**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** TC1.10  
**DATE** Aug 18, 2016

**TC/TG/TRG TITLE** Cogeneration Systems

**DATE OF MEETING** June 28, 2016  
**LOCATION** St. Louis, MO

<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>
</tr>
</thead>
<tbody>
<tr>
<td>Dharam Punwani</td>
<td>2014</td>
<td>Sriram Somasundaram</td>
<td>2012</td>
<td>Jeongmin Ahn</td>
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<tr>
<td>Annette Dwyer</td>
<td>2014</td>
<td>Lucas Hyman</td>
<td>2014</td>
<td>Geoffrey Bares</td>
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<td>John Andrepont</td>
<td>2012</td>
<td></td>
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<td>Mahabir Bhandari</td>
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<tr>
<td>Blake Ellis</td>
<td>2015</td>
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<td>Pat Georghegan</td>
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<tr>
<td>Tim Wagner (web)</td>
<td>2015</td>
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<td>Ryan Micarek</td>
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<td>Harold Smith (web)</td>
<td>2012</td>
<td></td>
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<td>John Molnar</td>
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<td>Gearoid Foley (web)</td>
<td>2015</td>
<td>Shahid Naeem (web)</td>
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<td>Dragos Paraschiv</td>
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<td>Farzin Rad</td>
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<td>Bill Ryan</td>
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<td>Vishno Sreeram</td>
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<td>Richard Sweetser (web)</td>
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**DISTRIBUTION**

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

**TAC SECTION HEAD:** Dr Amir Joka  
**TAC CHAIR:** Dr Thomas M Lawrence

**ALL COMMITTEE LIAISONS AS SHOWN ON TC/TG/TRG ROSTERS:**

- Chapter Technology Transfer Chair: Mr Christopher G Phelan  
- Research Liaison: Prof Shinsuke Kato, PhD  
- ALI/PDC: Mr Cameron R Labunski, PE  
- Handbook Liaison: Mrs Annette Dwyer  
- Standard Liaison: Mr Dennis A Stanke  
- Staff Liaison: Mr Michael R Vaughn

**Manager Of Standards** Stephanie Reiniche  
**Manager Of Research & Technical Services** Mike Vaughn

This form is available from ASHRAE Headquarters in Word.
The TC 1.10 meeting was called to order by the Chair, Dharam Punwani, at 2:31 PM.

1. Chair Dharam Punwani welcomed all members and acknowledged the guests.

2. Self-introductions were made by all present. TC 1.10 has 9 Voting Members of which 6 were present, 3 in person and 3 through remote participation meeting. Hence, a quorum was established.

3. Secretary Dragos Paraschiv read the TC 1.10 mission statement.

   **Mission Statement:** TC 1.10 is concerned with cogeneration systems, their cycles, and components including heat recovery, energy conversion, and system integration. The systems provide both power (electric and/or shaft) and thermal energy (heating and/or cooling) and are variously known as cogeneration systems; trigeneration systems; combined heat and power (CHP); combined cooling, heating, and power (CCHP); and integrated energy systems (IES).

4. Copies of the draft minutes of the meeting held in Orlando, Fl were distributed to the attendees of the meeting. John Andrepont made a motion to approve the minutes of the meeting with the noted corrections. The motion was seconded by Annette Dwyer and approved (6, 0, 0, 3, CV).

5. Ms. Annette Dwyer, ASHRAE Handbook Liaison attended the meeting.

6. **Subcommittee Reports**
   a. **Programs:** Rich Sweetser

      **St Louis Program:**
      No technical sessions sponsored by TC1.10 at this conference.

      **Las Vegas Program:**
      Rich will present a seminar entitled “Past, Present and Future of CHP Systems in Mission Critical Facilities” with 3 speakers:

      - Dr. Bruce Hedman: Combined Heat and Power: A Robust, Efficient, Economical and Clean Solution for Critical Infrastructure, Microgrids and Resiliency

      Rich Sweetser made a motion to approve the seminar for Las Vegas, seconded by John Andrepont and approved (6, 0, 0, 3, CV). Rich to follow up with TC6.2 and 6.9 for a request to cosponsor.

      TC 6.2 has asked our committee to co-sponsor a seminar entitled “Enhancing Resiliency in Mission Critical Operations”, with a focus on district energy systems with examples than may include CHP and Thermal Energy Storage. TC 6.9 is also cosponsoring this seminar.

      John Andrepont made a motion to cosponsor the seminar proposed by TC 6.2, seconded by Gearoid Foley and approved (7, 0, 0, 2, CV) – Blake Ellis joined the meeting.
b. **Research:** Dragos Paraschiv

Dragos attended the research meeting on Monday and announced the following:
- 9 RTAR evaluated (1 accepted, 4 accepted with comments, 4 rejected)
- 10 WS evaluated (6 conditionally accepted, 4 returned)

**TC1.10 Research**

1762-RTAR Update the ASHRAE Design Guide for CTIC Systems:

The RTAR was approved by RAC for further development into a work statement (WS). Dragos Paraschiv, Geoff Bares representing TC6.9 and Jay Eldridge representing TC6.2 prepared a draft document that was sent to the ASHRAE Liaison for review. ASHRAE is requiring the TCs to list potential bidders in the WS, and the authors are looking for input from the TC 1.10 members. John Andrepont and Annette Dwyer offered to review the document in advance of the e-vote. The WS will be sent for an email vote in advance of the next RAC deadline on Aug 15, 2016.

Update the ASHRAE Design Guide for Absorption Cooling

TC1.10 approved in Orlando to co-sponsor an RTAR prepared by TC8.3 to update the Design Guide for Absorption Cooling. TC8.3 has rewritten the RTAR and resubmitted it to RAC

Development of Cogen/Trigeneration Tools for Building Designers

TC8.3 developed an RTAR on CHP simulation with eQuest and asking TC 1.10 for co-sponsorship. Dragos Paraschiv will represent TC1.10 as a co-author of the WS, and Gearoid Foley offered to assist as well. John Andrepont made a motion to vote that TC1.10 be a co-sponsor for the RTAR, seconded by Blake Ellis and approved (7, 0, 0, 2, CV).

c. **Handbook:** Dharam Punwani

Chapters 7&8 were included in the 2016 HVAC Systems and Equipment. Dharam asked the TC1.10 members to review these chapters and return suggestions for future changes.

Starting after this meeting Dr. Tim Wagner will be the Handbook Subcommittee Chair, and supervise the revision of Chapter 7. Geoff Bares will supervise the revision of Chapter 8.

d. **CTIC Subcommitteee:** Annette Dwyer

The status of the CTIC handbook chapter (Chapter 8) is discussed above. There are no Programs proposed for the Las Vegas meeting.

Research: The status of the CTIC Design Guide Update RTAR is discussed above.

Geoff Bares will take over the CTIC subcommittee chair position after this meeting.

e. **Membership:** Dharam Punwani

Dharam Punwani reported that currently we have nine (9) voting members. 5 members will end their term as voting members after this meeting: John Andrepont, Lucas Hyman, Dharam Punwani, Harold Smith and Sriram Somasundaram, and TC1.10 will be adding 5 new members: Geoff Bares, Dragos Paraschiv, Farzin Rad, Rich Sweetser, as well as Birol Kilkis as member non quorum.

After this meeting, Annette Dwyer will become Chair, Dragos Paraschiv – Vice Chair, Blake Ellis – Secretary / Webmaster and Tim Wagner - Handbook Subcommittee Chair.

All other subcommittee positions are staying the same.
f. **Web Site:** Dragos Paraschiv

Dragos reported that the TC 1.10 website was transferred to the new ASHRAE TC website template and is up to date. Please contact him with any suggestions for webpage contents.

g. **Honors & Awards:** Dharam Punwani

No nominations from TC1.10 at this meeting. Annette presented a Certificate of Recognition to Dharam Punwani for his contribution as the TC1.10 Chair.

h. **Standards**

**ASHRAE Standard 100**

Richard Sweetser presented an update on the Energy Efficiency Standard for Existing Buildings (Standard 100). SSPC 100 approved (13,0,0) for public review the source energy inclusion into the standard, but it will require an e-ballot for the members that were absent.

, which is technically unfair to mixed-fuel buildings (CHP and District Energy examples). He reported that SSPC 100 is dealing with the site/source energy issue, under the standard continuous maintenance process. SSPC 100 recognizes that CHP and district energy are problematic for the standard and is seeking solutions, but the process is slow.

**SPC204P:**

The SPC 204 Subcommittee is preparing a draft for public review.

7. **Chairman’s Overview and Report:** Dharam Punwani

Following the TC Chairs’ Breakfast Meeting the Vice-Chair reported the following highlights:

- 2016-2017 rosters are available
- Two New Multidisciplinary Task Groups have been created; MTG.IAST Impact of ASHRAE Standards and Technology on Energy Savings/Performance and MTG.OBB Occupant Behaviour in Buildings
- New TC website template: ASHRAE is looking for feedback or suggestions
- There is an updated TAC presentation template available for TC members to use with local chapters
- Additional TC email position aliases are now available

8. **Old Business:**

John Andrepont reported on IDEA activities: See the attachment to this document for his report.

9. **New Business:**

**Meeting Times for 2016 Winter Conference in Las Vegas:** (Tuesday – Jan 31, 2016)

TC 1.10 Handbook, Program, Research, CTIC, Membership Subcommittee 1:00 pm – 2:00 pm

TC 1.10 main meeting from 2:30 pm - 4 pm

**Adjourn**

John Andrepont moved that the meeting be adjourned. Blake Ellis seconded the motion and it was approved (7, 0, 2, CV).

Minutes prepared and respectfully submitted by Dragos Paraschiv, TC 1.10 Secretary.