



ASHRAE Technical Committee 5.6

MINUTES

TC 5.6 Control of Fire and Smoke
Thursday, Jun 10, 2021

Virtual Meeting

ATTENDANCE

Voting Members Present	Additional Attendance		
Paul Turnbull	Yoon Ko	Valentina Nedelcu	Greg Sanchez
Matt Davy	Cheng Chang	William Webb	Kevin Marple
Yuan Li	Don Hardin	Aaron Gunzner	Michele Shi
Alfred Webb (NQM)	Duane Smith	Dimitry Kogan	Morgan Hurley
Jim Buckley	Larry Felker	Kim Clawson	Amir Jokar
	Mike Knipple	James Carlin	Dan Gottuk
	Samir Trabousi	Anil Kapahi	Jonathan Hodges
	Scott Hammond	Dane Carey	
Voting Members Absent			
John Klote			
Peter McDonnell			

IDENTIFICATION OF VOTING MEMBERS

Voting members in attendance are as follows: Paul Turnbull, Matthew Davy, Yuan Li, Jim Buckley. Alfred Webb, a non-quorum member was in attendance. A quorum was present, 5 of 7 voting members were in attendance.

CHAIRMAN'S REMARKS

- The vice chair chaired the meeting on behalf of the chair.
- ASHRAE Statement of ethics read by the chair, Paul

APPROVAL OF MINUTES FROM JUNE 2020

A motion was made to make a correction in the minutes of the TC 5.6 meeting on January, 2021 to include reports for AMCA and UL from Aaron Gunzner and Dane Carey. The motion was accepted. A revised minute will be distributed.

SUBCOMMITTEE REPORTS***Research – Matt Davy (Paul Turnbull)***

- Jensen Hughes (Jonathan Hodges) updated TC 5.6 committee on the work that has been completed so far on RP-1644. A short presentation was given to report the progress on the numerical modelling and analyses. Milestones 4 are underway to evaluate differences between the models with and without heat transfer and to identify the length at which the ceiling jet starts to descend with heat transfer for each configuration.

The CFD simulations showed an unexpected behavior of the ceiling jet thickening both near and away from the fire after a certain time, rather than just ramping down at a specific distance. Jensen Hughes proposed to redefine the value being identified in this research from the distance where the ceiling jet starts to descend to the maximum length of atrium where descent due to cooling does not occur. Discussion during the presentation indicated agreement with this change in definition since it will still provide the intended guidance to designers about atrium size that should or does not need to include thermal transfer in the design evaluation. By July, they intend to develop an equation relating the descent length to atrium dimensions, fire size and boundary conditions.

- No other update reported by Matt.

Program – Valentina Nedelcu

Valentia discussed existing program plans, and worked with the committee to develop the plans further. For details of the program plan, see Appendix A.

Handbook Subcommittee Report –John Klote

Our chapter will be in the 2023 Applications Handbook. ASHRAE (Eric Adams) informed that the deadline for our chapter is April 2022.

Modifications should be minor. A revised chapter will be sent to TC 5.6 in the fall of this year. We will need to vote on it next January.

Standards – (Jim Buckley)

Guideline 1.5 - SSPC 300: Commissioning is activating a sub-committee to update Guideline 1.5. Since GDL 1.5 is under SSPC 300 oversight, that is the required process. Members of 5.6 are welcome on the committee. All persons interested in helping in the process will need to become members of SSPC 300. For members interested please follow this link:

www.ashrae.org/pcmmemberapp to the online application process.

Membership – Larry Felker

The updated TC 5.6 roster will be posted.

TC 5.6 Web Site – Duane Smith

The TC 5.6 web site is updated with meeting minutes.

According to ASHRAE: "The purpose of the ASHRAE TC website is twofold: to support and update the TC membership and to inform outside audiences about the TC's contributions to ASHRAE." Looking for suggestions to make our website serve its intended purpose.

Smoke Management Software Report – Bill Webb/John Klote

This software is AtriumCalc. The good news is that no bugs have been identified in AtriumCalc.

Handbook of Smoke Control Engineering – John Klote

The Handbook of Smoke Control Engineering was sent to TC5.6 members for review in March 2021. Review comments were received from a few people, with most comments having a relatively minor impact on the content of the book. A motion was made to approve the next edition of the handbook as distributed for review, with content updated to resolve the comments received. The motion was approved unanimously. John Klote will send the final draft to ASHRAE after he has resolved the rest of the comments received.

ASHRAE Smoke Control Courses – John Klote

I have put off developing such courses until pandemic subsided and we are back to normal.

INTER-SOCIETY LIAISON REPORTS***CIBSE (Chartered Institute of Building Services Engineers) – Liaison needed***

There was no report.

NFPA 80 & 105 (Standard for Fire Doors and Fire Windows) – Duane Smith

- NFPA 105:
 - No Notice of Intent to Make a Motion (NITMAM) were certified
 - Standard is considered a Consent Standard
 - TBD, Issuance date by the Standards Council
- NFPA 80:
 - One NITMAM certified – related to 19.5.2.3.3 Remote Inspection Method
 - This certified NITMAM is now a Certified Amending Motion (CAMs):
 - Will be presented for discussion and vote at the 2021 NFPA Technical Meeting on June 14th
 - If CAM passes vote of membership, it will be balloted by the technical committee for final recommendation of text
 - TBD, Appeal Closing date for Standards with CAMs
 - TBD, Issuance date for Standards with CAMs

NFPA 90A (Air Conditioning and Ventilating Systems) – Jim Buckley

No update.

NFPA 92 (Smoke Management) – Paul Turnbull

No update, no activity

AMCA and Underwriters Laboratories – Aaron Gunzner

1. On May 11th, 2021, the AMCA Damper Engineering Committee met with Underwriters Laboratories to discuss several topics.
 - a. Damper position switches on UL products are being converted over from UL 873 to UL 60730. Currently, it does not look like any changes are going to be needed to change the products, but any new switch packages or sufficient changes to the switch package will need to be covered under UL 60730 due to UL 873 being retired.
 - b. Dynamic Ceiling Dampers were discussed to a great extent at the meeting. Currently approved dynamic ceiling dampers will only be approved in the specific ceiling design that it is tested. So, when a dynamic ceiling damper is listed in specifications, chances are that it will only be approved in one specific ceiling design.
2. AMCA has some concern with the National Building Code of Canada (NBC) 2015, Section 3.1.8.11 (Installation of Smoke Dampers), items #1 and #2 – it is AMCA's understanding that the products specified in those items are essentially 'flip-flopped' with the requirements in those items. A proposal is being internally drafted to try to make this correction for the next edition of the NBC.
3. No real changes to UL Standards regarding Fire Dampers, Smoke Dampers, and Ceiling Radiation Dampers have been made this year.
4. AMCA continues involvement in various code and standard revision cycles for some NFPA standards, ICC codes, and other codes.

AMCA - Fire and Smoke Content Initiatives

1. AMCA continues to provide webinars on TC 5.6 topics, such as actuators and life safety dampers. An upcoming example is an overview of Section 717 of the 2021 International Building Code on June 30th.
2. An article is planned for the 2021 edition of *AMCA inmotion* on control dampers for data centers. An article is also planned for life-safety-related content on positive-pressure ventilators (PPVs).
3. Life Safety Digest soon will be republishing the past article on field modifications of life-safety dampers from the 2020 edition of *AMCA inmotion*. RSES Journal republished that article in February and the author (James Carlin) presented a webinar based on it in April.

SFPE – Matt Davy

The annual conference this year will be virtual.

OLD BUSINESS

NEW BUSINESS

Starting July 1, 2021, Paul to move to the chair and Yoon to move to the vice chair.
Valentina will move to secretary.

ADJOURNMENT

The meeting was adjourned. Around 3:00pm Eastern time

Appendix A

TC 5.6 Program Subcommittee Report

Virtual Meeting – Annual meeting June 2021

1. PROGRAMS.

The 2021 Virtual Annual Conference will begin on Monday, June 28 at 12:00 PM EDT, and will end on Wednesday, June 30 at 6:00 PM. On-demand seminars and conference papers will be made available at the start of the conference, and the live portion will contain a mix of standalone and concurrent sessions, similar to the schedule of the 2021 Virtual Winter Conference.

Current (Phoenix) Virtual Meeting Programs:

Wednesday June 30, 4:30 PM - 5:30 PM Conference Paper Session 13

Grid-Interactive, Flexible and Low-Carbon Buildings and Building Systems

Track: Research Summit

As the electric grid increasingly uses renewable energy resources to provide electricity, the electricity produced is also more variable. To address this variability, advanced technologies and controls in buildings are needed to be able to produce and/or store energy on site, and adjust loads from energy consuming devices and equipment, while minimally impacting occupants in buildings. In this session advancements and research in technologies and controls to support this functionality are explored

- **Fire Smoke Control for Building Integrated Photovoltaic (BIPV)** (VC-21A-A004) Dahai Qi, Ph.D., Monireh Aram, Student and Yoon Ko, Ph.D.

Previous (Chicago) Winter Meeting Programs.

On Demand Sessions posted as part of the Winter Virtual Conference will be accessible until Aug 11, 2022 (18 months post-conference). Registration is this open.

Seminar 67: Life Safety Dampers, Back to Basics. sponsored by our TC and presented under Systems and Equipment Track is on-demand session
Chair: Paul Turnbull

All but the smallest buildings are required to include life safety dampers to ensure that fire and smoke cannot travel through ductwork and spread to other areas of the building.

Life safety dampers are very different from the dampers used for HVAC control. This session will help engineers and installers understand the differences between fire-, smoke-, combination fire/smoke-, and ceiling radiation dampers; the applications for which each is suited; and how to specify these dampers correctly. It also describes different ways that each of these dampers are activated and/or controlled. Installation, testing, and inspection methods and requirements are discussed.

Presentations:

- What Are Life Safety Dampers? Stephen D Carey
- Wiring and Controls of Life Safety Dampers. Larry Felker
- Testing and Installation of Life Safety Dampers. Stephen D Carey

2. Future Conferences Programs/Topics.

Topics:

- Getting Started at Atrium Smoke Control Design. John Klote
- Elevator Shafts, Methods of Testing for Leakage. Gary Nelson (Energy Conservatory)
No updates at the last meeting.
- With increased focus on Building Energy Efficiency resulting in tighter building envelopes do the new features affect Smoke Management and how. With increased airtightness an increase in smoke pressure is expected. In this scenario is the minimum pressure difference requirement to protect stairwells or any evacuation route or shelter in place or not?
A review paper to discuss articles/journals published over the past 2-3 years on the topic.
Yoon Ko
- How glazing separations in atrium, around elevator shafts are affecting Smoke Management of the space.

Impact on the vertical smoke rise ventilation looking at 2 scenarios when the glazing is not protected and when glazing is protected. Are any studies done to assess if glazing is different from other materials used for partitions, and how. The general assumption is that the walls remain standing, is glazing true to that assumption?

Topic proposed by Greg Sanchez.

3. Updates from CEC

Future Conferences

Year	Winter	Annual
2021	Jan 23-27 – Chicago, IL	June 26–30 – Phoenix, AZ
2022	Jan 29- Feb 2, Las Vegas NV	June 25-29- Toronto, ON
2023	Feb 4-8, Atlanta, Georgia	June 24-28, Tampa Bay

- **Las Vegas NW**, Winter Meeting Jan 29-Feb2

Track	Description	Track Chair
1	HVAC&R Systems and Equipment:	Anoop Peediyakkan peediyakkan@gmail.com
2	Fundamentals and Applications.	Bob Cox bob.cox@jacobs.com

3	Refrigerants and Refrigeration.	Billy Austin baustin@shultzeg.com
4	Buildings at 360°	Nohad Boudani nohadb@inco.com.lb
5	Energy System Integration.	Scott Peach sp@sp.engineering
6	Environmental Health and IEQ in the International Arena.	Som Shrestha shresthass@ornl.gov
7	HVAC for Industrial and Commercial Purposes - Challenges and Opportunities.	Bert Phillips phillips@unies.mb.ca
8	Refrigerants, Safety, Performances:	Gary Debes gary.debes@comcast.net

Upcoming Paper and Proposal Deadlines:

Friday, June 18, 2021: Website Opens for Program Proposals

Monday, July 12, 2021: Conference Papers Due

Monday, August 2, 2021: Debate, Panel, Seminar, Forum, Workshop and Debate Proposals Due

Friday, August 6, 2021: Revised Conference Papers/Final Technical Papers Due

Monday, August 23, 2021: Conference Paper Accept/Revise/Reject Notifications

- **Toronto Annual Meeting 2022**