

ASHRAE MEETING MINUTES – LAS VEGAS

TC 2.3 - Gaseous Contaminants/Removal Equipment

Handbook Sub-Committee Meeting

Monday, January 31, 2011

4:15-6:00 p.m.

Convention Center, Room N223

The meeting was chaired by Gemma Kerr (Handbook Chair for TC 2.3). Participants introduced themselves. Present were:

Name

Gemma Kerr (Chair)
Nick Agopian
Charlene Bayer
Bill Lull
Chang-Seo Lee
Ashish Mathur
Aflal Rahmathullah
Jeff Roseberry
David Schaaf
Brad Stanley
Mark Stutman
Paula Walmet

TC 2.3 is presently responsible for 2 Handbook chapters:

- Applications Chapter 45 – *Control of gaseous indoor air contaminants* (2011 Handbook, submitted July 2010)
- Fundamentals Chapter 11 – *Air Contaminants* (2013 Handbook, submission due May 24 2012)

Until 2009, TC 2.3 was also responsible for Fundamentals Chapter 12 – *Odors*. Now this is the responsibility of TC 2.1. TC 2.1 did not respond to a recent offer of assistance with items within the TC 2.3 mandate.

Gemma Kerr is acting as Reviser for Chapter 45. This was completed and submitted to ASHRAE in July 2010. Gemma expects to receive galley proofs soon, and said that she may call on members of the committee for assistance with the finalization. Several people expressed interest in continuing to work on Chapter 45 with a view to updating the electronic version (this can be

done once every six months). The current base document is the final version of the chapter as submitted in 2010. The officially approved base document will not be available until the summer, 1-2 months after the publication of the 2011 Handbook. Topics that will be addressed and responsibilities (underlined) are shown below. Note that some of the action items shown in the Albuquerque Minutes do not have a champion and will need to be looked at again later.

1. Re: Checking equations 5, 6, and 7 – Gemma will ask Jianshun Zhang to review this section. Further action depends on what Jianshun says.
2. Re: Adding a breakthrough test graph from 145.1, Gemma distributed a graph that was approved for inclusion. However, a decision needs to be made whether this new graph should replace or complement Figure 3. If Figure 3 is retained, the labeling needs to be improved - Gemma will resend the breakthrough graph to Brad and Nick who will review and edit this section.
3. Re: revision of the Installation, Startup and Commissioning section, and the Operations and Maintenance section, Bill Lull said he needs help and Nick Agopian and David Schaaf agreed to review these sections and work with Bill.
4. Re: Defining and discussing clean air delivery rate (CADR) as a measure of air cleaner performance, it was noted that, while the AHAM method is now an ANSI Standard, this standard only covers particle removal. Gemma will look at this.

Discussions of revisions to Chapter 11 centered on material such as the Table of outdoor concentrations of contaminants (which currently appears in both chapters), tables of source emission rates (which currently appear in Chapter 45), and equations 5, 6, and 7 in Chapter 45, and whether these should all be moved to Chapter 11. Since there was no consensus, everyone was asked to read both chapters carefully and come to the Montreal meeting prepared to make a decision on this.

Gemma will take the particle sections of Chapter 11 to the TC 2.4 Handbook committee in Montreal and ask for their help. The most important change needed is to provide proper coverage of ultrafine and nanoparticles. Charlene noted that these two types of particle are not the same although their defined size ranges are the same. Ultrafines tend to have a very broad distribution of sizes and to have some natural sources, while nanoparticles are always manufactured and typically are monodisperse.

People wanted to see a range of different outdoor standards included in Chapter 11, Table 12 (currently limited to NAAQS). Also they wanted a range of contaminant exposure standards (industrial, IAQ, museum artifacts etc.) to be included in Chapter 45 to assist designers. Brad has a draft Table that could form a basis for this and he will distribute it.

It was noted that there is text on control methods for VOCs and inorganic gases in Chapter 11. Gemma will take responsibility for replacing this with references to Chapter 45, and checking whether any of the deleted material is needed in Chapter 45.

Since there had been little detailed discussion of Chapter 11, Gemma asked everyone to review the Chapter and to send comments on changes they would like to see to Gemma by April 1.

It was noted that there is considerable misunderstanding of air, its gases and contaminants. Several of us have heard people complain that there is not enough oxygen in the air. We should attempt to address such misunderstandings in the Chapter, perhaps by saying that there is no change in oxygen content between air intake and exhaust. Gemma will look at where this discussion should fit into the Chapter.

The meeting was adjourned at 5:45 pm