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# 1791 Tullie Circle, N.E./Atlanta, GA 30329

**404-636-8400**

# 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. 2.2 DATE June 30, 2017

TC/TG/MTG/TRG TITLE Plant and Animal Environment

DATE OF MEETING June 27, 2017 LOCATION Long Beach, CA

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| --- | --- | --- | --- | --- | --- |
| MEMBERS PRESENT | YEAR APPTD | MEMBERS ABSENT | YEAR APPTD | EX-OFFICIO MEMBERS AND ADDITIONAL ATTENDANCE | |
| Bill Dean Past Chair VM | 2012 | Larry Howlett VM (e) | 2012 | Pawel Wargocki Sect 2 Research Liaison | |
| Morgan Hayes ViceChair VM | 2014 | Marcus Bianchi CM | 2012 | Gordon Sharp | |
| Dave Rausch Chair VM (e) | 2013 | Lingying Zhao CM | 2012 | Peng Yin | |
| Carol Donovan VM | 2013 | Kristin Schaefer VM | 2013 |  | |
| Jim Coogan VM | 2012 | Yuanhui Zhang CM | 2011 |  | |
| Henry Hays VM | 2012 | Joe Zulovich VM | 2015 |  | |
| Craig Burg CM | 2016 | Nadia Sabeh CM | 2015 |  | |
| Xinlei Wang CM | 2013 | Andres Alfonso Rojas CM | 2017 |  | |
|  |  |  |  |  | |
|  |  |  |  |  | |
| **DISTRIBUTION: *All Members of TC/TG/MTG/TRG plus the following:*** | | | | | |
| TAC Section Head: Elbert Phillips | | | | SH2@ashrae.net | |
| All Committee Liaisons As Shown On TC Roster   * Research Liaison * Standard Liaison * Staff Liaison * 2019 HVAC Applications | | | | Pawel Wargocki  Cyrus Nasseri  Michael Vaughn  Bryan Holcomb | |
| Mike Vaughn,  Manager Of Research & Technical Services | | | | MORTS@ashrae.net | |

**Technical Committee 2.2 Plant and Animal Environment June 27, 2017**

# Call to Order

Meeting called to order at 4:26 PDT by Chairman Dave Rausch

# Welcome and Introduction / Attendance Sheet

All in attendance introduced themselves and signed in.

Quorum: 6 of 9 voting members in attendance, only 5 at beginning of meeting. Five in the room and one using the e-meeting.

# Revise and Accept Agenda

Agenda reviewed. Updated agenda including MTG Air Change Rates discussion by Henry Hays distributed and reviewed.

Motion: To accept the agenda.

Moved: Bill Dean Seconded: Henry Hays; **Approved 5 – 0 – 0 CV**

# Approve Minutes from the Previous Meeting

Minutes reviewed all was considered acceptable.

Motion: That the June 2016 minutes be adopted as is.

# Moved: Bill Dean Seconded: Henry Hays; Approved 5 – 0 – 0 CV

# Report from Section Head

Bert Phillips did not attend.

# Announcements (Remains for Reference – Similar topics discussed and updated from Jan 2016)

Dave Rausch reviewed TAC Updates/Announcements. Discussed the following items;

* ASHRAE is celebrating 125 years. They want to celebrate technological heritage by having members write about technologies/successes they want to celebrate. These submissions are due Sept. 30th.
* Roster needs to be updated by June 30th. Dave will take care of this.
* Request for Thank you notes for employers are due by July 15th.
* The master calendar is now updated.
* Program proposals are due August 29th.
* Seminar and Forum Proposals for Chicago Meeting are due August 1st – Carol Donovan to submit.
  + Presenters will now be held to a three strike rule, where if they fail to upload presentations in a timely manner 3 times they will not be invited to speak again.
* Morgan Hayes – To update TC 2.2 Website by 11/1
* Morgan Hayes – To update and submit Meeting Minutes by 7/28
* Dave Rausch – To Send Meeting Reminder by 12/22
* Award Submissions need to be in in the next couple months
* RTAR Submissions by 8/15
* Next ASHRAE Conference – Chicago – Jan 20th to Jan 24th
* 2018 ASHRAE Conference – Houston – June 23rd to June 27th
* 2019 ASHRAE Winter Conference – Atlanta – Jan 12th to Jan 16th

# Roster & Status of the committee

The committee remains healthy and the energy level to some of the topics discussed is growing.

The electronic meeting continues to help. One voting member, our chair used the electronic meeting this conference and was able to successfully run the meeting remotely. We still feel this is a progressive alternative for our members that are unable to travel. This continues to allow flexibility in attending. The six voting members at this meeting along with additional committee members and guest attendees totaled 11.

*New Positions after summer meeting***;**

* Carol Donovan and Kristin Schaeffer will step down from voting members to corresponding members
* Nadia Sabeh and Craig Burg will step up to voting members.
* All other management positions remain the same.

# Handbook – Kristin Schafer, PE

Kristin Schafer was not available at this meeting. Nadia Sabeh is working on identifying needs/edits, however she was not able to attend this meeting.

# Research – David Rausch and Pawel Wargocki

Per the RAC liaison, research would like at least one submission from this committee (August).

There is a new Innovative Research Grant ($5,000) for students. It was encouraged to have students apply if their research is innovative. There is also a grant and aid award to ASHRAE students.

Leadership for each idea has been established. Team decided to modify and resubmit RTAR for seed storage. Focus on Energy Use in Ag buildings was determined to focus specifically on plant production. Demand Control Ventilation in Vivariums has been removed from the list due to leadership on the topic being less enthused with this topic.

1. Seed Storage Conditions: Larry Howlett and David Rausch

The RTAR was sent back to Larry Howlett around the winter meeting. David Rausch is waiting on edits.

1. Energy Use in Agricultural Buildings: Nadia Sabeh to champion Dave Rausch to assist. Nadia has not provided a draft to Dave yet.

* Nadia commented that in talking to utilities, there are concerns that indoor cannabis and food production draw very large amounts of power. There is a need to identifying the specific energy needs for greenhouses and indoor/vertical farms (heating ventilation, lighting, ect... The need is to collect data from existing facilities, determine baseline levels, use modeling to predict loading and evaluate what would make these systems more efficient. Correct metrics must be defined.
* Energy use in ag buildings is not currently covered in the Handbook Chapter.

# Program – Carol Donovan

The Energy Use in Ag program at Las Vegas went very well. Good audience questions and feedback provided a high score (~4.1).

Craig, Joe, and Carol will resubmit the follow-up session ag facilities previously discussed (Sensible and Latent Load Calculations from Indoor Plant Production Facilities). Carol will send out directions for submission of a seminar. They will try to dress it up to make sure it tells a story. Additionally, they will work on creating a better title.

Discussion on another session looking at marijuana/plant factories. Perhaps with a cosponsor committee (9.8 Specialty AC Applications)

# Old Business

**Standard for energy requirements for indoor food production/vertical farming? - Bill Dean**

Bill Dean investigated the idea of a standard, however industry strongly discouraged the standard approach feeling it would be too restrictive/prescriptive. No forward progress has been made so far in developing a special publication. Bill will continue to look at this.

Craig Burg stated that committee 9.8 has some interest in indoor farming. They are not necessarily looking to make recommendations, but they recognize the need to provide assistance for these facilities. They would like to work with TC 2.2 perhaps by cosponsoring a session or write-up.

# Mission, scope, and focus

**Current Scope:** **Technical Committee 2.2** is concerned with the relationships of environmental conditions, as altered by air-conditioning, refrigeration, heating and ventilating systems, to the growth, health, and reproduction of plants and animals

**Proposed Mission – revised per comments from meetings 1/30/17 and 6/27/17**

**Technical Committee 2.2 is concerned with the advancement of sustainable practices and environmental quality as it relates to HVAC and lighting systems in order to promote, growth, care, health and the reproduction of plants and animals in their various facilities.**

Motion: To approve mission statement as modified above.

# Moved: Morgan Hayes Seconded: Bill Dean; Approved 6 – 0 – 0 CV

# New Business

MTG-ACR, which is a collaborative committee to discuss air change rate and includes members of TC 2.2, 4.3, 5.3, 5.8, 9.2, 9.6, 9.10, 9.11, SSPC 62.1 and170 with Henry Hays as the TC 2.2 representative (Joe Zulovich as the alternative). Henry sent and Dave forwarded an attachment with a powerpoint and 2-page word document that cover the goals of the committee. In addition, Henry noted that he had received an email with 7 questions, he has taken a stab at answering them in blue. He is requesting input from the committee in answering the questions by July 10th.

Jim Coogan mentions that ASHRAE has recently provided research support to identify how a research model in 1 environment/space can be transferred to others. The goal with this type of project would find historical sources and determine the environment and then work to extrapolate this data. ASHRAE wants technical committees to model this.

# Adjourn

Motion: Adjourn at 6:16

# Moved: Bill Dean Seconded: Henry Hays; Approved 6 – 0 – 0 CV