



**AMERICAN SOCIETY OF HEATING, REFRIGERATING AND  
AIR CONDITIONING ENGINEERS, INC.  
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**TC/TG/TRG MINUTES COVER SHEET**

TC/TG/TRG No. TC5.6  
TC/TG/TRG/TITLE: Control of Fire and Smoke  
DATE OF MEETING: June 25, 2012

DATE: June 26, 2012  
LOCATION: San Antonio, TX

VOTING MEMBERS PRESENT	YEAR APPT'D	VOTING MEMBERS ABSENT	YEAR APPT'D	EX-OFFICIO MEMBERS AND ADDITIONAL ATTENDANCE
Kai Kang (Chair)	2013	Ahmed Kashef (Vice-Chair)	2014	Cameron McCartney, CM
John Clark	2013			Raj Kapoor, CM
Paul Turnbull	2012	Matthew Davy	2015	Tim Orris, CM
Gerald Kettler	2014	Bob Van Becelaere	2012	Josh Greene, CM
				Josiah Wiley, CM
Valentina Nedelcu	2012	Larry Felker	2012	Ed Koop (CM)
Peter McDonnell _Secretary	2015	Ray Sinclair,	2014	Bob Sibilski, CM
William Webb (NQ)	2014	George Hadjisophocleous	2014	Gary Andis CM
John Klote (NQ)	2014			Dan Rau, CM
				Kevin Chang, CM
David John	2015			Mark Owen (ASHRAE Staff)
Bill Black	2015			Gus Mastro, G
				Jeffrey Tubbs, CM
				Julian Rochester, G
				Joe Simmons, G
				Nader Shahchevaghi, G

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<b>ASHRAE LIAISON</b>	
TAC Section Head	Giustino Mastro
TAC Chair	Donald Brundage
Manager of Standards	Claire Ramspeck (Staff)
Manager of Research & Technical Services	Mike Vaughn (Staff)
<b>Committee Liaisons</b>	
ALI/PDC	Florentino J Mendez
Chapter Tech Transfer	Stephanie Reiniche
HB Applications	Charles Gullledge, III
Program Liaison	Riyaz Papar
RAC Research Liaison	Danny Castellan
Standard Liaison	Bodh Subherwal
Special Pubs	Stanley Mumma

These draft minutes have not been approved and are not the official, approved record until approved by this committee.

**MINUTES**  
**ASHRAE TC 5.6**  
**CONTROL OF FIRE AND SMOKE**  
**San Antonio, TX**  
**Grand Hyatt Hotel (Hancock Rm)**  
**Monday, June 25, 2012 – 4:15 to 6:30 PM**

Prepared by: Peter McDonnell, PE  
McClure Engineering Associates

**1. Introductions**

The Committee Chair Kai Kang called the meeting to order at 4:17 pm.

**2. Identification of Voting Members**

25 members and guests were present at the meeting. Voting members were identified. 12 voting members were present. 5 voting members were absent.

**3. Chairman's Remarks**

Kai welcomed members and guests and briefed attendees on the Section 5 meeting (please see attached). Kai informed the group about ASHRAE's rebranding efforts, including new website format.

Looking for nominations for 2013 Hightower Award – due 9/1/12. It is important to limit the nomination form to 100 words.

It is important for each member to keep their ASHRAE Bio up to date. There are training opportunities for members of TC's, please let Kai know if you would like to take one of these courses.

Kai also highlighted upcoming conferences:

High Performance Buildings Conference – March 12- 13, 2012 in San Diego, CA

CIBSE ASHRAE Technical Symposium – Buildings Systems and Services for the 21<sup>st</sup> Century: April 18- 19, 2012 in Imperial College, London

Fan 2012: International Conference on Fan Noise, Technology & Numerical Methods: April 18- 20 in Senlis, France

**4. Approval of Minutes from January 23, 2012 Meeting (Chicago, IL)**

The committee voted to accept the Chicago meeting minutes of June 23, 2012 (for approval: 12; against: 0; abstention: 0).

**5. Subcommittee Reports**

**a) Research – Paul Turnbull**

**Active Research Projects:**

- No active projects at this time.

**TRP-1447: (Performance of Pressurized Stairwells with Open Doors)**

- Bids were received.
- Action was taken in closed session by voting members to receive PSC recommendation. All voting members (10) present attended the closed session.

**WS-1600 Make-up Air Velocity for Smoke Control in Atria (#2)**

- RTAR has been accepted by ASHRAE for development into WS.
- Was submitted to Research Liaison for review, and received many suggestions for revision.
- At June meeting, Research subcommittee was notified that WS had been split into 2 parts; modeling and full-scale testing. It was intended that each part be bid separately, with full-scale test part contingent on favorable results in modeling part.

- Action item: Paul to rewrite WS to clearly define the 2 parts of the project, so that the overall scope and benefit is understood. – COMPLETE.
- This should bid in October 2012.

#### **New RTAR 1644 (Smoke Control in Long Atria):**

- RTAR was reviewed by the RAC and is being returned with comments requesting further revision and clarification. . Main comments:
  - Lacks details about deliverables
  - Please address budget concerns
  - Unclear how data would be used by ASHRAE
  - Need cost estimate from committee members familiar with this type work before it can be submitted.
  - Volunteers?
  - A response to the RAC comments will be compiled once WS-1447 is submitted.

#### **Ideas for future RTARs**

- Plugholing issues in atrium smoke management using exhaust inlets located on the atrium walls – current practice assume conservative approach if using vents on the wall rather than on the ceiling – Gary Lougheed developed a draft RTAR for study of sidewall vents on plugholing, but it has not been distributed.
  - Includes full-scale study to validate CFD model behavior in close proximity to sidewall vents, and
  - CFD study to determine appropriate factor to be used in existing NFPA92 equation.
  - Need cost estimate from committee members familiar with this type work before it can be submitted.
  - Volunteers?
- 
- Smoke purging from stair and shafts – by John Klote
- Comparisons of existing software tools to existing experimental data

#### **New ideas for research topics?**

- Ways to use results of modeling research – move toward open source
- Discussion of past research project # 1328 “Algorithm for Smoke Modeling in Large Multi-Compartment Buildings”. How can this algorithm be used for modeling multiple zone including the energy component (that COMTAM currently does not)? Bill Webb stated that those interested in this type of computer software could further develop the ‘abstract’ for this ‘project’. Paul Turnbull will checked with ASHRAE to find out what the availability of this information to general public. ASHRAE has concerns with providing the algorithm (for free) to an entity that would profit from the use.

#### **b) Program – Valentina Nedelcu**

Valentina updated the TC on the CEC and schedules for San Antonio (September 26 deadline for submission of technical papers and abstracts for conference papers). For San Antonio, it is “Leading the way to better buildings”.

#### **Seminar 64 – How Smoke Control Systems Contribute to Sustainability Goals**

The seminar is scheduled for Wednesday 11:00, Room 007C.

Chair: Paul Turnbull .

William Webb- How Smoke Control Contributes to Sustainability  
John Klote- Overview of Sustainability and Smoke Control  
Jeff Tubbs-  
Case Studies, Using Fire Engineering to Achieve Sustainable Design

- **Future meetings schedule updates:**

**Dallas Jan 26-30, 2013**

Website open [www.ashrae.org/Dallas](http://www.ashrae.org/Dallas)

Schedules for Dallas updated

**Denver June 22-26, 2013**

Website open [www.ashrae.org/Denver](http://www.ashrae.org/Denver)

Schedules for Denver updated

**New-York, January 18-22, 2014**

Tentative: Conference Paper Abstracts and Full Technical Papers due April 1,2013

**CEC(Conferences and Expositions Committee) announcements**

1. Dallas conference paper reviews will be handled by the Track Chair.  
Some of the TC members may be asked to assist with reviews.
2. Program submitted/accepted statistics numbers were presented.
3. Speakers rating system was implemented at Chicago Conference. As a result 25 letters were sent for below 3.5 rating.
4. First annual Research Mini-Conference and Integrated Project Delivery(IPD) will be held in Denver. Papers and seminars on ongoing or recently completed research are being solicited. Papers describing ASHRAE related research are encouraged and up to 25% of the Denver program will be allocated to this effort.
5. Because of increasing requirements for PDH hours on Ethics, a session on ethics and legal issues will be offered at every winter meeting.

During the Sub-Committee meeting each of the scheduled/proposed TC5.6 program events was re-visited in terms of: event type, proposed meeting date, topics, chair and speaker availability.

- **Future Proposed Programs**

➤ **Dallas Meeting- January 26-30, 2013**

<http://www.ashrae.org/dallas/>

Conference Papers submitted for review are due early July 2012  
Seminar and forum session proposals are due early August 2012.  
Technical Papers final reviews August 13  
Final Technical Papers due Sept 5

**Seminar – Alternative Smoke Detection Systems for Smoke Control.**

Paul Turnbull as moderator and papers by George Hadjisophocleous, Ahmed Kashef and Matthew Davy.  
The seminar will be submitted if the speakers will confirm availability.  
The seminar was originally submitted for the San Antonio Conference.

**Seminar – Special issues related to smoke control in large volume spaces.**

Jeff Tubbs as moderator and papers by Ray Sinclair and others to be determined.  
Peter McDonnell had attempted contacting the Mechanical Contractor for the Dallas Stadium.  
Case studies.  
Short timeline as the deadline is August.

➤ **Denver, June 26-30, 2013**

**Seminar - Guideline 1.5 Commissioning Smoke Control Systems. (Smoke Control Technical Requirements for the Commissioning Process).**

Depending on the publishing date of the document.  
More presentation topics to be developed. Chair to be assigned.

**Seminar-** Design Fire for smoke control. Possible papers by NRC and FPRF.

**Seminar-** Natural Smoke Control Strategies. Ray Sinclair

**Technical Session** on Smoke Control Modeling- applications, validation, development  
(possible papers by Jarrod Altson, Leon Wang, Bill Black, Ahmed Kashef). Chair to be assigned

➤ **New York, Jan 18-22, 2014**

**Seminar-Smoke Control in correctional facilities.**

Collaboration with TG9.JF, Justice Facilities  
Possible paper by Peter McDonnell.

➤ **Seattle, June 2014**

To be determined

**Future program topics.**

Post Fire Situation, Purge Smoke. (The topic was proposed by John Clarke)  
Zone Smoke Control required in hospitals. May be time to bring this back.

**c) Membership – John Clark**

John noted that the committee needs a balance of membership and would like invite anyone interested in the committee activity. For those interested in becoming either a corresponding member or a voting member, please provide business card indicating preference as corresponding member or voting member and ASHRAE membership info. The committee is looking for representation from design engineers. John suggests guests to start as corresponding member, as voting member needs commitment for a 4-year cycle. This year (2012), 5 members will be cycled off committee should look for a new members in a year or so.

This includes a replacement for Tenison Stone. Kai will review for new members to be added. This is due to ASHRAE tomorrow.

**d) Handbook – Jeff Tubbs**

The Handbook was published in June. The new cycle started where it will only be distributed electronically (no CDs).

Next time the chapter is issued will be 2015. For the next issuance, Jeff suggested that application information be added to assist the designer community. Potential building types such as:

Atrium Spaces

Malls

Stadium (Smoke Protected Facilities)

Healthcare

Detention / Correctional Facilities

High-rise (Residential / Office)

Combustible Storage

Underground Buildings

Stages

Performance-Based Approaches

Jeff will work with several members to work on more specifics to this list. This will reflect the IBC and NFPA 92 concepts, however it will not be presented as Code specific. This wants to be a general overview document to highlight items that should be considered in any design.

John Klote noted that he believes that updates to the chapter are needed. He will work on this for review in time for Winter Meeting (next time we will meet). This will help ensure that the Handbook chapter and the New Smoke Control Book (now available at the ASHRAE Bookstore) are coordinated.

**e) Guideline 1.5 – Paul Turnbull**

Guideline 1.5 (Commissioning Smoke Management Systems) was completed just after the Montreal meeting (as approved by the TC). It went for public review and received no comments. The document proof was returned to ASHRAE on January 17, 2012. Paul is expecting a final proof of the guideline from ASHRAE. The title of the guideline appear to be different from what the sub-committee started with. Paul noted that the number appears to be clear, but the title is the question. Gerald asked what is the sub-committee's title preference. The suggested title of "**Commissioning Process for Smoke Control Systems**" was agreeable to those in attendance. It is anticipated that this Guideline would be approved by Standards Committee at this meeting (June 2012), however Paul has not been told. Paul would not expect a meeting for this group at Dallas Conference.

**f) Standards** – No report, new liaison to be Ed Koop.

**g) TC5.6 Web Site – Josiah Wiley**

The committee's website address is: <http://tc56.ashraetcs.org>.

The logo was updated. John noted that the Eratka from the 2<sup>nd</sup> edition Smoke Control Book should be removed and the new Book link added to the TC website. Paul and Jeff suggested that the old Eratika be kept with note that the old book is no longer supported and new book exists. Bill Webb recommends that the TC website be kept current. Josiah noted that this is already happening.

## 6. Intra-Society Liaison Reports:

- a) New Smoke Management Book – Bill Webb reported that the book has been prepared and reviewed (approved) by the sub-committee appointed by Chairman of TC5.6. The book is now in ASHRAE's Bookstore for purchase. John noted that this new book truly replaces the old books. New book includes weather data (with wind speeds). Full scale fire testing, tunnel fires/smoke, commissioning and periodic testing are now separate chapter. Book is also available for download from ASHRAE Bookstore .
- b) TC1.4 (Control Theory and Application) – No report, meeting is tomorrow. Josiah Wiley
- c) TC5.2 (Duct Design) - The Committee will meet on Tuesday. David John noted nothing to report.
- d) TC5.9 (Enclosed Vehicular Facilities) – The Committee will meet on Tuesday. They are working on an RTAR on pressure transients for high speed trains. Nader Shahcheraghi
- e) TC5.10 (Kitchen Ventilation) – John Clark  
The cleaning for type 1 ductwork has highlighted that the access door gaskets are fire rated, but not pressure rated (At 1" wc).
- f) TC7.9 (Building Commissioning) – Jerry Kettler  
Jerry noted that in their meeting yesterday and many Codes are now requiring commissioning & testing of systems. Jerry noted that the Standard for commissioning existing buildings is very close to start. ASHRAE Commissioning Standard 2.2 is going for public review this summer. Many standards for commissioning fire safety systems and testing are being developed by different bodies (NFPA, ASTM, IES, IGSS, etc.). It was noted that the new ICC 2012 Energy, Green Code and ASHRAE Std 189.1 all require commissioning process.
- g) TC9.1 (Large Building Air Conditioning Systems) – No report.
- h) TC9.8 (Large Building Air Conditioning Applications) – No Report, need new liaison
- i) TC9.10 (Laboratory Systems) – No Report, need new liaison.
- j) TC9.12 (Tall Buildings) – The Committee will meet on Tuesday. Small group that is looking for more members willing to serve (3:30pm time slot at 4<sup>th</sup> floor Crockrtt C/D room).

## 7. Inter-Society Liaison Reports:

- a) CIBSE (Chartered Institute of Building Services Engineers) – No Report, need new liaison
- b) NFPA 80 (Standard for Fire Doors and Fire Windows) – Ed Koop reported that standard was updated and no activity to report at this time. Gary Andis noted that current language calls for first inspection after the first year. This has resulted in some AHJ's calling for an inspection one day after the (warranty expires) first year. The inspections for maintenance beyond at 4 years.
- c) NFPA 90A (Air Conditioning and Ventilating Systems) – Jim Buckley. No report
- d) NFPA 92 (Smoke Management) – Paul Turnbull  
The two standards are now one standard "NFPA 92". It is now available as 2012 document. The Building Codes will need to be updated to reflect this. This can be raised by any individual to IBC. (IFC 2012 incorporates these requirements).
- e) UL – Tim Orris  
UL is starting to develop certified ratings program. UL will be a for-profit company
- f) AMCA – Tim Orris  
The AMCA Damper Engineering is updating their engineer training programs. This will be coming this year. Intertek and FM Approvals presented information on their damper listing programs for dampers mounted in wood structures.
- g) SFPE – Jeff Tubbs  
Jeff noted currently they updated the handbook (2012) will be expanded with more guidelines and there are new committees on how to use fire models for tall buildings (August draft to be submitted).  
They are also working in committee to define very tall vs. high rise building requirements. They are meeting in July 2012 in San Francisco to review and how to move forward. Guideline for substantiating models for their intended use. The new handbook is currently being developed to make it more user friendly and basis for PE Fire Protection exam. WPI is working on a definition of design fire sizes.

**8. Old Business**

- Closed Session was held to discuss TRP-1447 Bid (all present voting members attended). The results of that discussion to be presented to Research Committee by Paul Turnbull (sub chair).

**9. New Business**

**10. Adjournment**

The meeting was adjourned at 6:33 pm.