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 3.3 DATE February 9, 2015

TC/TG/TRG TITLE Refrigerant Contaminant Control http://tc33.ashraetcs.org/

DATE OF MEETING January 27, 2015 LOCATION Chicago, IL

<table>
<thead>
<tr>
<th>MEMBERS PRESENT</th>
<th>YEAR</th>
<th>MEMBERS ABSENT</th>
<th>YEAR</th>
<th>EX-OFFICIO MEMBERS AND ADDITIONAL ATTENDANCE</th>
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<tbody>
<tr>
<td>Julie Majurin – Chair</td>
<td>VM</td>
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<td>Joe Nigro – Vice Chair &amp; Program</td>
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<td>Debra Kennoy</td>
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<td>Brad Boggess – Handbook</td>
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<td>Alice Reimer – IM</td>
<td>NQM</td>
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<td>Frank Nagy – Secretary &amp; Membership</td>
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<td>Ray Thomas – Research</td>
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<td>Rob Yost – Standards,</td>
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<td>Glen Steinkoenig</td>
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<td>Ed Hesssell, Knut Petry, Juan Flores</td>
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<td>Marc Scancarello</td>
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<td>Roberto Urrego, John Senediak, Chris Urban</td>
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<td>Danny Halel</td>
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<td>Chris Reeves, Greg Smith, Jay Field</td>
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<td>Bob Woods</td>
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<td>Joe Karnaz, Steve Kujek, Kyle Whitaker, Leonard Challenger</td>
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<td>Joe Longo</td>
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<td>Scott Gustafson, Chris Seeton</td>
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<td>Rosine Rohatgi</td>
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<td>Kyle Weidmayer, Yanwei Cen</td>
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<td>Alan Cohen - Webmaster</td>
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<td>Ivan Rydkin, Elyse Sorenson</td>
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<td>Jorge Cabrera, Mikelann Scerbo</td>
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DISTRIBUTION

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

<table>
<thead>
<tr>
<th>TAC Section Head:</th>
<th>Jay Kohler</th>
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<tr>
<td>TAC Chair:</td>
<td>Eric Adams</td>
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<td>TAC Vice-Chair:</td>
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<tr>
<td>All Committee Liaisons As Shown On TC/TG/TRG Rosters: Mark Spatz - Research</td>
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<tr>
<td>Manager Of Standards</td>
<td>Stephanie C Reiniche</td>
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<tr>
<td>Manager Of Research &amp; Technical Services</td>
<td>Mike Vaughn</td>
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<tr>
<td>Admin Asst – Technical Services</td>
<td>Tara Thomas</td>
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This form is available from ASHRAE Headquarters in Word.
1) Call to Order

Julie Majurin (Chair), called the meeting to order at 3:30 pm on Tuesday, January 27, 2015. The meeting was held at the Palmer House Hilton Adams Room in Chicago, IL. After introduction of members and guests, a quorum was confirmed with 9 / 11 voting members present. There were no changes or additions to the minutes.

**MOTION #1:** to approve the minutes was made by Raymond Thomas & seconded by Glen Steinkoenig. Motion passed 9-0-0.

2) Report on TC 3.0 Chair Breakfast Meeting – Julie Majurin

- Jay Kohler is the new Section 3 Chair.
- Programs for Atlanta are due February 9th, 2015.
- Due to our recent issues with getting programs approved, it was recommended that the Section. 3 groups suggest particular tracks to CEC for St Louis.
- AdHoc committee between TAC and CEC has been formed to address particular issues.
- Website Update – The TC can make suggestion for other information to post to the website.
- Employment Discipline should be updated on your Bio.
- Upcoming Specialty Conferences particular to Section 3 committees.
  - ICR 2015 Yokohama Japan

Upcoming meetings

- Atlanta - June 2015
- Orlando - January 2016

Liaison Comments:

3) Program – Joe Nigro

- No seminars were approved for Chicago. Future plans are to co-sponsor seminars with TC 3.2, 3.3 & 3.4 having a better chance to get approval as a group submission. The initial target is a seminar for Orlando approximately titled “Synthetic Lubricants: Making the commercialization of Low GWP refrigerants a Reality” or “Synthetic Lubricants: Making Environmentally Responsible and Energy Efficient Refrigeration Technologies a Reality “to be included in the “Cutting Edge Technology” Track which is focused on net zero buildings and increasing efficiency.
  - Target Speakers include:
    - System Builder (importance of the lubricant in the systems.
    - Compressor Builder (challenges of lubricating with the new refrigerants)
- Refrigerant Manufacture (challenges of optimizing refrigerant performance in the presence of a lubricant) (lubricant considerations)

Contingency 1: If not accepted for Orlando, than the goal is a conference paper. Contingency 2: Do an open seminar in Orlando during TC (3.3-3.4 on Tuesday) if rejected (ensure that we get proper exposure in the technical program) Contingency 3: Aggressively lobby the CEC for a separate track for St. Louis and resubmit the seminar. **MOTION #2:** to co-sponsor future seminars with TC 3.1, 3.2 & 3.4 was made by Marc Scancarello & seconded by Debra Kennoy; motion passed 9-0-0.

- Seminar on “CO2 System Contaminant Control & Retrofit” was rejected (Danny Halel & Rob Yost presenters).

- “Best Practices in Manufacturing, Field Installations & Servicing Refrigeration & AC Systems” to be co-sponsored with TC 9.3 & 10.7 was submitted for Atlanta.

- **MOTION #3:** to co-sponsor with TC 3.2 material compatibility work as a conference paper (including RP 1665 & 1641) was made by Rosine Rohatigi & seconded by Joe Longo; motion passed 9-0-0.

4) **Handbook – Brad Boggess**

- Chapter 7 is current; Brad is turfing over the committee to Chris Reeves. Chris forming a new committee in Atlanta. Julie Majurin, TC 3.3 Chair, recognized Brad and his committee in appreciation for their efforts.

5) **Standards – Rob Yost**

- SPC 35-2010 – “Method of Testing Desiccants for Refrigerant Drying”- was reaffirmed in Dallas (2013) per Rob Yost, subcommittee chair.

- SPC 63.1 – “Method of Testing Liquid Line Filter Driers” – subcommittee met and chair will submit by February end for letter ballot; it will be finalized by next meeting. (Scope only encompasses halogenated hydrocarbons; perhaps change to add other fluids?) Bob Woods, subcommittee chair / members: Jorge Cabrera, Chris Reeves, Alan Cohen, Jay Field & Rob Yost.

- SPC 63.2 – “Method of Testing Liquid Line Filter Drier Filtration Capacity” – subcommittee held first meeting; goal to finalize is by summer 2016 meeting. Glen Steinkoenig, subcommittee chair.

- SPC 78 – “Method of Testing Flow Capacity of Suction Line Filters and Filter Driers” – subcommittee held first meeting; revision under way. Chris Reeves, subcommittee chair / members: Alan Cohen, Juan Flores, Julie Majurin & Rosine Rohatgi.

- “MOT for the Effects of System Contaminants on Expansion Devices” – it was agreed after some discussion to remove this item ( Marc Scancarello, subcommittee chair).

- Added Standard for: “MOT of Liquid Line Filter Driers for Organic Acid Capacity”; Rob Yost to review with Standards Committee.

  *SPC 63.3 “Method of Testing Acid Filters” in limbo as a draft since 1989 was never approved. TRP- 1028 followed and a final report was issued in 2002 but was never approved as well. (Glen Steinkoenig authored a TPS: “MOT the Ability of Liquid Line Filter Driers or Adsorbents to Remove Organic Acid” for Denver (2013): a motion to spawn a standard on organic acid removal passed.)

  **Per John Senediak, subcommittee chair, there has been no response from ASHRAE as of yet. Please contact John if interested in joining the subcommittee; subcommittee members: Rob Yost.

6) **Research – Raymond Thomas**

- RP 1641: “Effect of Unsaturated Fluorocarbon Contaminants on the Reliability and Performance of HVAC&R Equipment” – Rosine Rohatigi of Spauchus to complete final report in February; there will be a conference paper for Orlando.
• RTAR / Work Statement – 1740: “Hydrogen Fluoride Capacity of Desiccants” – MOTION #4: to approve the revision was made by Raymond Thomas & seconded by Debra Kennoy; motion passed 9-0-0. Alan Cohen, author (unable to attend meeting) was notified (February 6) to submit paperwork to ASHRAE.

• RTAR: “Determine Maximum Allowable Level of Impurities in HC (non-fluorocarbon) Refrigerant Systems”- continues to be on hold, per Rob Yost, await field feedback via trial specification set by AHRI-700.

• RP 1665 - “Reactivity of R-40” work statement to fast track research was approved. (There is a safety concern with the reactivity of R-40 contaminant in R-134a primarily with aluminum.) Data indicates reactivity from 100ppm to 5% levels. Final report is complete and paper to be issued.

• RTAR - “Distribution of Water between Vapor and Liquid Phases of Low GWP Refrigerants” was modified with title change and R-134a was added as control. Finalized version was submitted to committee members prior to Chicago and ready for TC approval per Brad Boggess author; TC 3.1, 3.2 & 3.4 co-sponsors. MOTION #5: to accept as written was made by Glen Steinkoenig & seconded by Bob Woods; motion passed 9-0-0.

• New RTAR -“In Situ Identification of R-40 in Remediation and its Degradation Products” was championed by Glen Steinkoenig. Committee decided to await feedback via TRP-1665 report first before pursuing. Alan Cohen posted on website. This continues to be on hold for now; ASHRAE to possible co-fund with AHRI.

• New RTAR – “Effect of Additive Residues in Retrofitted Equipment”: Chris Seeton to champion with Chris Reeves & Sonny Sundaresan to assist.

• New RTAR – “System Chemistry Effects in Wet CO2 Units”: Glen Steinkoenig to champion (TC 3.2 research topic; recommending co-sponsor via TC 3.3) with Chris Seeton & Marc Scancarello to assist, this is on hold for now.

• New RTAR – “Effects of Non-Condensable & Other Contaminants on Lowering the Efficiency/Capacity/Healthiness of Buildings”: Rob Yost to champion, this is on hold for now.

• New RTAR – “Breakdown of Lubricant at High Discharge Temperature”: Lix Dixon to champion was unable to attend meeting and this is on hold for now.

• MOTION #6: for TC 3.3 to co-sponsor a work statement following up to the work done in RP 1410 but including lower GWP refrigerants with TC 3.2 & 3.4 was made by Glen Steinkoenig & seconded by Rosine Rohatgi; motion passed 8-0-0; Chair not voting.

7) Webmaster – Alan Cohen

• Website is in compliance (http://tc33.ashraetcs.org) & up to date (as reported by Frank Nagy for Alan Cohen).

8) Membership – Frank Nagy

• Voting Members for current society year were reviewed (through June 30, 2015): Danny Halel, Rosine Rohatgi, Julie Majurin, Debra Kennoy, Glen Steinkoenig, Marc Scancarello, Joe Longo, Bob Woods, Ray Thomas, Alan Cohen & Alice Reimer-IM.

  *Voting Members to roll off at the end of this society year: Debra Kennoy.

  **Voting Members to roll on the upcoming society year: Joe Nigro & Rob Yost

• Committee positions for current & next society year were reviewed (through June 30, 2015): Julie Majurin (Chair), Rob Yost (Standards), Raymond Thomas (Research), Joe Nigro (Program & Vice Chair), Alan Cohen (Webmaster), Chris Reeves (Handbook) & Frank Nagy (Secretary & Membership).
9) Old Business

- None

10) New Business

- A new standard was proposed by Jay Field titled: “Standard for assuring Chemical Stability between Process Chemicals and the Lubricant and Refrigerant in a System.” The standard would be co-sponsored by TC 3.2 / 3.3 / 3.4 with the goal of having AHRI adopt a similar standard and establish compliance criteria for the industry. There will be further discussion on this in Atlanta as to whether this should be a guideline vs a standard.

- Jay Field is retiring after this meeting; Chair commended him for all his support over the years. He will be missed.

11) Adjournment- MOTION #7: to adjourn meeting was made by Glen Steinkoenig & seconded by Bob Woods; meeting adjourned at 4:37PM.

Respectfully submitted,

Frank Nagy
Secretary TC 3.3