

ASHRAE MEETING MINUTES – MONTREAL

TC 2.3 - Gaseous Contaminants/Removal Equipment

Handbook Sub-Committee Meeting

Monday, June 27, 2011

4:15-6:00 p.m.

Hilton Hotel, St. Leonard (L)

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

Name

Gemma Kerr (Chair)
Sheldon Jeter (Ch 45 Liaison)
Nick Agopian
Charlene Bayer
Paula Levasseur
Bill Lull
Chang-Seo Lee
Ashish Mathur
Jeff Roseberry
David Schaaf
Brad Stanley
Al Vatine

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.

Sheldon Jeter introduced himself as our new liaison for Chapter 45, replacing John Pennington. He had no special instructions for us.

Chapter 11

Discussions of revisions to Chapter 11 continued. The first five items below were identified in Las Vegas, but the action items (underlined) were not completed and should be addressed before Chicago.

The most important issue relates to material such as the Table of outdoor concentrations of contaminants (which currently appears in both chapters 11 and 45), tables of source emission rates (which currently appear in Chapter 45), and equations 5, 6, and 7 in Chapter 45. There is no consensus about which Chapter these should appear in. Gemma, Ashish and Brad will read both chapters carefully and make a decision by the end of July.

Gemma will co-ordinate update of the particle sections of Chapter 11 with the TC 2.4 Handbook committee (she is a member of this committee). The most important change needed is to provide proper coverage of ultrafine and nanoparticles.

In Las Vegas, people had discussed adding a range of different outdoor standards to Table 12 (which now only shows NAAQS), for example EU. In Montreal, it was decided that Table 12 should be updated to 2010 NAAQS, and that no other standards should be included.

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.

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 committee reviewed Chapter 11 during the meeting, particularly the Tables, to identify other places where changes needed to be made.

The Bioaerosols section needs updating to include reference to the Applications Chapter 16 on effects of UV. Ashish, who has a copy of the ASHRAE documents on UV, will rewrite the paragraph on UV in the Control section.

Charlene will update Table 7 (left hand column needs fixing) and Table 8 (needs updating, for example on electron capture) and deal with minor errors in these Tables.

Table 9 needs data replaced by something more recent. Gemma will be responsible for this, and Ashish will forward his information to her.

A paragraph on SVOCs (phthalates, PAHs, flame-retardants, pesticides) should be added after the section on VOCs. Charlene will write this, with Chang-Seo providing some information.

Gemma will be responsible for replacing the old data in Table 11 with the new data and references used in Chapter 45.

Table 13, which covers outdoor sources and concentrations, and I/O concentration ratios, needs complete revision. Bill wants the source information to remain, including particles (PM_{2.5} and PM₁₀). Gemma will be responsible for making the changes based on info supplied by Charlene (references for particles) and Jeff (references for radon), a 2010 EPA report containing data for NAAQS contaminants, and possibly a paper by Seppanen et al in Proceedings of Indoor Air 2011. Asbestos info should be removed. Headings should be changed so as not to imply acceptability or non-acceptability of the data presented.

For Table 14 on flashpoints, it was noted that the data differ depending on the method used to determine the flashpoint. The method used for the data in Table 14 should be verified, and the method type appended to the Table. Gemma will take care of this.

Chapter 45

Gemma Kerr is acting as Reviser for Chapter 45. The editing was completed and submitted to ASHRAE in July 2010, the galley proofs were reviewed in March, and the chapter has been published.

In Las Vegas, 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). Gemma will circulate the new base document when it becomes available later in the summer so that this work can start. Topics that will be addressed and responsibilities (underlined) are shown below.

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.

There was discussion on including a range of indoor contaminant exposure standards (industrial, museum artifacts, IAQ etc.) in Chapter 45 to assist designers. Gemma noted that the industrial standards had earlier been moved to EHC's chapter in Fundamentals, and it was decided to refer

to this. There is already a Chapter on designing HVAC for museums, and we can refer to that. However, we may want to include some of the material shown in the back of Standard 62.1 which relates mainly to IAQ.

There was no other business raised.

The meeting was adjourned at 5:55 pm.