

**ASHRAE MTG – ACR  
Fall Web Meeting  
Friday, October 30, 2020  
Meeting Minutes**

**AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR-CONDITIONING  
ENGINEERS, INC.  
1791 TULLIE CIRCLE, N.E./ATLANTA, GA 30329  
404-636-8400**

**TC/TG/TRG MINUTES COVER SHEET**

TC/TG/TRG No	MTG.ACR	DATE	October 30th, 2020
TC/TG/TRG TITLE	Multidisciplinary task group on air changes rates		
DATE OF MEETING	October 30 <sup>th</sup> , 2020	LOCATION	Web Meeting

<b>Members Present</b>	
Kishor Khankari	Chair
Roland Charneux	Vice-chair
Henry Hays	TC-2.2
Bob Burkhead	TC-2.4
Jose Palma (Alt)	TC-5.3
Jim Coogan	TC-9.10
Phil Naughton	TC-9.11
Kevin A Scarlett	SSPC-170
James Bennett (Alt)	NIOSH
Clifford Cooper (ALT)	AIH

<b>Members Absent</b>	
Gaylon Richardson	TC-5.3
Michael Connor	TC-9.02
Roger Lautz	TC-9.6
Daniel Doyle	I2SL

<b>Additional attendance</b>
Joe Zulovitch (Alt TC-2.2)
Gary Goodson, webmaster
Carl Huber
Glen Friedman
Shervin Shoai Naini
Yusuf Bhetasi
Fred Betz
Ehsan Mousavi
Travis English
Larry Howlett

**DISTRIBUTION**

<b><i>All Members of TC/TG/TRG plus the following:</i></b>	
TAC Section Head	
TAC Chair	
All Committee Liaisons As Shown On TC/TG/TRG Rosters	
Standards liaison : Manager of Research & Technical Services	
Research liaison	

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**1. Call to order 11:05 (EST) and Introduction**

Kishor Khankari called the meeting to order and established a quorum with 10 (6 voting plus 3 alternate plus the Chair) out of 13 voting members (including chair).

Kishor reminds every attendee to adhere to the ASHRAE code of ethics.

**2. Approval of the Agenda**

The agenda is approved as submitted by Kishor Khankari.

**3. Approval of Minutes**

A motion to approve the July 10th, 2020, minutes, proposed by Clifford Cooper and seconded by Kevin A Scarlett (9-0-0-CV). Approved.

**4. Meeting dates**

The winter MTG.ACR Web Meeting date to be determined. It should be in January.

**5. Report from Members**

No additional news from MTG-ACR Members.

**6. Role of ACR in current pandemic - comments**

ACR are used because simple and easy to use

Near field exposure for coronavirus contamination

Residence time is needed for contamination

CFM per person?

Wells-Riley equation; exposure time

Standardized risk assessment protocol required

Potential for the development of a 2-3 pages document and/or a webinar

We do not know actually all about coronavirus spread and contamination paths.

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## **8. Program Update**

### a.1 Upcoming Winter Meeting in Chicago

- a. James Bennet will chair the MTG-ACR subcommittee program
- b. Program
  - Seminar suggestion: Air Change Rates and COVID-19.  
Phil Naughton accept to be the session chair for this seminar.  
Potential speakers: Kishor, Jim, Traci Hanigan(?)
  - Debate: Is Air Change per Hour (h-1), cfm/ft<sup>2</sup>, or Something Else?  
James Bennett, Joe Zulovich, Travis English, Dan Koenigshofe
- c. for the annual meeting, send ideas to James

## **9. Research Update**

### 9.1 RP 1833-Literature Review for Evidence of the Basis for Specified Air Change Rates (ACR) for Cleanrooms, Laboratories, Laboratory Animal Facilities, and Health Care Facilities with medium to high ACR. Phil Naughton and Roger Lautz reported on this research project.

6 months delay at no cost will be accepted.

Task 1 will be updated at the end of the research project.

**Ehsan Mousavi and Fred Betz** presented what they are doing actually

Understanding of the terms

Basis of ventilation rates specifications

A new approach will be taken for the literature review for old documents

Look at prescriptive vs performance

ACH is convenient and simple

ACH definition in 1964 by T.W. Kethley

Phil Naughton refers to ASHRAE handbook of 1938

They looked in references of references of references to find documents.

They developed a complex tool to show there methodology

### 9.2 Volunteer internal research project-ACR and Space Volume (Tom, Cliff, Kishor)

- A lot of data produced
- Some results are not conclusive
- Cliff and Kishor will continue to dig into the results.

## **10. New Research**

Work Statement should be developed for the following two topics. Kishor will contact members individually to see how members could collaborate to the effort.

### 10.1 Group I (Roland, Yussuf and Kishor, plus....)

- An effort to be done to try to combine the 4 objectives in one.

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10.2 Group II ( Jim Coogan, Ken Mead, plus....)

- Which definition correlates best: ACH, CFM per square-foot, per person, per animal?
- By CFD simulations? By testing?
- Quantify contaminants rate
- Modeling assumptions
- A works statement to be developed

10.3 Final Outcome

- Based on the above evaluations publish the evaluations of the existing ACH specifications in the current ASHRAE guidelines and standards.
- Develop recommendations for appropriate units for the specification of dilution airflow rates.

**11. Travis English presentation Power Point presentation**

- Travis presented numerous tests that he did to analyze the decay rate in different rooms.
- He made tests with hair spray, Carbon dioxide and salt water.
- Purge mode vs diffusion mode
- Steady state conditions.

**11. No old business**

No old business

**12. New Business**

No new business

**11. The meeting adjourned at 13:16 pm.**