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 June 2, 2011

TC/TG/TRG TITLE Refrigerant Contaminant Control

DATE OF MEETING February 1, 2011 LOCATION Las Vegas

<table>
<thead>
<tr>
<th>MEMBERS PRESENT</th>
<th>YEAR APPTD</th>
<th>MEMBERS ABSENT</th>
<th>YEAR APPTD</th>
<th>EX-OFFICIO MEMBERS AND ADDITIONAL ATTENDANCE</th>
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<tbody>
<tr>
<td>Danny Halel – Chair</td>
<td>VM</td>
<td>Kathrin Juch - IM</td>
<td>VM</td>
<td>Shelvin Rosen, Alan Cohen,</td>
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<tr>
<td>Ray Thomas - Research</td>
<td>VM</td>
<td>Eric Newberg - Handbook</td>
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<td>Glen Steinkeomig, Chris Reeves,</td>
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<td>Rosine Rohatgi</td>
<td>VM</td>
<td>Doug Gildehaus</td>
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<td>Tony Korba, Bob Woods</td>
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<td>Jorge Cabrera - Handbook</td>
<td>VM</td>
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<td>Dale Carr, Jay Field, Steve Kujak,</td>
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<td>Alice Reimer - IM</td>
<td>VM</td>
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<td>Maryline Rossi, Debra Kenney,</td>
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<td>Rob Yost –Vice Chair &amp; Standards</td>
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<td>John Senediak, Ray Cohen,</td>
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<td>Scott Gustafson</td>
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<td>Joe Longo, Knut Petryo,</td>
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<td>Sonny Sundaresan</td>
<td>VM</td>
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<td>Julie Majurin, Warren Clough,</td>
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<td>Joe Karnaz – Program</td>
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<td>Bianca Hydotksy, Hewitt Gaudin,</td>
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<tr>
<td>Frank Nagy - Secretary/Membership,</td>
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<td>Charles Stout, Bill Murphy,</td>
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<td>Kristen Ahrenstorf, Juan Flores,</td>
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<td>Rasmus Poulsen</td>
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DISTRIBUTION

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

<table>
<thead>
<tr>
<th>TAC Section Head:</th>
<th>Bill Murphy</th>
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<tbody>
<tr>
<td>TAC Chair:</td>
<td>Charles Wilkin</td>
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<td>TAC Vice-Chair:</td>
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All Committee Liaisons As Shown On TC/TG/TRG Rosters:

<table>
<thead>
<tr>
<th>Raymond Cohen – RAC</th>
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<tr>
<td>Cecily M Grzywacz – Handbook</td>
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<tr>
<td>Katherine G Hammack – Standards</td>
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<td>Stanley A Mumma – Special Pubs</td>
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<td>C Brian Wandleing – Program</td>
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<tr>
<td>Nancy J Mitchell-Veeck – CTTC</td>
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Manager Of Standards

Manager Of Research & Technical Services

Admin Asst – Technical Services

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

This form is available from ASHRAE Headquarters in Word.
1) Call to Order

Danny Halel (Chair), called the meeting to order at 3:37 pm on Tuesday February 1, 2011. The meeting was held at the Pavilion 1 (Hilton Hotel) room. After introduction of members and guests, a quorum was confirmed with 10/13 members present. There were no changes or additions to the minutes; MOTION to approve the minutes was made by Rob Yost and seconded by Rosine Rohatgi. Motion passed 9-0-0 (Chair Not Voting).

2) Report on TC 3.0 Chair Breakfast Meeting

At the Chairman’s Breakfast the following main points were made:

- Advise the Chair if you would like a letter thanking your manager and your company from the President of ASHRAE.
- ASHRAE continues to look for Research Projects.
- There are some new procedures for Programs, please refer to the website for these.
- Section 3 websites are all up to date, however, the best layed out and most up to date was TC 3.3.

Sub-Committee Reports

3) Program – Joe Karnaz

- No programs in Las Vegas.
- “Contaminant Control & Research” chaired by Rich Cavestri; MOTION to drop was made by Sonny Sundaresan & seconded by Alice Riemer passed 9-0-0 (Chair Not Voting).
- A seminar with co-sponsor TC 3.2 “Issues with CO2 refrigerant” chaired by Ken Lilje was tabled to Montreal with one presenter - Danny Halel.
- “Contaminant Control to Protect Expansion Devices & Effect of Oil Circulation in the Circulation of Contaminants in Refrigeration Systems” chaired by Sonny Sundaresan; MOTION to drop was made by Sonny Sundaresan & seconded by Alice Riemer passed 9-0-0 (Chair Not Voting).
- “History of System Chemistry Part II & Contaminant Control” chaired by Joe Karnaz was pushed out to future meeting; only one presenter to date - Sunny Sundaresan.
- “Contaminant Control in Transcritical Systems” chaired by Joe Karnaz; was tabled to Montreal for additional
- A seminar with co-sponsor TC 3.2 “Acid Number & Other Health Indices for System Chemistry” chaired by Sonny Sundaresan; TC will continue to support / looking for presenters.
- Future seminar for Chicago to be discussed in Montreal was “System Contaminant Control & Retrofits.”

4) Handbook – Jorge Cabrera

- Subcommittee meeting slated for Chicago for next revision (Chapter 6) due late 2013 (Members: Danny Halel, Sonny Sundaresan, Alan Cohen, Bob Woods, Jay Field).

5) Standards – Rob Yost

- SPC 35-92R – “Method of Test for Refrigeration Drying”
  Complete & published; per Jay Field, “Cudos to Chair - Alan Cohen.”
- SPC 63.1 – “Method of Testing Liquid Line Filter Driers”
Reaffirmed in 2004; subcommittee chair - Bob Woods to email members for review in Chicago (Members: Jorge Cabrera, Chris Reeves, Alan Cohen, Jay Field).

- SPC 63.2 – “Method of Testing Liquid Line Filter Drier Filtration Capacity”
  Reaffirmed in 2009; current with no action required.

- SPC 78 – “Method of Testing Flow Capacity of Suction Line Filters and Filter Driers”
  Reaffirmed in 2006; MOTION by Rob Yost to revise & seconded by Sonny Sundaresan passed 9-0-0 (Chair Not Voting). Juan Flores to chair subcommittee (with Sonny Sundaresan to help).

6) Research – Raymond Thomas

- RTAR 1495 – “Oil Effect on Moisture Distribution Coefficient in HFC’s” (Alan Cohen author): TC 3.2 and TC 3.4 to co-sponsor. This is an expansion of Refrigeration Handbook Chapter 6, Table 2 data for pure refrigerants revised by Research Project 1239. RTAR 1495 deals with the effect of oil when present. Project has priority number 1. RAC approved and going out for bids.

- New RTAR – “Effect of Unsaturated Fluorocarbon Contaminants on the Safety of HVACR Equipment” – was submitted and discussed at last meeting. The subcommittee is now working on it (Rob Yost, Ray Thomas and Steve Kujak).

- New RTAR-“Adsorbing HF into Desiccants” – Alan Cohen to write RTAR for discussion / possible vote in Montreal.

- New RTAR-“Breakdown of Lubricants at High Discharge Temperature in Transcritical Systems”- Sonny Sundaresan to write RTAR for discussion / possible vote in Montreal.

- Long Range RTAR’s:
  - “MOT for Capillary Tube Plugging”- Sonny Sundaresan needs more time to pursue write up; to be discussed in Montreal as to possible vote or drop consideration.
  - “Users Guide to System Chemistry Maintenance”- Sonny Sundaresan recommended to drop it.

7) Webmaster – Alan Cohen

- Website is in compliance and up to date on server (http://tc33.ashraetcs.org); Danny Halel gave kudos to Alan Cohen as having the best website in Section 3.

8) Membership – Frank Nagy

- Warren Clough, Tony Korba, Chris Reeves, Charles Stout & Juan Flores to be added as corresponding members.

9) Old Business

- None

10) New Business

- None

11) Adjournment-MOTION to adjourn meeting was made by Joe Karnaz & seconded by Rosine Rohatgi; meeting was adjourned at 5:05pm.

Respectfully submitted, Frank Nagy, Secretary TC 3.3