

ASHRAE MEETING MINUTES – Long Beach

TC 2.3 - Gaseous Air Contaminants/Removal Equipment TC Meeting

Tuesday, June 26, 2007

13:00 - 15:30

Renaissance Hotel – Rm. R. Ballroom V (2nd Level)

NOTICE:

These meeting minutes have been approved and are official.

- The meeting was called to order at 13:23 pm by Chairman Dean Tompkins. The attendees that completed the meeting attendee sheet(s) were:

Name	Email address
(Voting Members – 9)	
Gemma Kerr	gemma.kerr@inairenvironmental.ca
Karin Foarde	kkf@rti.org
Paolo Tronville (International Member)	paolo.tronville@polito.it
Dean Tompkins	dtompki@wisc.edu
Ez Khalifa	ez@ecs.syr.edu
Kyung-Ju Choi	kchoi@aafintl.com
William Lull	ashrae@garrisonlull.com
Nick Agopian	nagopian@dectron.com
Chris Muller	chris_muller@purafil.com
(Corresponding Members – 15)	-
Kathleen Owen	mko@rti.org
Bob Ajemian	bajemian@grkl.com
Marilyn Listvan	mlistvan@yahoo.com
Doug VanOsdell	dvw@rti.org
Eric Kuiper (International Member)	erik@mail.ashrae.org
Phil Winters	pwinters@filtrationgroup.com
K.C. Hsieh	kchsieh@aol.com
H.E. Burroughs	heburroughs@mindspring.com
Monroe Britt	mbritt@clair.com
Terri Wytko	twytko@ari.org
Scott Hanson	shanson6758@msn.com

Dave Witham	davew@udi.com
Jensen Zhang	jszhang@syr.edu
Derald Welles	dwelles@ix.netcom.com
Thomas Kelly	thomas.j.kelly@carrier.utc.com
Steve Zitin	szitin@bioclimatic.com
Shannon Schoppman	sschoppman@fiberweb.com
Paula Levasseur	paula@cglcarbon.com
Mark Stutman	stutmanm@camfilfarr.com
Brad Stanley	brad_stanley@purafil.com
Matt Middlebrooks	mmiddlebrooks@filtrationgroup.com
(Visitors & Guests – 11)	
Bruce Duffy	b.duffy@tridim.com
Rakesh Goel	rakesh.goel@lennoxind.com
Bob Culbert	enr.bob@steril-aire.com
Ken Kubitz	kkubitz@sparkstech.com
Charles Seyffer	seyffer@camfilfarr.com
Brian Monk	brian.monk@carrier.utc.com
Jay Field	jay.field@trane.com
Dave Chojnowski	davidc@uic.edu
Lied Driss	driss@camfillfarr.com
Yuhao Kang	derekkang@itri.org.tw
Stephan McDonagn	stephan.mcdonagn@health.ri.gov
Aaron Kuehl	akuehl@keddog.com
Paul Nigro	pnigro1@uic.edu
Douglas Kosar	dkosar@uic.edu
Terry Logee	terry.logee@ee.doe.org
Catherine Jacquiod	catherine.jacquiod@saint-gobain.com
Daniel Osorno	daniel.osorno@carrier.utc.com
Mark Renn	mrenn@aafintl.com
(Liaisons not appearing is list above)	

- Attendee self-introductions were made.
- Voting membership was identified.
- Liaisons were given the opportunity to give their report(s). See below for written text on the individual reports.
 - No liaisons present

- Roster check was made. TC 2.3 has 9 voting members. Voting members present at the TC meeting include:

	<u>Present</u>	<u>Absent</u>
1) Paolo Tronville (International Member)	X	
2) Karin Foarde	X	
3) Nick Agopian (Vice Chair)	X	
4) Ez Khalifa	X	
5) Dean Tompkins (Chair)	X	
6) KJ Choi	X	
7) William Lull	X	
8) Gemma Kerr	X	
9) Bob Hendry		X
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	Totals: 8	1

One voting member was absent Bob Hendry, who has limited travel funds.

A quorum was achieved with 11 voting members present. (Needed for quorum: 50% + 1 of voting members.)

Comments

Emergency roster change-replace Phil Winters with Matt Middlebrooks

Chris Muller, Shannon Schoppman, Doug VanOsdell, Bob Culbert, Dave Chojnowski, Paula Levasseur would like to roll on as a voting member

- Motion :Approve Dallas meeting minutes**
By: Dean Tompkins
Seconded: Paulo Tronville
Results: For-7 / Against- 0 / Abstain-0 / CNV
Background/Discussion: Symposium session name to transaction

MOTION APPROVED to accept the Meeting Minutes from Dallas with the knowledge that the requested changes discussed will be made.

- Minutes to be published within 60 days following the minutes.

Subcommittee Reports Made:**Membership (Nick Agopian, Chair, reporting)**

The current TC 2.3 leadership team is:

- Chair – Dean Tompkins
- Vice Chair – Nick Agopian
- Secretary – Shannon Schoppman
- Research – Karin Foarde
- Planning – Nick Agopian
- Membership – Nick Agopian
- Standards – Paolo Tronville
- Program – Dean Tompkins
- ALI Coordinator (ASHRAE Learning Institute) – Doug VanOsdell
- Handbook – Gemma Kerr
- International – Paulo Tronville, Erik Kuiper
- Webmaster – Erik Kuiper
- Publications – Marilyn Listvan

Committee participation:

50% people are not involved in the committee or a subcommittee. ASHRAE asking corresponding members and guests to list interests in the effort to involve more people. TC 2.3 is much below ASHRAE participation averages.

Other:

Update bios on the website (email most important).

Research (Karin Foarde, Chair)

Research subcommittee Chairs Breakfast: survey of TC regarding submission of RTAR/work statements due to lack of. time, authors discouraged from bidding, research budget too low to get work done.

- Budget has been increased and people are encouraged to submit RTARS (100K-RAC can approve. \$200K+ has to go to board
- Time
- Authors Discouraged from bidding-RAC will propose that there is no longer a conflict of interest. Hoping to resolve by Wednesday

RAC Liaison Spitler (spitler@okstate.edu) was not present. No pending issues but will confirm at the research chairs meeting. Will be getting a new liaison after this meeting.

Presentations/Up-Dates on Current Research Project

- 1302-RP “Comparison of Gas Phase Air Filtration Equipment (GPAFE) Lab Tests to Field Experience. Principal Investigator – Donald H. Stedman, University of Denver

[PMC- Gemma Kerr (Chair), Bill Lull, Phil Winters, Paolo Tronville, and Nick Agopian]
The objective of this project is to provide directly comparable performance data and or methods (i.e., correlate approaches) to make comparisons for various media used in GPAFE designs at both accelerated (high challenge concentration) and application (very low challenge concentration) conditions within a lab setting.
No presentation. Final report due soon. C. Kerr will check on status. PMC will rename the project title after receipt of the draft.

Work statements & RTARs

- o Proposals for 1457-WS “By-product Production from Photocatalytic Oxidation Associated with Indoor Air cleaning Devices” has been reviewed. [PES- Eric Kuiper(Chair), Gemma Kerr, Doug VanOsdell, Marilyn Listvan (Brian Krafthefer and Robert Hendry were not at ASHRAE)]

TC 2.3 2007-2008 Research Plan

Projects	Person Responsible	Priority
Real lab environment comparison tests of PCO vs. carbon filter (flow, pressure drop, RH, temp, multiple VOCs, etc)	Dean Tompkins	1
Evaluation of combined particulate and gaseous filters (combi-filters): What happens to gas phase contaminant levels with particulate loading?	Paolo Tronville	2
Evaluating formaldehyde cleaning devices	Jensen Zhang	2

Other ideas considered-

What is impact of desiccant wheels on gaseous contaminants?
Determining/evaluating end of service life of filterbed material.
Correlation between high and low inlet concentration and media (granular) life – in not answered in #1302-TRP.

Motion: Accept research plan as proposed by research committee

Made: Nick Agopian

Second: Gemma Kerr

Vote: For-8 Against-0 Abstain-0 CNV

Discussion: None

Motion: Approve the PES recommended contractor

Made by: Karin

Second:Gemma Kerr

Vote: For-7 Against-0 Abstain-2 (abstain conflict of interest), CNV

Discussion: None

Voting Members left in room -7

Comments

U of Chicago-Approach ASHRAE with a proposal for financial aid to Ozone removal

TC 5.10-Generate RTAR for odor removal, effective treatments for gas phase
-Need technical data/scientific evaluation

Program (Dean Tompkins, Chair, reporting)

- Program(s) presented in Long Beach, CA (June 26, 2007):

<u>Name</u>	<u>Title</u>	<u>Co-Sponsor</u>	<u>Chair</u>
Forum 7	Measurements of Gas Phase Contaminates Input for Guideline GPC27P	None	Bill Lull
	Comments: Exclude catastrophic events Compounds to include in guideline (Chapter 12 and 27)		
Forum 11	Is Green Clean? IAQ and Energy Efficiency 2.4 for LEED and Green Buildings		Marilyn
	Comments: 36 people, will IAQ be sacrificed with LEED? Much discussion of LEED vs. IAQ 2.4 cosponsor, and was not identified.		
Seminar 5	Natural Ventilation in Schools Boom or Bust?	None	Chris Muller
	Comments: 50 attendants, applying IAQ in schools.		

- Program items for the next winter meeting in New York, NY were prioritized through votes of attendees as follows:

New York, NY

<u>Name</u>	<u>Title</u>	<u>Co-Sponsor</u>	<u>Chair</u>	<u>Priority</u>
FORUM	Developing a Worldwide Filtration Standard(s)		Paulo	
SEMINAR		2.4	Chris Muller	
Seminar			Nick	
Seminar Proper Application of UV Lights		2.9/2.4		
Seminar Formaldehyde Cleaning Devices			KJ Choi	
	Sustainable Buildings			
FORUM	Filtration/IAQ Needs for ... Marine Environments and Cruise Ships	2.4	Charlie Seyffer	

Motion: Accept the Program as presented at the meeting and listed above.

Made by: Dean Tompkins

Second: Paulo Tronville

Results: For-8 / Against-0 / Abstain-0 / CNV

Discussion: TC will lose priority if presentation is not uploaded 10 days prior to meeting date. Co-Sponsoring committee will lose their priority as well. If presentation is not

uploaded 24hr before event, the speaker will not be able to present. No longer have option to be videotaped.

Action Item: Sub-committee chair will prompt all speakers to submit final/preliminary presentations.

Motion: Formally protest the penalty to the TC of losing priority.

Made: Ez Khalifa

Second: Gemma Kerr

Discussion:

Vote: For-8 / Against-0 / Abstain-1 (vote unanimous among voting members in room)

Motion: Committee protest requirement of non-ASHRAE members sign over copyright release or they are not allowed to present

Made: Bill Lull

Second: Chris Muller

Vote: For-0 / Against-0 / Abstain-0 / CDV

Discussion: None

Handbook (Gemma Kerr, Chair)

Note that TC 2.03 is responsible for Applications Chapter 45 and Fundamentals Chapters 12 and 13. The latter are due for submission to ASHRAE May 24th 2008 and July 14 2008. Since the Applications Handbook is appearing this year, only the Fundamentals chapters were discussed at the meeting.

Regarding Chapter 13, there are no longer people with expertise in this subject who belong to TC 2.3. No-one present at the meeting was able to suggest a suitable co-author or cognizant authority for the chapter. Action items are as follows:

- All present at the meeting will review chapter 13 by the end of August and send their comments to Gemma
- Doug will provide Matt with a copy of the Fundamentals Handbook since all of his ASHRAE material is gone
- Everyone will think again about who might be a suitable cognizant authority to revise the chapter and pass on names to Gemma

Regarding Chapter 12, the Dallas Minutes listed eight action items for editing the Chapter, none of which have been acted on yet. Each was further discussed as shown below. Details and people responsible are shown below. Revisions are due end of September.

1. Under definitions, the abbreviations *nm* and *lm* are used without stating what they are abbreviations of, no definitions are given for microscopic and sub-microscopic particle sizes, and ultrafine particle mode is used in Figure 4, but not mentioned earlier where the coarse and fine particle modes are discussed. **Doug VanOsdell** will write up these items.

2. Revision of Table 5 (list of chemicals). It was decided not to combine this table with either Table 6 or Table 13, but to reduce the number of chemicals listed and attempt to make the table more useful by adding information on family properties and harmful characteristics. Table 6 should be retained, but should not include any chemicals which do not appear in Table 5. Also, care should be taken to ensure consistency of naming chemicals and chemical families between text and tables. **Gemma Kerr** will revise Table 5 and change Table 6 as necessary. Nick will send his material on chemicals to Gemma to assist.

As part of this revision, Table 10 should become a table of typical organic air contaminants (not "example sample target list"). All entries in Table 10 should also have appeared in Tables 5 and 6. **Gemma** will take care of this.

3. Text or Table 6 should refer to Fundamentals Chapter 39 which contains similar information to the Table. **Gemma** will take care of this.

4. It was decided that Tables 7 and 8 (measurement methods) should not be combined. **Matt Middlebrooks** will look into revising and updating the info in these tables.

5. Gemma will enlist the help of **Karin Foarde** to improve the microbial contaminants section, including discussion of MVOCs and mycotoxins.

6. **Nick Agopian** will update Table 11 (typical outdoor concentrations for selected contaminants). Particulates (PM₁₀ and PM_{2.5}) should be included, and ranges used rather than single concentrations). Concentration units should be changed to ppm and ppb for gases. This Table also appears in Chapter 45 and should be updated there too.

7. **Gemma** will be responsible for revising Table 13. Typical indoor concentrations should be updated, and source information retained. Locations where contaminants are found might be dropped as superfluous.

8. Regarding adding information on material emissions as part of non-industrial contaminants, Doug pointed out that there is emissions information in Chapter 45 including data tables. He considers this material is useful in Chapter 45 and should stay there, so that it may not be necessary to add to Chapter 12.

Additional action items were identified as follows:

- **Gemma** will get a soft copy of Chapter 12 (Microsoft Word) and distribute it to Doug, Nick, Matt and Karin.
- **Doug** will review material on controlling exposures to VOCs and inorganics and determine whether it should be moved to Chapter 45.
- **Gemma** will merge all the revisions.
- **Everyone** (including Mark and Bill) will review the revised Chapter.

Standards (Paolo Tronville, Chair, reporting.)

Reviewed minutes of Dallas meeting; accepted (5 yes, 2 abstain – not present at previous meeting)

Report on the status of ASHRAE TC 2.3 related Standards activities:

- a. GPC 27P “Procedures for measurement of gases in indoor environments” - Bill Lull Reporting
 - i. *Procedures for Measurement of Gases in Indoor Environments* has almost finished the Guideline outline, will streamline it in New York. The committee has 7 voting members and meets 3-5 pm on Sunday. Talk to Bill if interested in joining. Scope is methods for effective IAQ measurement in field, but not industrial situations. Timeline is to have a guideline ready 2 years after New York meeting.
- b. SPC 145 - Chris Muller Reporting
 - i. The body of the 145.1 standard for media testing is complete, finalizing annexes planned by July 11, then will have a letter ballot so as to be able to submit completed standard to ASHRAE by the deadline of July 25.
 - ii. The 145.2; the full scale laboratory test method, the work has started on Doug VanOsdell’s draft, and hopefully will be finished in a year.
 - iii. 145.3; the in-situ test for filters installed in buildings, is dormant at the moment because Bob Hendry has stopped attending ASHRAE meetings and a new champion is needed. This document might become a guideline rather than a standard.

Update of Filtration related Standards

- a. ISO/TC142/WG8 – Paolo Tronville
 - i. Paolo reported that WG8 has a meeting in London in July, Chris Muller, Monroe Britt and Phil Winters are on the US TAG, which is meeting at Long Beach Wednesday to discuss voting.
 - ii. Re Canadian TAG, Nick Agopian thinks the group should expand and move to P-member status. Gemma is Chair
- b. ISO/TC22/SC7/WG3 – Paolo Tronville
 - i. Part 1: Protection against hazardous substances
 - ii. Part 2: Air purifying devices. Draft standard has been proposed, Paolo can provide anyone interested with a copy of this draft.
- c. IRTI (Taiwan) – Chris Muller Reporting
 - i. ITRI (Taiwan) have developed a test method for gas phase filters. They are similar to RTI, check their website for information. The gas information not there but Chris says it exists. The test rig for 2x2 feet size, challenge gases are hydrogen sulfide, dimethyl sulfide, ammonia and toluene at 10 ppb and 10 ppm. Specific test method, not general enough for all challenge gases.

- d. ASTM D22.05. Chris Muller is a member, reported that most of their standards are for test methods for measuring contaminants.
- e. D28.04. Chris Muller reported that most standards are industrial application rather than indoor air, though there is a filter testing method 6646 on breakthrough capacity for activated carbon. There is no TC dealing with chemisorption, and they are resistant to starting anything in this area.

Update of IAQ-related Standards

- a. SSPC 62.1 – Chris Muller reported
 - i. Increased emphasis on air cleaning for ozone. Proposed change is out for public review on reducing the outdoor ozone level at which cleaning is required. If this goes through, there will be air cleaning needed in most cities. Green Building Council is unhappy as they have LEED buildings in these cities.
- b. SSPC 62.2 – Chris Muller reported
 - i. There is talk about ozone, but there is unlikely to be any other gaseous contamination issue out of this committee.
- c. SPC161P – Paolo reported as Erik Kuiper not present.
 - i. The revised standard is nearly ready for publication.
- d. EPA IAQ update – To be determined
 - i. No report
- e. SPC 170-To be determined
 - i. Gas phase filtration is needed by some facilities, but is it included in the standard?
- f. GPC 28-To be determined
 - i. It is going out for public review, not clear if they have a requirement for gas phase filtration.
- g. TC 5.4-Paolo Tronville reported
 - i. Committee is interested mainly in heavy load gas phase filters.
- h. TC 9.11-Phil Winters reported
 - i. No discussion on AMC filters.
- i. TC 2.9- To Be Determined
 - i. A test standard for germicidal filters is in progress with standard 185.1 for air, and 185.2 for surfaces.
- j. TC 8.10-Nick Agopian Reporting
 - i. Has an ASHRAE research project to test for trichloramines in indoor swimming pools, they want to develop a standard to control it.
- k. TC 4.3-K J Choi reported
 - i. Have research on IAQ sensors to control conditions in open offices.
 - ii. No report
- l. IEST WG0035 – Mark Stutman
 - i. 3 parallel drafts of document, Mark Stutman is working on combining. Kevin Seguin is chair, it meets twice a year. Also WG CC008 is a design spec for high efficiency gas phase filters (gas phase adsorber cells), more of an industrial thing, they have an almost complete document.

- m. ISO TC 205 are completing methods on assessing indoor air for human occupancy and some mention of gas phase filtration. standard 16814 final draft
- n. 14644-8 is a classification system for AMC in clean rooms, not a standard method, rating procedure is approved and available.
- o. WG9 for TC 209 on surface contamination has issued a final draft international standard

Other Business:

ISIAQ have a WG Task Force 3 on IAQ for museums, and have written a guidance document on gas phase contamination and control.

Paolo would like to gather documents relevant for testing gas phase devices. If anyone has copies of anything useful let him know. He would like TPS and summaries of the documents discussed if they contain useful method info.

There are some application-specific methods, SAE cabin air filters, or ISO ag tractors, aimed at specific contams and situations that we should have details on to check for relevance.

Military standards are mostly aimed at very high levels of contaminants and not so useful.

Publications (Marilyn Listvan, Chair, reporting)

The joint TC 2.03 and 2.04 Publications Meeting was held on June 25, 2007 in Long Beach, CA and had 7 members present.

- **It is URGED that members update their e-mails / member information on the ASHRAE website.** This site is the official, central, and only location for contact information.
- **IAQ Proceedings CD:** ASHRAE publications is expecting our document available for the IAQ 2007 conference (market) so scan need to be COMPLETE by Feb 07 to give to Special Pubs. The remaining efforts include:

- '88 – Engineering Solutions to Indoor Air Problems (small red)
---ML has done
- '96 – Paths to Better Building Environments (burgundy)
--- Jim Moulton/ ML (~ 1/3 done) C. Seyffer to finish
- '97(?) – Design, Construction & Operation of Healthy Buildings; Solutions to Global
--- Scott Hanson ?? C. Seyffer (not started!!)

******JULY 20, 07 deadline for scanned files back to Marilyn so she can bookmark, etc. ******

Action item: Detailed scanning instructions (Responsibility-all)

1. PDF format, Scan from within Acrobat (open New.....).
2. They need to be scanned with optical character recognition OCR (with 600 dpi) use Acrobat 7.0 OCR settings.
3. We can use bookmarks to identify papers.
4. ASHRAE wants each paper a separate file, then bookmarks

Action Item: finished/repared scans DUE to ASHRAE on 8/15 to make IAQ deadline (Responsibility-Marilyn)

Article topics and Authors were asked for (continued from past meetings):

- **Published 1/07 in Journal:** Paolo Tronville and Dick Rivers have refined an article on International standards.
- D. Tompkins – There were two Symposium papers (Denver) from RP- 1139 (done)
- Several ASHRAE News releases relevant to 2.3 & 2.4 have been sent out lately
 - **ASHRAE news releases.** (Contact: [Jodi Dunlop](#) Phone: 678-539-1140)
 - Action item for 62.1 press release: perhaps wait for Press Release after public review period. **ASHRAE news releases.**
 - “Who is MERV?” Al Veeck provided information, Marilyn, Jim Hanley & Eric Kuiper will help review information. (*ML note...got this info from AV, status??*)

Action Item: Next possible joint News release: Who is MERV anyway?? (Responsibility-Marilyn)

Action Item: Contact NA/ZD for the HVAC overview before ~~August 15th 2005~~ (also to7/07) (Responsibility-Marilyn)

- (Continued from ~ 1/06) there was extended discussion on: Are there ISO standards for filtration?
 - (ISO TC 142 ... Met in 1986): Paolo Tronville gave some background. The ISO committee is re-activated. The committee will be working on standard for general ventilation, standard on HEPA and ULPA filters as well as Gas Phase and gas turbine intake filters and electrostatic filters.
 - Action: Phil Winters keep notes on working with the ISO process and write an article on that experience. (next ISO mtg is 6/07checked with Phil W. on his progress....he will write an article on the ISO “process / experience”....or “what not to do”)
 - Paulo will put together a small summary for the ISO standard (ISO TC 142....?). Maybe we can put something into Insights. **Note from ML: GPC 27P wants this ISO info as reference material**

Action Item: “Use of Filtration in Process Applications.” Nick Agopian has info for two applications (Outdoor air for Semiconductors; Pulp & paper).

Nick is moving forward with a P&P field studies paper –Cu coupons (corrosion measures) are in the lab for analysis now .

- MVOC Res. Project article. (Elliot Horner, AQS to write..status? – KF says **unknown status**)
- Energy Conservation using IAQ procedure article (IAQ in Schools issue?) received several detailed/ critical comments back to Fred Turner – possible response needed (Chris Muller/ Brad Stanley will do...talks were given in Long Beach.....paper status??)
 - Jerry Lampin’s talk on San Antonio schools 6/07 should be written up (with emphasis on specifics of HOW they achieved the improvements!!)
 - Examples of using an online calculator for IAQ method.? Mark Stutman/Charlie Seyffer (out to 6/08)

Action Item: IAQ School Issue in ASHRAE Journal (Responsibility-Chris Muller / Brad Stanley (??))

- FTC needs to crack down on false claims by filter devices – should this be a FORUM or Seminar?

Action Item: Would Jeff Seigel &/or Richard Corsi do an article? Note- Calif. has legated twice the “snake Ions” vendor(s).

- Emerging Technologies papers: PCO: Catherine J./ Dean T.) Has an abstract for a paper about PCO applications. This information is to be shared with Marilyn to help along.
- Emerging Technologies papers: PCO: Jeff Roseberry-- a paper for PCO applications, based on Quebec talk?
- Emerging Technologies papers: Plasma: Ron D.____(?) a paper for Plasma applications.
- How to apply the IAQ method? Action: Barney Burroughs 15-building project. And/or Chris Muller/Brad Stanley???

A request for volunteer reviewers of articles was made so that good information is provided by the TC.

Reviewers Contact Mary McGee: mary.mcgee@ashrae.org

Planning (Nick Agopian, Chair, reporting)

The Denver 2005 Minutes, which were the most recent Planning Minutes available, were used to set the Agenda.

One of the key goals of the committee is to make grassroots ASHRAE members (mostly Chapter members who do not attend winter and summer meetings) aware of gas phase filtration and how and when to use it. Two presentations that could be used by TC 2.3 members were planned: a 15-minute summary talk to raise awareness of the TC and what it does; and a half-hour tutorial on gaseous contaminant control. Doug VanOsdell prepared a draft tutorial two years ago which could form the basis for both presentations. Marilyn agreed to contact Doug and get the presentation redistributed to committee members for review by the end of August. Comments should be sent to everyone, and it would also be good to get Chris Muller involved in the review process. He is currently an ASHRAE Distinguished Lecturer and has a talk that may overlap the half-hour tutorial..

Standard 62.1's IAQ procedure is currently receiving attention. Part of the TC's Roadmap might include preparation (in conjunction with TC 2.4) of a comprehensive filtration selection procedure that would meet the needs of engineers using the IAQ method. To make a start on this, we should propose a program for the New York meeting on IAQ procedure case studies (*this was done, and Nick Agopian is the Seminar Chair*).

There was discussion on use of the website as a communications tool to reach ASHRAE members and non-members. Nick is passing on the webmaster job to Erik Kuiper. The site is hosted by NAFA and its address is www.nafahq.org/ashrae/tc23. However, it is not yet linked to ASHRAE's TC website area, which is a must for reaching anyone outside of the TC. Marilyn agreed to bring this matter up with the Electronic Communications Committee to get it linked quickly (*Note that the TC 2.3 website is now accessible from ASHRAE's website*).

The possibility of posting on the website a presentation from one of TC 2.3's back-to-basics seminars was discussed and should be pursued.

Gemma agreed to write an abstract of Fundamentals Handbook Chapter 12 (Air Contaminants)

for posting on TC 2.3's website. Material on the TC's other chapters should also be posted (Fundamentals chapter 13 - Odors, and Applications chapter 45 - Control of gaseous contaminants).

TC 2.3 should have a mission statement to post on its website. This was discussed some years ago. Gemma will check previous Planning/TC Minutes to see if a mission statement already exists. It was noted that TC 2.3's Scope may be inappropriate. Everyone was asked to go to the website, check out the Scope and send comments to Erik and Dean by the end of August.

All recent TC Minutes should be posted on the website (there are a few older ones only). The preferred format is .pdf since readers cannot change the posted text. Marilyn and Gemma have Adobe Writer which is necessary for transforming to this format and are willing to work on this. The most important Minutes are the most recent ones, which Dean has. Dean will send copies to Erik.

Back in 2001, the Planning Committee prepared a draft survey for posting on the web and publishing (where this could be done at no cost). Dean agreed to get the survey from Doug and review it so that we can reactivate this task.

Website (www.ashrae.org) (Erik, Chair, reporting)

NAFA agreed to put up TC 2.3 website, link is now made:

www.nafahq.org/ashrae/tc23

The roster and research is on website.

TC Liaison Work:

- Electronic Communications Committee (ECC; Marilyn Listvan reporting)
 - Marilyn Listvan is a member of the Electronic Communications Committee (ECC). The ECC is making efforts to consider having the ASHRAE meeting become *paperless* meetings. Software is available on the ASHRAE website to conduct a paperless meeting. You can create a host server on someone's PC and we can freely share documents between the chair and the committee members. The chair will need to buy a \$30 hub and Dean is willing to buy the hub for the next meetings. The software can be uploaded from ASHRAE's website.
 - Send in complaint to ECC to add TC 2.3 to ASHRAE website
- TC 8.12 (Doug K reporting) –
 - Limited interest in gas adsorption research topics. Looking at linking gas contaminants to 145

New Business:

- Sept 3-Beijing conference International Society for HVAC
- Chris Muller's award

Agenda Items for the Annual ASHRAE meeting in New York, NY

- No new business discussed.

Meeting Adjourned at 15:30.