

**AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR-CONDITIONING
ENGINEERS, INC.
1791 Tullie Circle, N.E./Atlanta, GA 30329
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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 8.1 DATE May 31, 2011

TC/TG/TRG TITLE Positive Displacement Compressors

DATE OF MEETING February 1, 2011 LOCATION Las Vegas,
NV

MEMBERS PRESENT	YEAR APPTD	MEMBERS ABSENT	YEAR APPTD	EX-OFFICIO MEMBER AND ADDITIONAL ATTENDANCE
Alex Lifson	2006	David Bergeron	2008	See Attachment
Bruce Griffith	2009	Jason Hugenroth	2009	
Rainer Grosse-Kracht (IM)	2009	Juergen Suess (IM)	2009	
Rick Hall	2008			
Georgi Kazachki	2009			
Scott MacBain	2010			
Chris Seeton	2007			
Curt Slayton	2009			
Bob Utter	2010			
Mike Wegenka	2009			
Ward Wells/John Williams	2008/10			
Matt Irons	2010			

DISTRIBUTION

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

TAC Section Head:	<u>William McQuade</u>
TAC Chair:	<u>Donald Brudage</u>
TAC Vice-Chair:	

All Committee Liaisons As Shown On TC/TG/TRG Rosters:	Richard Hermann– RAC Russell Lindemann – Handbook Martin Dierckx– Standards Kimball Ferguson – Special Pubs Lynn Werman – Program Nathan Hart– CTTC
Manager Of Standards Manager Of Research & Technical Services	Stephanie Reiniche Mike Vaughn

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

February 1, 2011

Call to Order – Alex Lifson

Alex Lifson called the meeting of TC 8.1 to order in room N231 of the Las Vegas Convention Center in Las Vegas, Nevada. Members and guests introduced themselves..

Establishment of a Quorum – John Tolbert

A quorum of 11 out of 13 voting members was confirmed. See the cover sheet above for names.

Approval of Louisville Minutes – Ward Wells

Ward Wells made a motion for approval of the Albuquerque Annual Meeting TC 8.1 minutes. Rick Hall seconded and the motion passed unanimously.

Chairs' Breakfast Meeting Notes – Alex Lifson

The Hightower Award this year was given to Dr. Gary Phetteplace for his work in support of TC 6.2 “District Energy” and TC 6.8, “Geothermal Heat Pump and Energy Recovery Applications.

During the past year the membership category “provisional corresponding member” has been introduced. This allows a TC to add a corresponding member between roster update cycles. The term of membership is two years and the TC has the option after the two-year period to add the person as a corresponding member or a voting member or to drop the person from the roster.

Energy design guides will be distributed for peer reviews. Any member who is interested is welcome to participate – anywhere from Feb to May this year. The four reviews are: “Energy Efficiency Guide for Existing Commercial Buildings: Technical Implementation”, “50% Advanced Energy Design Guide for K-12 School Buildings - 60% Draft”, Performance measurement Protocols: Best Practices Guide” and “50% Advanced Energy Design Guide for K-12 School Buildings – 90% Draft”.

A new heading entitled “Current Technical Focus of Society” has been added to the ASHRAE website “Technical Committee” page with links to information on the activities and plans of the new Tech Council steering committees.

The eight tentative tracks for the 2012 Annual Meeting in San Antonio are Alternate Technologies, Integrated Energy Systems, Indoor Environmental Applications, Building Modeling Applications, Specialized Applications – Archival Museum & Assembly Spaces, Refrigeration Applications, HVAC&R Systems & Equipment and HVAC&R Fundamentals and Applications.

A new “Help Wanted” section will be added to the Technical Committee page of the ASHRAE website so TCs can advertise requests for help in the various functions of the TC such as research, website and standards.

Upcoming ASHRAE meetings include Montreal in June, Chicago in January 2012 and San Antonio in June of 2012. The theme of the Montreal meeting will be Net Zero Buildings. The theme of the Chicago meeting will be the Impact of HVAC on daily lives. ASHRAE will discontinue the practice of having a conference theme beginning with the San Antonio meeting.

Upcoming international conferences include the 10th IEA Heat Pump Conference from May 16 through May 19, 2011 in Tokyo, Japan, the 14th European Conference Part 2: Latest Technologies in Renewable Energy and Applications in Heating & Cooling, June 10-11, 2011 in Milan Italy and ECOS 2011, the 24th International Conference on Efficiency, Cost, Organization. Simulation & Environmental Impact of Energy Systems on July 4-7, 2011 in Novi Sad, Serbia.

Members will need a passport to attend the upcoming ASHRAE Annual Meeting in Montreal

ASHRAE is trying to make sure that standards are written in mandatory language as opposed to the advisory language that is used in guideline documents.

ASHRAE is trying to getting away from registration waivers. They are just talking about it at this time. Seventeen hundred people attend the technical conference but only about fifteen hundred are paying for it.

Liaisons – Alex Lifson

Alex recognized the handbook, liaison who had just arrived. Our TC has just finished the handbook for this cycle. The society is working on the on-line guide. It will soon be available for us to make changes to it as members of the TC. A change to the on-line guide could cause problems since the printed copy is the official version. Alex Leyderman does not have questions.

Section Head Bill McQuade asked if the TC had any concerns we wanted him to bring to the attention of TAC. No issues were raised.

Standards - Rick Hall

Standard 23.1 “Methods of Testing for Rating Positive Displacement Refrigerant Compressors and Condensing Units That Operate at Subcritical Temperatures of the Refrigerant” was published in 2010 so we are in good shape on that one. Standard 23.2P “Methods of Testing for Rating Positive Displacement Refrigerant Compressors and Condensing Units That Operate at Supercritical Temperatures of the Refrigerant” is being developed by Scott MacBain. There have been several web conferences and the group is making good progress. The subcommittee is looking for new members.

Scott is looking for a different time slot for SPC 23.2P from Tuesday 1 pm to 3 pm.

Sunday was the traditional meeting date and he thinks 10 am was the meeting time. He is trying to go back to that day and time. The public review is targeted for June.

Revision work on Standard 41.9-2011 “Standard Methods for Volatile Refrigerant Mass Flow Measurement Using Calorimeters” has been concluded. This standard will be published in 2011 and will be available in June.

Standard 41.10 “Standard Methods for Volatile Refrigerant Mass Flow Measurement Using Flowmeters” was last published in 2008. It is now due for periodic maintenance. We need to choose between revising, reaffirming or withdrawing the standard. We can’t reaffirm because some of the references are out of date. This standard is important to other standards and Rick moved to revise it. Chris Seeton seconded the motion and the vote was 8 in favor, none opposed and no abstentions with the Chair not voting (8-0-0 CNV).

Standard 41.4 “Standard for Measurement of Proportion of Lubricant in Liquid Refrigerant” - Alex Leyderman indicated that “Oil Circulation Test” sections in Standards 41.9 and 41.10 can be removed. Instead these standards can reference the Standard 41.4 for the purpose of oil circulation test and analysis. Our TC needs to recommend a chair for 41.10 committee. Shane Angle volunteered. Rick Hall moved to set up the SPC, Scott MacBain seconded and the motion passed 8 – 0 –0 CNV. The SPC needs at least four members. Curt Slayton, Alex Leyderman, John Scott, Mike Wegenka and John Douglas volunteered. International members are encouraged to be on Standards committees.

Standard 179P - Bob Utter. We continue to have an active committee. There were two web meetings between the Summer Albuquerque meeting and this past Sunday’s meeting in Las Vegas. More web meetings are coming up. We have a test protocol but are not in full agreement about it at this time. There are more web meetings coming up. We are looking to get the advisory review going by Montreal. We will also actively seek other participants in addition to ASHRAE notice. Our goal is to have the draft done and vote on it at the Montreal meeting. The next AHRI meeting will be in April. We won’t have our draft ready by then. Our work plan called for completion in 2012 Dec.

SPC 41 – Alex Leyderman. The SPC was approached about measurement of superheating and subcooling. It’s a temperature difference and related to the pressure. Standard 41.1 Committee doesn’t include it because it is not a temperature and Standard 41.2 Committee doesn’t include it because it is not a pressure.

Rick Hall suggested it might belong in the 23 series standards. Alex indicated that the handbook talks about it but doesn’t explicitly say how to do it. The TC voted on a motion stating “There is a need for an accurate method of measuring refrigerant superheat and subcooling”. The motion carried (6, 5, 2). [Secretary’s note – The attendance list confirms only 11 voting members were present so the vote on the motion must be in error – No action will be taken on the motion so the concern is moot – Ward Wells].

Program – Scott MacBain

Geogi Kazachki chaired Seminar 22 “Vapor-Compression Cycles, Systems and Components with Natural Refrigerants” with four presenters discussing ammonia and CO2. It

was quite well-attended.

Our TC was trying in Albuquerque to try to put together a seminar for this conference which Curt Slayton would chair. Matt Irons was going to participate. The topic was going to be “Compressor Features and Conditions at Part-load Performance”. This wasn’t submitted for Las Vegas but Curt would still chair the seminar if we want to try again. This time it would be targeted for Chicago. Curt moved to resubmit this seminar for Chicago, the seconding member was not noted by the secretary. The motion passed 9, 0, 0 CNV. Curt will approach potential speakers.

Another potential seminar topic might be compressor design for low-GWP refrigerants. We will discuss this further in Montreal.

The Refrigeration Committee is sponsoring a seminar in Montreal “Advancements in low global warming impact technologies” 10.7 and 8.11 have agreed to co-sponsor the seminar. Georgi Kazachki asked TO 8.1 if we want cosponsor as well and possibly propose a paper. The deadline is February 14 for speakers, and mid-March for program submission. Georgi moved to have TC 8.1 cosponsor this seminar, Ward Wells seconded and the motion passed, 7, 0, 0 CNV

Research – Matt Irons

Our research subcommittee had a meeting yesterday preparing for Montreal. Plan is to coordinate the meeting on Monday from 2:15 to 4:15 between Scott MacBain, Matt Irons and Alex Leyderman to have Program, Research, and Handbook all at the same place.

Matt attended the Research Subcommittee Chair meeting. The research budget remains an issue since there is an ASHRAE rule that the society can’t budget more than what they have in reserve. They are trying again this year to get more research money. \$13MM is available for 2011.

May 15 is the deadline for RTAR submission for Montreal. Steve Taylor won the ASHRAE research award. There is a new award, the Homer Adams Award, to support former research students.

Given the tightness of money the RAC reminded us there are other avenues for research money.

The Society currently has 23 research proposals waiting for funding. They will send out 18 for bids this year. A multidisciplinary discipline task group is being formed. One to two high-risk research application proposals are considered each year.

The text of the RTAR “Properties Measurements of HFO-1234yf/Lubricant mixtures” which we cosponsor with TC 3.4 has been clarified and verbiage about Danielle charts for YF and lubricants has been added. We have conditional approval to proceed which means we can start writing the work statement. TC 3.4 is working on that.

The RTAR dealing with measurement of oil-refrigerant dielectric properties has been cancelled.

The TC has been asked by TC 8.11 to cosponsor an RTAR entitled “Improved Compressor Performance Modeling Methodology for use in System Simulation Programs”. The RTAR was distributed to 8.01 members prior to this meeting. TC 8.11 voted yesterday to investigate improved compressor performance modeling methodology for use in system simulation programs and asked TC 8.1 to cosponsor that work. TC 8.1 discussed the merits and drawbacks of various modeling equations and their tendencies to crash programs when modelers don’t iterate very close to the actual condition. It was moved and seconded that TC 8.1 should cosponsor the work with TC 8.11 and the motion passed 7, 0, 1 with Matt Irons abstaining.

Handbook - Alex Leyderman

Chapter 27 - Alex submitted this chapter for a final vote. It would be useful to add a section on over-compression and under-compression but Alex will leave the chapter as is for now and will include this for the next cycle. The motion passed, (7-0-1-CNV). The abstention was because the member didn’t get the e-mail containing the information in advance of the meeting.

Chapter 42 - Alex is reviewing chillers with positive-displacement compressors. Our TC is only responsible for the positive displacement compressor part of chapter. He needs some help, a second opinion. If not, he will probably submit it at the end of March or the beginning of April. Mike Wegenka and Bob Utter will help.

Membership – John Tolbert

Bob Utter will become vice chair after the Annual meeting in Montreal. Thirteen corresponding members have been deleted due to non-attendance.

As of July 1 we will have 14 voting members, 2 International members and 19 corresponding members. The voting members will be David Bergeron, Jim Douglas, Bruce Griffith, Rainer Grosse-Kracht (IM), Rick Hall, Jason Hugenroth, Matt Irons, Georgi Kazachki, Alex Leyderman, Scott MacBain, Curt Slayton, Juergen Suess, Bob Utter, Mike Wegenka, Ward Wells, and John Williams.

Website – Bob Utter

The webpage is up to date. Bob is putting the stuff on as he gets it. To reach the webpage, go to Technology/TCs and click on the TC 8.1 homepage. Alternatively, you can go to tc81ashraetcs.org Bob Utter will send the URL information along with the user name and password.

At Albuquerque, ASHRAE recommended we form a Google group. Some companies block Google, but ASHRAE says if you can’t access it from work, access it from home. ASHRAE said they don’t have a listserv. Bob learned from someone else at ASHRAE that we can get a Google group set up if we have a webmaster.

Old business – Alex Lifson

Alex asked for old business and there was none.

New business – Alex Lifson

Alex asked for new business and there was none

Adjourn – Alex Lifson

With no further business before the committee, Alex adjourned the meeting at 6 pm.

Attachments

1) Attendance List

TC 8.1 Attendance List – Las Vegas

Name	Company	Status
Alex Lifson	Carrier UTC	Chair/CM
Rick Hall		Standards/VM
Matt Irons	Emerson Climate Technologies	VC/Researc/VM
Alex Leyderman	Fairchild Controls	Handbook/CM
Scott MacBain	Carrier UTC	Program/VM
John Tolbert	Bristol Compressor	Membership/CM
Bob Utter	Innovative Thermal Solutions	Webmaster/VM
Ward Wells	DuPont	Secretary/VM
Bruce Griffith	Johnson Controls	VM
Rainer Gross-Kracht	Bitzer	IM
Georgi Kazachki	DRS-ESI/Cryotherm	VM
Chris Seeton	Honeywell	VM
Curt Slayton	Consulting Services International	VM
Mike Wegenka	Trane	VM
John Williams	Bristol Compressor	VM
Bill McQuade	Johnson Controls	Section Head
Shane Angle	Emerson Climate Technologies	CM
Rick Bunch	R.L. Bunch Enterprises	CM
Doug Collings	Tecumseh	CM
Jim Douglas	Tecumseh	CM
John Neel	Fairchild Controls	CM
Hermann Renz	Bitzer	CM
John Scott	Natural Resources Canada	CM
Sami Zenda	Emerson Climate Technologies	CM
Gene Fields	Danfoss	PCM
Stefan Elbel	CTS	Guest
Kyle Larson	VaCom Technologies	Guest
John Lemmond	AHRI	Guest
Shanebaz Malik	Johnson Controls	Guest
Eddie Rodriguez	McQuay International	Guest
Seshu Seshasai	Tecumseh	Guest
Brett Van Horn	Arkema	Guest
Joseph Wan	Trane	Guest
Chris Wehrenberg	Trane	Guest