

**ASHRAE MTG – ACR
Spring Web Meeting
Friday, March 19th, 2021
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	March 19, 2021
TC/TG/TRG TITLE	Multidisciplinary task group on air changes rates		
DATE OF MEETING	March 19th, 20201	LOCATION	Web Meeting

Members Present	
Kishor Khankari	Chair
Roland Charneux	Vice-chair
Henry Hays	TC-2.2
Bob Burkhead	TC-2.4
Jose Palma (Alt)	TC-5.3
Michael Connor	TC-9.02
Roger Lautz	TC-9.06
Jim Coogan	TC-9.10
Phil Naughton	TC-9.11
Thomas Smith	AIH
James Bennet (Alt)	NIOSH

Members Absent	
Gaylon Richardson	TC-5.3
Daniel Doyle	I2SL
Kevin A Scarlett	SSPC-170
Kenneth Mead	NIOSH

Additional attendance
Joe Zulovitch (Alt TC-2.2)
Erich Binder (Alt TC-9.02)
Travis English (Alt TC-9.06)
Cliff Cooper (Alt AIH)
Fred Betz
Larry Howlet
Carl Huber
Wei Sun
Kevin Gebke
Yusuf Bhetasi
Nick Agopian
Duncan Phyfe

DISTRIBUTION

All Members of TC/TG/TRG plus the following:	
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 11:06 (EST) and Introduction

Kishor Khankari called the meeting to order and established a quorum with 11 (8 voting plus 2 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 October 30th, 2020, minutes, proposed by Phil Naughton and seconded by Jim Coogan (10-0-0-CNV). Approved.

4. Role of ACH in current pandemic – Comments

Debate at last meeting on ACH/CFM per square-feet, etc..

Importance of ventilation effectiveness. Lot of work has to be done

Based on quantity and depending on quality.

Needs for research

Coupling of supply and return

Lots of point of view

Lots of diverse opinions

5. Report from 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

8.1 Upcoming Winter Meeting in Chicago

- a. One seminar submitted, Travis English, James bennet, Kishor Khankari ands Doug Walkinshaw

8.2 Suggestions for Las Vegas

- a. Seminar, Phil Naughton. Presentation on RP-1833
- b. Forum on onsite ventilation effectiveness monitoring – Field measurements, Travis English and Wei Sun

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 reported on this research project.

Monthly meeting, Research schedule is maintained.

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

- A lot of datas 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.

Combine RP per type or different research. Probably 2 or 3 RTAR. Potentially combine Labs and Isolation rooms, Surgery rooms and clean rooms.

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10.1 Relationship between airflow rates and safety (Risks) for people and products. Healthcare, labs and cleanrooms

10.2 Evaluate strength and location of sources of contamination and airflow rates. For labs contaminations could be fugitives contaminants from housekeeping, hazards and spills.

10.3 Develop an in-depth understanding of relationship between ACR and various ventilation effectiveness. Define exactly “ventilation effectiveness”

- Traditional ASHRAE definition
- Mean age of air
- Mixing factor
- Spread index (CFD based)
- Measurement protocol
- Standard list of variables to be able to compare different studies
- Real time measurement can provide different expression

10.4 HVAC Configuration

- Diffusers types etc..
- Impact of obstructions in the room
- Real on-site measurements
- Rooms evolve with time

10.5 Quantitatively correlate concentration of contaminants with various measures of ventilation.

- Modeling assumptions
- Time sensitive issues
- Which measure correlates best with the objective.
- Steady state conditions.

11. Update from members

- **Travis Englis** discussed on NFS facilities strategies, fouling tests , ventilation effectiveness

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and testing scripts for cross contamination.

- **Tom Smith** discussed of airflow visualization tests using IPA and salt as visible tracer gas. Local filtration reduces the dose and peaks of contamination potential.
- **Duncan Phyfe** discussed on real labs set-up, released particles at breath site, CFD flow pathlines and education of workers.
- **Kishor** discussed of a special seminar for MTG-ACR members and interested persons potentially at mid-april.

11. No old business

No old business

12. New Business

No new business

11. The meeting adjourned at 13:10 pm.