

**AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR-CONDITIONING
ENGINEERS, INC.
1791 Tullie Circle, N.E./Atlanta, GA 30329
404-636-8400**

TC/TG/MTG/TRG MINUTES COVER SHEET

(Minutes of all Meetings are to be distributed to all persons listed below within 60 days following the meeting.)

TC/TG/MTG/TRG No. 2.4 DATE 10/04/2012

TC/TG/MTG/TRG TITLE Particulate Air Contaminants and Removal Equipment

DATE OF MEETING June 26, 2012 LOCATION San Antonio

MEMBERS PRESENT	YEAR APPTD	MEMBERS ABSENT	YEAR APPTD	EX-OFFICIO MEMBERS AND ADDITIONAL ATTENDANCE
James Hanley	7/1/11	Eric Brodsky	7/1/08	A total of 43 people were in attendance for this meeting.
Nader Barjesteh	7/1/11	Charlie Kern	7/1/08	
Michael Corbat	7/1/11			
Mark Renn	7/1/10			
Bruce Mc Donald	7/1/10			
Tom Kuehn	7/1/08			
Zied Driss	7/1/11			
Christine Sun	7/1/11			
H.E. (Barney) Burroughs	7/1/09			
Monroe Britt	7/1/10			
Robert Burkhead	7/1/10			
KJ Choi	7/1/09			
Alan Veeck	7/1/11			
Stephen Nicholas	7/1/09			
Chris Peart	7/1/09			
Jeffrey Siegel	7/1/11			

DISTRIBUTION

<i>All Members of TC/TG/MTG/TRG plus the following:</i>	
TAC Chairman:	Dr. Charles H Culp, III (cculp@tamu.edu)
Section Head	J Thomas Sobieski (jtsobieski@atlanticbb.net)
All Committee Liaisons As Shown On TC/TG/MTG/TRG Rosters:	Standard – Hoy R Bohanon, Jr (hrbohanon@workingbuildings.com)
	Technology Transfer - Jean-Gabriel Joannette (jgjoannette@pageaumorel.com)
	ALI/PDC - John H. Nix, II (john.h.nix@fpl.com)
	Special Pubs - William S Fleming (flemg@aol.com)
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Manager Of Standards	Stephanie Reiniche (sreiniche@ashrae.org)
Manager Of Research & Technical Services	Mike Vaughn (mvaughn@ashrae.org)

ASHRAE MEETING MINUTES – San Antonio
TC 2.4 - Particulate Contaminants/Removal Equipment
Main Committee Meeting

Tuesday, June 26, 2012 3:30 – 6:00 p.m. Grand Hyatt San Antonio – (H) Texas B (4)

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1. **Call to order (Jim Hanley, Chair)**
 - a. **Agenda Review – Attachment 1**
2. **Introduction of guests and members**
 - a. ~43 total attendance at meeting

3. **Roll call (Tom Justice)**

a.

Member	Pres	Abs	Member	Pres	Abs
Jim Hanley (Chair)	X		Robert Burkhead	X	
Mark Renn (Research)	X		KJ Choi	X	
Eric Brodsky (Handbook)	X		Christine Sun	X	
Bruce McDonald (Standards)	X		Nader Barjesteh	X	
Stephen Nicholas (Programs)	X		Tom Kuehn		X
Al Veeck (Webmaster)		X	Mike Corbat	X	
Charlie Kern		X	Jeff Siegel	X	
Zied Driss	X		Chris Peart		X
Barney Burroughs (ALI)	X				
Monroe Britt	X				
			Totals	14	4
					18

NV Members/Officers

Tom Justice (Secretary/Membership)
 Don Thornburg (Vice Chair)
 Marilyn Listvan (Publications)

Present: **14 voting members – We have a quorum**
 29 Corresponding members/visitors/guests
 Eric Brodsky and Stephen Nicholas arrived after the start of the meeting

4. **Welcome and Opening Comments (Jim Hanley)**

- a. Introductions from committee members and visitors
- b. Recognition of official liasons, Tom Sobieski, section 2 Head and Iain Walker. Mr. Walker gave a brief update on the need for input to other committees such to SSPC 62.2.
- c. Paperless Meeting – Minutes are sent via email to the Voting Members and Corresponding Members on record. No other papers other than the sign-up sheets.

- d. Please initial the information on the sign-in sheets or add your information as needed. Any corrections need to be done on the ASHRAE web site by you. If you wish to sign up as a corresponding member of this committee please see Tom Justice after the meeting.
- e. This is the Main TC meeting and it is mostly a review of Subcommittee Reports, so you need to attend the subcommittee meetings for more detailed reports on the TC activity.
- f. A quick look at the draft agenda; one addition will be a short conference with Stephanie Reincheine to discuss where the 52.2 Guideline will fall, ie 52.2 or TC 2.4.
- g. David Johns was not present at the start of the meeting but was recognized as our new Research Liason.

5. Particle Party Announcement (Marilyn Listvan):

- a. Where/When: Casa Rio, 6:45pm tonight
- b. Thanks to Al Veeck and Joe Fly Co. for assisting with the planning.

6. Approval of Last Meeting Minutes (Chicago, January 24, 2011): (Tom Justice)

- a. **Moved by Mike Corbat, 2nd by Christine Sun**
- b. **Vote to approve: 12-0-1-5-18 (Yes-No-Abstain-Absent-Tot) Chair Not Voting (CNV)**

7. Record of Votes since last meeting (Tom Justice)

- a. **The secretary reported that there had been no votes taken since the 2012 Chicago meeting.**

8. Subcommittee Reports:

a. Planning Subcommittee (Don Thornburg)

- i. The committee on Monday June 25th from 8-10am.
 1. Mr. Thornburg reiterated that the goal of this committee was not to re-hash what the various sub-committees were doing rather to look at the hows and whys and ask is there a better way for the overall committee to function with the goal to help our specific industry move forward.
 2. Don also mentioned that we do have a website however we are looking at something like Google Groups to make this more accessible and allow set-up of working areas for sub-committees. Jim contacted Al Veeck and he stated that he was receptive to working on this project. Don mentioned that Mike Corbat and Chris Campion had also shown an interest in working on establishing such a site.
 3. Don mentioned that other topics discussed at the Planning meeting would be reviewed by the sub-committees in their report.
- ii. **Motion to accept the Planning Subcommittee report**
 1. **Moved by Stephen Nicholas, 2nd by Monroe Britt**
 2. **Vote 12-0-1-5-18 (Yes-No-Abstain-Absent-Tot) CNV**

iii. PLANNING SUBCOMMITTEE REPORT IS ATTACHED.

b. Membership Subcommittee Report (Tom Justice)

- i. Mr. Justice reported that there are currently 97 total members on the TC 2.4 roster inclusive of 18 voting members. There is no change today from the voting roster, which was in place at Chicago.
- ii. 5 individuals will roll off as voting members after the 2012 summer meeting
- iii. Replacing those who will roll off are Randy Haseman, Tim Johnson, Carolyn Kerr, Chris Campion and Paolo Tronville.

- iv. The current executive committee and sub-committee chairs will remain in place through the 2012/2013 year.
- v. Tom noted that a schedule of activities and meetings had been sent out prior to this summer meeting.
- vi. Tom again re-emphasized that TC 2.4 has been successful because of the participation and involvement of both voting and corresponding members.
- vii. Jim mentioned that if anyone wanted to sign up as a corresponding member....see Tom.
- viii. **Motion to accept Membership Report**
 - 1. **Moved by Bruce McDonald, 2nd Zied Driss**
 - 2. **Vote: 12-0-1-5-18 (Yes-No-Abstain-Absent-Tot) CNV**

ix. MEMBERSHIP SUBCOMMITTEE REPORT IS ATTACHED.

c. Research Subcommittee Report (Mark Renn)

- i. Mr. Renn noted that we had one PMS meeting this session which was held on Sunday the 24th. The meeting was well attended with 27 counted. One issue which Mark brought up was ASHRAE's position that PMS sessions be public however such open forums often discourage active debate and at times prove to be a point of embarrassment as issues are publicized. He encouraged everyone to bring this up with Mike Vaughn at RAC.
- ii. Current Research Projects: TRP-1360-RP "How do filters change through their life: pressures drop, efficiency, weight gain and dust composition". Principal Investigator Kathleen Owen, PMS Chair, K.J.Choi. Highlights of the research were presented. Project is due to be completed this September.
- iii. Mark also mentioned that there are a number of research projects in progress. The one with the most traction is 1649-WS Impact of higher efficiency filtration on IAQ in Residential Environments with Central HVAC – Champion: Tom Justice, currently working on work statement.
- iv. Our new Research Liason is Mr. David John who was introduced at the meeting.
- v. Mark noted that the upcoming Denver meeting will focus on research.
- vi. Mark announced his intentions to resign as chair of Research sub-committee due to various reasons. He further mentioned that Michael Waring, Drexel University had indicated that he would agree to accept this position if nominated and Mark stated that he would agree to stay on as vice-chair to assist in the transition. Jim will review and make a decision regarding the appointment before the next meeting
- vii. Thanks were extended to Mark for his work as chair of the committee.
- viii. **Motion to accept Research report**
 - 1. **Moved by Jeff Siegel, 2nd by Christine Sun**
 - 2. **Vote to accept report 12-0-1-5-18 (Yes-No-Abstain-Absent-Tot) CNV**

ix. RESEARCH SUBCOMMITTEE MEETING MINUTES ARE ATTACHED.

d. Standards Subcommittee Report (Bruce McDonald)

- i. Sub-committee chair Bruce McDonald noted that there was a lot going on. Regarding committee structure Mike Corbat has agreed to take the vice chair position if selected. No others expressed an interest. Jim Hanley will announce this change before the next meeting.
- ii. Bruce noted that SSPC 52.2 (chair Bob Burkhead) was due for re-publication in 2012.

- iii. **MTG Energy Efficiency Classification of General Ventilation Air-Cleaning Devices –**
Christine Sun
Held web conference in April. Agreed to develop a method. Work will be done in a GPC.
- iv. Under new business there were two presentations made at the sub-committee meeting for possible new standards which would be closely associated with TC 2.4 's scope. It was agreed that the main TC would take no formal action aside from agreeing with the recommendations of the standards subcommittee which were to form a working group for each proposal to determine whether or not there was justification to form a standard, where this work would be done and development of title, purpose, and scope.
 - a. **Proposal for new standard regarding testing HVAC filters installed in combination: prefilter/final filter combinations –** Monroe Britt, chair, Bob Burkhead, Bruce McDonald, Mick Flom, Todd McGrath, Don Thornburg, Don Schweinhart, Volker Handler, Eric Brodsky
 - b. **Proposal for new standard regarding residential filter test method –** Tom Justice, chair, Bob Burkhead, Nate Barjesteh, Joel Davis, Aaron Frost, Thad Ptak, Brian Kraftheffer, Brent Stephens, Christine Stanfel.
- v. Bruce announced that the official liaison for SPC 180 would be Phil Maybe and for SSPC 189.1 would be Charlie Seyffer. Two names were submitted for liaison to SSPC 62.2, Brent Stephens and Bob Burkhead. On this last item Jim will get back to the committee.
- v. Barney Burroughs informed the group that it was announced at TC 2.3 that the standard on Bio-safety and Building Security had fallen under the purview of GPC 2 and they were asking for help in reviewing and updating the document particularly assistance from members of TC 2.4.
- v. **Motion to accept Standards report**
 - 1. **Moved by Stephen Nicholas, 2nd by Mike Corbat**
 - 2. **Vote to accept report 10-0-2-6-18 (Yes-No-Abstain-Absent-Tot) CNV, Phil Winters, Bob Burkhead, Don Thornburg left room to meet with Stephanie Reincheine**
- vi. **STANDARDS SUBCOMMITTEE MINUTES ARE ATTACHED.**
- e. **Program Subcommittee Report (Stephen Nicholas)**
 - i. Mr. Nicolas reported that we have four programs, which have been submitted which include 2 seminars (Choi, Kraftheffer), 1 forum (Justice) and a conference paper (Winters).
 - ii. **Motion to accept Program report**
 - 1. **Moved by Bruce McDonald, 2nd by Christine Sun**
 - 2. **Vote to accept report 11-0-2-5-18 (Yes-No-Abstain-Absent-Tot) CNV**
- f. **Webmaster Report (Jim Hanley reporting for Al Veeck)**
 - i. Pictures from past particle parties are now posted on the website.
 - ii. The website is now up to date with TC 2.4 minutes and including minutes from SSPC 52.2
 - iii. Al is looking for suggestions on ways to make the website better. Please contact him directly.
 - iv. As this was not an official report, no vote was taken.

g. Handbook Subcommittee Report (Eric Brodsky)

- i. Chair Eric Brodsky reported that the sub-committee met on Saturday, 1:00 – 2:30 pm. There were 8 people in attendance.
- ii. The 2012 ASHRAE Handbook--HVAC Systems and Equipment has been published. This Handbook includes the updated Chapter 29 titled 'Air Cleaners for Particulate Contaminants.' This chapter was revised and now includes references to appropriate current standards and guidelines.
- iii. Under the direction of Gemma, a draft of Chapter 11, Air Contaminants was review by the 2.4 Handbook subcommittee. During this working session, sections primarily pertaining to particulate contaminants were reviewed and edited. This chapter will be submitted for publication in the 2013 Fundamentals Handbook

iv. Motion to accept Handbook report

1. **Moved by Mike Corbat, 2nd by Bruce McDonald**
2. **Vote to accept report 13-0-1-4-18 (Yes-No-Abstain-Absent-Tot) CNV**

v. HANDBOOK SUBCOMMITTEE MINUTES ARE ATTACHED**h. Publications Report (Marilyn Listvan)**

- i. Chair Marilyn Listvan passed around a handout outlining special applications list which is on ASHRAE's agenda which includes our IAQ agenda.
- ii. Outlined a list of publications which were up for renewal.
- iii. Marilyn reported that there was a real interest by ASHRAE in publications of case studies which would be sold at the bookstore.
- iv. The ASHRAE wiki has had over 90,000 hits. Gives members the opportunity to comment on terms and definitions.
- v. Jim Hanley to co-sign a letter to ASHRAE noting that publications do not work on MAC.
- vi. **Motion to accept Publications report**
 1. **Moved by Mike Corbat , 2nd by Stephen Nicholas**
 2. **Vote to accept report 12-0-1-5-18 (Yes-No-Abstain-Absent-Tot) CNV**

9. Reports from other TC liaisons

No other TC liaisons present to report.

10. Old Business

No old business to report.

11. New Business

- a. **Bob Burkhead** reported to the committee on the discussion within SSPC 52.2 to develop a 52.2 Guideline to serve as a user's guide to the current standard and prevent misuse. Stephanie Reincheine has recommended that a separate working group be form within SSPC 52.2 to develop the title, purpose and scope for the Guideline document. Volunteers for this working group were Mike Corbat, Zied Driss, Chris Champion, Brian Krafthefer, and Paolo Tronville.
- b. **Monroe Britt** reported on his earlier presentation to the Standards sub-committee regarding his proposal for a new standard for testing HVAC filters installed in prefilter/final filter combinations.

Monroe reviewed data which highlighted the impact of prefilter use on the energy usage and service life of the final filter. His preliminary proposal sees this potential standard based on the 52.2 protocol with the goal to generate data which will allow the optimization of the prefilter / final filter change-out. The document may move forward as a separate standard or as an appendix to 52.2. The group was tasked to;

1. Determine whether or not this would be useful.
2. Where such a document will be presented.
3. Develop Title – Purpose – Scope
4. Define output.

Motion to adjourn at 6:00pm

Made by Bruce McDonald, 2nd by Bob Burkhead

Vote Unanimous

Respectively submitted,

Tom Justice

TC 2.4 Secretary

Meeting date: June 26, 2012

Minutes submitted: September 19, 2012

ATTACHMENTS

Agenda

TC 2.4 Particulate Contaminants/Removal Equipment

Main Committee Meeting

San Antonio, Tuesday June 26th, 2012

3:30-6:00p

Grand Hyatt San Antonio - (H) Texas B (4)

- 1. Call to order..... Jim Hanley
- 2. Introductions
- 3. Roll call Tom Justice
- 4. Welcome and opening comments Jim Hanley
- 5. Particle Party..... Tom Justice
- 6. Approval of Chicago Minutes..... Tom Justice
- 7. Record of votes taken since Chicago Tom Justice

- 8. Subcommittee Reports
 - a. Planning Subcommittee Report..... Don Thornburg
 - b. Membership Subcommittee Report..... Tom Justice
 - c. Research Subcommittee Report..... Mark Renn
 - d. Standards Subcommittee Report..... Bruce McDonald
 - e. Program Subcommittee Report..... Stephen Nicholas
 - f. Web Master..... Al Veeck
 - g. Handbook..... Eric Brodsky
 - h. Publications..... Marilyn Listvan

- 9. Reports from other TC liaisons
- 10. Old Business
- 11. New Business
 - a. Proposed new MOT standard:
 - Testing of HVAC filters installed in combination,
i.e. a pre-filter and a final filter.
 - Vice Chair presides..... Monroe Britt
 - b. Misc Announcements (Conferences, Awards, etc)

- 12. Adjournment

ATTACHMENTS

TC 2.4 Planning Subcommittee Meeting – San Antonio

Draft Agenda

Monday, June 25, 2012

8:00 – 10:00 a.m.

Convention Center 003A

Action items shown in BOLD and RED

1. Call to order, Welcome and Introductions
2. Review draft agenda that I forget to hit send on...
3. Chair Remarks
 - a. The Planning Subcommittee is still a work in progress as we have only had a few meetings and we are still adjusting to find the most useful format/structure to plan the future needs of TC 2.4.
 - b. We need to keep the focus of this subcommittee on HOW we are doing things and WHY. The regular subcommittee meetings are to cover the WHAT we have done questions.
4. Topic discussions (in no particular order)
 - a. TC Working area of the Web Site
 - i. Is there an easy way of maintaining committee member and subcommittee "member" lists for correspondence?
 1. Google Groups was mentioned as a possible way to achieve this
 2. ASHRAE has a connection to Google Groups, but none of us are well versed in how it works at ASHRAE.
 3. **Jim Hanley will contact Al Veeck (Webmaster) and find out what he knows about this GG possibility. Mike Courbet and Chris Campion will also investigate it, in case it cannot work within our current web site.**
 4. The plan is to have GG as a TC working area open to TC members. We would probably need "levels" of access (Officers, VM, NVM, CM, etc.).
 5. Have separate areas for the Main TC, Subcommittees, Task Groups, SPC's, SSPC's, GPC's.
 - b. Membership Items
 - i. ASHRAE has proposed new member diversity categories

- c. Program Items
 - i. Abstracts are the key to getting programs selected. All ASHRAE CEC has to go by to select a program is the Abstract so a poorly written one will have a very slim chance of being selected.
 - ii. We need to make sure we know what the defined Tracks are and design our programs to fit within one of the defined Tracks.
- d. Publications
 - i. Do we need a Publication subcommittee? The consensus is yes, even though we do not necessarily need meetings at ASHRAE, the work is ongoing.
 - ii. **All members need to send the Chair a list of articles published.**
 - iii. Article idea
 - 1. Top 10 things you don't know about air filtration.
 - 2. **Submit your top 1-3 to Marilyn and she can assemble it into a top 10 list.**
 - iv. Uses manual for ASHRAE 52.2
 - 1. Is this a TC 2.4 item or SSPC 52.2?
 - 2. Current precedent is these type of documents are published by the SSPC's
- e. Research Items
 - i. Open PMS meetings. We understand the need/want of ASHRAE for everything to be open, but this can diminish the role of the PMS committee that is charged with monitoring the project.
 - 1. Public and private time with the PMS and the contractor is needed.
 - 2. Can we do a formal statement at start of the PMS about the rules (No comments on scope changes, no price discussions, comments from PMS first, etc.).
 - 3. **Mark Renn to contact Mike Vaughan on how to do this and find out if ASHRAE has any other thoughts on fixing it.**
 - ii. RTARS are becoming like Work Statements in need for detail and complexity. This is becoming a problem and making gthe process more difficult.
 - 1. There is a Power Point presentation on how to draft an RTAR on the ASHRAE website
 - iii. Mark Renn will be resigning as Research Subcommittee Chair soon and has offered to step back to Vice Chair for now to get the new Chair up to speed.
 - 1. Michael Wearing from Drexel has volunteered as chair.
 - 2. **The TC 2.4 Chairman will make a decision on the new Research Subcommittee Chairman**
- f. Standards Items
 - i. Struggling with how to communicate all the information better.
 - ii. Bruce will be adjusting the agenda to cover what needs to be covered in the meeting and rely on e-mail to get any additional information
- g. Main TC
 - i. There has been a new MTG formed titled: MTG-EAS Energy-Efficient Air Handling Systems for Non-Residential Buildings
 - 1. No meeting in San Antonio, just formed

5. Adjourn

ATTACHMENTS

TC 2.4 Membership Report

2012 ASHRAE Summer Meeting San Antonio

- The current roster has 97 total members inclusive of 18 voting members. There has been no change in the voting roster since the 2012 Winter meeting in Chicago.
- We have five (5) members rolling off immediately after this summer meeting. Included are Eric Brodsky, Bruce McDonald, Barney Burroughs, Charlie Kern and Tom Kuehn.
- Rolling on as voting members after the summer 2012 meeting will be Chris Campion, Randy Haseman, Tim Johnson, Carolyn Kerr and Paolo Tronville.
- The current executive committee is as follows. Any changes or additions will be discussed in the sub-committee reports.

Chair	Jim Hanley
Vice Chair	Don Thornburg (cm)
Secretary	Tom Justice (cm)
Programs	Steve Nicholas
Research	Mark Renn
Standards	Bruce McDonald
Handbook	Eric Brodsky
Membership	Tom Justice
Publications	Marilyn Listvan (cm)
ALI Coordinator	Barney Burroughs
Webmaster	Al Veeck

- A very focused schedule of TC 2.4 and related activities was send out for member convenience but also to assist new committee members in sorting through various programs.
- A reminder was given that you can actively participate on committee activities as a corresponding member.

ATTACHMENTS

ASHRAE RESEARCH SUBCOMMITTEE MEETING AGENDA

San Antonio

TC2.4 – Particulate Air Contaminants/Removal Equipment

Sunday, June 24, 2012

3:00 – 5:00 PM

Convention Center – 103B (Street Level)

All interested parties are encouraged to attend the following Project Monitoring Subcommittees (PMS) meeting.

1360-RP How do filters change through their life: pressures drop, efficiency, weight gain and dust composition. **Sunday 11:00 AM – Noon, CC – 002B (River Level)**

There were 27 attendees at the PMS meeting. This is the last public PMS for this RP. Project is due by September.

1. Call to Order **Meeting called to order at 3:02 PM**
2. Introductions **41 attendees**
3. Review of Agenda
4. Chair's comments **Announced the chair's intention to step down as research chair as soon as a replacement can be found.**
5. Current Project
 - a. 1360-RP How do filters change through their life: pressures drop, efficiency, weight gain and dust composition.
Principal Investigator, Kathleen Owen
PMS Chair, KJ Choi
Kathleen presented highlights from her research. Project is due to be completed by September.
6. Current Tentative Research Projects (TRP)
 - a. TRP-1603 Role of HVAC Systems in the Transmission of Agents in Buildings and Intermodal Transportation (TC2.4 co-sponsor with TC9.6 and EHC. TC 9.3 main committee) **No update.**
7. Cosponsored Projects (for reference only)
 - TC 2.3 – 1625-RTAR Applicability of the IAQP to Achieve Healthy, Net Zero Energy Buildings **No update.**
 - TC 2.1 – 1624-WS Effective Energy Efficient School Classroom Ventilation **No update.**
8. Roll Up Sleeves to service current RTAR, WS and other proposals for balance of the meeting time **Spent last hour of meeting in small discussion groups to discuss moving forward some of the project ideas below. Also found out William McCoy is no longer Research Liaison for Section 2. New RL is David John and has RL experience for section 5 research.**
 - a. 1626-RTAR Energy Implications of Air Filtration in Commercial Buildings **Chair will discuss with new RL (Dave John) to see if the impasse with RAC concerning duplication of research can be overcome. If not, project idea will be dropped.**

- b. 1649-WS Impact of higher efficiency filtration on IAQ in Residential Environments with Central HVAC – Champion: Tom Justice **Progress made in generating WS.**
- c. Benefits/Problems of using MERV 13 filters in LEED – Champion: Jeff Siegel **Project dropped.**
- d. Survey of Existing commercial HVAC systems and potential Energy Savings Technologies. Champions: Zied Driss, Mike Corbat and Ken Snider **Progress made in getting idea to RTAR stage.**
- e. Modeling of Energy Implications of particle removal using various techniques – Residential and Commercial - Tom Justice **Project idea dropped.**
- f. Update Monroe’s previous RTAR 1559 with one deliverable being a process for doing a round robin to verify the changes made to ASHRAE 52.2 –Chris Campion and Jeff Siegel **This research idea will be transferred to SSPC who will be submitting this as a RTAR**

Dave Matier and Christine Stanfel agreed to champion “Impact on performance (efficiency and pressure drop) of air filters in high humidity and free moisture conditions”. They also put forward another topic “Quantity particle shedding from loaded air filters in cycle flow conditions as found/experienced in VAV systems and in shut down/start up applications”. Dave and Christine stated they will work on the moisture topic first, then the cycle topic later.

9. Liaison Report (whenever Bill McCoy arrives) **RL was not present. Section 2 has new RL (see above).**

10. Adjournment **Adjourned at 5:00 PM**

ATTACHMENTS

TC 2.4 STANDARDS SUBCOMMITTEE

Monday, 25 June 2012
4:15 p.m. – 6:00 p.m.

Convention Center 008A River Level
San Antonio TX

Introductions

Chair's comments

Review proposed agenda: Start New Business no later than 5:00.
Will establish Vice Chair of TC 2.4 Standards Subcommittee.

1) Update on standards and MTGs within scope of TC 2.4:

- a) **SSPC 52.2 M.o.T. Air Cleaners for Particle Size Efficiency** – Bob Burkhead.
- b) **MTG Energy Efficiency Classification of General Ventilation Air-Cleaning Devices** – Christine Sun
Held web conference in April. Agreed to develop a method. Work will be done in a GPC.

2) ASHRAE Liaisons:

- a) **TC 2.3 – Gaseous Filtration** – Kathleen Owen
TC 2.3 has two ongoing projects. RP 1557 on use of 145.1 for various sorbents. RP1457 on UVPCO is finishing up.
 - i) **SSPC 145.1, 2, Test Methods for Assessing Performance of Gas Phase Air Clean. Equip**
145.1 is due for reprinting.
- b) **TC 2.9 – UV Air & Surface Treatment** – Matt Middlebrooks
 - i) **SPC 185.1P Elimination of Microbial Contaminants in Air** – Matt Middlebrooks
Received comments back. Comments have been addressed and document revised. Now sending

- back to commenters.
- ii) **185.2 Elimination of Microbial Contaminants on surface**
Not submitted yet
- c) **TC 5.4 – Industrial Air Cleaning** – Bruce McDonald
 - i) **SPC 199 – MOT for Rating the Performance of Industrial Pulse Cleaned Dust Collectors**
 - d) **TC 9.6 – Health Care Facilities** – Zied Driss
 - e) **SSPC 62.1 – Commercial Ventilation** – Charlie Seyffer
Addendum to changed from MERV 6 to MERV 8 will be out for public review in short time.
IAQP method: Manufacturers need to make presentation in January regarding gas phase filtration. Charlie arranging that work.
 - f) **SSPC 62.2 – Residential Ventilation** – Nominate: Brent Stephens
IAQ data relating IAQ and health. Increasing from MERV 6 to MERV 10. Hope to go to MERV13.
 - g) **SSPC 90.1 Energy Eff. Design of New Bldg** – Christine Sun
 - h) **SSPC 90.2 Energy Eff. Design of New Low Rise Res. Bldg** –
 - i) **SSPC 161 – Air Quality in Commercial Aircraft** –
 - j) **SSPC 170 – Ventilation of Healthcare Facilities** – Zied Driss
Filtration tables action items for last two years but no action.
Hospital design guide references 170.
Hospital design guide still references 52.1. Zied working to get it fixed.
 - k) **SPC 180 – Inspection & Maintenance of HVAC Systems** – Nominate Phil Maybe
Changes to air filtration requirements in Addendum A.
Re-published in 2012
 - l) **SPC 189.1 ASHRAE/USGBC/IESNA Standard for the Design of High-Performance Green Buildings except Low-Rise Residential Buildings (?inclusion of IAQ)** – Nominate Charlie Seyffer
 - m) **SPC 189.2 Design, Construction and Operation of High-Performance Green Healthcare Facilities (?inclusion of IAQ)** –
 - n) **SGPC-10 Achieving Acceptable Indoor Environment** – David Matier No report.
It has been published for 2 years. Working to resolving old issues but not filtration issues.
 - o) **GPC 33P Guideline for Documenting Indoor Airflow and Contaminant Transport** –
 - p) **US TAG for ISO TC142** – Will be Don Thornburg. See also TC 142 below.
 - q) **GPC 23 Guideline for the Design/Application of HVAC Equip. for Rail Passenger Vehicles** –
 - r) **Environmental Health Committee**
 - i) Developing a position document regarding “Environmental Health in Green Building Programs” This is just being formulated.
 - ii) Developing a position document regarding “Air Filtration and Cleaning” Barney wants support from manufacturers. Evaluating various technologies and health effects. Very little third party lit. that relates filtration to health. Meeting EHC Barney to keep us informed. Barney to share TPS.

3) **Old Business Did not get to old business: Skip to New Business.**

a) **MoT for Filtration Efficiency on particles below 300nm**

- i) Progress on committee formation – Kathleen Owen
no news on forming the committee. Kathleen still wants to have this method, but can't get to it right now. If some else would like to push this, she'd be fine with that. Otherwise, she will move forward when time permits or after we get more information from Tom Justice's proposed research (if the PI does indeed include ultrafines).
- ii) Activity at ISO TC 142/WG 4 regarding nano particle testing –
CEN is moving forward with a media test for 20 – 500 or higher nm particles, so we may get some insight from them.

b) **Relationship between ISO TC 142/WG 3 and ASHRAE** from the perspective of TC 2.4. Within ASHRAE the topic affects several groups: SSPC 52.2, TC 2.4 (Standards Subcommittee), the US TAG to TC 142, and the US Advisory Panel for WG 3. – Don Thornburg

4) **New Business**

a) **Proposal for new standard regarding testing HVAC filters installed in combination: prefilter/final filter combinations** – Monroe Britt



New Proposed MOT
__TC 2.4.pdf

Presentation attached:

Question about how much distance between filters.
? Should this be an appendix to 52.2. or separate document?

Decision:

Recommend to TC to form task group:
The charge of the task group is:
Is this valuable
Where should this work be done? 52.2 or new SPC or ?
write TPS.
Reportable output.

b) **Proposal for new standard regarding residential filter test method** – Tom Justice



Residential Test
Standard.ppt

Presentation attached:

Decision:

Recommend to TC to form task group:
The charge of the task group is:
Is this valuable
Where should this work be done? 52.2 or new SPC or ?
write TPS.
Reportable output.

**>>>> Adjourned due to time constraints before addressing rest of Agenda.
Some liaison reports attached.**

- c) **?Possible discussion of Initial MERV and other variations on 52.2 Should there be a separate standard for: Initial efficiency? Loading? Conditioning? Use of other test dusts?**
- d) **??? shedding, variable air flow**

Information Exchange:

- e) AFS – KJ Choi
Fall Conference: Oct 15 – 18, 2012, Embassy Suites Airport, Philadelphia
2013 Annual Conference: May 6 – 9, 2013, Bloomington (Minneapolis), MN.
- f) AHRI – Eric Chen
- g) CEN/TC 195 – Air Filters for General Air Cleaning – Paolo Tronville



CENTC195_Projects_
23jun2012.pdf

- h) Eurovent – Paolo Tronville
- i) IEST – Institute of Environmental Sciences and Technology – Andy Stillo or Vijay?
- j) INDA – International Nonwovens Development Association – Emily Moore
- k) ISO TC 142 – Cleaning Equipment for Air and Other Gases – Paolo Tronville



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ISOTC142Preliminary
Projects_23jun2012.xls



ISOTC142PublishedP
rojects_23jun2012.xls

- l) CEN TC 144 – Environmental Air quality for Agricultural Cabs – Paolo Tronville
- m) NAFA – Al Veeck
- n) SAE Air Cleaner Test Code Standards Comm. – Bruce McDonald
- o) ISO TC 22/SC 7/WG 3 & WG 11 – Paolo Tronville or Bruce McDonald
Updating ISO 5011 Setting up round robin. Working on revision of ISO 12103-1 (dust) to accommodate new measurement instrumentation. Working on Round Robin for ISO TR 19713, fractional efficiency for engine inlet air cleaners
- p) UL 900 – Randy Haseman
For UL 900; a Gage R&R project has been initiated to examine the variability of the UL 900 flame exposure test. When the test samples are ready the study will begin.

For UL Canada S111 (Canadian equivalent to UL 900); the ULC Standards Committee on Fire Tests has drafted a proposed 5th Edition of ULC-S111. The Class 1/Class 2 distinction has been removed from the body of the standard and added as an informative annex, apparently making a Class 1 rating optional.

- q) REHVA HVAC air filtration guidebook –

5) Adjourn – 6:00 pm

Attendance list below.

TC 2.4
Standards Subc

- Name
- Kyung-Su Choi
- Chris Fischer
- Christine. Sun
- Mark Renn
- JIM HANLEY
- Charles Senffer
- Barney Burroughs
- DON THORNBURG
- Kathleen Owen
- Michael Corbat
- Nathaniel Nance
- THAD PITAL
- Bruce Duffy
- Brian Burgess
- Todd McBrath
- JON ROBERTSON
- Chic Lent
- Randy Haseman
- CHRISTOPHER L. CAMPION
- R. VIJAYAKUMAR

TC 2.4
Standards Subc

- Bruce McDonald
- Bob BURKHEAD
- PAUL TRONVILLE
- TOM JUSTICE
- MOYRA BEIT
- Tim Johnson
- Phil Winters
- DAVID MATIER
- Joel Davis
- Doug Pfeiffer
- DON SCHWEINHART
- KEIM CHESSON
- Matt Middlebrooks
- Mick Flom
- NATE Barjastah
- Christian DESQUILLES
- VOLKER HAENDLER
- CHRISTINE STANFEL
- STEPHEN NICHOLAS

ATTACHMENTS

TC 2.4 Programs Sub-committee

Minutes : Monday June 25, 2012, 8:00 – 10:00 am

Dallas, January 2013

PROGRAMS

- 1) Forum – Tom Justice, “Do we Need a separate test standard for Residential Filters?”Dallas
- 2) Seminar – K.J. Choi, “Filters, Friend or Foe?”Denver
- 3) Conference Paper – Phil Winters, “Cleaning the Air on Energy.”
- 4) Seminar – Stephen Nicholas, “A History of Air Filtration Past, Present & Future MOT.”

ATTACHMENTS

ASHRAE MEETING MINUTES – San Antonio

TC 2.4 - Particulate Contaminants/Removal Equipment

Handbook Subcommittee Meeting

Sat. June 23, 2012 1:00 – 2:30

- 1. Call to order 1 PM Eric Brodsky, Chair
- 2. Introductions
- 3. Attendees: Zied Driss, Phil Maybee, Jim Hanley, Dan Hass, Bob Burkhead, Gemma Kerr, Tom Justice, Eric Brodsky
- 3. Chapter 29, HVAC Systems and Equipment
The 2012 ASHRAE Handbook--HVAC Systems and Equipment has been published. This Handbook includes the updated Chapter 29 titled ‘Air Cleaners for Particulate Contaminants’ This chapter was revised and now includes references to appropriate current standards and guidelines.

4. Chapter 11, Fundamentals

Under the direction of Gemma, a draft of Chapter 11, Air Contaminants was review by the 2.4 Handbook subcommittee. During this working session, sections primarily pertaining to particulate contaminants were reviewed and edited. This chapter will be submitted for publication in the 2013 Fundamentals Handbook.

5. Other Business

It was discussed that Chapter 29 'Air Cleaners for Particulate Contaminants' be updated to include more information about what is a proper ASHRAE Standard 52.2 test. Specifically that proper testing follows the complete Standard and can not be abbreviated.

7. Adjournment about 2:15 pm

Prepared by Eric Brodsky,
Draft Minutes submitted: 6/25/2012
justfilter@yahoo.com, hanley@rti.org