

DRAFT
ASHRAE TC 1.10 COMMITTEE MINUTES
Virtual Meeting
June 16, 2020

The TC 1.10 meeting was called to order by the Chair, Dragos Paraschiv, at 1:30 PM (CDT).

- 1) Chair Dragos Paraschiv welcomed all members and guests and encouraged visitors to sign up as Provisional Corresponding Members.
- 2) Self-introductions were made by all present.
- 3) No liaisons were present.
- 4) TC 1.10 currently has seven (7) quorum Voting Members and one International Voting Non-Quorum Member of which five (5) were present. Hence, a quorum was established.
- 5) Chair Dragos Paraschiv read the TC 1.10 mission statement:

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

- 6) Approval of the Minutes
 - a) Copies of the draft minutes of the meeting held in Orlando, FL were made available through the TC 1.10 website for a number of weeks.
 - b) **MOTION** – Farzin Rad made a motion and Dharam Punwani seconded to approve the minutes of the Orlando Meeting. **The motion was approved. (4-0-1, CV)**

7) Subcommittee Reports

- a) Programs: Gearoid Foley (incoming subcommittee chair)
 - i) Virtual (Summer 2020) Program:
 - (1) Dharam presenting on CTIC Design Guide, June 22nd
 - ii) Chicago (Winter 2021) Program:
 - (1) A track is available for Energy Conservation. Seminar ideas were discussed during sub-committee meeting and will be formulated for a vote in Austin. Working title of seminar is, “Energy Conservation in a carbon constrained world: CHP is up to the task.” Content will address how CHP enables energy conservation.
 - iii) ? (Summer 2021) Program:
- b) Research: Farzin Rad (subcommittee chair)
 - i) There was discussion on the publication, “Fuel Cell In Building Applications,” which was last updated in 2002. ASHRAE Pubs has asked TC 1.10 to update. New authors have agreed to revise this publication as an academic contribution that would not require Research financial support (Ryan Milcarek, Farzin Rad, Dragos Paraschiv). Does TC 1.10 still want to sponsor publication?
 - ii) **MOTION** Farzin, John sponsoring revision of fuel cell in building applications **Motion Passes (5-0-0, CV)**

- iii) TC is actively soliciting input to revised content.
 - iv) The CTIC Design Guide approved for publication. Dharam stated manuscript is with Pubs and under review. He's presenting an overview of changes at the virtual conference (June 22nd). Two part seminar (updated design guide, case study example).
 - v) Discussed project titled "Cogeneration and trigeneration simulation modeling with eQuest" that is co-sponsored with TC 8.3. It is unknown what the current status of this project is. It was understood that a work statement was generated.
 - vi) Research topics under consideration:
 - (1) Hybrid micro-grid: micro-CHP with PV generation and battery storage
 - (2) Site vs. Source, GHG emissions
 - (3) Seamless control of flexible CHP (grid responsive)
 - (4) Discussed CHP and biogas scrubbing at waste water treatment facilities during sub-committee meeting.
- c) Handbook: Dragos Paraschiv
- i) Chapters 7 and 8 of the HVAC Systems and Equipment Volume have been published in the 2020 edition. Chapter 7 is titled "*Combined Heat and Power Systems*" and Chapter 8 is titled "*Combustion Turbine Inlet Cooling*".
 - (1) Chapter 7: Dragos Paraschiv volunteered to take on the Handbook Chair position for the next four year cycle.
 - (2) Chapter 8: With the completion of the Combustion Turbine Inlet Cooling (CTIC) Design Guide, the chapter will be reviewed to add design guide references and possibly integrate new content. Dharam Punwani agreed to take over as Handbook Chair for the next four year cycle. Dharam advocated for making the CTIC Technology Performance Tool available through the online handbook.
- d) Membership: Dragos Paraschiv (subcommittee chair)
- i) Dragos reported that there are 4 voting members rolling off after the summer meeting: Geoff Bares, Rich Sweetser, Farzin Rad and Dragos Paraschiv. New voting members will be Michael Calabrese (Webmaster, Secretary), Gearoid Foley (Programs), Dave Kalensky (Standards, SPC 204) and Blake Ellis (Chair, Membership, Honors & Awards). This maintains the number of voting members at seven (7), which is the minimum. Farzin Rad will continue as Research chair, Geoff Bares will move to Vice Chair and Dragos Paraschiv will move to Handbook Subcommittee Chair.
- e) Web Site: Geoff Bares (webmaster)
- i) Website is up to date. Meeting notes and agendas will be posted on the website.
- f) Honors & Awards: Dragos Paraschiv (subcommittee chair)
- i) No TC 1.10 members or past members received an award at this conference.
 - ii) Dec 1st is next deadline for submittal. Blake Ellis encouraged everyone to consider self-nominating for Distinguished Service or Extinguished Service awards.
- g) Standards Annette Dwyer (subcommittee chair) – *Report by David Kalensky*
- i) David Kalensky provided an update of SPC 204 (micro CHP – 50kW and under). This standard is still awaiting publication, but is in final review with ASHRAE Pubs. The standard will start a revision cycle in the near future to include topics and technologies that were not addressed in the original publication.

8) Chairman's Overview and Report: Dragos Paraschiv

Chair Dragos Paraschiv stated that we conduct our meetings in accordance with the ASHRAE Code of Ethics. The full code can be read at: <https://www.ashrae.org/about/governance/code-of-ethics>

Discussed TC reorganization. TC 1.10 was not affected by TC mergers in the last calendar year. Mergers now to be undertaken by TAC subcommittee.

Discussed whether this lays groundwork for doing subcommittee work via Zoom ahead of the Chicago meeting. Free up in-person time.

Strategic Plan is still in development.

9) Old Business:

- a) CHP Course: Lucas Hyman had previously developed a CHP ALI course. The course was last presented in Las Vegas in 2017. We will reach out to Lucas to consider presenting in 2022 (Winter, Las Vegas).

10) New Business:

- i) IDEA Update: The IDEA Liaison report was provided by John Andrepont and read by Dragos Paraschiv. See Attachment 1 to this document for his report.
- ii) DOE Update: No update available.
- iii) Next Meeting: Tentatively in Chicago at the Winter meeting on Tuesday Jan 26th. The subcommittees are scheduled for 1:30pm and the main TC meeting from 2:30pm – 4:00pm. Due to potential COVID-19 restrictions, meeting times and locations will be confirmed at a future date.
- iv) Blake Ellis thanked Dragos for his work as Chair the last two years.

11) Adjourn

- i) **MOTION** – Rich Molnar moved and Dharam Punwani seconded that the meeting be adjourned. The motion was approved **(4-0-0, CNV)**.
- ii) Meeting adjourned at 2:17pm.

Minutes prepared and respectfully submitted by Geoff Bares, TC 1.10 Secretary.

The screenshot displays a Zoom meeting interface. On the left, a document titled "TC0110_DraftMinutes_Virtual_20200616" is open, showing a list of agenda items for a meeting. The document text includes:

- The TC 1.10 meeting was called to order by the Chair.
- Chair Drago Paraschiv welcomed all attendees and corresponding members.
- Self-introductions were made by all present.
- No liaisons were present.
- TC 1.10 currently has seven (7) quorum votes, which five (5) were present. Hence, a quorum was present.
- Chair Drago Paraschiv stated that we could proceed with the meeting.
- Chair Drago Paraschiv read the TC 1.10 minutes.
- Mission Statement: TC 1.10 is concerned with components including heat recovery, combustion integration. The systems provide both power and cooling and are variously known as cogeneration (CHP), and combined cooling, heating and power (CCHP).
- Approval of the Minutes
 - Copies of the draft minutes of the meeting will be posted on the TC 1.10 website for a number of weeks.
 - MOTION: Rich Sweetser made a motion to approve the minutes. The motion was approved.
- Subcommittee Reports
 - Program: Genesid Foley (incoming member) presented on the following:
 - Virtual (Summer 2020) Program.
 - Dharam presenting on CTC D (Chicago Winter 2020) Program.
 - A track is available for Energy meeting and will be formulated. Cooperation is a carbon cost.

The Zoom chat window on the right shows a list of participants (10) and a group chat message from Niche Mittal: "Hi everyone- It around midnight at my location- India- hence leaving the meeting now. Thanks". Other chat messages include a private message from Drago Paraschiv and a message to everyone from Drago Paraschiv regarding the start time of the main TC1.10 meeting.

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