

**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 8.1 DATE Oct 13, 2012  
TC/TG/TRG TITLE Positive Displacement Compressors

DATE OF MEETING June 26, 2012 LOCATION San Antonio, TX

MEMBERS PRESENT	YEAR APPTD	MEMBERS ABSENT	YEAR APPTD	EX-OFFICIO MEMBERS AND ADDITIONAL ATTENDANCE
Matt Irons	2011	David Bergeron	2008	See Attachment 1
Jim Douglas	2011	Rainer Grosse-Kracht	2009	
Bruce Griffith	2009	Jason Hugenothe	2009	
Rick Hall	2008	Juergen Suess (IM)	2009	
Georgi Kazachki	2009	Bob Utter	2011	
Alex Leyderman	2008	Mike Wegenka	2008	
Scott MacBain	2010	John Williams	2010	
Curt Slayton	2009			
Ward Wells	2009			

**DISTRIBUTION**

	TC:	All members of TC8.1
	TAC Section Head:	Stephen Duda
	TAC Chair:	William McQuade
All Committee Liaisons As Shown On TC/TG/TRG Rosters:		David Yasher– Section 8 Research Liaison Michael Patton – Systems Handbook Chair Rick Larson – Standards Francis Mills – Special Pubs Keith Reihl – Technology Transfer Committee
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."

### **Call To Order - Matt Irons**

Matt Irons called the meeting to order at 3:37 pm on Tuesday June 26th, 2012 in Bowie Room C of the Grand Hyatt Hotel in San Antonio, TX. A sign-in sheet was circulated and is included as Attachment 1 to these minutes.

### **Establishment of a Quorum – Matt Irons**

A roll call was taken. Voting members present were Jim Douglas, Bruce Griffith, Rick Hall, Matt Irons, Georgi Kazachki, Alex Leyderman, Scott MacBain, Curt Slayton, and Ward Wells. With nine of thirteen voting members present, a quorum was established.

### **Approval of the Chicago Minutes – Matt Irons**

Rick Hall moved to accept the Chicago minutes as written and George Kazachki seconded the motion. The motion passed unanimously.

### **TC Chairman's' Breakfast Minutes - Matt Irons**

- Two new multidisciplinary task groups (MTGs) have been formed, one on Alternative Global Warming Potential Refrigerants. This MTG is looking for members. If you are interested in representing TC8.1, please contact Matt Irons. For more information on these two MTGs and the four other MTGs, please go to the MTG section on the following web page: <http://www.ashrae.org/standards-research--technology/technical-committees>
- The Society is still planning to rate speakers with the intent of asking those who rate low to go for speaker training.
- Original plan was to align TC8.1 with Track 1 HVACR Systems and Equipment. Curt Slayton volunteered to contact Track 1 liaison and get input on how to approach any new programs.
- Update as of September 21: Curt contacted Chair of Track 4: Energy Conservation, Charles E. Henck per feedback from Section Head. The Seminar that was proposed was not selected for Dallas.
- ASHRAE is looking for input on If anyone has any ideas of any new tracks that are needed they can submit suggestions to <http://www.ashrae.org/events/page/2537>.
- TC Volunteers willing to Support Content Development and Quality Control for Society Technical Program at Society Meetings. Provide to your Section Head after each Society meeting a list of qualified volunteers from your TC that are potential Technical Session chairs and reviewers of session papers that are related to TC's scope for use by the Conferences & Exhibitions Committee (CEC) in developing technical content for future technical programs.
- Beginning with the Denver 2013 summer conference, there will be 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.
- As part of the rebranding of ASHRAE, a new logo and tagline "Shaping Tomorrow's Built Environment Today" was unveiled at the Plenary session this past Saturday. TC8.1 website is updated.

- As a reminder to the subcommittee chairs, the option for holding teleconference meetings still exists.
- Upcoming industry events in attachment 2.
- ASHRAE has a Technical Committee master calendar. It will download the whole TC calendar onto your Google calendar. If someone tries it, let us know how it works
- ASHRAE has launched the free ASHRAEwiki site, a centralized resource for referencing terminology definitions. Visit ASHRAEwiki.org to find this information. It is not compulsory that you use this terminology in ASHRAE correspondence or presentations, for example. It is just a resource. Georgi Kazachki commented that he has tried it and was not impressed.

### **Liaisons – Section Head – Stephen Duda (actually arrived during Research)**

Steve indicated everything is looking good regarding administration of TC 8.1. The agenda was distributed on time and the web site is in good shape.

In response to Steve's request for questions or comments, Matt Irons pointed out how difficult it is to get our program submittals accepted for the Technical Program. Steve said we can present our program sessions during the TC meeting. Matt asked if speakers in the TC meeting would get a discount on their registration fee. Steve said he would look into it. He also said he would be happy to look at our program proposals from an abstract standpoint and make contact with CEC to see if we can do something to improve prospects for acceptance. Steve said we could co-sponsor with another TC to help get our talks on the program and that submitting conference papers would also make acceptance more likely. Rick Hall pointed out that our rejection rate has been exceptionally and disappointingly high and that our companies' lawyers are reluctant to let us present written papers.

Georgi Kazachki asked why if there is a reported one million dollar surplus we are charging speakers? Steve Duda said that the cost of the annual and winter conference has to be borne by that conference. The Society can't subsidize a given conference and can't profit from it. The problem has been that cost has been going up and up to the point that 40% of attendees were getting freebies. Sixty percent of the attendees were carrying the other forty percent. The Board of Directors decided that everybody should pay some of their way including the Board members themselves. The other sources of Society income such as AHR Expo income, Society dues, advertising in the Journal etc. is providing the surplus. Georgi indicated that this approach will cause problems when presenters who are not members of ASHRAE have to come up with attendance fees to present their information.

### **Standards – Rick Hall**

TCF8.1 is the responsible for five separate standards.

- Standard 23.1 – Methods of Test For Performance Rating Positive Displacement Refrigerant Compressors and Condensing Units That Operate at Subcritical Temperatures. This standard was published in 2010 and will come up for revision or reaffirmation in 2013. We will be asking the Society membership for members for the SPC and this TC will be asked to recommend a chair.
- SPC 23.2 Methods of Test For Performance Rating Positive Displacement Refrigerant Compressors That Operate at Supercritical Temperatures of the Refrigerant. The SPC is developing a companion standard to Standard 23.1, which instead of addressing performance at subcritical temperatures of the refrigerants will address performance at supercritical temperatures of the refrigerant. Scott MacBain is the SPC Chair. The subcommittee met this week and the standard is nearly ready for public review. They are targeting getting the document voted on by the January meeting in Dallas, with publication to

follow at the summer meeting in Denver. They will hold bi-weekly meetings when needed to meet this schedule. Their work plan was approved by ASHRAE Standards just now.

- Standard.41.9 Standard Methods for Volatile Refrigerant Mass Flow Measurements Using Calorimeters. This will come up for periodic review in 2014. There is no activity at this time.
- Revision of Standard 41-10 Calorimeter Test Methods For Volatile Refrigerant Mass Flow Measurements using Flowmeters. Shane Angle is the subcommittee chair. At the San Antonio meeting the SPC reached consensus on a public review draft. It will go out for public review in a few weeks. If no substantive comments come in, the SPC will submit the standard for publication.
- The fifth Standards item is new, SPC-179P, Method of Test for Life Testing Positive Displacement Compressors. Bob Utter is the subcommittee chair. The proposed standard is currently out for advisory public review. This review is actually a request for information, not a request for comments which, if addressed, would lead to an approved standard. The review period ends on July 16. Curt Slayton chaired the San Antonio meeting of the SPC in Bob Utter's absence. The SPC expects to get comments soon. Four of the eight voting members were present so we didn't vote since we lacked a quorum. TC 8.1 members can go to the ASHRAE website to see it. John Williams has left Bristol and the HVAC industry. John Tolbert will return to SPC-179 as a voting member. Rupal Choksi has comments from AHRI members which he is planning to submit.
- Margaret Mathison will become vice chair for Standards for Rick Hall.

### **Program - Curt Slayton**

- We submitted a seminar entitled "Compressor Design For Improving Part-Load Performance". We had a choice of asking the presenters to present in the TC meeting. Hermann Renz would present at Dallas. Alex Lifson might present but his participation is indefinite at this time.
- There are a lot of issues with presenting during a TC meeting such as support logistics. Speakers have a 75% discounted registration fee if they present in the Technical Program. Will speakers who present at TC meetings also get that reduction? Also, we don't know if that is 75% off the conference registration or just 75% of a one-day registration. Curt thinks the speakers in a TC venue probably won't get a reduced fee. Anyone interested in giving a third presentation in this Dallas session should contact Curt.
- Curt asked for any new ideas for seminars. Georgi Kazachki said he will submit a seminar for Dallas with the same title as this conference's Seminar 50, "Design, Performance and Efficiency Impact of Low-GWP Refrigerants on Systems and Components". Georgi will chair that session and asked TC 8.1 to co-sponsor.
- Georgi invited anyone who has something to present for his Dallas seminar to send him a brief title and abstract. The deadline for submission of abstracts is August 14 and the deadline for submission of the presentation is sometime in December. Georgi has two tentative speakers already. TC 3.1 is the sponsor. Curt moved to cosponsor the seminar and Ward Wells seconded. The motion passed unanimously.

### **Research – Matt Irons**

- Matt went to the research breakfast. There was an innovative research grant. Five proposals were rejected during the spring. The emphasis is now more on product development than research.
- The Society is asking for more projects to be submitted. The number of RTARS and work statements being submitted is decreasing.
- RTAR 1642 "Improved Compressor Performance Modeling for Use in System Simulation Programs"

was approved. TC8.11 is looking for co-funding from AHRI. The Small Unitary Group of AHRI has been in favor. The Compressor and Condensing Unit (CCU) Committee of AHRI is revising Standard 540 to address the concerns on compressor rating accuracy so they are not in favor. During the TC 8.11 meeting yesterday an important point was made system simulators are using the current coefficients in appropriately, that is, the coefficients were not meant to provide the accuracy needed for certain simulations. Someone representing the AHRI committee suggested to those in TC8.11 that they provide detailed feedback on exactly what simulations are the problem so that AHRI can address their concerns. TC 8.11 will ask TC 8.1 to co-sponsor.

Update as of August 15<sup>th</sup>, Electronic ballot vote was conducted on whether TC8.1 would sponsor RTAR 1642

14 total voting members. 12 responded; 11 stated preferences, 1 abstained  
7 in favor, 4 against, 1 abstaining – CV (chair voting)

- Matt Irons will contact Chris Seeton to get an update on the status of RTAR 1628: “Properties Measurements of HFO-1234yf/Lubricant mixtures”. He will also get a status from Chris on two other proposals, the RTAR for physical property measurements of R-32, R-152a and R-1234ze with some lubricants and the proposal to co-sponsor work with TC 3.4 on ultra-high pressure viscosity
- Regarding the proposed RTAR for oil circulation measurement, Alex Leyderman pointed out that there has been no progress on this. He indicated we should discontinue the proposed work and there was no objection.

### **Handbook - Alex Leyderman**

- Chapter 37 has just been published. We need to resume work on Chapter 42 soon and this is a good time to start looking for members. We need to add a section on scroll compressors to this chapter. Scott MacBain offered to assist. Curt would work on Chapter 37. We will need someone with manufacturing experience to get information on scroll chilling systems. We need to add information on these chillers to the chapter.
- The compressors chapter looks good but still requires some updates on schematics and especially scroll information. We don't have a nice picture of rotary compressors. In Chapter 37 we need a section on over-and under-compression in compressors. We also need to talk about Mach number effect because Chapter 37 is written by two TCs, 8.1 and 8.2. TC 8.2 talks about Mach number in their section, and we need to talk about it in ours.
- In general, Alex wants to update materials compatibility information because of the HFC refrigerants which have been commercialized and the other new refrigerants which are now coming into commercial production. In addition to the customary metals and lubricants, there are also the electrical/electronic materials such as wire insulation, electrical connectors, resins, and polymers. Even an update on the materials compatibility with current refrigerants would be useful.
- Also we could use information about compressors without a sump. In this design, the lubricant is carried by refrigerant. A lot of screw compressors and rotaries have this design. Send any information you have to Alex Leyderman.
- Most of the work is needed on Chapters 37 and 42. Scroll chillers are not there at all. Chapter 8 is due in 2014. It is pretty much acceptable as is and will probably just be a matter of review.

**Membership – John Tolbert**

- The new roster goes into effect on July 1 of this year and is good until July 1, 2013. We can't change it except for once per year at the January meeting. Jon Lemmond wants to become a corresponding member. We will put him in as provisional corresponding member.
- We will have thirteen voting members plus two International members for a total of fifteen. Voting members coming off are Alex Leydermann and David Bergeron. Doug Collings is coming on as a voting member. We could attach the tracking document to the minutes. The roster can't be published. John Tolbert won't be voting again until July 2013.

**Website - Drew Welch**

- Bob Utter has posted the agenda for this meeting and the Chicago meeting minutes

**Old Business – Matt Irons**

- No old business was re-introduced.

**New Business - Matt Irons**

- Matt said that if someone on the TC wants to represent us on the TRG, he or she should let Matt know.

**Motion to Adjourn - Matt Irons**

- With no further business before the TC, Ward Wells moved to adjourn. Curt Slayton seconded and the motion passed.



**Attachment 2: Upcoming Workshops and Conferences:**

- **10th IIR Gustav Lorentzen Conference 2012** (Natural Refrigerants), June 25-27, 2012 – Delft, <http://www.gl2012.nl/>
- **10th International Conference - Healthy Buildings 2012** – July 8-12, 2012 –Brisbane, Australia - <http://hb2012.org/>
- **U.S. National Committee - IIR Refrigerants Short Course** July 14-15, 2012, on the campus of Purdue University in West Lafayette, Indiana [https://engineering.purdue.edu/Herrick/Events/2012Conf/about\\_shortcourse.html](https://engineering.purdue.edu/Herrick/Events/2012Conf/about_shortcourse.html)
- **Purdue Summer Conferences 2012**  
21st International Compressor Engineering Conference,  
14th International Refrigeration and Air Conditioning Conference  
2nd International High Performance Buildings Conference  
July 16-19, 2012, on the campus of Purdue University in West Lafayette, Indiana  
<http://engineering.purdue.edu/Herrick/Events/2012>
- **Seventh Annual New Energy Symposium**, July 18, 2012 | 8:00 AM - 7:00 PM  
New York Academy of Sciences, NY - <http://www.nyas.org/2012NewEnergy>
- **SimBuild 2012** - August 1-3, 2012 - Madison, WI –  
website:<http://www.ibpsa.us/simbuild2012/>
- **COBEE (2ND International Conference on Building Energy & Environment)**,  
August 1-4, 2012, Millennium Harvest House, Boulder CO  
<http://www.colorado.edu/cobee2012>
- **ASHRAE HVAC Design Workshops**, August 6-10, 2012, ASHRAE HQ, Atlanta, GA  
<http://www.ashrae.org/education--certification/workshops/hvac-design-workshops>
- **ICCCS 2012- International Symposium on Contamination Control 2012**,  
September 3-7, 2012, ETH Zurich, Switzerland <http://icccs.net/>
- **12th Cryogenics 2012, IIR International Conference**, September 10-14, 2012,  
Dresden, Germany, <http://www.icaris.cz/conf/Cryogenics2012>
- **4th Jordanian IIR International Conference on Refrigeration and Air Conditioning, 4th JIIRCRAC**, September 10-12, 2012, Amman-Jordan,  
Website: <http://jnciirconf.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.ahrexpomex.com/eng/>
- **3rd IIR Workshop on Refrigerant Charge Reduction in Refrigerating Systems** –  
RCR 2012, October 25-26, 2012 – Valencia, Spain, Website:  
<http://www.imst.upv.es/iir-rcr2012>
- **ASHRAE/NIST Refrigerants Conference: Moving Towards Sustainability**, October 29-30, 2012 –  
Gaithersburg, Maryland, Website: <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>
- **2nd 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
- **5th 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