

ASHRAE MEETING MINUTES – Montreal

TC 2.3 - Gaseous Contaminants/Removal Equipment

Research Subcommittee Meeting

Sunday 6/26/11

1. Welcome
2. Introductions
 - A. Sign-In
3. Review of Minutes from Las Vegas – no changes put forth.
4. RAC Report
 - A. Liaison TC 2.3 – Iain Walker (LBL) - Iain will not be our liaison after July 1st since his term is finished, Use rl2@ashrae.org to reach the new person. It is likely to be Bill McCoy, but we do not have person confirmation or the spelling of his name.
5. Presentations/Up-Dates on Current Research Projects
 - A. 1457-TRP “By-product Production from Photocatalytic Oxidation Associated with Indoor Air cleaning Devices” - Dean Tompkins University of Wisconsin. [PMC- Kathleen Owen (Chair), Gemma Kerr, Matt Middlebrooks, Marilyn Listvan]

ASHRAE reports that Dean has not requested the project extension beyond September 2010, no reports have been received since 2009, and no financial reports have been filed with ASHRAE. The PMS has been unable to contact Dean since February. Research stalled more than a year ago, and there is no known possibility of getting the work to be done. ASHRAE now suggests that TC2.3 terminate the project. Iain Walker, our liaison, and the members of the PMS concur.

A suggestion was made that we enquire as to whether ASHRAE might own the equipment purchased on this project (ASHRAE Rig, Room space Rig). Iain reports that the contract does not include ASHRAE owning any of the equipment.

The research subcommittee asks that TC2.3 formally request that 1457-TRP be terminated.

Because of this project and the last 2.3 project’s lack of successful completion, we recommend that:

- Future Projects should try to require Payment by Milestones
- Future Projects should be aware of projects that expect CoFunding
- Group should pursue information on this topic. A talk on the topic had been offered for this meeting but only as a seminar. Kathleen will suggest to him that he write a Conference Paper so that it could be presented at ASHRAE

B. 1557-TRP “Evaluation Lab Comparison of Relative Performance of Gas Phase Filtration Media at High and Low Challenge Concentrations.” Matt Middlebrooks will lead PES; Bill Lull, Paolo Tronville, Mark Stutman, and Nick Agopian will serve as PES. Bid Status Update. Matt M. reported that

- Received multiple bids of good quality
- Conference calls were made to gather info
- Executive session will be held at TC meeting to decide on which submitter to go with

6. Work statements & RTARs

A. 1579-RTAR Testing and Evaluation of Ozone Filters for Improving IAQ has been accepted. Nick Agopian is PES chair. Bill Lull, Aflal Rahmathullah, Ashish Mathur, Mark Stutman, and Gemma Kerr volunteered to serve on the PES. Leon Alevantis of California Department of Public Health, will represent EHC on the PES/PMS as they will co-sponsor.

- **Nick Agopian is leading this effort.**
- Submission deadline was missed.
- Putting in for next deadline which is still OK – need to submit to group (above) for review, then submit to research liaison for comments, then send on to group for vote before sending to RAC. Please use research chair to help coordinate.

B. 1625-RTAR Application of Indoor Air Quality Procedure, a draft RTAR prepared by Charlene Bayer was presented to the committee for comment. Charlene and Nick are working on this.

- **Champion - Charlene Bayer, Nick, and Pawel**
- Not submitted, need to rework
- Discussion on what research can be done related to the IAQ Procedure to prove this case.
- Items to consider (formaldehyde, outdoor air vs indoor air, carcinogens – other parties related to health like EHC need to be involved)
- Research into 1596 TRP (Big Box Retail Ventilation – sponsored by TC 4.3) results for any help they may be for this project.
- Other input – ensuring durability of the design using the IAQ Procedure (maintenance, actual cost savings, etc.)

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C. RP-1243 Unfinished business: Iain needs the Disposition of ASHRAE research from the PMS chair for RP-1243.

- Karin (the PMC) resubmitted this to Iain and Mike Vaughn immediately after LV.
- Ian is following up to check that ASHRAE has received the paperwork.

D. ASHRAE building proposed project: update from Charlene.

- ASHRAE building is not optimally configured to get information out of doing the IAQ Procedure and provide good data to the industry relative to the IAQ Procedure.
- Possible that project could use one zone and still get useful information. Still being pursued, and we will be updated as progress is made.

7. Research Plan 2011-2012: At the summer meeting we develop the research plan for the next year (2009-2010), a champion is identified for each, and the ideas are prioritized by subcommittee attendee vote. All will be encouraged to draft RTARs. The ideas that follow are those in our current queue with updates from this meeting. Newest ideas are at the end of the list.
 - A. Field performance of typical gas-phase air cleaning technologies over service life”. Long-term performance of air cleaners, over 6-mo, 12-mo life-time. Full air cleaner (as opposed to media). In-situ. Monitor air cleaners in situ over time. Possibly look at using lab data to predict life, modeling, and correlations. How often should I check on how a filter is doing? Goal of research might be ‘care and feeding of a gas-phase air cleaner, ‘common features of effective and ineffective systems in the field’.
 - i) Matt proposed that GPC-27 guideline methods be incorporated.
 - ii) Champions are Brad Stanley and Bill Lull
 - iii) Get in touch with Pawel Wargocki to get his thoughts and ideas on proceeding forward.
 - B. Concerns that media testing do not reflect filter bypass. Proposed by Jensen. It was suggested at previous meeting that the research in A could bridge the gap between 145.1 test results and model actual system performance. Jensen had planned to prepare RTAR for modeling.
 - i) No champion emerged
 - C. Cost of Ownership – ventilation vs IAQ. A big buzz word is cost of ownership, do we want to look at this with regard to cost savings, IAQP? What is the value of the energy savings (ROI) and the total cost of ownership for gas-phase filters in an implementation of the IAQP? Similar to LBNL-255E, Bill Fisk, “Can sorbent-based gas phase air cleaning for VOCs substitute for ventilation in commercial buildings?” Ventilation alone will not get us to zero buildings. Extraction is required, but performance and lifetime is not known to the engineers. The questions are: Will it work? How long is it going to last? Jeff: How does overall cost of extraction (\$/cfm) compare to overall cost of ventilation alone (\$/cfm)? This would be a long-term project.
 - i) **Champion is Paula Levasaur Nick and Jeff to help.**
 - D. Sorbents as Air Cleaners” - Use of 145.1 “test rig” to study ability to regenerate desiccants upon cycling them through fresh-hot-purge gas (RP475 ... dozens of compounds studied). No progress reported.
 - i) **Champion – still Bill Lull, Matt Middlebrooks will also assist**
 - E. Barney: Conduct a demo of the IAQP in a highly monitored and high profile facility – the ASHRAE building! The building is highly instrumented so a baseline could be established. Then, IAQP activities could be performed on the ‘living lab’. Dynamic Air is in there now. Install gas-phase and particulate filtration as a retrofit, and shut off the outdoor ventilation. There is room.in the AHUs. Testing, questionnaires, energy could all be tested. We could propose to TC2.4 Research, and other related TCs, for cooperation. Comments from TC2.9 members that RAC is reluctant to fund field research; they like lab research and do not feel that field research is adequately controlled. Group suggesting that industry participants would donate equipment and materials. Barney will inquire as to whether this type of project would be allowed.
 - i) **Champion – Barney Burroughs and Charlene Bayer**

- F. Evaluating air cleaner technologies/devices for treating formaldehyde No progress to report.
- i) June – EPA listed formaldehyde as a carcinogen
 - ii) Champion – Jeff with help of Chang Seo Lee, Bill Lull, Paula Levasour, Gemma Kerr, Bob Ajemian
- G. Project 1457 retake “By-product Production from Photocatalytic Oxidation Associated with Indoor Air cleaning Devices”
- i) **Champion – Marilyn Listvan with Chang Seo Lee, Matt Middlebrooks, Mark Cree Jackson (Lennox and with previous PMS of 1457)**
- H. Future Items
- i) Consider Plasma as well in the scope of this project – “Oxidizing Air Cleaners” similar to 1457 type of RTAR.
 - (1) No champion at this time
 - ii) Round Robin Testing of for ASHRAE 145.2
 - (1) Minimum of 5 labs is recommended by the group
 - (2) **Champion – Chang Seo Lee**
8. Update from Bob Ajemian on an applicable RTAR from another committee. He got several people to offer to help especially on the 2nd one.
- A. Committee related to Kitchen hoods
 - B. #1 RTAR will be evaluating UV lights for kitchen hood exhaust
 - 1st Characterization of kitchen exhaust
 - 2nd Fundamental Mechanisms taking place
9. Updates from Research Subcommittee Chairs Breakfast – This breakfast takes place on Monday so notes will be added for information but not discussed at meeting.
- A. TRP backlog not big anymore. 17 TRPs went out for bid this time, 15 got bids. 10 TRPs still waiting to go out for bid; 2 likely to go out in the next round. Not much money left this year.
 - B. Let liaison read/comment on every RTAR/WS before they go to RAC!**
 - C. Why are RTARs returned? Biggest item for RTARs is that you need to show that you understand what’s been done already - work on your background/citations. Why are WS returned? be sure your scope is clear! Make sure it’s likely to result in bids to do the same work. Make sure that the budget makes sense for the scope. RAC may not have your background, so you may end up needing more justification based on your TC’s area of expertise. RAC wants to work with us - you can argue with comments. They know they may not understand - so explain. Be polite! Use your liaison. They know more than we do about RAC and are there to help us.
 - D. GPIC – multiple group with funding, goal to improve environmental energy performance. www.Gpichub.org They will be funding research in conjunction with ASHRAE. Check out their website and keep an eye out for info from ASHRAE over next year. Indoor environment high on their list along with energy.
10. Dinner plans
11. Meeting adjournment