

**AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR-CONDITIONING  
ENGINEERS, INC.  
1791 Tullie Circle, N.E./Atlanta, GA 30329  
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**TC/TG/MTG/TRG MINUTES COVER SHEET**

(Minutes of all Meetings are to be distributed to all persons listed below within 60 days following the meeting.)

TC/TG/MTG/TRG No. TC 2.9 DATE: January 20, 2014

TC/TG/MTG/TRG TITLE: Ultraviolet Air and Surface Treatment

DATE OF MEEING: Monday, June 20, 2014 LOCATION: New York City, NY

MEMBERS PRESENT	YEAR APPTD	MEMBERS ABSENT	YEAR APPTD	EX-OFFICIO MEMBERS AND ADDITIONAL ATTENDANCE
See Attached Minutes for List				

**DISTRIBUTION**

<i>All Members of TC/TG/MTG/TRG plus the following:</i>	
TAC Section Head:	Thomas J. Sobieski ( <a href="mailto:jtsobieski@atlanticbb.net">jtsobieski@atlanticbb.net</a> )
TAC Chair:	Walter T. Grondzik ( <a href="mailto:gzik@polaris.net">gzik@polaris.net</a> )
All Committee Liaisons As Shown On TC/TG/MTG/TRG Rosters:	Chapter Technology Transfer: Mr. Chris S. Fudge ( <a href="mailto:cfudge@master.ca">cfudge@master.ca</a> ) Research Liaison: Harvey Sachs ( <a href="mailto:hsachs@aceee.org">hsachs@aceee.org</a> ) ALI/PDC: Mr. Hugh D. Mcmillan, II ( <a href="mailto:hugh_mc@mail.ashrae.org">hugh_mc@mail.ashrae.org</a> ) Standards Liaison: Mr. Cyrus H. Nasser ( <a href="mailto:cyrus.nasser@ee.doe.gov">cyrus.nasser@ee.doe.gov</a> ) Handbook Liason: Mrs. Annette Dwyer ( <a href="mailto:adwyer@munters.com">adwyer@munters.com</a> )
Manager Of Standards Manager Of Research & Technical Services	Stephanie Reiniche ( <a href="mailto:sreiniche@ashrae.org">sreiniche@ashrae.org</a> ) Michael Vaughn ( <a href="mailto:mvaughn@ashrae.org">mvaughn@ashrae.org</a> )

**ASHRAE Technical Committee 2.9 (TC 2.9)  
Ultraviolet Air and Surface Treatment  
Main Committee Meeting Minutes**

**MEETING AGENDA  
2014**

**Monday, Jan 20, 2014 at 10:00-NOON  
Hilton, NYC**

**These DRAFT minutes have not been approved and are not the official record until approved by the  
Technical Committee at the 2014 New York Winter Meeting**

“TC 2.9 Scope – TC 2.9 is concerned with all aspects of equipment and systems that utilize ultraviolet radiation to destroy or de-activate chemical and/or biological air and surface contaminants in HVAC systems and indoor spaces, including, but not limited to, effectiveness, safety, maintenance, and economics.”

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The Chair called the meeting to order at 10:06 AM. Participants introduced themselves and an attendance sheet was circulated. (Scanned copy of attendance sheet attached)

Voting Member Attendance:

**8 of 10 Voting Members present. Quorum achieved. (See attached sign in sheet)**

<b>Voting Present</b>	<b>8</b>	<u><b>Quorum met</b></u>
<b>Voting-Not-Present</b>	<b>2</b>	<b>Voting not in attendance</b>
<b>Total Voting</b>	<b>10</b>	

Denver meeting minutes were distributed to all, a motion was made by Steve Martin to approve and seconded by Forrest Fencl, Vote: 8/0/0/2/10 [for/against/abstain/absent/total]

## **TC-2.9 Voting members as of NYC meeting.**

First Name	Middle	Last	Email Address	Email Address 2	7/1/2013	Date Appointed	Date Rolling Off	Attendance (NYC)
					ASHRAE Roster			1/20/2014
Katja	D	Auer	Katjadorisauer@yahoo.com		V	7/1/2012	6/30/2014	V
Charles	E	Dunn	chuckdunn@lumalier.com	cdunn2@lumalier.com	V	7/1/2013	6/30/2015	VN
Stuart		Engel	stuart18@outlook.com		V	7/1/2012	6/30/2014	V
Forrest	B	Fencl	forrest.fencl@uvresources.com		V	7/1/2012	6/30/2016	VN
Matt		Middlebrooks	mmiddlebrooks@filtrationgroup.com		V	7/1/2011	6/30/2015	V
Dave		Witham	davew@uvdi.com		V	7/1/2011	6/30/2015	V
Richard		Vincent	richard.vincent@MountSinai.org		V	7/1/2012	6/30/2016	V
Robert		Coleman	rcoleman@trane.com		V	7/1/2013	6/30/2017	V
Jason		Degraw	degraw@psu.edu		V	7/1/2013	6/30/2017	V
Scott		Sherwood	ecocareny@aol.com		V	7/1/2013	6/30/2017	V

### **Chair's Breakfast Report:**

Katja Auer read the chairs breakfast report...highlights below.

#### Chair Meeting Minutes 2014

1. High Tower Award Recipient G.D. Mathur (TC 5.5 & TC 5.7)
  2. TAC has developed new award called Outstanding Technical Committee Award to foster friendly competition between TC's within a section.
  3. Reviewed ASHRAEs Code of Ethics
  4. TC Master Calendar is now available via google
  5. New Multidisciplinary Task Group (MTG) has been formed: Hot Climate Design Guide Development
  6. TC Members encouraged to volunteer with CEC to review technical papers for ASHRAE conferences
  7. ASHRAExChange new online forum / discussion board service to connect members
  8. Update ASHRAE BIO, specifically employment discipline
  9. Seattle Meeting 28 Jun – 2 Jul 2014
- Katja reminded everyone to make sure your ASHRAE online bio is up to date and that requests to join the TC committee should be processed through the ASHRAE website.

### **TC 2.9 Website Report: Bob Coleman, Webmaster**

Bob Coleman updated the website just a few weeks before this meeting. Roster will be updated and uploaded...no other comments.

## **TC 2.9 Subcommittee Reports**

### **TC 2.9 Research Subcommittee Report: Richard Vincent, Research Subcommittee Chair**

1. **Status of Submitted Research Under Review**—Mr. Vincent reported from the Research Chairs Breakfast that all three of our proposed project work statements and RTARs were rejected by the ASHRAE RAC. He will then communicate with each author of the WS or RTAR to determine next steps.

**Action:** Mr. Vincent will follow up with Harvey Sachs, the RAC liaison for TC 2.9 to learn why these decisions were made, how to revise and resubmit. (See attached RAC report from ASHRAE).

2. **RTARS Under Development**—Mr. Vincent reviewed new RTARs under development
  - a. **SPG 185.2**—Round robin testing—Dean Saputa lead author
  - b. **SPG 185.1**—Round robin testing—Ashish Mathur and Steve Martin co-authors
  - c. **Environmental Health Committee**—Tim Earhart to liaise with TC 2.9 Chair on co-sponsoring RTARS to address building related sickness symptoms.

**Hepa Filters**—John Putnam suggested a combined effort with TC 2.4, and TC 9.6.

Dean Saputa updated SPC-185.1 and 185.2 stating that .1 was going back out for a 60 day ISC public review period around March and Steve would try and hold offline meetings to respond to any comments.

### **TC 2.9 Handbook Subcommittee Report: Steve Martin, Handbook Subcommittee Chair**

**Sunday, January 18, 2014**

**08:00-12:00**

**Sheraton, Lower Level, Conference Room E**

TC 2.9 is currently in a good position with Handbook responsibilities. The new Chapter 60 was published in the 2011 Applications book and the updated Chapter 17 was published in the 2012 Systems and Equipment book. Our next formal responsibility is having an updated version of the Applications chapter finalized and accepted by the TC no later than at the 2014 Annual Conference in Seattle, Washington. Comments on Chapter 60, that we received from two members of the ASHRAE College of Fellows, have been addressed in the proposed update to the chapter. Steve Martin and Jaak Geboers also identified other small updates and changes to the chapter to reduce repetition and make the chapter more concise. Steve Martin will submit a complete Track Changes version of the proposed update to Chapter 60 to the TC members for comment, along with the TC 2.9 minutes from the New York City meeting. The Word file is formatted so that the formatting is correct when it is converted to the print version of the chapter. So, sections appear to be out of order and choppy. This is intentional, so please do not make changes to the formatting of the file, only to the content. Please send any comments on the proposed changes or any recommendations for additional changes to Steve by the end of May 2013. Steve will compile all the changes for discussion and final vote at the Seattle Annual Conference.

At the 2013 Denver Annual Conference, Steve Martin noted that Applications Chapter 46, entitled “Control of gaseous Indoor Air Contaminants” had shown up in the list of chapters under TC 2.9 control in ASHRAE Handbook Central. This chapter is typically maintained by TC 2.3. After talking with Gemma Kerr, the Handbook Subcommittee Chair for TC 2.3, it was decided that TC 2.9 would not be involved in future updates to Chapter 46, unless the scope of the chapter changed to more align with TC 2.9 priorities.

Get Notes from Steve

### **TC 2.9 Membership Subcommittee Report: Dean Saputa, Membership Subcommittee Chair**

Dean Saputa has reported that the roster has been updated and submitted to ASHRAE for approval. He reminded anyone that wanted to become a corresponding member to go online and make a formal request to join the committee.

**TC 2.9 Program Subcommittee Report: Sam Guzman, Program Subcommittee Chair**

**We talked about skipping the submissions for Seattle and focusing our effort on Chicago. Chicago = next target. We like the three current topics, but we want to take a session off and try to catch a spot at the larger winter meeting.**

**Existing ideas:**

- 1.) Radiating into the future: This looks at what we have learned so far with UV technology and where it is going. Some of the newer research and applications, a discussion of LED technology, and emerging drug resistant pathogens.**

Title:

UVC: Radiating into the Future

Overview:

This seminar will cover the use and application of UVC energy for the next generation of new construction and retrofit applications. The presenters discuss UVC for surface and air disinfection, its use in healthcare facilities for controlling the spread of infection, and its use in commercial buildings for energy savings and emerging LED technology. The three sections present using UV for infection prevention in healthcare settings, low energy UV IAQ solutions, equipment and the degradation of materials exposed to the UVC energy.

UV Radiating into the future – was accepted and due to several conflicts we were not able to pull it off in Denver. ASHRAE said they would resubmit for NYC, but that didn't go well. All present still like the idea it was agreed that we would hold off for a bigger audience.

- 2.) UV in a healthcare environment**

Upper air- Richard/ Dave / Sam

Duct units- Benoit/ UVR /SA

Surface/Mobile units Sam / Dave/ Dave

Programs advisory Committee (PAC)

Scott/ Benoit/ Brian/ Sam/ Shelly/ Forrest

- 3.) SPC 185.1 & 185.2 an intro to the new testing standards**

Steve Martin / Dean Suputa

- 4.) The proper application of UV in an HVAC system**

UVC the Fundamentals of a Successful Install

The ABC's of UVC

Validation, safety, dose, O&M

UL/CSA

Need to confirm title, speakers, and sub-topics in Seattle. We can vote for top 2-3 for submission

Submission date for Chicago August 15, 2014, Seminar, Forum & Session proposals

Technical papers April 14, 2014 for Seattle, WA

Conference papers August 15, 2014

## ISO/TC 142/GG2

Matt Middlebrook stated that WG-2 is moving slowly. A new convenor from China was appointed.

## UL-1995

Brian Rogers reported that it has passed the working group portion it will go to the voting body with the publication in 2016 and then it will go out for public comment.

## General Business

### **New action Items:**

A discussion on new areas where this committee should investigate

- Richard Vincent stated that UV should be included in the BIM (Building information Management). Should be part of the architectural engineering software.
  - Richard Vincent and Jason Degraw to set up discussions on this subject. Jason to take lead.
- TC-2.9 would like to support the ASHRAE airborne infectious disease position document with emphasis on upper air, in-duct and mobile room units.
  - Richard Vincent would chair the discussion group

Shelly Miller reported that she is on the board of directors for IUVA and is looking for new members to join IUVA and to participate in upcoming seminars and webinars.

Annett Dwyer- Our Handbook Liaison spoke and stated that comments about our chapters are available on line or have been emailed to the TC chair. Additional online memberships are available per published handbook, Steve Martin to take the lead on this.

Each chapter has one free online subscription to view other handbook chapters online content...TC Chair is to email Annett with that person's name that will have access to the online content.

**Meeting to adjourn at 11:26, motion made by Katja Auer, Seconded by Sam Guzman, approved by all.**