

**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**

**(Minutes of all TC/TG/TRG Meetings are to be distributed to all persons listed below within 60 days following the meeting.)**

TC/TG/TRG NO 10.7 DATE 8/21/12

TC/TG/TRG TITLE Commercial Food and Beverage Display and Storage Equipment

DATE OF MEETING June 25, 2012 LOCATION San Antonio, TX

MEMBERS PRESENT	YEAR APPTD	MEMBERS ABSENT	YEAR APPTD	EX-OFFICIO MEMBERS AND ADDITIONAL ATTENDANCE
Dean Swofford	2010	Massoud Ali	2010	See attachment
Van Baxter	2008	Robert Sperl	2010	
Georgi Kazachki	2009	Rob Uhl	2008	
Cesar Luis Lim	2010			
Massoud Neshan	2010			
Maryline Rassi	2010			

**DISTRIBUTION**

*All Members of TC/TG/TRG plus the following:*

TAC Section Head:	Eric Adams
TAC Chair:	<u>Charles Wilkin</u>
TAC Vice-Chair:	<u>Charles Culp</u>
All Committee Liaisons As Shown On TC/TG/TRG Rosters:	Pradeep Bansal , RAC Alan Podhorodeski , Handbook Richard Hall - Standards Stanley Mumma - Special Pubs Dennis Wessel , Program Scott Wayland , CTTC Florentino Mendez , ALI/PDC
Manager Of Standards	Stephanie Reiniche
Manager Of Research & Technical Services	Mike Vaughn
Admin Asst , Technical Services	Tara Thomas

Note: "These draft minutes have not been approved and are not the official, approved record until approved by this committee."

June 25, 2012

**Welcome and Introductions – Dean Swofford**

Chair Dean Swofford called the meeting of TC 10.7 to order at 2:20 pm in the Hyatt Lone Star F Room of the Grand Hyatt Hotel in San Antonio on June 25, 2012. Members and guests introduced themselves and a sign-in sheet was circulated.

**Review and Revise Agenda – Dean Swofford**

Dean asked if there were any proposed changes to the agenda. None were offered.

**Determination of a Quorum – Dean Swofford**

Voting Members Cesar Luis Lim, Massoud Neshan, Van Baxter, Maryline Rassi, Dean Swofford and Georgi Kazachki were present. Massoud Ali, Rob Uhl, Robert Sperl were absent. With six of nine voting member in attendance, the quorum was established.

**Special Item – Dean Swofford**

Dean noted David Hinde’s passing and Ramin Faramarzi gave a brief eulogy. The group observed 15 seconds of silence.

**Review Current Scope and MBOs – Dean Swofford**

Dean reviewed the scope and MBOs (“Management by Objectives”) of the Technical Committee.

**Discussion of New Scope / MBO Suggestions – Cynthia Gage**

The Title and Scope Revision Committee is chaired by Sriram Sumasundaram, with members Dean Swofford, Cynthia Gage, Sarah Widder, Scott Mitchell, and Ramon Faramarzi. The committee exchanged e-mails and met by phone prior to the San Antonio meeting. Cynthia discussed the subcommittee’s deliberations and provided a written summary of the proposed modifications to the TC for discussion.

The TC discussed various aspects of the wording including adding an upper area limitation of 3000 square feet for walk-ins to make clear that TC10.7 would not be encroaching on TC 10.8’s scope. This was accepted. There was also discussion about whether or not hot display cases were to be included in the scope. It was noted that Chapter 47 for which the TC is responsible contains material on hot cases. A suggestion was made to eliminate hot and cold as adjectives and reduce it to “refrigerated merchandisers and storage cases”. This would not preclude the TC from doing more with hot cases in the future, if the committee identified a need to do so. This was also accepted. With these minor changes, there was a call for a vote to accept the revised Title, Scope, and MBOs, as shown in Attachment 2 to these minutes. Massoud Neshan moved and Cesar Luis Lim seconded. The vote was 5-0-0-3-CNV (Five in favor, none opposed, no abstentions, three absent and the chairman not voting but in support). Cynthia agreed to forward the revised materials to our Section Head, Eric Adams, so that he could submit it to the Technical Activities Committee at their Wednesday morning meeting for their consideration and approval.

Deleted:

**Recognition of Liaisons and Announcements – Dean Swofford**

Refrigeration Committee Liaison - Cesar Luis Lim

A list of announcements of upcoming workshops and conferences will be included as attachment 3 of the minutes.

ASHRAE's logo is being changed and a new tagline "Shaping Tomorrow's Built Environment Today" is being put in place.

### **Membership – Dean Swofford**

David Hinde is gone. Brian Fricke is coming on as Vice Chair and will move to the Chair position after the summer meeting in Denver next year. He was the Chair of TC 10.9. Ward Wells will continue as Secretary. Daryl Erbs will assume the Research Chair position. Van Baxter will continue as Standards subcommittee chair. Cynthia will continue as Program Chair. Dave Demma will be Handbook subcommittee chair. The current Webmaster is Rob Uhl and Cesar is our non-quorum member.

We lost Sam Cantrell as a voting member. He now works for Hill Phoenix as does chair and voting member Dean Swofford so Sam has gone to corresponding member (CM) status.

Cynthia Gage, Dave Demma, Pradeep Bansal and Charlie Hon will all become Voting Members after this meeting with Pradeep as an International Member.

Kyle Wessels will be the incoming Webmaster.

### **Review Draft Minutes from the 2012 Winter Meeting in Chicago – Ward Wells**

Part of the Chicago research notes were incomplete but were the best that could be documented under the circumstances. There was a call for any changes and none were offered. Van Baxter moved to approve the minutes as written, Cesar Luis Lim seconded and the motion carried unanimously.

### **Subcommittee reports**

#### **Program – Cynthia gage**

The Subcommittee met yesterday afternoon. Ten people attended. We have been told that abstracts are very critical to acceptance of a program session. The Society is averaging one time slot for every three submissions. The hierarchy uses the abstract as the first cull. Cynthia will help with preparation of abstracts.

In Dallas at the January meeting there are some due dates. The society has again revisited the speaker fee waiver policy. Speakers will pay a reduced registration fee of \$95 beginning with the Dallas meeting.

Beginning with the Denver conference, the Society's conference program will have a special emphasis on research with a call for papers on innovations in HVAC&R research. Papers describing ASHRAE-related research are encouraged and up to 25% of the Denver program will be allocated to this effort.

The Program committee is encouraging us to reach out to track chairs to give them the opportunity to help us. After Denver, New York and Seattle are the next two meetings.

Two submissions were attempted by TC 10.7, one by Van Baxter who had four presenters, and the other by David Hinde who had two presenters. Neither was accepted. We co-sponsored Georgi Kazachki's Seminar 50, Design, Performance and Efficiency Impact of Low-GWP Refrigerants on Systems and Components, which will be held tomorrow. Georgi will propose another for the next ASHRAE conference, to be held in Dallas. It will have the same title as this one.

It was decided in the subcommittee meeting to ask the TC to resubmit Carl Roberts' forum on Supermarket Hot Gas Defrost Piping Guidelines for Best Performance, Reliability and Leak Reduction. It had

not been accepted for Chicago so he would resubmit it for Dallas. TC 10.7 will also be asked to resubmit Van Baxter's seminar on demand-side management.

Since there will be a strong emphasis on research at the Denver conference, we decided to try for a conference paper session on Laboratory and Modeling Studies of Refrigeration Systems. Brian Fricke has agreed to do a paper on LCCP of refrigeration systems. Hemayun Navaz would do one on modeling and experimental measurements of infiltration in walk-ins Kristina Kamensky would do another paper in the same subject area and Scott Mitchell agreed to do one on laboratory evaluations of demand response strategies in residential refrigerators. AHRI is finishing some of their projects on low-GWP commercial refrigeration projects this fall. They could be presented in a conference paper session. Abstracts for Dallas for conference papers are due on October 16 and the papers are due on January 14. There isn't enough time to set this up as a conference session. We might consider submitting this as a seminar for Dallas instead.

Also in Denver, RP 1467 will be submitted as a transactions paper.

Georgi Kazachki asked the TC to cosponsor the next follow-up seminar on low-GWP refrigerants in Dallas. Georgi indicated the seminar will be open to any applications and that the title was made broad for that reason.

Cynthia and her Program subcommittee are developing a list of future topics. Anyone interested please attend the subcommittee meeting.

Another possible seminar for Dallas would be about reducing GWP impact of refrigerants. Patti Conlan could talk about replacements for R-404A, Mark Spatz could talk about lower GWP replacements and John McHugh could talk about reducing leak rates of commercial systems. Cynthia would chair the seminar although she indicated that we will have two resubmissions and that if we get both it may be difficult to get this third one. If this session is turned down in Dallas, we may propose it again for Denver.

Van Baxter moved and Massoud Neshan seconded that the TC approve the proposed upcoming program sessions. The motion passed unanimously.

### **Research Subcommittee - Daryl Erbs**

Daryl attended the Research Subcommittee Chairs breakfast this morning. There are only five RTARs active in ASHRAE at this time. They need more.

There is a new submission form for RTARS. May 15, August 15 and December 15 are the key dates for submitting both RTARs and work statements.

Section 10 will have a new research liaison as of July 1. It will be David Yasher. Regarding active projects, RP 1467 is continuing on a no-cost extension. The Project Monitoring Subcommittee (PSMC) met with the contractors to review project completion status. The contractors are rewriting a section of the final report to clarify some differences between the validation work and reference store model used for the simulation study. The final report will be completed by the end of July with an expected project completion date by the end of September. A technical meeting on the project will be submitted for the Denver ASHRAE meeting.

The Research subcommittee discussed RP 1634 "Guide for Sustainable Refrigerated Facilities and Refrigeration Systems". Three contractors are still being considered. All are qualified so it is tough to decide. Emphasis is placed on practicality. The main research fund comes from various sources. \$200,000 came from UNEP with some from NW Energy. AHRI is also helping. Shitong Zha volunteered to be a member of the PMSMC.

A draft RTAR is being prepared by Daryl Erbs entitled "Minimum Refrigerant Charge Attainment for Commercial Refrigeration Systems". TC 8.4 is interested in co-sponsoring. TC 10.3 and TC 10.5 don't, although TC 10.5 will continue to monitor progress and possibly decide to sponsor at a later date. TC 10.1 has

interest in further participation. Carl Roberts and Cynthia Gage have volunteered to help with the RTAR development. The target submission date to RAC is August 15.

On a related work statement, we are a cosponsor of WS 1615, "Fault Detection and Diagnostic Methods for Supermarkets". The work statement was returned by RAC for clarification. Ramin Faramarzi has agreed to work with them on getting this clarification.

On Saturday afternoon, Daryl Erbs sat in on the Multidisciplinary Task Group (MTG) meeting about Alternative Low-Global-Warming refrigerants. Several Technical Committees and SPCCs are involved. Brian Fricke has volunteered to be a voting member of the MTG, representing TC 10.7. Daryl Erbs made a motion to have this happen and Massoud Neshan seconded the motion. It passed unanimously. Chair Dean Swofford voted to provide a quorum since Voting Member and Refrigeration Committee liaison Cesar Luis Lim had had to leave to attend to his other TCs.

An individual TC can only have one voting member on an MTG but Carl Roberts and Charlie Hon will also attend with Daryl.

The list of new research ideas established at the Winter meeting in Chicago was reviewed. The subcommittee agreed that the topic of refrigeration loads for walk-in coolers and freezers was of significant interest. Michele Friedrich was identified as a potential lead in developing an RTAR. The purpose is basically quantifying loads for walk-in freezers and coolers in the real world.

A new research topic proposed by SPC 72 is about how to deal with two-phase flow in CO<sub>2</sub> and secondary fluid situations. The current test methods cannot determine the fluid enthalpy in these situations. Tim Anderson from Hussmann has volunteered to develop the RTAR for a research project to develop new measurement techniques.

#### **Handbook - Dave Demma**

He discussed the status of the revised Handbook chapters 15 "Retail Food Store Refrigeration and equipment" and 16 "Food Service and General commercial Refrigeration Equipment" Dave has talked with Dave Dettmers in preparation for the review process. The target date is 2014. The first step is to review what was updated two years ago and have the changes approved by the committee so the paperwork has to be completed by this time next year. We have plenty of time since there are not many changes. Anyone who wants to assist, see Dave. Cynthia Gage requested that when the chapter is published, David Hinde should be recognized as a contributor.

#### **Van Baxter - Standards**

Standard 18 "MOT for Drinking-Water Coolers and Self-contained Mechanical Refrigeration" is the one we inherited from TC 10.9 when it disbanded. The standard should be reaffirmed on Wednesday so we won't need to take action on it again until 2015.

Standard 29 "Methods of Testing Automatic Ice Makers" is being worked on now and Daryl Erbs is chairing the SPC meeting immediately after this TC 10.7 meeting. The main issue now is that the SPC doesn't meet the balance requirement. They need one more user. The next opportunity for someone to be added to the TC will be in August.

Standard 32.1 "MOT for Rating Vending Machines for Bottled, Canned and Other Sealed Beverages" has been reaffirmed.

Standard 32.3 "MOT for Rating Pre-Mix and Post-Mix Beverage Dispensing Equipment" was revised in 2011.

Standard 72 “MOT Open and Closed Commercial Refrigerators and Freezers” is in process with Charles Hon is Chair of the revision committee. They have voted for a public review and it should be out in the next few weeks.

Standard 147 “Reducing the Release of Halogenated Refrigerants from Refrigerating and Air-conditioning Equipment and Systems” is out for its fourth public review. The comment period will close next month. The SPC will have web or phone meeting later to reconcile comments and there will probably be a fifth public review. The Standard may be published in 2013.

Standard 210 “MOT for Rating Commercial Walk-in Refrigerators and Freezers is our new one. Kristina Kamenski is the Chair. The first meeting was held this morning at 8 AM. The group made a list of action items. Van broke down the work to review the current standards for testing and use. Following are the current standards AHRI 1250 , AHRI 1200 ASHRAE 72 and DOE MOT. Our goal is to find the bones of each standard using lessons learned from experts involved. Estimated time for completing this SPC/MOT is three to four years. Kristina will secure a dedicated website for 201 on [WWW.ashraepcs.org](http://WWW.ashraepcs.org) where all information on progress and document status will be available. She plans on having a conference call sometime in the time frame of August to October. Anyone who wants to join us in that call or in the SPC efforts can do so.

#### **Webmaster - Kyle Wessels**

Kyle will get the agendas and related documents posted on the website. The new website address is <http://tc107.ashraetcs.org/index.html>.

#### **New Business – Dean Swofford**

There is some interest in TC 10.1 in measuring the effect of return gas temperature (RGT) on halocarbon systems. The historical practice of 65F return gas temperature to the condensing unit is not appropriate in real-world situations. TC 10.1 would like to work with TC 10.7 on this. AHRI is also investigating this. Their rating standard for condensing units is being revised to include additional lower return gas temperatures to the equipment rating, but the system design engineer is still in need of guidance on the correct selection for common applications.

There was some discussion about the availability of data available for systems verified for return gas situations other than 65 RGT.

#### **New Business – Dean Swofford**

No additional business was brought before the committee. Nessian Massoud moved and Van Baxter seconded a motion to adjourn and the committee was adjourned at 3:55 pm.

## Attachments

### 1) Attendance List

TC 10.7 Attendance List – San Antonio, TX

Name	Company/Affiliation	Status
Dean Swofford	Hill Phoenix	Chair/VM
Van Baxter	Oak Ridge National Lab	Stds/VM
Ramin Faramarzi	Southern California Edison	Handbook/CM
Cynthia Gage	US EPA	Program/CM
Ward Wells	DuPont Company	Secretary/CM
Georgi Kazachki	Cryotherm Consulting	VM
Cesar Luis Lim	San Miguel Corporation	VM
Massoud Neshan	Southern Stove Fixtures	VM
Maryline Rassi	AHRI	VM
David Cowen	Food Service Technology Center	CM
David Demma	United Refrigeration	CM
Daryl Erbs	Manitowoc Food Service Group	CM
John Gallaher	Hill Phoenix	CM
Charles Hon	True Manufacturing	CM
Christina Kamensky	Prismitech LLC	CM
Carl Roberts	Zero Zone Inc.	CM
Mark Spatz	Honeywell	CM
Sarah Widder	PNNL	CM
Shitong Zha	Hill Phoenix	CM
Gary Zhyhowski	Honeywell	CM
Tim Anderson	Hussmann Corporation	Guest
Ashly Armstrong	DOE	Guest
Chad Bowers	Creative Thermal Solutions	Guest
Cathy Chappell	HMG	Guest
Doug Collings	Tecumseh Compressor Co	Guest
Patti Conlan	Arkema	Guest
Laura Degitz	Navigant Consulting Inc	Guest
Brian Dobbs	VaCom Technologies	Guest
David Dorste	Parker-Sporlan	Guest
Pat Eilert	PATE	Guest
Brian Fricke	Oak Ridge National Labs	Guest
Randy Haseman	Underwriters Laboratories	Guest
John Hipchen	Exel Consulting Group	Guest
Kyle Larson	VaCom Technologies	Guest
Jon McHugh	McHugh Energy	Guest
Hemayun Navaz	Kettering University	Guest
Rajan Rajendran	Emerson	Guest
Kyle Wessells	HTPG	Guest
Scott Wujek	Creative Thermal Solutions	Guest

## Attachment 2

### Recommended Changes to the Title, Scope and Objectives of TC10.7

#### **Title**

Existing: Commercial Food & Beverage Display and Storage Equipment

Proposed: **Commercial Refrigeration Equipment**

#### **Scope**

Existing: TC 10.7 is concerned with the applications of standard and special refrigeration equipment, food and beverage cooling, displays, vended and non-vended types and storage. This includes special features, cabinet construction, and establishment of application criteria.

Proposed: 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 ( $\leq 3000$  sq.ft.), beverage venders and dispensers, commercial ice makers, and water coolers.

#### **MBOs**

##### Existing:

- The pursuit of technological advancement of commercial food and beverage display and storage equipment.
- To provide engineering design and application knowledge and expertise to assure appropriate research is conducted to effectively support the Refrigeration handbook chapters and standards for which we are responsible.

##### Proposed:

- 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.

#### **TC10.7 Standards**

- Standard 72-2005, MOT Open and Closed Commercial Refrigerators and Freezers
- Standard 32.1-2004, MOT for Rating Vending Machines for Bottled, Canned and Other Sealed Beverages
- Standard 32.2-2004, MOT for Rating Pre-Mix and Post-Mix Beverage Dispensing Equipment
- Standard 29-2009 Methods of Testing Automatic Ice Makers
- Standard 18-2006 Methods of Testing for Rating Drinking-Water Coolers with Self-Contained Mechanical Refrigeration
- Standard 210 MOT for Rating Commercial Walk-in Refrigerators and Freezers

Attachment 3

**San Antonio Announcements of Upcoming Conferences                      August 19, 2012**  
(Conferences listed before the above date omitted)

**ICCCS 2012 – International Symposium on Contamination Control 2012.** September 3-7, 2012 ETH Zurich, Switzerland <http://icccs.net>

**12<sup>th</sup> Cryogenics 2012, IIR International Conference,** Septembr 10-14, 2012. Dresden, Germany.  
<http://www.icaris.cz/conf/cryogenics2012>

**4<sup>th</sup> Jordanian IIR International Conference on Refrigeration and Air Conditioning,** 4<sup>th</sup> JIIRCRAC, September 10-12, 2012, Amman, Jordan. Website <http://inciirconf.ju.edu.jo>

**ASHRAE Energy Modeling Conference Tools for Designing High Performance Buildings –** Oct 1-2, 2012 Atlanta, GA – <http://ashraem.confex.com/ashraem/emc12/cfp.cgi>

**AHR Expo Mexico –** September 25-27, 2012 – Monterrey Mexico  
<http://www.ahrepomex.com/eng>

**3<sup>rd</sup> IIR Workshop on Refrigerant Charge Reduction in Refrigerating Systems –** RCR 2012, October 25-26, 2012 – Valencia, Spain. <http://www.imst.upv.es/iir-rcr2012>

**ASHRAE/NIST Refrigerants Conference: Moving Towards Sustainability** October 29-30, 2012 – Gaithersburg, Maryland. <http://www.ashrae.org/membership--conferences//conferences/ashrae-conferences/ashrae-nist-refrigerants-conference>

**Cold Climate HVAC 2012.** November 12-14, 2012, Calgary, Alberta, Canada.  
<http://www.ashrae.org/events/page/coldclimate2012>

**2<sup>nd</sup> IIR International Conference on Sustainability and the Cold Chain,** April 2-4, 2013, Paris, France.  
[www.iccc2013.com](http://www.iccc2013.com) Abstract submission deadline July 15, 2012

**5<sup>th</sup> International Conference Ammonia Refrigeration Technology,** May 9-11, 2013. Ohrid, R Macedonia,  
<http://www.mf.edu.mk.en>. Abstract submission deadline, September 30, 2012

**ASHRAE IAQ 2013 – Environmental Health in Low Energy Buildings,** October 15-18, 2013, Vancouver, BC Canada. [www.ashrae.org/IAQ2013](http://www.ashrae.org/IAQ2013) Abstract and initial workshop proposals submission deadline December 15, 2012