DRAFT MEETING MINUTES
TC 2.3 - Gaseous Contaminants/Removal Equipment
Standards Subcommittee Meeting
Monday, June 22nd 2009; 6:00-7:00 p.m.
The Galt House Hotel, Cochran (R3), Louisville, KY

The meeting was called to order by Chair Paolo Tronville. Present were:

Name
1) Kyung-Ju Choi
2) Mick Flom
3) Gemma Kerr
4) Marianne Lane
5) Matt Middlebrooks
6) Chris Muller
7) Kathleen Owen
8) Aflal Rahmathullah
9) Jeff Roseberry
10) Brad Stanley
11) Mark Stutman
12) Christine Sun
13) Sunny Sun
14) Paolo Tronville
15) Phil Winters

1) Updates were given on standards within scope of ASHRAE TC 2.3

a) GPC 27P "Procedures for measurement of gases in indoor environments" – *Brad Stanley*
Scope has been changed to remove industrial buildings. The scope covers commercial buildings, and commercial is defined to include educational, medical, museums etc. There 10 sections, with 4 written, work on 2 more in progress. The GPC has 5 voting members. There was a comment that the title should be more specific about the types of buildings covered.

b) SPC 145.2 "Laboratory Test Method for Assessing the Performance of Gas-Phase Air Cleaning Systems: Air Cleaning Devices" - *Kathleen Owen*
The methodology is close to completion. Work on the Appendices is needed, but the document can be submitted for public review without them.

c) SPC 145.3 "Field Test Method for Assessing the Performance of Gas-Phase Air Cleaning Systems: Installed Systems" – The plan is to ask ASHRAE to remove this from the standard scope. It might go forward as a separate Guideline later, but at present there is not enough good data to allow development of a reliable procedure.

2) Updates were given by ASHRAE Official Liaisons

a) TC 2.4 "Particle Filtration" – *Kathleen Owen*
Several issues were discussed but no changes will be made until after research results come back. They have created a task group to develop a users guide.

b) TC 2.9 "Ultraviolet Air and Surface Treatment" – *Matt Middlebrooks*
There is not much activity relating to TC 2.3. They are interested in side effects such as effects of treatment on air contaminants.

i) SPC 185.1 & .2 - *Chris Muller*
They will use a 52.2 test duct for the air procedure, and want advice from TC 2.3 regarding rig use.

c) TC 9.11 "Clean Spaces" – *Matt Middlebrooks*
They are preparing to write a design guide for ASHRAE and have a detailed outline ready.

d) SSPC 62.1 "Ventilation and IAQ High Rise Buildings" – *Chris Muller*
62.1 wants 145.2 completed so that it can be used to help tighten up the IAQ procedure. They want to test filters for a list of contaminants that they have not yet completed. Need a short contaminants list.

e) SSPC 62.2 "Ventilation and IAQ Low Rise Buildings" – *TBD*
There was no report.

3) Information Exchange

a) AFS – *KJ Choi*
The AFS Fall conference "Emission solutions in transportation" will take place in Ann Arbor, MI, October 5-8. The 2010 Annual conference will be co-located with AIChE in San Antonio March 22-25.

b) ASTM D22.05 "Air Quality" Sub-Committee "Indoor Air" – *Chris Muller*
There was nothing to report

c) ASTM D28.04 - "Activated carbon" SC "Gas Phase Evaluation Tests" – *Chris Muller*
D6646 - 03(2008) "Standard Test Method for Determination of the Accelerated Hydrogen Sulfide Breakthrough Capacity of Granular and Pelletized Activated Carbon"
The committee has put in a request to make this standard applicable to a wider range of gases. They also have a guide for testing activated carbon. The committee did not know of the existence 145.1, and are interested in reviewing to see if they can use it.

d) CEN/TC144 "Tractors and machinery for agriculture and forestry" – *Paolo Tronville*
prEN 15695-2 "Agricultural tractors and self-propelled machinery - Protection against hazardous substances - Part 2: Air purifying devices"
No modifications have been made, but there are concerns with the cyclohexane challenge. They are afraid of testing devices as the concentration is too high, and service life shows as too short.

e) CEN/TC 195 "Air filters for general air cleaning" WG 5 "Gas phase filters"– *Paolo Tronville*
The committee has decided to implement the Vienna agreement, i.e. they will work in parallel with ISO/TC 142 Working Group 8 to consider the future ISO standard as a European one.

f) CEN/TC 346 "Conservation of cultural property" WG 4 "Environment"– *Chris Muller*
They had a recent meeting and have done some work on relative humidity control. As of today, no gas-phase contamination control has been developed; it is planned later.

g) ISO/TC 22/SC7/WG3 "Air and oil filters" – *Paolo Tronville*
ISO/DIS 11155-2: 2007 "Road vehicles - Air filters for passenger compartments - Part 2: Test for gaseous filtration"
This has been voted as an International Standard. Filters are tested with toluene and n-butane as mandatory challenge contaminants. The test for sulfur dioxide is optional. This is of interest to 145.2, as they have some dissent regarding the suitability of sulfur dioxide as the main acid gas challenge.

h) ISO/TC 142 "Cleaning Equipment for Air and Other Gases" WG8 "Gas-phase air cleaning devices" – *Matt Middlebrooks*

i) NWIP 10121 -1 "Media" and -2 "Devices"
This Working Group is working in parallel with 145.2, though it has the media test as second priority. It is now doing web meetings, the next is planned on July 1st. Progress is being made. The test rig is more generic than 145.2. The first Committee Draft (CD) is due in September 2009. The next plenary of TC 142 will be in Frankfurt on October 9th, with WG 8 on October 7th or 8th.

ii) US Technical Advisory Group (TAG) – *Matt Middlebrooks*

The US TAG has discussed definitions with WG 1 to try to get agreement with 145.The information has been sent to WG 8.

i) ISO/TC146 ISO/TC146 "Air quality" /SC6 "Indoor air" – *TBD*
This group has developed test methods for contaminant measurement which may be of interest to GPC 27P. There are many methods, mainly industrial plus some IAQ.

j) ISO/TC 205 "Building environment design" – *TBD*
This committee, for which ANSI has the secretariat, has requested TC 142 for permission to develop a test method for gas phase devices using sensory olfactory methods for detection (nose in test duct). TC 142 will let them do it. The rating of filters may end up with a result different from SPC 145.

k) ISO/TC209 "Cleanrooms and associated controlled environments" – *Chris Muller*
i) 14644-8:2006 "Classification of airborne molecular contamination"
ii) 14644-10 "Classification of surface chemical cleanliness"
This deals with surface molecular contamination for cleanrooms, with focus on micro electronics, but possibility to apply to metals parts or vapors. At moment the document only covers a classification scheme, and will go for a vote soon.

l) ITRI (Taiwan) – *Chris Muller*
They have their own design test duct, 5 gases are used, and everything is proprietary, so we know little of the test details. They may be developing gas phase filters with an industrial partner. This test is of interest to 145, they use very tight control of concentration, temperature and relative humidity.

m) JIS B 9901:1997 "Gas-removal – Method of test for performance of gas-removal filters" – *Paolo Tronville*
ISO/TC 142 WG 8 has used this Japanese standard in test method development. It was the first published standard for testing full scale gaseous contaminant filters.

n) China
The first 3 standards listed below are approved and in use. A seminar in Chicago gave some information on them. The fourth is still in development. All are national standards not used outside China.
GB/T 18801 - 2002 "Air cleaner"
Range: Household air cleaner with power
Key parameters: CADR
QB/T 2761 – 2006 "Methods for determination of purificatory effect of indoor environment"
Range: Air cleaner and unit, materials
Key parameters: Cleaning efficiency in 24 hours
JC/T 1074 – 2008 "Air purification evaluations of indoor wall coating materials"
Range: Passive indoor wall coating materials
Key parameters: Cleaning efficiency in 24 hours; Cleaning life 4 days
??? name
Range: Household air cleaner with power; Air cleaner in duct
Key parameters: Cleaning efficiency in 24 hours; Ozone generation

4) New Business was discussed as follows:

i) Proposed by Jeff Siegel, David Chojnowski, Hugo Destaillats in Chicago

Title: Method-of-test for ozone emission from in-duct electrically powered air cleaners

Purpose: The purpose is to develop a method-of-test to determine the absolute ozone emission rate for any electrically powered in-duct air cleaning, air purification, surface decontamination, or component decontamination device.

Scope:
1.1: This MOT is only applicable for in-duct and electrically-powered in-duct air cleaning, air purification, surface decontamination, or component decontamination devices and is not applicable for portable air cleaning devices.
1.2: This MOT produces an absolute ozone emission rate (mass of ozone generated per unit time). The total is inclusive of any ozone that is removed by reactions with the device or with any deposited material on the device.

Jeff Siegel, who championed this in Chicago, was not present to provide an update. TC 2.3 supported this idea in Chicago. To move forward, we need to get approval from TC 2.3 for the scope as shown above. Then we need a champion a at least four more people to be submitted to ASHRAE Standards Committee.

ii) Filter Energy Rating/Labeling Guideline/Standard
iii) Life Cycle Cost Calculation Guideline/Standard
Items ii) and iii) were discussed together. TC 2.4 is working on both of these. They are of interest to TC 2.3, especially life cycle costing. Customers might welcome this information. For development of these standards, we could use same HVAC info as TC 2.4, then add on the gas contaminant and filter information. The consensus was that TC 2.3 should postpone the initiative until the TC 2.4 standards and standard 145.2 are completed. This should be put before TC 2.3 for discussion.

5) The meeting was adjourned at 7:05 pm.