

**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 3.4 DATE February 4, 2013

TC/TG/TRG TITLE Lubrication

DATE OF MEETING January 29, 2013 LOCATION Dallas, TX

MEMBERS PRESENT	YEAR APPTD	MEMBERS ABSENT	YEAR APPTD	EX-OFFICIO MEMBERS AND ADDITIONAL ATTENDANCE
Scott Gustafson	2012	Kirsten Ahrenstorf (IM)	2009	Attendance List Attached
Joe Karnaz	2012	Bret Van Horn	2012	
Ed Hessel	2011	Jay Field	2011	
Sonny Sundaesan	2009			
David Vincent	2009			
Yunho Hwang	2012			

DISTRIBUTION

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

TAC Section Head:	<u>William Murphy</u>
TAC Chair: TAC Vice-Chair:	<u>William McQuade</u>
All Committee Liaisons As Shown On TC/TG/TRG Rosters:	Mark Spatz – RAC Ramon Ponce – Handbook Rick Larson – Standards Francis Mills – Special Pubs Mark Tome – 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."

Call to Order – Scott Gustafson

Scott Gustafson called TC 3.4 meeting to order at 1:30 pm on January 29, 2013 in the Lone Star Ballroom C2 at the Sheraton Convention Center Dallas, TX. Members and guests introduced themselves. Guests were welcomed and invited to participate.

Confirmation of quorum - Scott Gustafson / Joe Nigro

Scott Gustafson, Joe Karnaz, Sonny Sundaresan, Dave Vincent, Ed Hessel, and Yunho Hwang were present. Voting members Jay Field and Brett Van Horn were not present and non-quorum voting member Kirsten Ahrenstorf was also not present. With six of eight voting members present, the quorum was established.

Liaisons - Bill Murphy, Mark Spatz, Ramon Pons and Rick Hall Attended

Bill Murphy – Section 3 Head - opened by thanking our group for its continuing efforts in support of TC 3.4. ASHRAE is developing an Outstanding TC Award to be presented annually within the section. A point system is being developed to measure TC performance. Points will be assigned based on the TC activity sheet submitted after each meeting. Comments are welcome. Roll out is targeted for summer 2014.

Mark Spatz – Research – Section 3 was encouraged to submit RTARs and work statements as the work load is low at this time and research dollars are available. Mark volunteered to help with whatever is needed to develop and submit more RTARs and work statements. So help exists if requested don't be bashful.

Ramon Pons – Handbook - reminded TC 3.4 that the Chapter 12 draft is due June 8th, 2013. Time is short.

Rick Hall – Standards - Rick mentioned that the TC should communicate changes from their standards committees to the standards liaison.

Approval of 2012 Winter Meeting Minutes in Chicago - Joe Nigro

A motion was made by Joe Karnaz to approve the San Antonio minutes, the motioned was seconded by Yunho Hwang, and the motion carried 6-0-0 (Chair voting).

TC Chair Breakfast – Scott Gustafson

- Notes form the Chairs Breakfast will be posted on the TC 3.4 Website.
- Lucas Hyman won the 2012 - 2013 Hightower Award. Congratulations!
- ASHRAE has published a code of ethics for TC members. All TC members are asked to review the ethics code available on the ASHRAE website.
- AHREAE members are asked to update their profiles on the ASHRAE website with Bio Information on Employment Discipline.
- ASHRAE has created a master TC calendar in Google Calendars. TC members are welcome to link in.
- CEC voted and conference speakers will continue to have to pay a reduced rate (\$95USD) to attend the conference. The Denver annual meeting will include a Research Summit.

- Subcommittee meeting can be conducted on line if desired. The ASHRAE website has details.
- ASHRAE has created a WIKI page which currently contains over 7500 definitions of ASHRAE terms. Check it out!

Subcommittee Reports

Program – Ed Hessel

TC 3.4 had no accepted program items in Dallas. TC 3.4 had a seminar titled “Lubricants Optimized for use with Low Global Warming Refrigerants” which was rejected for Dallas. A motion was made by Sonny Sundaresan to sponsor this seminar in Denver within the time allotted for the TC 3.4 meeting. The motion was seconded by Ed Hessel and the motion carried 6-0-0 (with the Chair voting). Ed Hessel will be working on finalizing presenters and ensuring that the seminar listed on the ASHRAE agenda.

The submission deadline for Denver is looming – Feb 11th. Ed will resubmit the previous seminar to see if it passes. Ed to confirm if MTG would like to co-sponsor (per suggestion of Prof. Yunho Hwang).

Discussion centered on options for TC 3.4 to secure room in the ASHRAE agenda. The past few years of multiple rejections is disheartening and is damaging moral.

The following two options were discussed in detail:

- Re-submit the Seminar mentioned above for Denver. Could co-sponsor with MTG and/or other TC.
- Schedule an “OPEN SESSION” seminar to be presented from 1-2:30pm prior to the 3.4 TC session meeting.

Other program options were discussed and are noted in Table 1.

Item	Date Inception	Title	Lead	Potential Speakers	Meeting	Status/Action Items	Comments
1	2/1/2011	New and Improved Lubricants to Accommodate Low GWP Refrigerants	Ed Hessel and Scott Gustafson	Chris Seeton, Ted Li, Joe Karnaz, Ed Hessel	Montreal	Seminar 51, Wed. 6/29. 8-9:30am, Westmount	Complete
2	6/26/2010	Managing Oil Circulation in Refrigeration and Air-Conditioning Systems for Comfortable Daily Lives	Ed Hessel	Danny Halel (Hussman) Scott Wujek (Creative Thermal Solutions) Yunho Hwang (U. of Maryland)	San Antonio	Completed online submission by Feb. 13, 2012 Rejection Notice on March 16, 2012.	No further actions at this time. Move on to item 3.
3	2/1/2011	Lubricants Optimized for use with Low Global Warming Refrigerants	Ed Hessel	Potential list of speakers includes: Ken Lilje (CPI)(confirmed) Ed Hessel (Chemtura) (confirmed) Eric Schwein (Idemitsu)(confirmed)	Dallas	Completed online submission on July 29, 2012. Seminar Rejected.	Resubmit for Denver. Schedule as an OPEN SESSION seminar from 1:00-2:30pm prior to TC 3.4 meeting. Can always drop if seminar is accepted. Check with MTG to see if they wish to cosponsor.
4	2/1/2011	Lubrication Aspects of LGWP applications	Sonny Sundareson	To be determined	?	Dropped	
5	2/1/2011	Equipment Improvement in Terms of Energy Efficiency: contribution of the lubricant	Joe Karnaz	To be determined	Dallas	On hold until there is more definition on which refrigerants will be advanced.	
6	2/1/2011	Lubricants with CO2	Sonny Sundareson	To be determined	?	On hold until Sonny can identify some OEM speakers	
7	2/1/2011	Effects of Refrigerant Lubricant Solubility on Microchannel Heat Exchangers	Cosponsor with 8.4	8.4 to provide 2 speakers, 3.4 must provide 1.	?	Need to identify lead and one speaker. Ed to meet with TC 8.4 Program Chair to discuss options and timing.	Ed to meet with TC 8.4 Program Chair to discuss options.
8	6/26/2012	Lubricants and lubrication challenges for hydrocarbon based refrigeration applications	Ed Hessel	None at this time	TBD	Identify at least 2 speakers. Get final title. Propose at next meeting	Ed to look for 2 or more speakers before Denver meeting.

Handbook - Julie Majurin

Julie Majurin plans on meeting the Chapter 12 June draft submission date. A large amount of new data will be added to the chapter and is in the process of being pulled together. Information on new lubricants,

additives etc. will be added. An effort is being mounted to harmonize some of the lubricant related data from Chapter 6 (System Chemistry) with chapter 12. We will be seeing the finished product draft in Denver 😊.

Standards – Rob Yost

Standard 86 “Methods of Testing the Floc Points of Refrigeration Grade Oils” is being chaired by Warren Clough. The public comment period ended in July with no comment. The final document has been signed and submitted. The standard is done. Thanks to everyone participating on this project!

Standard 99 “Refrigeration Oil Description” – chaired by Chris Seeton. The team is getting close to a final draft. A document should be ready to submit for review in the next few weeks. A letter ballot is expected prior to sending the final document to ASHRAE standards.

Standard 172P “Method of Test for Insoluble Materials in Synthetic Lubricants and HFC Refrigerant Systems” chaired by John Senediak – The standard is written. A series of labs have agreed to round robin testing for verification. A conference call is planned in May to start the round robin. Their intent is to add more information about reproducibility and repeatability.

Research – Chris Seeton (reported by Joe Karnaz)

RTAR 1628 “Physical Property Measurements of HFO/Lubricant Mixtures” will be moved from an RTAR to a work statement submittal, in addition HFO 1234zE will be added to the refrigerant matrix. A TC letter ballot vote will be scheduled for the week of February 11 or 18th.

An RTAR is being drafted by Joe Karnaz, Brett Van Horn and Steve Kujak entitled “Physical Property Measurements of HFC/HFO Lubricant Mixtures”. The draft is being modified to include other HFC/HFO refrigerant blends.

TC 3.8 is writing an RTAR titled “Monitoring Commercial Systems to Predict Leaks before Performance becomes an Issue”. TC 3.4 may be interested in co-sponsoring.

Ideas from the Combined Research Subcommittee Meeting:

- Proposed topic – Look at miscibility in R-32 and R-32 blends?
- Proposed topic – correlation of PVT test methods / modeling PVT data. Julie Majurin will investigate the potential for an RTAR.

KEY RAC Dates per Mark Spatz:

Submissions received by March 15th will be discussed at the April RAC meeting.

Submissions received by May 15th will be discussed at the June RAC meeting.

Webmaster - Dave Vincent

The website is up to date and looking good!

Membership – Scott Gustafson

Current 3.4 voting members: Scott Gustafson, Joe Karnaz, Sonny Sundaresan, Dave Vincent, Ed Hessel, Yunho Hwang, Jay Field, Brett Van Horn, and voting non quorum member Kirsten Ahrenstorf.

Chair is looking for 1-2 more voting members for the roll over roster. Sonny, Dave and Kirsten will be rolling off after the June meeting. Anyone wishing to be a corresponding member should contact the chair.

Old Business – Scott Gustafson

Scott Gustafson had agreed to send a letter to the President of ASHRAE regarding 3.4's recent poor history with getting seminars approved through the CEC. Scott has held off on sending the letter until he collects data from ASHRAE on the statistics behind the number of papers and seminars submitted and approved for ASHRAE as a whole and TC 3.4 in particular. The overall statistics showed that 75-80% of papers were accepted for Dallas but a 50% rate for seminars. The breakdown by section is not yet available.

Joe Karnaz updated the status the MTG – titled Alternative Lower GWP Refrigerants. This MTG was formed to be a liaison to the TC's working on lower GWP refrigerant options. The MTG would like to be included as a co-sponsor for any related TC seminars and also be supported by the TC's for MTG sponsored seminars. They are currently coordinating a seminar in Denver titled "Performance Testing of Low GWP Refrigerants".

A motion was made by Joe Karnaz to cosponsor the above MTG seminar. The motion was seconded by Sonny Sundaresan and the motion carried 6-0-0 (with the Chair voting)

Future MTG updates will be move to a TC 3.4 agenda item.

New business – Scott Gustafson

Scott Gustafson stated that TC 3.4 will post all meeting information such as agenda's and meeting minutes on the TC 3.4 website within 30 days prior or after a given meeting. All meeting attendees will be expected to obtain these documents from the website.

Adjourn – Scott Gustafson

With no further business before the committee, Joe Karnaz moved to adjourn. Dave Vincent seconded and the motion passed. Chair Scott Gustafson adjourned the meeting.