

ASHRAE TC 10.7

Commercial Food & Beverage Refrigeration Equipment

2021 Winter ASHRAE Meeting

Agenda for Monday, 18 January 2021, 2:00 pm - 4:00 pm (EST)
Virtual Meeting via Zoom

Note: The ASHRAE Code of Ethics is to be adhered to by those doing ASHRAE business whether or not they are an ASHRAE member (<https://www.ashrae.org/about/governance/code-of-ethics>):

In this and all other ASHRAE meetings, we will act with honesty, fairness, courtesy, competence, inclusiveness and respect for others, which exemplify our core values of excellence, commitment, integrity, collaboration, volunteerism and diversity, and we shall avoid all real or perceived conflicts of interests.

1. Welcome & Introductions

2. Review and Revise Agenda

3. Determination of Quorum

4. Review Scope / MBO's

- TC10.7 Scope:
 - TC 10.7 is concerned with the application and performance of equipment and systems for the refrigeration of food and beverages in commercial operations. This includes commercial equipment such as refrigerated merchandisers and storage cases, walk-in freezers and coolers (<3000 ft²), beverage vendors and dispensers, commercial ice makers, and water coolers.
- TC10.7 MBO's (Objectives):
 - The pursuit of technological advancement of commercial food and beverage equipment and systems to enhance overall performance through improved food safety, food quality, energy efficiency, and reduced environmental impacts.
 - To provide engineering design, application knowledge, and technical expertise to effectively support research and the Refrigeration handbook chapters and standards for which we are responsible.

5. Recognition of Liaisons & Announcements:

- Committee Liaisons:
 - Section Head:Charlie Henck
 - Program Committee Liaison:
 - Research Committee Liaison:Lorenzo Cremaschi
 - Handbook Committee Liaison:.....Carlos Brignone
 - Chapter Technology Transfer Committee Liaison:
 - Standards Committee Liaison:Kwang Woo Kim
 - Refrigeration Committee Liaison:Charlie Hon
 - ALI/PDC Liaison:
 - MTG Low GWP Liaison:.....Brian Fricke

- Announcements

6. Membership:

- Current TC10.7 Management Team
 - Chair:.....Brian Fricke (VM 06/21)
 - Vice Chair:Stephen Schaefer (VM 06/23)
 - Secretary:.....Justin Sikorski (NV) - *resigned*
 - Research Subcommittee Chair:.....Vishaldeep Sharma (NV)
 - Standards Subcommittee Chair:Jon Murray (VM 06/23)

- Program Subcommittee Chair:.....Gustavo Pottker (NV) - *resigned*
- Handbook Subcommittee Chair:.....Dave Demma (NV)
- Webmaster:Kyle Larson (NV)
- **Additional Voting Members:**
 - Ramiro Avila (6/24), Jeff Bauman (06/23), Daryl Erbs (06/21), Neil Monson (6/24), Massoud Neshan (06/21), Carl Roberts (06/23)
- **Proposed 2021-2022 Roster**
 - **Management Team**
 - Chair:.....Stephen Schaefer (VM 06/23)
 - Vice Chair:NEED VOLUNTEER
 - Secretary:NEED VOLUNTEER
 - Research Subcommittee Chair:Vishaldeep Sharma (NV)
 - Standards Subcommittee Chair:Jon Murray (VM 06/23))
 - Program Subcommittee Chair:.....Jian Sun (volunteered on 1/11/2021)
 - Handbook Subcommittee Chair:Dave Demma (NV)
 - Webmaster:Kyle Larson (NV)
 - **Additional Voting Members:**
 - Cesar Lim (Non-Quorum 06/25), Ramiro Avila (06/24), Jeff Bauman (06/23), Neil Monson (06/24), Carl Roberts (06/23)

7. Review Draft Minutes from the 2020 Summer Meeting (Virtual)

8. Subcommittee Reports:

- **Program Subcommittee (Gustavo Pottker)**
 - **Meeting:** Monday, 11 January 2021, 2:00pm – 4:00pm, Virtual Meeting via Zoom
 - **Winter 2021 Program:**
 - Seminar 24: Safe Transition to Flammable Refrigerants in Commercial Refrigeration Applications, 10 February 2021, 6:00pm – 7:50pm (EST)
 - **Previous program ideas:**
 - Proposed Seminar (Winter 2021): Latest Developments in Low-GWP Refrigerants and Systems for Refrigeration
 - G. Kazachki submitted to ASHRAE, but did not receive notification of acceptance or rejection
 - Follow up with status of this seminar
 - Resubmit for Summer 2021?
 - Servicing equipment containing flammable refrigerants
 - IoT, Big Data, and control methodologies to improve the operation and efficiency of commercial refrigeration equipment
 - Transactive control (electrical load shifting) for refrigeration equipment (e.g., ice makers) to correspond to renewable power generation. Could thermal storage fit into this?
 - Potential forum: could be used to inform research direction for RTAR that D. Erbs has drafted.
 - D. Erbs volunteered to present in Forum
 - Living with a lower charge limit on Hydrocarbons: Forum or Seminar? “Lower”? Include perspective on A2Ls? Limit discussion to more severe hydrocarbons, vs discussing both A2L and A3? What types of systems are suitable for A2L/A3 and lower charge limits (proper design of secondary systems – separate issue from refrigerant efficiency)?
 - Efficient fan operation in condenser applications
 - Solar powered WICF
 - Other ideas?
 - Refrigerant allocations: Charlie Hon to discuss this with Refrigeration Committee; also MTG.LowGWP and Codes and Standards. Broader topic than just refrigeration; includes air conditioning, heat pumps, etc.
- **Research Subcommittee (Vishaldeep Sharma)**
 - **Meeting:** Monday, 11 January 2021, 2:00pm – 4:00pm, Virtual Meeting via Zoom
 - **TRP 1831:** Validation of a Test Method for Applying a Standardized Frost Load on a Test Evaporator in a Test Chamber with an Operating Conditioning System
 - Contact: MacGowens, Lauren <LMacGowens@ahrinet.org>, Detlef Westphalen

- PES has recommended a contractor
 - Full committee voted in favor of PES recommendation, via letter ballot (19 June 2020); recommendation has been forwarded to RAC for consideration
- **RTAR 1876:** Optimizing Air Curtains and the effect on the infiltration load of Refrigerated Display Cases with Glass Doors
 - Contact: Mike Chieffo <Mike.Chieffo@zero-zone.com>; Carl Roberts <Carl.Roberts@zero-zone.com>
 - Resubmitted to Dr. Khalifa (RL) in Dec. 2018
 - Action: Accepted and waiting for a work statement
- **New RTAR:** Renewable Energy Electrical Grid Balancing via Dynamic Commercial Refrigeration Equipment Energy Storage
 - Contact: Daryl Erbs, Xudong Wang
 - Develop an estimate of the potential for electrical grid energy absorption through conversion of electricity to frozen water or frozen brine by dynamic control of phase change storage incorporated into commercial refrigeration equipment.
- **Previous research ideas:**
 - RTAR - DOE test according to ASHRAE Standard 72 and how instrument accuracies and input tolerances can affect the outcome of the test results and repeatability. This could involve both analytical and testing. It was noted that ASHRAE 37 may be doing something similar and this should be considered when developing this RTAR.
 - Matching hot water load (rack controls) to refrigeration load
 - ~~Transactive control (load shifting) for refrigeration equipment (e.g., ice makers) to correspond to renewable power generation. TC 10.5, 10.6, and 10.1 may be interested in co-sponsoring.~~
 - Low GWP refrigerants
 - Other Ideas?
- **Handbook Subcommittee (Dave Demma)**
 - **Meeting:** Monday, 11 January 2021, 2:00pm – 4:00pm, Virtual Meeting via Zoom
 - Refrigeration, Chapter 15 – Retail Food Store Refrigeration and Equipment
 - Refrigeration, Chapter 16 – Food Service and General Commercial Refrigeration Equipment
 - **Ideas for next version:**
 - Use of hydrocarbons in commercial refrigeration
 - Heat gain loads for typical types of self-contained equipment
 - Standard method of rating capacity of evaporators and condensers? (AHRI 1250)
- **Standards Subcommittee (Jon Murray)**
 - TC10.7 is the Cognizant TC for the following standards:
 - Standard 18-2008, MOT for Rating Drinking-Water Coolers with Self-Contained Mechanical Refrigeration
 - Standard 29-2015, MOT for Automatic Ice Makers
 - Standard 32.1-2017, MOT for Rating Vending Machines for Bottled, Canned and Other Sealed Beverages
 - Standard 32.2-2018, MOT for Rating Premix and Postmix Beverage Dispensing Equipment
 - Standard 72-2018, MOT for Open and Closed Commercial Refrigerators and Freezers
 - Standard 210, MOT for Rating Commercial Walk-in Cooler and Freezer Equipment
 - Standard 220, MOT for Rating Small Commercial Blast Chillers, Chiller-Freezers, and Freezers
 - **SSPC 72 Meeting:** Jon Murray
 - **SPC 210 Meeting:** 26 January 2021, 2:00pm – 5:00pm (EST); Lauren MacGowens
 - **SPC 220 Meeting:** 26 January 2021, 11:00am – 1:00pm (EST); Denis Livchak and/or Oliver Ta
- **Website (Kyle Larson)**
 - TC10.7 Website: <https://tc1007.ashraetcs.org/>

9. New Business

10. Adjournment

Upcoming ASHRAE Conferences:

Summer 2021 Conference: Jun 26 – 30, 2021, Phoenix, AZ
 Winter 2022 Conference: Jan 29 – Feb 2, 2022, Las Vegas, NV
 Summer 2022 Conference: Jun 25 – 29, 2022, Toronto, ON