

**AMERICAN SOCIETY OF HEATING REFRIGERATING AND
AIR-CONDITIONING ENGINEERS INC.**

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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.	TC6.1	DATE	February 26, 2013
TC/TG/TRG TITLE	Steam and Hydronic Systems		
DATE OF MEETING	January 29, 2013	LOCATION	Dallas, TX

MEMBERS PRESENT	YEAR APPT	MEMBERS ABSENT	YEAR APPT	EX-OFFICIO MEMBERS & ADDITIONAL PRESENT
Voting		Voting		
Ramez Afify	2011			
Jason Atkisson	2011			
Tricia Bruenn	2009			
John Glunt	2009			
Trevor Houck	2010			
Julia Keen	2010			
Michael McDermott	2011			
Ken Luther	2011			
Rex Scare	2011			
Steve Tredinnick	2009			
Edward Tsui	2011			
Corresponding		Corresponding		VISITORS PRESENT
Robert Bean	2005	Roy Ahlgren	2009	Lam Duong
Niels Bidstrup	2009	Raymond Albrecht	2002	Robert Glass
Tom Cappellin	2010	Steve Anthony	2011	Ulf Johansson
William Coad	2007	Charles Arnold	2003	Jack Kang
Kim Cross	2010	Gil Avery	2006	Joanna Mauer
Hooman Daneshmand	2011	Peter Baade	2008	Jennifer McGrath
Scott Fisher	2011	Donald Bahnfleth	2006	Hailey Mick
Hans Hansen		William Bahnfleth	2007	Thomas Olmsted
Gary Harbison	2013	David Bixby	1994	Mark Owen
Mark Hegberg	2011	Albert Black	1987	Gay Powell
Larry Konopacz	2008	Cyrus Blackmore	2007	Alison Williams
David Lee		Jeffrey Boldt	2010	Aykut Yilmaz
Frank Myers	2007	Thomas Butcher	2010	
Thomas Neill	2011	Michael Collarin	2010	
Michael O'Rourke	2011	Kelly Cramm	2006	
Reddy Palicharla	2011	Vikram Doshi	1996	
Donald Prather	2010	Fredric Goldner	2009	

Earl Rightmier	2005	Farhad Golestan	2010	
Mick Schwedler	2011	Wilbur Haag Jr.	1995	
Greg Towsley	2009	Richard Hegberg	2010	
Robert Walker	2010	Martha Hewett	2009	
		Kevin Hoey	2003	
		Joseph Hoose	2005	
		Chris Jacques	2010	
		Miha Kavcic	2007	
		Jack Kersten	1996	
		Trace Laux	2010	
		Evans Lizardos	2010	
		Thomas Logan	1996	
		Kenneth Magsam	2010	
		Zoltan Magyar	2005	
		Terrence Moses	2001	
		Mark Mueller	1999	
		Marc Neufcourt	2009	
		Drew Overmiller	2008	
		Earl Rightmier	2005	
		James Rishel	1987	
		Brent Ross	2005	
		Aniruddh Roy	2009	
		James Schlachter	2008	
		William Schulte	2011	
		Alexander Sleiman	2006	
		Alpdeniz Soysal	2011	
		Harvey Stenger	2010	
		Kevin Stuart	2010	
		Bodh Subherwal	2010	
		Joseph Thuman	2007	
		David Tree	1999	

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

TAC Section Head:	John Dunlap, PE
TAC Chair	Charles Culp, III
All Committee Liaisons as Shown on TC/TG/TRG Roster	ALI/PDC - John Nix, II
	Handbook Fundamentals – Forrest Yount
	Handbook Fundamentals – David Yuill, PE
	Research – Stephen Hancock
	Special Publications – William Fleming
	Standards – James Vallort
Manager of Standards	Stephanie Reiniche
Staff Liason/Research/Tech Services	Michael Vaughn

MEETING MINUTES

TC 6.1 Hydronic and Steam Equipment and Systems

Dallas, TX

January 29, 2013

1. Call to Order:

Chair Keen called the meeting to order. The Chair welcomed all in attendance, and self-introductions were made. An attendance sheet was passed and signed by those in attendance. A quorum was present with attendance by 11 of 11 voting members (2 voting members arriving late), including 1 non-quorum voting member..

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.

2. Setting of the Agenda:

The Chair passed out an updated Agenda. Motion by Rex Scare, seconded by Jason Atkisson to approve the agenda. Motion passed 8-0-1.

3. Approval of San Antonio Meeting Minutes

Motion by Ken Luther, seconded by John Glunt to approve the San Antonio 2012 meeting minutes. Motion passed 9-0-1.

4. Recognition of Liaisons:

No liaisons were present.

5. Chair's Report

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

- (a) All members need to update their bios on the ASHRAE website.
- (b) TCs have been asked to review their membership lists to insure all listed are active and interested in remaining a member of the TC.
- (c) A new award is being established for the 'best TC'.
- (d) A PowerPoint presentation has been developed to explain the role and responsibilities of TCs to the local ASHRAE Chapters. TC members

are being asked to present this at their local chapters. A link to this presentation “Presentation Template for TC Members to use with ASHRAE Chapters” can be found on the ASHRAE Technical Activities Committee website <https://www.ashrae.org/standards-research--technology/technical-committees>.

- (e) The ASHRAE Code of Ethics approved on 1/31/07 was read. It is attached to these meeting notes.
- (f) Multitask groups are being established between multiple TCs. No one present is participating in one.

6. Sub-Committee Reports

- A. Programs: Mike McDermott (Chair). Subcommittee meeting minutes of January 28, 2013, are attached.

Chair McDermott reviewed the two programs sponsored by TC 6.1 at this meeting [Seminar 3 – Fundamental Pipe Selection and Control; and a Technical Paper – Pumping System Bypass Orifice Testing and Analysis].

A look ahead for the Denver, New York, and Seattle programs is attached.

Ken Luther suggested perhaps TC 6.1 could participate in a seminar in New York regarding tall buildings, perhaps co-sponsoring with TC 9.1 – Large Building Air-Conditioning Systems.

Ideas for future programs are always welcome to Mike McDermott.

- B. Research: Tom Cappellin (Chair). Subcommittee meeting minutes of January 29, 2013 attached. This includes updates from the Research Chairs Breakfast Meeting.

(Discussion of SPC155/RP196 is located under G. Standards of these meeting notes.)

- C. Handbook: Rex Scare (Chair). Subcommittee meeting minutes of January 28, 2013, attached.

Chair Scare circulated a sign up list for editors/reviewers for upcoming 2016 chapters. A copy of the assignments is attached. Also, any corresponding member not in attendance is welcome to volunteer and become part of the editing/review process.

Discussion continued on merging Fundamentals Chapter 22 – Pipe Sizing and Systems Chapter 46 – Pipe, Tubes, and Fittings into a single ‘Hydronic System Pipe Design’ Chapter in Fundamentals. The Systems Chapter 46 will be deleted beginning with the 2020 Handbook.

Approval was received from the ASHRAE Handbook to create a Chilled Water Plant Design Chapter. Steve Tredinnick is the editor for this chapter.

Chair Scare thanked Mick Schwedler for his work on the edits for Chapter 13(S) – Hydronic Heating and Cooling.

Bob Walker provided a report from TC 1.4 – Control Theory and Application regarding the coverage of control valves in both TC 1.4 and TC 6.1's Handbook chapters. Control valves (sizing, selection, etc.) will remain in Chapter 47(S) – Valves, while TC 1.4 will address the control of the valves in their chapters.

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

Chair Tredinnick stated the work on the new Handbook chapter on Chilled Water Plant Design scheduled for 2016 has begun.

Bill Coad questioned what the definition between a chilled water plant and a chilled water system would be for purposes of the chapter. Chair Tredinnick said the chapter is to be focused on the overall design of the chilled water plant. Julia Keen stated the single chapter could be used as the beginning of a complete design guide for chiller water plant design.

Frank Myers suggested incorporating the pipe sizing guidelines established by 90.1.

E. Membership: John Glunt (Chair). Chair Glunt reports the roster for TC 6.1 goes into effect after the June meeting in Denver. The terms of two voting members end after the June meeting.

Julia Keen reminded the visitors to the meeting to access the ASHRAE website to become a corresponding member of TC 6.1.

F. Professional Development (ALI). Greg Towsley (Chair): Chair Towsley reports there are no actions for the TC from the Professional Development Committee.

SDL 7 is at ASHRAE for review and typesetting before moving forward with the SI Version.

The SDL 12 contract awarded to Mark Hegberg is still in process.

G. Standards: Mike O'Rourke (Chair).

Standard 55: Chair O'Rourke reported it is in continuous maintenance mode. The group is working to get the standard in a more readable format. The last few sections have been approved and public review is planned. The goal is to republish the standard this year. Standard 55 has been approved as an ASHRAE Standard and the preparation of a user's manual has been approved by ASHRAE.

Standard 155/RP196: Frank Myers reports Martha Hewlett is retiring as chair and Tom Bucher will replace her as the chair. Myers asked the committee to honor Martha with a round of applause for the work she's done on this standard. A memorandum of understanding has been signed by ASHRAE and AHI for the joint standard. There is a proposal to stay with combustion efficiency as the standard, Myers is chairing a working group to define the test methodology (combustion efficiency vs. thermal efficiency). Due to the length of time the TC may be asked to vote on the original contract either in Denver or by electronic ballot.

Greg Towsley reported on 90.1.

Addendum ak

- o Public review ended 25 June 2012; 8 commenters and 21 comments
- o Working Group formed, developed a revised proposal, approved by TC6.1, and submitted to 90.1 MSC for consideration for 2nd public review
- o 90.1 MSC review submittal in October 2012 – “thought at first it would be fine since so many of the requirements were the same as the current language, but...it has a lot of problems.”
- o Modified ak with minor changes:
 - § deleted the DP reset off valve position – “since it was effectively deleted by the exception that said it was not required if supply water temperature was reset off valve position. But since the latter is required, then the former was always true and the DP reset never was required.”
 - § deleted 6.5.4.2 since it is the subject of a proposed addendum (Pump Isolation)
- o Continues to be a disagreement as to the control method that cannot get resolved
- o November 14, 2012 - A 2nd public review draft was created from changes above with a letter ballot.
- o Nov 30, 2012 – MSC letter ballot ended, had negative vote with comment, will require recirculation ballot.
- o Jan. 1, 2013 - recirculation ballot issued in MSC
- o Jan. 19, 2013 – Confirmed that 2nd PR passed MSC with one member dissenting - MSC to work compromise with dissenter before bringing to main SSPC

Bill Coad discussed the proposal for all chilled water pumps to have inverter drives. Greg Towsley reported 90.1 requires hot and chilled water systems with a total of 10hp and larger to have inverter drives. Ken Luther asked if other methods are allowed besides variable speed drives.

Addendum br (motor efficiency)

- o Update current motor efficiencies
- o Public Review ended; no comments above with a letter ballot.

Addendum cd (piping definition)

- o Current standard “piping” is required to have minimum levels of insulation, pipe sizes, etc. In all cases, the intent was that the same requirements also apply to all of the piping accessories that are in series with the piping that also sees fluid flow, such as pumps, valves, strainers, air separators, etc.
- o cleans all “piping” and “pipe” wording in 90.1
- o 1 comment, withdrawn

Pump Isolation Proposal

- o Reducing pump energy; shut off flow through inactive chillers/boilers;
- o Submitted to the SSPC for their approval for publication for public review during the main SSPC 90.1 - unable to bring to vote

Greg Towsley also updated the following from the last meeting.

- Framework document was placed on the DOE website Friday, January 25, 2013. The document is 134 pages with 111 requests for information from the DOE. It involves test procedures and energy efficiency standards for pumps. The public hearing is February 20, 2013. The preliminary analysis is expected in 2014.
- NOTE: In Section 11, the DOE is requesting comments from “user subgroups” if they will be “affected disproportionately by new or revised energy conservation standards”.

H. WEB Site: Jason Atkisson (Chair) Chair Atkisson stated the website has been updated with all but the recent corresponding member changes. That will occur soon.

7. Liaison Reports from other TC’s and Organizations.

There were no reports.

8. Old Business:

Carlson/Holohan Industry Award of Excellence. John Glunt reported ASHRAE has been asked to make this a society award. Typically the Society only allows an award to be named after a person in exception instances. Also, there are questions regarding who will keep possession of the wheel.

Robert Bean reports Holohan has offered to take his name off the award, but some previous winners are uncomfortable with this. This work is on-going. Robert Bean also suggests the wheel go to either the Smithsonian or ASHRAE Museums.

Bill Coad report Gil Carlson received the Pioneer of the Industry Award. He stated the Society would be happy to protect the wheel, but the artifact (wheel) needs to be separated from the award.

Guideline 8 Energy Cost Allocation for Multiple-Occupancy Residential Buildings: Chair Keen reported Adam Hinge states the guideline is out of date and there have been no requests to update the guideline. Mark Hegberg and Mike O'Rourke reviewed the document after a request was brought forward at the Annual Meeting in San Antonio. Both felt the document was so out of date that a complete overhaul would be required but there is concern Guideline 8 is no longer being referenced by the industry.

Bill Coad provided some history of the guideline. He stated it was originally intended to be a standard. The document was based on European district heat systems from 25 years ago utilizing low temperature hot water for heating.

Steve Tredinnick stated he would like to review the document prior to deciding either updating or discontinuing the guideline.

Chair Keen asked if anyone is referencing or using this guideline. There was no acknowledgement the guideline was in use.

Motion by John Glunt, seconded by Ken Luther, to discontinue Guideline 8. The motion passed 7-0 with 4 abstentions. Chair Keen stated Adam Hinge will be advised to remove it from the list of current guidelines.

Status of new pump efficiency standard: Framework document was placed on the DOE website Friday, January 25, 2013. The document is 134 pages with 111 requests for information from the DOE. It involves test procedures and energy efficiency standards for pumps. The public hearing is February 20, 2013. The preliminary analysis is expected in 2014. NOTE: In Section 11, the DOE is requesting comments from "user subgroups" if they will be "affected disproportionately by new or revised energy conservation standards".

9. New Business:

- A. Chair Keen thanked the committee for their quick response to the various e-mails asking for comments over the past six months.
- B. Chair Keen invited the guests attending the meeting to become involved with the work of TC 6.1.
- C. Chair Keen thanked everyone for their time and commitment to the work of the committee.
- D. Robert Bean thanked the committee for the efforts of the snow ice melt program (TC6.5) in San Antonio.

10. Meeting Adjournment:

Motion by Jason Atkisson, seconded by Tricia Bruenn, to adjourn the meeting.
Meeting adjourned at 3:14pm.

Submitted by,
Bob Walker.
TC 6.1 Secretary