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**DRAFT**

**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. 6.1 DATE January 15, 2019

TC/TG/MTG/TRG TITLE Hydronic and Steam Equipment and Systems

DATE OF MEETING January 15, 2019 LOCATION Atlanta, GA

MEMBERS PRESENT	YEAR APPTD	MEMBERS ABSENT	YEAR APPTD	EX-OFFICIO MEMBERS AND ADDITIONAL ATTENDANCE
Jason Atkisson	2016	Michael Brusic	2016	
Niels Bidstrup (NQ)	2015	Mark Hegberg	2017	
Scott Fisher	2015	Niels Bidstrup (NQ)	2018	
David Lee	2015	Steve Tredinnick	2015	
Thomas Neill	2014	Robert Walker	2015	
Stan Kutin	2018	Tom Cappellin	2018	

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

TAC Section Head:	Dawen Lu
All Committee Liaisons As Shown On TC/TG/MTG/TRG Rosters (Research, Standards, ALI, etc.)	ALI/PDC – James W. Bochat Chapter Tech. Transfer – Andrew Babler Research – Omar Abdelaziz Standard – Erick Phelps 2020 HB Systems – Caroline Calloway 2021 HB Fundamentals – Stephanie Mages
Mike Vaughn, Manager Of Research & Technical Services	<a href="mailto:MORTS@ashrae.net">MORTS@ashrae.net</a>

Note: These draft minutes have not been approved and not the official, approved record until approved by the TC.

## 1. Call to Order:

Chair Atkisson called the meeting to order at 1:10pm. Chair Atkisson welcomed all in attendance and self-introductions were made. An attendance sheet was passed and signed by those in attendance. A roll call of voting members was conducted, and a quorum was present with 7 of 10 voting members.

Technical Committee 6.1 is concerned with all aspects of hydronic and steam systems. This includes the application of boilers, chillers, terminal units, and all accessories and controls making up the total system as well as the design of the integrated system. In addition to comfort applications of both heating and cooling, snow melting systems are included. Cooperation with other TCs is recognized in areas such as control, noise and vibration, refrigeration, pumps and hydronic and service water piping.

Chair Atkisson read the ASHRAE Code of Ethics, *“In this and all other ASHRAE meetings, we will act with honesty, fairness, courtesy, competence, integrity and respect for others, and we shall avoid all real or perceived conflicts of interests.”* (See full Code of Ethics at [www.ashrae.org/about-ashrae/ashrae-code-of-ethics](http://www.ashrae.org/about-ashrae/ashrae-code-of-ethics))

## 2. Setting of the Agenda:

The Chair passed out an updated Agenda. No objections to the Agenda.

## 3. Approval of Houston Meeting Minutes:

Motion by Treddinick, second by Walker to approve the past meeting minutes. Motion passed 6-0-1 CNV.

## 4. Recognition of Liaisons:

No liaisons were present.

## 5. Chair’s Report

Chair Atkisson summarized the key items from the Section 6 Breakfast.

- A. A new MTG has been formed since the Houston Meeting – MTG.HWBE (Health and Wellness in the Built Environment)
- B. A new Resilience & Security TC has been formed.
- C. The Residential Building Committee is interested in co-sponsoring related TC research.
- D. Deadlines:
  - i. TC Activity Forms: Jan 16, 2019
  - ii. Seminar and Forum Proposals for Kansas City Feb 8, 2019
  - iii. Remote Participation Requests for Kansas City April 5<sup>th</sup> 2019
- E. The Professional Development Committee is seeking ideas for new ASHRAE Learning Institute courses.

## 6. Sub-Committee Reports

A. Programs: David Lee (Chair). Subcommittee meeting minutes of January 15, 2019, are attached. 3 seminars submitted, all approved, talked about proposed seminars for KC. Joint with 7.9, *Lessons Learned in Professional Development* Rex Scare, Analytics of HVAC joint David might speak Stan Kutin volunteered to handle TC 6.5 speakers. In KC also a track for radiant heating and cooling. Joe Rendals researcher “Characterizing hot dip tubes ... dimensionless” Feb 8 deadline for KC programs. Orlando 2020 a couple of proposals *Pump Fundamentals* Jessica, *Case Study High Performance Hydronics* Jason, Jenn

B. Research: Jessica Mangler (Chair). Subcommittee meeting minutes of June 25, 2017, are attached.  
Met yesterday new opportunities discussing co-sponsoring with other TCs. Outstanding 1196 in holding pattern due to standard being updated. Visitor from SPC205 transfer data from mfgs for modelling software.

Chair Mangler asked for inputs of potential research projects.

C. Handbook: Tricia Bruenn (Chair). Subcommittee meeting minutes of June 24, 2017, are attached.

Jason Atkisson chaired the meeting. Concentrated on 3 chapters that are ready to be agreed upon. 3 motions brought to main committee

Chapter 11 Steam Motion Rex to approve Seconded by Steve 6-0-1 CNV carried

Chapter 14 Steve Moved Condensor Water Systems minor edits Second Walker 6-0-1 CNV approved

Chapter 48 HX Fisher moved to accept minor revisions second Tom 6-0-1 CNV approved

Chapter 13 still working

32,36 Tom’s working on

Niels, Stan, David working on pump

47 Tricia control valves

D. Chilled Water Plant Sub Committee: Steve Tredinnick (Chair).

Right now a jumble of ideas. Access authoring portal to make suggestions. All TC members have access. Temperature recommendations, refrigerants and so forth.

E. Membership: Bob Walker (Chair). .

Four voting members will complete their terms after KC

Jason, Bob, Scott, Steve

To be VM must be corresponding member and make a commitment to being at all meetings.

Also Niels non-quorum but he often gets right back

F. Standards: Frank Myers (Chair). Chair O’Rourke was not in attendance.

90.1 ballot for Gas Hot-Water condensing boilers in new buildings. 90% minimum energy averaged efficiency. Many issues like 40° rise requirement. Flow requirements interfered with primary-secondary systems. Mandate for 40° rise removed, ensure 120°F inlet to boiler under all operating conditions. Energy savings from moving from 82% to 90% requirement. If this goes through it would immediately go into effect for all new buildings. Public review first or second week of February then look at software for best way to package. Might be offered with standard. Building modelling. AHRI conducted substantial program of testing to confirm 155, they had difficulty, so the standard was revised. Now there will be another major series of tests. 155 is to generate a performance curve with minimum testing. 9 months to a year to complete the standard. This is a massive change to the industry. Publication likely in 2020. No-cost extension through 2021. Many manufacturers support this improvement in test methodology. Was calorimetric water-in water-out now combustion efficiency with jacket loss.

G. Web: Mike Trantham (Webmaster). Webmaster Trantham reports the website is up to date.

## **7. Liaison Reports from other TC's and Organizations.**

No liaisons were present.

6.2-District Energy Jessica Mangler: Approved a couple of handbook chapters. 6.2 is looking to co-sponsor programs.

6.5- Radiant Heating & Cooling Aaron program in KC on radiant heating and cooling. 4-5 sessions. Chapter 6 S&E substantial revisions to be submitted at KC, 2 RTARS, 1 PTAR  
RTAR direct solar heat gain  
Radiant design guide RTAR or PTAR  
Short course on radiant system design through ALI program.

6.6-Service Water Heating Frank

Activity on smaller pipe sizes Gary Cline standard 189 new requirement for maximum volume of water in the last leg of piping which will require small piping.

6.7

6.8 Geothermal – Frank in 90.1 Solar and Renewable watch for public review drafts with new requirements. Title purpose and scope revised to include site in addition to building. Site is continuous area under a single owner. Not all of site is automatically required to be 90.1. Now things like remote parking lot lighting can be included. Also renewables can be optionally included.

6.10 Fuels and Combustion Tom N handbook meeting last night doing revision on chimney section with new equations for calculating the heat loss for chimneys. The current equation is not fully realistic. EU looking to use H instead of nat gas

Residential Building Comm

Hydronic Industry Alliance Aaron update manufacturers coming together to promote hydronics. Working to maintain popularity of hydronics. ARI software unrealistic about VRF efficiency. Currently the software assumes only 25ft of pipe or less. HIAC also working to help with selection and complete energy modelling. New tool for selection and comparison. Compare VRF, 4-pipe and so forth to compare first cost, LCT and so forth. 125 practitioners in meeting this morning, HIA-C  
Commercial building types in the software. Very powerful tool.

## **8. Old Business:**

Status of SPC 208-Method of test ...Capacity

## **9. New Business:**

Previous standard 125 Meth of Testing Therm Energy Meters  
past due date

Frank: How many were sold? If not many third option to delete the standard  
Table talk to Mark Webber in a few weeks email to VMs and letter ballot before KC  
Anyone can comment not just VMs revised in 2016.

Questions from membership: Movement of steam inside a flash vessel.

It's not a flash tank but more like a hood how much condensate captured. System not for heating or process purpose. Jason can forward the email if someone wants to give a more complete answer.

Conference Paper Peer Review looking for volunteers. Send email to volunteer.

## ***New item: TAC letter***

Structure not efficient

Silos... stagnant... slow... discouraged... not maintaining industry leadership..., not sharing better practice. 85 people commented.

TAC owns these issues and they've added basecamp etc.

Decrease silos, increase collaboration for programs, research & Handbook

110FG meetins, 180 subcommittee meetings. Re-form 110 FGS to 30 TWGs. 75-125 members per TWG in large technical programs. 2 hour slots could include topical programs, subcommittee breakouts.

Can we merge with other TCs?

Direct through Dawen Lu

Proposal yesterday dropping two sessions for SCs now just on Monday. HB/CW/Research one session on Monday.

Feedback form from TAC will be sent to everyone.

Maybe all of Section 6 merge?

Maybe not service water heating.

6.2+6.1 likely. 6.3 probably not. 6.5 Radiant likely. 6.7 Solar/Renewable maybe. 6.8 Geo, 6.9 TES. 6.10 not likely

6.5 decouple IR it's not well attended

Excited about: More people to help on chapters. This was not even mentioned to Handbook. Less effort to liaise.

Would 7.4 fall into this? What about section 9?

With the merge more things would happen before the meeting.

Very large meetings will require most work to happen before the meeting.

We just join with 6.2 and 6.5?

Concept of improved synergies well received.

With fewer rooms we might have more choices for venues in Summer.

Mick Schwedler: it's really about better use of volunteer's time. 5 new task groups.

Staff might assist with things like maintaining Basecamp.

Some TCs have started intermediate meetings electronically.

Survey might be re-issued.

Email to [sarah@greenfootprintscx.com](mailto:sarah@greenfootprintscx.com)

## ***Roster updates***

Society Year 2019-2020

Frank will be Standards Sc Chair

Jen will be Program SC Chair along with Research for KC.

Four voting members rolling off Scott, Steve, Bob, Jason

Jessica will be a voting member. Can't have two voting from one company. Frank rolled off and back on. David and Jason will discuss. David new chair, need new vice-chair, Mike as Secretary, Tricia willing to turn over HBK if there's a volunteer. Minimum voting members is 6. Niels is non-quorum so we have 9 now.

### **10. Meeting Adjournment:**

Motion by Fisher to adjourn the meeting. No second or vote required. Meeting adjourned at 3:05pm.

Submitted by,  
Mike Trantham.  
TC 6.1 Secretary