research. Less attendance at ASHRAE technical sessions.
 6. Regular jobs would interfere with attending ASHRAE because you can't justify traveling only for a single meeting.
 7. Lower participation in subcommittees
 8. No outside participation by people not familiar with committees. Subcommittees would no longer be published.
- vi. **Charlene Bayer and Marwa Zaatari joined the meeting. (13 of 15 Voting Members present)**
- vii. Paula will ask ASHRAE for a training session to prepare Chairs for virtual meetings.
- viii. Marilyn - Combining TC's would request in less meeting participation since many more people will opt to sit quietly in the background.
- ix. Paolo - Not all TC's have the same active participation as ours. Some rationalization of TC's may be needed. Web meetings are useful when you have to make decisions but not for brainstorming or communicating with other people. We will not get a larger audience outside of TC members. Put subcommittee meetings back-to-back to maximize attendance and cut down on the repetition of information sharing.
- x. Stephen – TC 9.3 has back-to-back subcommittee meetings culminating with the Main meeting. One issue is some employers find it difficult to fund 2 trips in a year. For TC 9.3, virtual meetings are beneficial.
- xi. Paula – The issue of having TC 2.3 subcommittee meetings back-to-back is that TC 2.3 members are all on other committees not related to TC 2.3.
1. Straw poll of the room confirmed that the vast majority of TC 2.3 members participate in other committees.
 2. Paolo – TC 2.3 and TC 2.4 can never overlap because of this involvement
- xii. Barney – Reorganization of TC's has been in the works at ASHRAE for decades. This reorganization has been included in ASHRAE's strategic plan. There are many layers of administration above TC's and they must hear our negative comments. Include frustrating comments of ASHRAE delaying TC work (example – minor rewording of research projects causes months of delay). We need to reiterate that in-person meetings are required for brainstorming. Use this TC combination proposal to help improve ASHRAE's process.
- xiii. Barney – Explain our outreach. How many people outside of committees are attending our meetings?
- xiv. Matt – Historically we have averaged 40-50 meeting attendees with only 10-15 being Voting Members.

-
- xv. Paula sent out response forms to all Voting Members however the form does not need to be used and comments can be emailed instead.
 - 1. Paula will send this form out to all corresponding members as well.
 - 2. Paula would like all to reply within 2 weeks.
 - 3. Kevin to send all emails to Paula.
 - xvi. Charlene – Using EHC as an example, the current complaint is we can't get programs in because there are not enough spots. With ASHRAE's new proposal, there will be even fewer spots for programs which exacerbates the issue.
 - xvii. Barney – This move is not driven to reduce ASHRAE meeting room costs. It is driven by the want to improve meeting efficiencies.
 - xviii. Paula – Pawel has done a great job of pushing projects through RAC. What if the next Research Liaison does not have the same drive? This process needs to be improved.
 - 1. Dan – Research project Champions should be able to face RAC
 - 2. Nick – Face-to-face with RAC helped push WS-1579 through after stalling for many years.
 - xix. Gemma and Sanjeev proposed the idea of a TC 2.3 vote to respond to ASHRAE's TC combination proposal.
 - 1. Motion to reject the concept of merging TC 2.3, TC 2.4, and TC 2.9 by Sanjeev Hingorani
 - 2. Seconded by Jeff Roseberry
 - 3. 13-0-0-2-CV (For-Against-Abstain-Absent-Chair Voting Status)

 - 4. Motion to maintain face-to-face meetings for brainstorming by Marilyn Listvan
 - 5. Seconded by Charlene Bayer
 - 6. 13-0-0-2-CV (For-Against-Abstain-Absent-Chair Voting Status)
 - xx. Ashish – Attended MTG on Health and Wellness in the Built Environment. Their 2-year objective is to gather information from inside and outside of ASHRAE for the state-of-the-art.
 - xxi. Charlene – IAQA 2020 will be in Athens, Greece in mid-September
 - xxii. Barney – Good work of committees to push ASHRAE in defining "health" with indoor air quality.
 - xxiii. Charlene/Marwa – SPGC10 was from 9am-Noon on Sunday. ASHRAE's full name for this group is the Standing Guideline Project Committee so the correct acronym may be SGPC.
 - xxiv. Charlene – EHC has decided that they will not be leading RTARs but will make suggestions to push to TC's. TC's should try to push research now while EHC has this attitude.
 - xxv. Charlene – TC 2.3 needs to stay involved on the Emerging Issues document.
 - 1. Charlene will send the contact information of the person leading Emerging Issues document to Paula.
 - xxvi. Marilyn – We have tried to have Forums in the Program subcommittee but have not been successful. We have been told that Forums must be held during Main meetings.

8. Agenda suggestions for the Summer Meeting in Kansas City

- a. No agenda suggestions proposed

9. Adjournment

- a. Motion to adjourn by Sanjeev Hingorani
 - b. Seconded by Gemma Kerr
 - c. 12-0-0-2-CNV (For-Against-Abstain-Absent-Chair Voting Status)
- Meeting adjourned @ 2:55pm