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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 24, 2018

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

DATE OF MEETING January 22, 2018 LOCATION Chicago, IL

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| --- | --- | --- | --- | --- |
| MEMBERS PRESENT | YEAR APPTD | MEMBERS ABSENT | YEAR APPTD | EX-OFFICIO MEMBERS AND ADDITIONAL ATTENDANCE |
| Bill Dean Past Chair CM | 2016 | Carol Donovan CM | 2012 | Bert Phillips Sect head |
| Morgan Hayes ViceChair VM | 2016 | Marcus Bianchi CM | 2012 | John Stinn |
| Dave Rausch Chair VM | 2016 | Lingying Zhao CM | 2012 | Ben Edwards |
| Joe Zulovich VM  | 2014 | Kristin Schaefer CM | 2013 | Jean Walsh (e) |
| Larry Howlett VM (e) | 2016 | Yuanhui Zhang CM | 2011 | Kyle Bowling |
| Nadia Sabeh VM  | 2016 | Henry Hays VM | 2014 | Chris Albright |
| Craig Burg VM | 2017 | Jim Coogan VM | 2016 | Steve Ferguson |
|  Andres Alfonso Rojas CM | 2017 |  |  | Brian Dunn |
|  |  |  |  | Mark Baines |
|  |  |  |  |  |
| **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 WargockiCyrus NasseriMichael VaughnBryan Holcomb |
| Mike Vaughn,Manager Of Research & Technical Services | MORTS@ashrae.net |

**Technical Committee 2.2 Plant and Animal Environment January 22, 2018**

# Call to Order

Meeting called to order at 5:15 CST by Chairman Dave Rausch

# Welcome and Introduction / Attendance Sheet

All in attendance introduced themselves and signed in.

Quorum: 6 of 8 voting members in attendance. Five in the room and one using the e-meeting.

# Revise and Accept Agenda

Agenda reviewed.

Motion: To accept the agenda.

Moved: Bill Dean Seconded: Joe Zulovich; **Approved 6 – 0 – 0 CV**

# Approve Minutes from the Previous Meeting

Minutes reviewed all was considered acceptable.

Motion: That the June 2017 minutes be adopted as is.

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

# Report from Section Head

Bert Phillips did attend and provide dates for many of the items under announcements. One additional opportunity discussed was that if a submitted program session was not passed, we could still hold it during our meeting time. The slide set would still be reviewed and it would be in the program.

# Announcements

* TC’s have the ability to put together technical bulletins/white papers
* Seminar and Forum Proposals for Houston Meeting are due February6th – 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 3/22
* Morgan Hayes – To update and submit Meeting Minutes by 3/22
* Dave Rausch – To Send Meeting Reminder by 5/22
* Award Submissions need to be in in the next couple months
* RTAR Submissions by 5/15
* Next ASHRAE Conference – Atlanta – Jan 12th to Jan 16th
* 2019 ASHRAE Conference – Kansas City – June 22nd to June 26th
* 2020 ASHRAE Winter Conference – Orlando – Feb 1st to Jan 5th

# 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, used the electronic meeting this conference and was able to successfully vote in 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 17.

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

* Joe Zulovich moves to elect Nadia Sabeh to be the new Vice-Chair/Secretary acclamation. Motion Passes. **Approved 6 – 0 – 0 CV**
* Andres Alfonso Rojas agrees to become a voting member. **Approved 6 – 0 – 0 CV**

# Handbook – Kristin Schafer, PE

Nadia Sabeh has developed a list of needed edits.

Bill Dean requests a word document so he can assist in soliciting expertise. The committee can review both the list of edits and any experts suggested and add to the process.

TC approval will need to occur in June 2018.

# Research – David Rausch

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. 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

Wednesday morning Seminar 60 will occur with Joe Zulovich and Craig Burg presenting. Nadia Sabeh will fill in as moderator.

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 suggests a working title for a technical bulletin of ‘Technical Challenges of Growing Plants Indoors.’ After developed the TAC will send it out for peer review then it will be published to the ASHRAE and TC website.

# 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

Nadia Sabeh and Steve Ferguson discuss an opportunity to work with ASABE on a standard being developed. ASABE, the American Society of Agricultural and Biological Engineers is working on EP 653. This as a standard to discuss the equipment typically placed in indoor plant facilities. ASHRAE is gauging interest in cosponsoring the standard or having ASHRAE members as corresponding members on the standard writing subcommittee at ASABE. ASHRAE is not interested in duplicating work and believes it's better to have a liaison than to have multiple standards from different organizations. Bill Dean asked why not a design guide instead of a standard, Joe Zulovich and Jean Walsh explain the notation in ASABE standards, EP’s act more practice guidelines; this is just terminology difference between the societies. Questions also arose if we needed guidance for greenhouses in general or for specific products like cannabis. ASHRAE’s executive committee is interested in involvement in any ‘standard’ ASABE produces that overlaps with ASHRAE topics.

Nadia is collecting names of those interested in interacting. Bill Dean and Craig Burg both express interest.

# Adjourn

Motion: Adjourn at 6:46

# Moved: Bill Dean Seconded: Nadia Sabeh; Approved 6 – 0 – 0 CV