

**AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR-CONDITIONING ENGINEERS, INC.
404-636-8400**

TC/TG/MTG/TRG MINUTES COVER SHEET

(Minutes of all Meetings are to be distributed to all persons listed below within 60 days following the meeting.)

TC/TG/MTG/TRG No: TC 6.9

DATE: Monday, June 29, 2015

TC/TG/MTG/TRG TITLE: Thermal Energy Storage

DATE & LOCATION OF MEETING:

Monday, June 29, 2015

Atlanta, GA

MEMBERS PRESENT	YEAR APPTD	MEMBERS ABSENT	YEAR APPTD	EX-OFFICIO MEMBERS AND ADDITIONAL ATTENDANCE*
John Lau	2013	Chris Mincey	2013	Ken Fulk - CM
John Dunlap	2011	John Andrepont	2011	Blake Ellis - CM
John Nix	2013	Paul Steffes	2012	Brian Silvetti - CM
Henry Becker	2013			Farzin Rad - CM
Scott Shaffer	2012			Trent Hunt - CM
Harshal Upadhye	2012			Ivan Thomas - CM
Guy Frankenfield	2011			Ayyoub M. Mamen - CM
Jeff Kane	2013			Geoff Bares - CM
John Filler	2012			Mikelann Scerbo - G
Mark McCracken	2013			M-A Leove - G
				Ed Saribay - G
				Ben Bell-Walker - G
				Jerry Casey II - G
				*Please note that approximately 25 other Ex-Officio members were also in attendance but did not sign-in.

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

TAC Section Head:	Mark Hegberg
TAC Chair:	Guy Frankenfield of DN Tanks
ALL COMMITTEE LIAISONS AS SHOWN ON TC/TG/MTG/TRG ROSTERS:	Chris Mincey of Crom - Programs
	John Lau of BAC - Handbook
Manager Of Standards	John Filler of Trane
Manager Of Research & Tech. Services	Brian Silvetti of Calmac

ASHRAE TC 6.9 – Thermal Storage - General Meeting

Meeting Minutes – Room 203, Atlanta Hilton
Atlanta, GA

Monday, June 29, 2015
4:30 – 6:00 PM

1. Preliminaries

- a. The meeting was called to order at 4:30 PM by Guy Frankenfield, Chair.
- b. Several weeks prior to the meeting, the agenda was posted on the TC 6.9 webpage and emailed to all TC 6.9 members.
- c. Several months before this meeting, the prior meeting minutes were posted on the TC 6.9 webpage.
- d. The Purpose Statement is posted on the TC 6.9 webpage.
- e. Roll call was taken and 10 of the 13 voting members were present including the Chair.
- f. Everyone in attendance (including guests) was given the opportunity to introduce themselves. The Chair noted that in order to become a Corresponding Member, contact the Chair with your ASHRAE identification number.
- g. No modifications to the agenda were suggested.

2. Approval of Minutes

- a. The minutes from the Winter Meeting in Chicago, IL were posted on the TC 6.9 website within 30 days of that meeting, and available to all members.
- b. There were no suggested changes to the minutes.
- c. John Nix made a motion to approve the minutes. Jeff Kane seconded the motion. The motion was approved unanimously by a vote of 9-0-0 (Chair not voting, CNV).

3. Announcements by Chair – Guy Frankenfield

- a. Chair Frankenfield reported on the Section 6 Breakfast Meeting.
 - During the meeting, a question was raised as to whether TCs are doing anything in the near future to benefit the residential sector. Paulo Tabares noted his plans to write an RTAR that would involve taking a more holistic view of thermal energy storage systems in residential buildings. This RTAR may be upcoming for review by the Research Subcommittee in the future. Other than Paulo Tabares' suggestion, no other suggestions were raised regarding the residential sector.
 - The Section reported that the website will become easier to update in the future as a new website format is implemented.
 - The Section reported that seminar proposals for the Winter Orlando Conference are due by August 10, 2015.
 - The Section reported that about ten TCs will attempt to conduct their meetings via web conference during the Summer 2015 Conference. TC 6.9 will still conduct an in-person meeting. The Section noted that the web conference option may be useful to TCs that have trouble reaching quorum.
 - The Section encouraged Hightower Award nominations to be submitted to the Section Head by the due date of September 1, 2015.
 - The Section noted that ASHRAE will be offering to send a Thank You Letter to be sent to your employers for working on subcommittees.
 - The Section reported that several new tracks will be included in the Summer 2016 St. Louis Conference, including a Renewable Energy Systems track which may be of interest to TC 6.9.

4. Liaison Reports

- a. Professional Development Committee (John Nix)
 - Doug Reindl is prepared to present a four-hour seminar on renewables integrated with thermal storage systems. The Professional Development Committee did not choose TC 6.9's submittal at their meeting today. However, John Nix will suggest that TC 6.9's submittal be selected in the near future.
- b. The Section 6 TC Section Head (Mark Hegberg) was not present.

- c. ASME has an initiative to look at methodologies for specifying and commissioning energy storage systems.
 - John Lau is TC 6.9's liaison to ASME's effort. Members Ken Fulk, Brian Silvetti and Geoff Bares are also receiving information regarding ASME's initiative.
 - ASME is still determining the scope of this effort. A summit is to take place in San Diego this week (29-Jun-2015).

5. Handbook – John Lau

- a. Chapter 51 of the ASHRAE Handbook is currently in the third year of the four year cycle. The HVAC Systems & Equipment Handbook Revision Update is due in 2016.
- b. The Handbook Subcommittee is ahead of schedule to publish the revised Chapter 51. The completed revision was voted on and approved unanimously in Chicago for submission. The revised draft has been submitted to the Handbook Chapter Liaison. The liaison has already submitted the draft to the ASHRAE editor. The following additions and revisions to Chapter 51 have been completed:
 - Sustainability, grid reliability, renewable power
 - Heating thermal storage
 - Electrical thermal storage supporting grid integration
 - Emergency cooling by incorporating research results from RP-1387 and help from Paul Steffes
 - TES commissioning
 - Water treatment for TES with help from Henry Becker
- c. TC 6.9 is now soliciting a volunteer for Chair of the Handbook Subcommittee for the next four year cycle.
- d. John Lau was sincerely thanked for completing revision of the Handbook Chapter early.

6. Programs – Chris Mincey was absent. Geoff Bares pinch hit for Chris Mincey for this meeting.

- a. Section Breakfast report from Conferences and Expositions Committee (CEC).
 - CEC reported that ASHRAE will start allowing non-ASHRAE members to participate as guest speakers without having to pay the conference fee.
 - A new bias disclosure statement will be included in seminars. More information is upcoming on what the disclosure statement will entail and when it will start being implemented.
 - The CEC is actively seeking suggestions for tracks as well as suggestions for presentation formats for the Summer 2017 Long Beach Conference.
- b. Review of Past Programs (Chicago, IL – Winter 2015)
 - Two seminar proposals were submitted for Chicago but both were rejected. The Programs Subcommittee is looking for another opportunity to submit these proposals as both the content and volunteers for the seminar proposals are great.
 - CEC noted that there is heavy competition for seminars as less than 50% of proposals are accepted. Reaching out to the Track Chairs to receive feedback on proposals can help acceptance chances.
- c. Current Programs (Atlanta, GA – Summer 2015)
 - Seminar titled “Method of Testing the Performance of Cool Storage Systems” – Standard 150 will be presented on Wednesday, July 1 at 9:45 a.m. in Salon A by John Nix and Lucas Hyman.
- d. Future Programs (Orlando, FL – Winter 2016)
 - Mark MacCracken made a motion to move forward with the following two seminars to be submitted for the Winter 2016 Orlando conference on the Cutting Edge Technologies Track. The motion was seconded by Mike Filler, and approved unanimously by a vote of (9-0-0) with the chair not voting. The two submittals involved:
 1. Rework of thermal energy storage systems and interacting with renewable energy, to be presented by Mark MacCracken, Paul Steffes, John Andrepont (or Guy Frankenfield), and Doug Reindl with Lucas Hyman as the Chair.
 2. Case studies of different types of thermal energy storage systems, fundamentals and applications. There are many thermal energy storage installations in Florida, and the Program Subcommittee is currently looking for building owners local to

Florida to come to ASHRAE to discuss their facility. Members will contact local building owners to find potential participants in this seminar. John Nix will Chair this seminar.

- Another idea discussed and to be considered in the future involves thermal energy storage systems and water conservation.

7. Standards – Mike Filler

- a. Standard 94.2, Method of Testing Thermal Storage Devices with Electrical Input and Thermal Output Based on Thermal Performance
 - This standard was released in 2010. SPC 94.2 agreed in 2013 to revise the standard. The first revision meeting was held this morning.
 - SPC 94.2 is soliciting more committee member volunteers, preferably manufacturers or users of the standards, to help with the standard revision.
 - A conference call will be scheduled in the next thirty (30) days (details to be posted on the website) to develop a work plan and current scope.
- b. Standard 150, Method of Testing the Performance of Cool Storage Systems
 - This standard was reaffirmed in 2004. SPC 150 has been working on revisions since 2008. The latest revision meeting was held on Sunday, June 28, 2015. Eight members are on SPC 150.
 - John Nix attended the Standards Project Committee (SPC) meeting. The SPC requested completion of the standard within the next 18 months.
 - The delay in completion of the standard is partly because the standard is based on field testing which is time consuming. Field testing involves measuring capacity, ton-hours, and a system's ability to handle the critical point of high discharge and high peak.
 - SPC 150 is 75% through reviewing the standard with comments. A conference call will be scheduled for next month. The goal is to have the standard out for public review by the end of 2015.
 - Members noted the need to keep the standard intact and to also include proper descriptions of how the standard is to be used. The appropriate cost associated with using the standard needs to be accounted for.
- c. Standard 100, Energy Efficiency in Existing Buildings
 - TC 6.9 does not contribute to the revision of this standard, but this standard may affect TC 6.9. Mike Filler will give a liaison report at the next meeting.

8. Research – Brian Silveti

- a. TRP-1607 – Utilization of TES / Renewable Energy Resources
 - The University of Wisconsin took on this research task and activity is underway.
 - The near term issue requires that the Project Monitoring Subcommittee (PMS) needs to determine which two building types to study.
 - Doug Reindl updated the Research Subcommittee with low profile information for series potentials for buildings.
 - A formal PMS meeting will be scheduled to discuss the research project in Orlando.
- b. Work statement (WS) 1716 – Design Guide for Cool Thermal Storage – Revision
 - Jeff Kane, Chris Mincey, and Verle Williams have all volunteered to assist with the revision of this work statement.
 - Brian Silveti is trying to identify which areas in the design guide need corrections. For instance, throughout the design guide, chapters are referenced that do not exist anymore. The revision will need to deal with how to reference constantly changing material.
 - The revision group should consider expanding the commissioning section.
- c. RTAR with TC 1.10 and 6.2 – Design Guide for Combustion Turbine Inlet Cooling Systems (TC 6.9 is a co-sponsor)
 - A volunteer is needed to take John Andrepont's place on TC 1.10. Geoff Bares volunteered to take the place if necessary. John Andrepont will continue to serve on TC 1.10 as long as he is able.
 - John Andrepont is working on this RTAR. A letter ballot may be emailed to speed to process.
- d. RTAR 1752 - Guidelines for Avoided Electric Generation/Source Energy Consumption due to Waste

Heat Recovery and Heat Pump Technologies

- A new Multidisciplinary Task Group (MTG) was formed to produce this RTAR. TC 6.9 has agreed to support the MTG.
 - Carrie Smith of TC 6.8 is organizing this MTG effort. Meetings will take place via conference call.
 - Mike Filler volunteered to be a voting member for TC 6.9 on this MTG with Guy Frankenfield as an alternate.
 - Brian Silveti motioned to have TC 6.9 support the new MTG. Mike Filler seconded this motion. The motion was approved unanimously by a vote of 8-0-0 (Chair not voting, CNV, and John Lau had to leave the meeting by this time).
- e. New MTG for operations and maintenance and its impact on energy efficiency
- Let the Chair know if you are interested in participating on this MTG as soon as possible.
 - The purpose of this MTG is to help support the applications of ASHRAE guidelines and standards for regulatory bodies, utilities, building owners, etc. The MTG will encourage research on maintenance and its impact on energy efficiency in order to help provide advice on building efficiency enhancements.
- f. RTAR / URP Concept – Residential TES
- Paulo Tabares has expressed interested in submitting an RTAR or Unsolicited Research Proposal to complete research on residential applications of TES he performed at NREL.
 - Although ASHRAE and committee interest in pursuing this research is undetermined, Paulo agreed to develop an RTAR for review.

9. Long Range Planning/Website – Guy Frankenfield

- a. Mike Filler has volunteered to be the webmaster.
- b. Currently there are 13 voting members but three people will be rolling off on July 1. Guy Frankenfield reported next year's roster list of fourteen members:
- Geoff Bares, Chair
 - John Lau
 - Chris Mincey
 - Mike Filler
 - John Nix
 - Henry Becker
 - Blake Ellis
 - Ken Fulk
 - Jeff Kane
 - Mark MacCracken
 - Larry Markel
 - Scott Schaffer
 - Paul Steffes
 - Harshal Upadhye
- c.

10. Honors and Awards – Mike Filler

- a. Over 100 members were honored at the awards presentation on Saturday, July 27.
- b. Mike Filler encouraged everyone to keep their ASHRAE biographies current.
- c. Nominees can complete a self-nomination form for distinguished service awards.
- d. The Hightower Tech Achievement Award is given to members with great service on TCs, particularly members who have done work on multiple committees or were Chairs. Send nominations to Mike Filler. Include information on the last four years of service in the nomination. The awards are given out based on a points system.
- Lucas Hyman recommended that John Nix be nominated for the Hightower Tech Achievement Award.

11. Old Business

- a. No old business.

12. New Business

- a. Although John Andrepont was unable to attend today's meeting, members heartily expressed their thanks for John Andrepont's dedicated efforts through the years on TC 6.9. He was celebrated with an enthusiastic round of applause.
- b. Sincere thanks was also given to Guy Frankenfield for his term as Chair of TC 6.9. John Nix noted that the strength of this committee is largely due to the continuity and willingness to volunteers of its members.
- c. A question was asked as to whether a workshop on thermal storage equipment took place at this conference.
- d. Lucas Hyman announced that he is taking an early retirement and will no longer be an active member of TC 6.9. Lucas is a former chair and has been highly active in the committee for many years. The members thanked Lucas for his service.

13. Adjournment – Motion by Jeff Kane to adjourn, seconded by Scott Schaffer. Meeting adjourned at 5:40 PM.