

**AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR-CONDITIONING
ENGINEERS, INC.
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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: Wednesday, 28MAR2012

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

DATE OF MEEING: Monday, 23JAN2012 LOCATION: Chicago, Illinois

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 (jtsobieski@atlanticbb.net)
TAC Chair:	Charles H. Culp (cculp@tamu.edu)
All Committee Liaisons As Shown On TC/TG/MTG/TRG Rosters:	Chapter Technology Transfer: Jean-Gabriel Joannette (jgjoannette@pageaumorel.com) Research Liaison: William F. McCoy (wmccoy@phigenics.com) Special Pubs: William S. Fleming (flemg@aol.com) Standards Liaison: Hoy R. Bohanon (hrbohanon@workingbuildings.com)
Manager Of Standards Manager Of Research & Technical Services	Stephanie Reiniche (sreiniche@ashrae.org) Michael Vaughn (mvaughn@ashrae.org)

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

**Monday January 23, 2012 – 10:00 to 12:00
Chicago, Illinois
Palmer House Hilton Hotel, Room: Dearborn 1**

**These DRAFT minutes have not been approved and are not the official record until approved by the
Technical Committee in San Antonio, Texas in June 2012**

“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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Steve Martin, Chair, called the meeting to order at 10:05 AM. Participants introduced themselves and an attendance sheet was circulated.

9 of 10 Voting Members present. Quorum achieved.

Voting Members Present
Chuck Dunn
Stuart Engel
Gus Farris
Jaak Geboers
Sam Guzman
Steve Martin
Matt Middlebrooks
Dean Saputa
Dave Witham

Guests
Jason DeGraw
Benoit Despatis
Joseph Firrantello
Albert Lin
Ashish Mathur
Brian Rodgers
Edward Tsui

Corresponding Members Present
Katja Auer
Bob Culbert
Kyung-Ju Choi
Brian Hafendorfer
Byron Hagen
Josephine Lau
John Putnam
Uri Rainisch
Bob Scheir
Scott Sherwood
Larry Simmon
Richard Vincent

Steve Martin, distributed copies of the minutes from the TC 2.9 Main Committee meeting held on June 27, 2011 at the ASHRAE Annual Conference in Montreal, Quebec, Canada. No changes were noted. Gus Faris made a motion to approve the minutes from Montreal. Motion seconded by Richard Vincent. **Voting on approval of the Montreal meeting minutes was as follows: 9/0/0/1/10 [for/against/abstain/absent/total]. Montreal meetings minutes were approved.**

Chair’s Breakfast Report:

At the TC Chair’s breakfast, they emphasized the rebranding of ASHRAE. ASHRAE now has a new logo and tagline “Shaping Tomorrow’s Built Environment Today.” Additionally, ASHRAE will simply be known as “ASHRAE” and will no longer be referred to by the full legal name of the “American Society of Heating, Refrigerating and Air-Conditioning Engineers.” The use of “ASHRAE” is felt to better reflect the Society’s global membership and that ASHRAE services will continue evolving globally. The ASHRAE rebranding also coincides with a redesign of the ASHRAE website (ASHRAE.org).

It was mentioned that the Conferences and Expositions Committee (CEC) was working on ways to improve the technical programs at ASHRAE meetings. They will begin implementing a new process to verify that TC’s have actually sponsored program submissions prior to publishing the sponsorship in meeting programs. This new procedure is being put in place to prevent program submissions from other TCs/groups/individuals from selecting a particular TC for sponsorship without the TC having an opportunity to review the submission. This practice has become more common over the last several meetings.

As they did in Montreal, the CEC will continue asking each TC for annual lists of people that would be willing to serve as paper reviewers and/or session chairs for future meetings. The list below was again sent to our Section Head based on volunteers from the TC. If you would like to be added to the list, please let Steve Martin know.

TC 2.9 List of Volunteers to Serve as Reviewers/Session Chairs For Technical Papers/Sessions Related to Ultraviolet Technologies			
Name	Email	Paper Reviewer?	Session Chair?
Steve Martin	smartin1@cdc.gov	Yes	Yes
Gus Faris	gfaris@nailor.com	Yes	Yes
Richard Vincent	richard.vincent@mountsanai.org	Yes	NO
Brian Hafendorfer	bhafendorfer@trane.com	Yes	NO
Dave Witham	dave.witham@uvdi.com	Yes	NO

Starting with the 2013 ASHRAE Winter Meeting in Dallas, Texas, the CEC will begin accepting proposals for entire program sessions. TCs are encouraged to make entire session proposals.

TC 2.9 Website Report: Steve Martin

Bob Coleman, TC 2.9 Webmaster was unavailable. Steve Martin provided the update.

Prior to the Chicago meeting, the TC 2.9 website was completely up-to-date.

TC 2.9 Research Subcommittee Report: Steve Martin

Karin Foarde, TC 2.9 Research Subcommittee Chair was unavailable. Steve Martin provided the update.

TC 2.9 has four RTARs in various states of completion:

RTAR 1652: Computational Fluid Dynamics (CFD) for Planning Upper Room UVGI Placement, with Ventilation Systems, in Public Places; Lead author: Richard Vincent (received initial comments back from RAC)

RTAR 1653: Study HVAC System Photodegradation at the Low Level UVC Light Irradiance used for Coil Maintenance and Air Stream Disinfection; Lead author: Dave Witham (received initial comments back from RAC)

Unassigned #: Field Studies to Identify Biofilm Microorganisms on VVAC Cooling Coils and Drain Pans; Lead author: Bob Scheir (yet to be submitted to RAC)

Unassigned #: Ultraviolet Optical Properties of Cooling Coils for Ultraviolet Germicidal Irradiation Applications; Lead author: Jason DeGraw (yet to be submitted to RAC)

The number of RTARs being submitted to ASHRAE has dwindled recently. Because of the reduced number of RTARs, it may be easier to fund new projects.

RAC is having an extra meeting in 2012 to discuss RTARs. The deadline for turning in RTARs to our Research Liaison, Dr. William McCoy, for consideration at the earlier RAC meeting is February 15, 2012. If possible, all RTARs should be modified/completed in time for a TC vote prior to the February 15 deadline. As always, the TC priority for RTAR submission is whoever completes their RTAR first.

Jason DeGraw provided a brief overview of potential UV-related project funding through the Greater Philadelphia Innovation Cluster for Energy Efficient Buildings (GPIC). The GPIC operates an Opportunity Research Fund (ORF) which provides grants of between \$100,000 and \$250,000 to support research, development, demonstration, and deployment of technologies, policies, business models, and training programs that advance GPIC goals. He will send out more information on the next Request for Proposals when it becomes available.

NOTE: The RTAR entitled "Ultraviolet Optical Properties of Cooling Coils for Ultraviolet Germicidal Irradiation Applications" was modified and presented to the TC for a full vote on February 13, 2012. A vote of the TC membership was initiated on February 14, 2012. By the morning of February 15, **voting on approval of the RTAR was as follows: 9/0/1/0/10 [for/against/abstain/absent/total]. The RTAR was approved for initial submittal to RAC.** The RTAR was sent to Dr. William McCoy and confirmation was received that the RTAR would be considered at the early RAC meeting.

TC 2.9 Standards Subcommittee Report: Jaak Geboers, Standards Subcommittee Chair

Chuck Dunn reported that members of SPC 185 worked most of the day Saturday, January 21 addressing public comments received during the first 45-day comment period on SPC 185.1. Most of the comments were adequately addressed. Some of the comments dealing with the microbiological test methods were referred to a newly-formed microbiological subcommittee (MSC) for more thorough discussion and attention. Elliott Horner volunteered to chair the MSC with participation from Bob Scheir, Karin Foarde, and Shelly Miller. They will have recommendations for addressing comments referred to the MSC by

the next SPC 185 meeting in San Antonio. The goal is to have all public review comments appropriately addressed at the conclusion of the meeting in San Antonio so that SPC 185.1 can be resubmitted to ASHRAE.

Dean Saputa reported that good progress was made on SPC 185.2. After the work on Saturday, the standard is ready for a final vote on submitting it to ASHRAE for public review. A vote could not be taken on Saturday as an SPC 185 quorum was not achieved during the meeting.

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

None of the three TC 2.9 program submissions for the Chicago Winter Meeting were selected for presentation.

Brian Hafendorfer volunteered to work with Sam Guzman to spice up the program submissions for resubmission for presentation at the 2012 San Antonio Annual Meeting. All of the program ideas will be resubmitted.

A transactions session by Dr. Kaufman regarding his UV degradation of materials work under RP-1509 is still planned for presentation at the San Antonio Annual Meeting in June 2012. Richard Vincent and Dr. Kauffman have been working with ASHRAE representatives to ensure the session becomes reality.

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

The TC approved update to Chapter 16 (Ultraviolet Lamp Systems) for the 2012 printing of the HVAC Systems and Equipment Handbook was submitted to ASHRAE prior to the end of July 2011 deadline. Final galley proofs of the new chapter should be received for review sometime in early spring 2012.

The next handbook cycle is for the 2013 Fundamentals Handbook. Unfortunately, our attempt to gain a chapter in that book was rejected by the ASHRAE Handbook Committee. We should consider improving our proposal and trying again prior to the 2017 Fundamentals cycle.

The TC's next responsibility for handbook updates is during the 2015 Applications Handbook cycle. Chris Ahne, the TC's Applications Liaison to the ASHRA Handbook Committee asked for a list of proposed modification to the current Chapter 60 at the 2012 San Antonio Annual Meeting.

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

Dean Saputa has worked extremely hard cleaning up the TC roster. It is currently correct for the first time in several years. According to the tracking spreadsheet, TC 2.9 currently has 10 Voting Members, 43 Corresponding Members, and 2 Provisional Corresponding Members.

Steve Martin's two-year term as TC 2.9 Chair will end after the 2012 San Antonio Annual Meeting. At that time, Katja Auer will become the TC Chair, Stuart Engel will become the TC Vice-Chair, and Dean Saputa will become the TC Secretary. Steve Martin will remain the Handbook Subcommittee Chair and roll down to a Corresponding Member. Dean Saputa will also roll down to a Corresponding Member. Katja Auer and Forrest Fencil will roll up to Voting members. Jason DeGraw, Albert Lin, Brad Stanley, and Uri Rainisch will all be added as official Corresponding Members. Updates to the TC roster are due to the Section 2 Head, Tom Sobieski, by midnight on Tuesday, January 24, 2012. These roster changes will not go into effect until July 1, 2012 (after the San Antonio meeting).

People interested in joining TC 2.9 can find instructions for getting on the TC roster on the ASHRAE website at: <http://ashrae.org/technology/page/1705>.

General Business

Steve Martin presented John Putnam, TC 2.9 Immediate Past-Chair, with a certificate of appreciation from ASHRAE for his service to the technical committee.

Richard Vincent announced that Dr. Kauffman has met all his deliverables to ASHRAR under RP-1509 and that he is finalizing his manuscript submittals for ASHRAE publication. Aside for the transactions session on Dr. Kauffman's work planned for the San Antonio meeting, for all practical purposes, RP-1509 is closed.

Richard Vincent gave a brief summary of a recent Upper Room UVGI Conference held on December 8-9, 2011 in Boston, Massachusetts. The conference was sponsored by the Harvard School of Public Health and served to bring together national and international experts on UVGI and airborne infection control to begin the development of international guidelines for the application of upper room UVGI fixtures. More work needs to be done, but the meeting was a great start to a challenging issue.

Byron Hagan and Brian Rogers provided a brief update on UL199, and in particular, the ongoing UV aspects of the testing standard. Significant accomplishments have been made for including UV installations in the standard. A few tricky issues remain to be resolved. Mark Hinkleman will call for a new teleconference in February or March 2012 to start final discussions aimed at resolving the issues. The goal is to have all UV-related issues properly addressed and included in the next UL1995 revision draft.

Stuart Engel was recently named the Convener of ISO TC 142/WG2 working to develop international standards for UVGI devices. For anyone interested in participating in WG2 activities, there will be a meeting at 4:30pm on Monday, January 23, 2012 (at the ASHRA Chicago Winter Meeting) to discuss the ISO/TC142 Working Group 2 goals and future work.

Dean Saputa has been appointed as the TC 2.9 representative to a newly-formed ASHRAE "Air Filtration and Cleaning" Position Document Committee. The committee will hold its first information meeting during the Chicago Winter Meeting with a goal of having the position document drafted in 18-24 months.

On the Technical FAQ area on the ASHRAE website, FAQ #23 is "What is ASHRAE's recommendation on the use of ultraviolet light in air systems for microbial control?" Historically, this question has been assigned to TC 2.4 for an answer, and there is an adequate answer currently on the website. However, TC 2.9 should be the cognizant TC for this particular FAQ and the current answer could use some updating. Steve Martin volunteered to approach ASHRAE to get the FAQ assigned to TC 2.9 and then draft an updated answer to the question based on our recent Handbook chapters. He will have an updated answer to the question by the San Antonio Meeting.

No other business was noted.

Stuart Engel motioned to adjourn the meeting at 11:40am. Motion seconded by Dean Saputa. The TC 2.9 Main Committee Meeting was adjourned.