



1791 Tullie Circle, N.E./Atlanta, GA 30329
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 6.2

DATE: June 28, 2016

TC/TG/MTG/TRG TITLE: District Energy

DATE OF MEETING: June 26, 2016

LOCATION: St. Louis, MO

MEMBERS PRESENT	YEAR APPTD	MEMBERS ABSENT	YEAR APPTD	EX-OFFICIO MEMBERS AND ADDITIONAL ATTENDANCE
Jay Eldridge	6/30/2014	Lawrence Markel	6/30/2015	Alan Neely
Drew Overmiller	6/30/2013	Chris Paraskevacos	6/30/2013	Geoffrey Bares
Steve Severini	6/30/2013	Gary Phetteplace	6/30/2012	Jessica Mangler
John Andrepont	6/30/2013			Art Giesler
				Parham Eslami Nejad
				William Ryan
				John Molnar
				Steve Tredinnick
				Tim Anderson
				Jim Young
				Mike Case
				Mark Menzer
				Ryan Mallory
				Den Low
				Darryl DeAngelis
				Andrew Dubel
				Dragos Paraschiv
				Verle Williams



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DISTRIBUTION: <i>All Members of TC/TG/MTG/TRG plus the following:</i>	
TAC Section Head:	SHx@ashrae.net Where x is the section number
All Committee Liaisons As Shown On TC/TG/MTG/TRG Rosters (Research, Standards, ALI, etc.)	See ASHRAE email alias list for needed addresses.
Mike Vaughn, Manager Of Research & Technical Services	MORTS@ashrae.net



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ACTIVITIES SHEET
ASHRAE TC 6.2 DISTRICT ENERGY
Sunday, June 26, 2016 St. Louis, MO

Chairman: Drew Overmiller
Vice-Chair: Alan Neely
Secretary: Steve Severini

TC 6.2 Meeting Schedule:

Location Past 3 Meetings	Location Next 3 Meetings
Orlando, FL January 2016	Las Vegas, NV January 2017
Atlanta, GA June 2015	Long Beach, CA June 2017
Chicago, IL January 2015	Chicago, IL January 2018

TC 6.2 Sub-Committees:

Committee	Chair
Handbook	Steve Tredinnick
Membership	John Andrepont
Program	Tim Anderson
Research	Jay Eldridge
Standards	(open)
ALI Coordinator	Chris Paraskevakos
Webmaster	Jessica Mangler

Research Projects

None current.

Technical Papers from Sponsored Research:

None current



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ACTIVITIES SHEET (Continued)
ASHRAE TC 6.2 DISTRICT ENERGY
Sunday, June 26, 2016 St. Louis, MO

TC 6.2 SPONSORED SEMINARS, FORUMS, AND WORKSHOPS (Past three years and this meeting)

Year	Location	Topic
2013, June	Denver	<i>Seminars 19 and 27:</i> The New ASHRAE District Heating and District Cooling Design Guides, Parts 1 and 2 (1267-RP).
2014, January	New York	<i>Seminars 6, 16, and 17:</i> Efficient Technologies That Are Also Economically Sustainable, Parts 1, 2 and 3: District Energy and Complementary Options. (co-sponsored with TC 1.10 Cogeneration Systems and TC 6.9 Thermal Storage)
2014, June	Seattle	<i>Workshop 11:</i> Achieving High Delta-T: Keys to High Performance District Energy Systems
2015, January	Chicago	None
2015, June	Atlanta	None
2016, January	Orlando	<i>Seminar 47:</i> The Campus Planning Question: To Centralize Energy or Decentralize?
2016, June	St. Louis	<i>Forum 4:</i> To Centralize or Decentralize a Thermal Energy System: The Great Debate Continues

TC 6.2 SPONSORED TECHNICAL PAPER SESSIONS AND CONFERENCE PAPER SESSIONS

(Past three years and this meeting)

Year	Location	Topic
2013, June	Denver	None
2014, January	New York	None
2014, June	Seattle	<i>Technical Paper Session 5:</i> Theoretical and Real World Application of Energy Saving Techniques (co-sponsored with TC 6.05 Radiant Heating and Cooling)
2015, January	Chicago	None
2015, June	Atlanta	None
2016, January	Orlando	None
2016, June	St. Louis	None



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Journal Publications: (Past three years)

1. Tredinnick, S., Wade, D., Phetteplace, G. July 2015. "District Energy Enters the 21st Century".



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Voting is recorded in a format (In Favor – Against – Abstentions) and is based on voting members present.

1. Call to Order:

Chair Drew Overmiller called the meeting to order at 3:00 PM. Drew opened the meeting by stating the scope of TC 6.2 District Energy:

Technical Committee 6.2 is concerned with district energy technology and integrated systems that provide one or more forms of thermal energy or a combination of thermal energy and electric power from a central plant(s) to meet the heating, cooling, or combined thermal energy and power needs of end-users in two or more structures. The TC collects and disseminates information on regional resource planning including the design, performance, economic analysis, operation and maintenance of central plants, distribution networks, and consumer limited to materials, construction methods, heat transfer, fluid flow, and measurement. The scope of the TC includes the development and assessment of associated technologies for energy use sections.

All attendees were welcomed. Self-introductions were made. An agenda was distributed and an attendance sheet was circulated and signed by attendees. See attached copies. The following voting member attendance and end of current term were noted:

Mr. Lawrence Markel	6/30/2019	Not Present
Mr. Jay Eldridge	6/30/2018	Present
Mr. Steve Severini	6/30/2017	Present
Mr. John Andrepont	6/30/2017	Present
Mr. Drew Overmiller	6/30/2017	Present
Mr. Christian Paraskevacos	6/30/2017	Not Present
Mr. Gary Phetteplace	6/30/2016	Not Present

With 4 of 7 voting members in attendance, a quorum is present.

2. Visitors & Reports/Information from other Committee Representatives:

Drew gave the floor to any committee representatives. None were present.

3. Approval of the Orlando January 2016 Meeting Minutes:

Four corrections were noted by the membership. John Andrepont moved to approve the minutes, as corrected. Second by Drew Overmiller. The motion passed with a vote of 4-0-0.

4. Announcements by Chair:



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Drew attended the Section 6 breakfast earlier this day and noted the following discussion items:

A. Section 6 Breakfast:

- i. Conferences & Expositions Committee (CEC)
 - (1) 2017 Las Vegas, NV
 - (a) Conference Papers are due July 8, 2016
 - (b) Seminar, Forum, and Workshop proposals are due August 8, 2016
 - (c) Confex opens for presentation uploads is December 2, 2016
 - (d) All presentations are due online January 2, 2017
 - Track 1: Systems and Equipment; Track Chair: Chuch Curlin (ccurlin@shultzeg.com)
 - Track 2: Fundamentals and Applications; Track Chair: Michael Collarin (Michael.Collarin@parsons.com)
 - Track 3: Water-Energy Nexus; Track Chair: Gary C. Debes (gcdebes@verizon.net)
 - Track 4: Commercial and Industrial IAQ; Track Chair: Kevin Marple (kmarple@benzco.com)
 - Track 5: Mission Critical Design and Operation; Track Chair: Carrie Anne Crawford (carriecrawford@eeace.com)
 - Track 6: Effects of Climate Change on HVAC&R; Track Chair: Rocky Alazazi (mrалazazi@yahoo.com)
 - Track 7: Energy Efficient Industrial Buildings; Track Chair: Corey Metzger (corey.metzger@resourcece.com)
 - Track 8: Building Operations and Performance; Track Chair: Cynthia Moreno (cindym@tmmechanical.com)
 - (2) 2017 Long Beach, CA
 - (a) Conference Papers Abstracts Due August 29, 2016
 - (b) Conference Papers are due December 9, 2016
 - (c) Seminar, Forum, and Workshop proposals are due February 6, 2017
 - (d) Confex opens for presentation uploads is May 1, 2017
 - (e) All presentations due online June 2, 2017
 - Track 1: Fundamentals and Applications; Track Chair: Frank Schambach (frankschambach@mindspring.com)
 - Track 2: HVAC&R Systems and Equipment; Track Chair: Jennifer E. Leach (pennst8jen@yahoo.com)
 - Track 3: Refrigeration; Track Chair: Vikrant Aute (vikrant@umd.edu)
 - Track 4: Building Life Safety Systems; Track Chair: Robert Alan Neely (alan_neely@pghcorning.com)



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- Track 5: Controls – Smart Building Systems and the Security Concerns as Technology Emerges; Track Chair: Melanie Derby (derbym@ksu.edu)
 - Track 6: Commissioning – Optimizing New and Existing Buildings and their Operation; Track Chair: Dennis Alejandro (denzjac@yahoo.com)
 - Track 7: Zero Net Energy Buildings – The International Race to 2030; Track Chair: Jason DeGraw (jason.degraw@nrel.gov)
 - Track 8: Residential Buildings – Standards Guidelines and Codes; Track Chair: Kimberly Pierson (kdpwildcat@gmail.com)
 - Track 9: Research Summit; Track Chair: Ann Peratt (ann.peratt@gmail.com)
- (3) Program Statistics for St. Louis
- (a) Conference Papers
 - (i) 130 abstracts submitted, 124 approved
 - (ii) 84 papers received
 - (iii) 71 presented
 - (iv) 22 sessions
 - (b) Technical Papers
 - (i) 60 received
 - (ii) 28 presented
 - (iii) 9 sessions
 - (c) Seminars
 - (i) 116 submitted
 - (ii) 64 presented
 - (d) Workshops
 - (i) 10 submitted
 - (ii) 8 presented
 - (e) Forums
 - (i) 12 submitted
 - (ii) 4 presented
- (4) TC Opportunities
- (5) Speaker Ratings: 12 Orlando speakers received ratings below 3.5 out of 5.0
- (6) Presentations: Ongoing issue with presentations being uploaded for commercial review prior to conference (30 sessions not uploaded by deadline for St. Louis & 11 not uploaded before June 24th with 9 of these sponsored by TCs). CEC implementing a 3 strike policy for speakers.
- (7) CEC Call for Reviewers: 2017 Winter Conference and others. Contact Tiffany Cox (tc Cox@ashrae.org) and copy TC Chair & Vice Chair
- (8) New program types starting at 2017 Annual Meeting in Long Beach



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- (a) Panel Discussion - 3-4 speaker panel with each addressing a facet of the session topic followed by an interactive discussion lead by chair. 60 or 90 minutes.
- (b) Debate – highlight hot-button issues faced by membership. 60-90 minutes in length.
- B. Multidisciplinary Task Groups (MTGs)
 - i. 2 new MTGs
 - ii. MTG.IAST – Impact of ASHRAE Standards and Technology on Energy Savings/Performance; Chair – Dan Pettway
 - iii. MTG.OBB – Occupant Behavior in Buildings; Chair – Tianzhen Hong
 - iv. 10 total MTGs
 - v. TC contact Mike Vaughn (MORTS@ashrae.net) if TC would like to have a voting representative on a particular MTG.
 - vi. Potential MTG: MTG.ACR (Air Change Rate)
- C. New restructured TC Manual of Procedures (MOP) to be issued after St. Louis meeting. A new TC meeting minutes cover sheet is now available.

5. Liaison Reports:

- A. ALI: No report.
- B. DOE: No report.
- C. IDEA: John Andrepont provided the following report.
 - i. The International District Energy Association (IDEA) is an industry association of over 2,000 members. The membership includes District Energy (Thermal) Utilities; Physical Plant and Utilities Personnel from University, Medical, and other District Energy Facilities; Equipment Manufacturer/Suppliers; Service Providers to the Industry; other District Heating & Cooling Associations; plus Government, Student, and other Personal members.
 - ii. IDEA has two major conferences each year (one focused on campus District Energy systems and one focused on thermal utility systems), as well as smaller workshops on subjects such as marketing and thermal distribution, plus occasional regional-focused conferences. Each major conference also focuses on integrating Combined Heat & Power (CHP) and Thermal Energy Storage (TES) with District Energy.
 - iii. Upcoming IDEA conferences include:
 - 2016 International District Cooling Conference (sponsored by Empower)



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- November 13-15, 2016 – Dubai, UAE
- 30th Annual Campus Energy Conference
February 20-24, 2017 – Miami, Florida
- 108th Annual District Energy/CHP Conference and Trade Show
June 26-29, 2017 – Scottsdale, Arizona

iv. For further information on IDEA, contact:

Rob Thornton, President
IDEA
24 Lyman Street, Suite 230
Westborough, Massachusetts 01581

tel: 508-366-9339
fax: 508-366-0019
e-mail: rob.idea@districtenergy.org
website: www.districtenergy.org

6. Sub-Committee Reports

A. Handbook: Steve Tredinnick (Chair)

Steve reported that the District Energy chapter (Chapter 12) for the 2016 Systems and Equipment Handbook has been published. For 2020, we will include updated heat transfer equations and some other enhancements.

In the future, ASHRAE will be performing chapter edits electronically, using Microsoft SharePoint or Google Docs.

TC 6.1 Hydronic and Steam Equipment and Systems has asked that TC 6.2 take over responsibility for Chapter 15 of the Systems handbook, which is Medium- and High-Temperature Water Heating. Steve is looking for volunteers to assist with editing this chapter, particularly if you have MTHW experience.

B. Membership: John Andrepont (Chair)

It was noted that we currently have 7 voting members, with appointed dates as mentioned previously (see Item 1). Following this meeting, one voting member will roll off, and 3 new voting members will become active. The new voting members are:

<u>Name</u>	<u>Appointed</u>
Alan Neely	July 1, 2016



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Geoffrey Bares
Jessica Mangler

July 1, 2016
July 1, 2016

Any corresponding member is encouraged to become a voting member. Any guest is encouraged to become a provisional corresponding member. Anyone interested should inform Drew Overmiller (Chair) and provide their ASHRAE number in the correspondence.

C. Programs: Tim Anderson (Chair)

St. Louis June 2016 (this meeting): we are sponsoring Forum 4 to be held Wednesday at 9:45 am: To Centralize or Decentralize a Thermal Energy System: The Great Debate Continues.

Las Vegas January 2017 meeting: two options were discussed:

- A. Track 3 "Water-Energy Nexus". We will be making a forum submission. Preliminary title is "Alternate Methods for Water Conservation in District Energy Systems". TC8.6, Cooling Towers and Evaporative Condensers will be co-sponsor.
- B. Track 5 "Mission Critical Design and Operation". We discussed a seminar with preliminary title "Enhancing Resiliency in Mission Critical Operations" with emphasis on district systems as the means for enhancement. Geoff Bares will request co-sponsorship from TC 6.9, Thermal Storage. John Andrepont will request co-sponsorship from TC1.10, Cogeneration Systems. Tim Anderson will be the coordinator. John Andrepont moved that we pursue this seminar. Second by Jay Aldridge. The motion passed with a vote of 4-0-0.

Long Beach June 2017 meeting: the tracks are very focused. There is not much opportunity for district energy topics. Track 1 "Fundamentals" and 2 "HVAC&R Systems and Equipment" are the most general, but because of that will be the most competitive. Track 6 "Commissioning" is a possibility. We will discuss further in Las Vegas.

Chicago January 2018 meeting: John Andrepont suggested a topic designed to educate attendees on the total cost of ownership of local building source equipment (chillers, boilers, etc.) with comparison to connection to a district energy system. This would be targeted for a Winter meeting due to better attendance. We will discuss further in Las Vegas.



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- D. Standards: TC 6.2 is not responsible for any published Standards. No discussion.
- E. Webmaster: Jessica Mangler
Jessica has organized our meeting minutes on the website. We are missing minutes from couple of meetings from the distant past. Email aliases have been updated.
- F. ALI Liaison: Chris Paraskevacos – not present
No discussion.
- G. Research: Jay Eldridge (Chair)
TC 1.10 Cogeneration Systems has requested that TC6.2 co-sponsor a Combustion Turbine Inlet Cooling Design Guide Update. An RTAR has been approved. The work statement is nearly complete, per Dragos Paraschiv. Once complete, Jay Aldridge will distribute to members for an electronic vote regarding co-sponsorship.

Research ideas presented include:

- Guide for installing underground plastic piping, such as PEX.
- Conversion of steam systems to hot water, particularly the aspect of air handling unit coil conversion/replacement.

7. Old Business:

Regarding SSPC 100, Steve Tredinnick noted that there has been no action since Orlando (January 2016). For information, SSPC 100 was formed in part to discuss the reaction that the calculation procedure used in Standard 100 "Energy Efficiency in Existing Buildings" is flawed. As previously discussed in TC6.2 meetings, Standard 100 uses "site energy" which unfairly treats district energy systems. Steve noted an example where a building with a high-efficiency chiller in it can comply, but the same chiller installed across the street now causes the exact same building to fail.

Alan Neely has been appointed TC 6.2 vice chair.

8. New Business

Drew noted that micro-grids have not been discussed in TC 6.2. Our scope does include "electric power from a central plant" to meet the "power needs" of end users. Cogeneration/CHP are micro-grids and there are plenty of success stories to be told. Attendees felt micro-grids is a worthwhile topic for future TC 6.2 activities.

9. Meeting Adjournment:

- John Andrepont moved for adjournment. Second by Jay Eldridge.



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- The meeting was adjourned at 4:35 pm.

Submitted by,
Steve Severini
TC 6.2 Secretary
June 28, 2016

Agenda: TC 6.2 District Energy
Sunday, June 26, 2016 St. Louis, MO

TC 6.2 District Energy
Sunday, 3:00 pm – 5:00 pm, 123

Sponsoring Forum 4 - To Centralize or Decentralize a Thermal Energy System: The Great Debate Continues (224)

TC 6.2 Programs, Research, Handbook
Sunday, 1:00 pm – 3:00 pm, 123

Voting Committee Members

Mr. Lawrence Markel	6/30/2019	Mr. Drew Overmiller	6/30/2017
Mr. Jay Eldridge	6/30/2018	Mr. Christian Paraskevacos	6/30/2017
Mr. Steve Severini	6/30/2017	Mr. Gary Phetteplace	6/30/2016
Mr. John Andrepont	6/30/2017		

New Voting Committee Members

Mr. Alan Neely	7/1/2016	Ms. Jessica Mangler	7/1/2016
Mr. Geoffrey Bares	7/1/2016		

1. Call to Order:

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A. Agenda & Attendance Handouts

B. Introductions

2. Visitors & Reports/Information from other Committee Representatives

3. Approval of the Orlando Winter 2016 Meeting Minutes

4. Announcements by Chair:

A. Section 6 Breakfast:

i. Conferences & Expositions Committee (CEC)

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(3) Program Statistics for St. Louis

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 - vi. Potential MTG: MTG.ACR (Air Change Rate)
- C. New restructured TC Manual of Procedures (MOP) to be issued after St. Louis meeting

5. Liaison Reports:

- A. ALI
- B. DOE
- C. IDEA

6. Sub-Committee Reports:

- A. Handbook: Steve Tredinnick (Chair)
- B. Membership: John Andrepont (Chair)
- C. Program: Tim Anderson (Chair)
- D. Standards: Open
- E. Webmaster: Jessica Mangler
 - i. New TC website template – initial feedback or suggested improvements, if any?
 - ii. Oversight of TC websites with regard to Technical Bulletins (white papers)
 - iii. Additional e-mail position aliases available after St. Louis (Secretary, Standards Sub. Chair, Program Sub. Chair, Handbook Sub. Chair, and Webmaster)
- F. ALI Liaison: Chris Paraskevakos
- G. Research: Jay Eldridge (Chair)

7. Old Business

8. New Business

9. Meeting Adjournment

Action Items MAIN COMMITTEE MEETING

<u>Name</u>	<u>TC Position</u>	<u>Email</u>
Drew Overmiller	Chair - Voting	dovermiller@burnsmcd.com
Verle Williams	CM	Verleawilliams@gmail.com
Art Giesler	CM	ART.GIESLER@AIT.NET
Parham Estlami Nejad	NRCan	parham.estlaminejad@canada.wryan@uic.edu.ca
William Ryan	Guest	
John Molnar	CM	john.molnar@coengadvisors.com
Jay Eldridge	VM	JAY.ELDRIDGE@DAIKIN APPLIED.COM
JESSICA MANGLER	Webmaster	jMangler@aeieng.com
Alan Neely	VM	Alan.Neely@pqh.corning.com
STEVE TREDINICK	CM	stredinick@burnsmcd.com
Steve Severini	VM, secretary	sseverini@newcomb-boyd.com
John Andrepont	VM	Cool Solutions Co@aol.com
Tim Anderson	Programs	tanderson@applied-e-s.com
Jim Young	CM	jyoung@itwinsulation.com
Mike Case	CM	michael.p.case@usace.army.mil
MARK Menzer	guest	MARKMENZER@DANFOSS.COM
Ryan Mallory	guest	Ryan.Mallory@uponor.com
Den Low	guest	denlow@iaqtechnology.com.my
DARRYL DEANGELIS	GUEST	darryl.deangelis@us.BELIMO.COM
Andrew Dubel	GUEST	Andrew.Dubel@LEAP.COM



DRAGOS PARASCHIV

~~best~~ dragos.paraschiv@humber.ca

CM



humber.ca