

**Draft Minutes**  
**TC 2.3 - Gaseous Contaminants/Removal Equipment**  
**Research Subcommittee Meeting**  
**St. Louis, MO Sunday 5:00-7:00 pm**

**Meeting Attendees:**

1. Meeting call to order by Kathleen Owen at 5:04
2. Introductions were completed
3. Orlando minutes were reviewed and no changes were made.
4. RAC Report (Liaison TC 2.3 – Pawel Wargocki) arrived 5:45 He addressed WS1579 in that it did not refer back to 1497. He said it must be made very clear that EHC did not give us info on 1497 and the list of filters is not comprehensive – that must be addressed in the RTAR so that RAC understands that the data was no good.  

Language on WS and RTARS must be clear enough for the RAC members. They could not see the benefits for ASHRAE. He stressed that the RTAR is the critical stage – it must present clearly why this work is necessary. It must be written so that a non-expert can understand it. There is a new research manual on the website to help with RTAR. All research projects are posted and you must refer to these when writing a new RTAR if it has relevance to your research. New investigator award –spring 2017 \$10,000 split in two parts. RAC is looking for volunteers – contact ASHRAE staff if our interested. AHSRAE is looking into regions to see if the can contribute to research topics.
5. Work statements, RTARs, and RPs – Updates –
  - A. **1579-WS Testing and Evaluation of Ozone Filters for Improving IAQ**— Sanjeev Hingorani FINAL DEADLINE is now August 15, 2016 Kevin Kwong Matt Middlebrooks Nick Agopian, Thad Ptak are on the PES
  - B. **1720-WS Validation of gas-phase air-cleaner performance test method (Standard 145.2) by laboratory testing of commercially available filtration devices** - Kartik and Brian with Gemma Kerr. PES to be: Paula Levasseur, Chris Muller, Gemma Kerr, David Schaaf, Brad Stanley . Still unclear about David Schaaf as he has not been to recent meetings
  - C. 1614-WS kitchen hood effectiveness of UV systems (5.10) – B Krafthefer – no update
  - D. 1755-TRP, Impact of Gaseous Contamination and High Humidity on the Reliable Operation of Information Technology Equipment in Data Centers”. TC9.9 project, TC 2.3 co-sponsor, Chris Muller on PES. Project underway- no update
  - E. 1780-WS, Test Method to Evaluate Cross-contamination of Gaseous Contaminant within Total Energy Recovery Devices; Responsible Committee: TC 9.10 (Laboratory Systems); Co-Sponsors: TC 2.3. Chris Muller- Nick Agopian stated they were going to make some changes and go back to RAC – Nick will check to see if we will get to see changes before cosponsoring RTAR conditionally accepted 2.3 will get a chance to review. Nick reported that Roland (of 9.10) plans to send current version to Kathleen and Nick soon.
6. Proposed RTARS and other work: status updates -
  - A. sVOCs including how SVOC emissions change with temperature - Sanjeev\*, Jensen Zhang, Kevin Kwong- the RTAR is out. Jensen reported Professor Ying Xu from Austin has done a great deal of

work on svoc's; we will add her to the WG. Pawel has seen the RTAR and has suggested they narrow the scope. Pawel needs to see it again. Jenson suggests that it go to the TC for a vote. Suggested co-sponsor 62.2. Nick or Kathleen will get it to them. Potentially 2.4 may co-sponsor.

- B. Occupant Related Pollution Loads - Chang-Seo Lee\*, Dean Tompkins
    - I. Chang-Seo put together and RTAR but Pawel commented that it was too big a topic and written too technically for RAC to understand. Dean does not have the time to help. Gemma will read and try to polish it up. EHC and 62.2 might be cosponsors. Thad Ptak and Marilyn Listvan also added to WG.
  - C. IAQP field studies - Marwa Zaatari\*, Anthony Abate and Dean Tompkins – Collected research studies – they are trying to identify the type of space without much data and proceed with that– Jeff Roseberry to help.
  - D. How should the IAQP be applied when the IAQ/CoCs are not well defined. Marwa needs IAQP field studies to work on this RTAR. This idea will be combined with item C going forward.
  - E. Bipolar Ionization/Reactive Air Cleaner performance test method for VOC etc. removal and testing a variety of commercially-available ionization devices. Scott Sherwood champion, Jensen, Dean Tompkins, Charlie Waddell, Chang-Seo, Marilyn Listvan. – SSPC145 has a draft RTAR headed by Kevin Kwong for a literature search for all the types and methods – Scott Sherwood, Charlie Waddell will work with Kevin Scott and Charlie could not get any manufacturer to send a device to Chang-Seo for Ozone testing. UL867 does not require duct mounted units to be tested for Ozone, which is a major gap. They will continue to work on RTAR for a chamber test.
  - F. The effects of filtration on health. Dean Tompkins, Nick Agopian, with EHC interest – Pawel to discuss with RAC on literature search. (note from after meeting, Pawel says RAC is ok with lit search RTARs)
  - G. Real Time Small sensors (Brian K.) Paula will check with Jeff R to see if he is interested. Marilyn L also volunteered to help.
  - H. Desorption of filter gas and particle – Brian and Marilyn
  - I. Trace VOC acceptable levels – how to come up with acceptable levels-on hold
  - J. Multi-contaminant challenge what acceptable VOC levels-on hold
  - K. Service life on hold
  - L. In-room air cleaners: Kathleen (from Planning)- this may merge with bipolar ionization
  - M. Energy usage of gas filtration and particulate filtration - Brian Krafthefer (from Planning)on hold
  - N. controlling VOC levels when applying IAQP - on hold
  - O. IAQP in residences – on hold
  - P. Gas phase filtration in residences- no champion- Pollution in low energy homes. Load – modeling-use IAQ – Jensen suggested the name of the RTAR should be **The role of gas filtration improving IAQ in Residences** – Jensen, Nick and Kathleen to coordinate on this.
  - Q. How does the reduction of VOC's using gas phase filtration affect odors Ashish Mathur (from Planning). This is being taken off the list.
  - R. Using specially treated textiles to reduce odors (the effect would be similar to using room air-cleaners). Arsen Melikov champion, Ashish. Arsen is still interested we will await for something from him.
  - S. Demand-based air-cleaner operation to save energy. Brian Krafthefer and Jensen Zhang. Did discussion with GPC 35 on refocusing take place? Kyle Kisebach would also like to work on this. On hold
- The committee agreed that although several RTARS are on hold the ideas should stay for future possible completion.

7. New Business – no new business.

8. Adjourn at 6:50

Notes from Research Subcommittee Breakfast (Monday morning, after the 2.3 research meeting)

- 1) RAC wants to look at more applied research
- 2) RAC has plenty of money to spend
- 3) Update Research Manual with new milestones for PMS and other changes should be posted soon after St. Louis
- 4) Research Database on line electronically – about 250 projects included so far. Please use this resource when preparing RTARs
- 5) 9 RTARs considered: 1 accepted, 4 conditionally accepted with comments, 4 rejected
- 6) 10 WS considered – 6 conditionally accepted, 4 returned
- 7) Please be sure to get input from cosponsors at every step

Attendees:

Ashish Mathur	UVDI
Bob Burkhead	Blue Heaven Technologies
Brad Stanley	AAF
Brian Hafendorfer	Trane
Charlene Bayer	Hygieia Sciences
Charlie Wadell	Global Plasma Solutions
Christine Sun	Filtration Tech
Dan Haas	Clarcor
Daniel Mason	Bioclimatic
Dean Tompkins	Dean Tompkins Group
Fuoad Parvin	Halton
Gemma Kerr	retired
Glen Toloczko	Blue Heaven Technologies
Jeff Roseberry	ProMark Associates
Jensen Zhang	Syracuse
Kathleen Owen	RTI
Keith Chesson	Clarcor
Kevin Kwong	LMS Technologies
Kyung-Ju Choi	Clean & Science
Lu Liu	Freudenburg
Marilyn Listvan	Listvan & Associates
Marwa Zaatari	enVerid
Matt Middlebrooks	Filtration Group
Mick Flom	3M
Nicholas Clements	Delos
Nick Agopian	Renewaire LLC
Paolo Tronville	Politecnico Di Tonino
Paula Levasseur	Cameron Great Lakes
Pete Freeman	Jacobi Carbon
Peter McKinney	StrionAir/Carrier
Ryan Micaveli	Syracuse
Sanjeev Hingorani	Lennon Ind
Scott Sherwood	EcoCare Corp
Thad Ptak	AO Smith
Tyrone Cunningham	StrionAir/Carrier