

**AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR-CONDITIONING
ENGINEERS, INC.
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. 6.10 DATE 6/22/2015

TC/TG/MTG/TRG TITLE FUELS AND COMBUSTION

DATE OF MEETING 01/27/2015 LOCATION Chicago, IL

MEMBERS PRESENT	YEAR APPTD	MEMBERS ABSENT	YEAR APPTD	EX-OFFICIO MEMBERS AND ADDITIONAL ATTENDANCE
Paul Sohler (VM-chr)	6/2013			Jeff Angel
Tom Butcher (VM-vchr)	6/2014	Earl Rightmier (VM)		Chris Altenderfer
Tom Neill (VM-sec)	4/2014	David Bixby (CM-std)		Craig Grider
Jennifer Guerrero (VM-hb)				Steven Sill
Bill Roy (VM-re)	6/2014	Hall Virgil (VM-NQ)		Wayne Kraft
Larry Brand (CM)		Peter Novak (VM-NQ)		
Mehdi M Doura (VM)	6/2014	Cory Weiss (CM)		
George Kusterer (VM)				
Aykut Yilmaz (CM)				
Diane Jakobs (CM)				
Shamel Kassab (CM)				

DISTRIBUTION

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

TAC Section Head: Mark Hegberg (mhegberg@comcast.com)	ADDITIONAL DISTRIBUTION: TCStaff@ashrae.net
TAC Chair: Eric Adams (TACchair@ashrae.net)	
All Committee Liaisons As Shown On TC/TG/MTG/TRG Rosters:	ASHRAE LIAISONS: Lane Jackins (PL6@ashrae.net) Lawrence Markel (RL6@ashrae.net)
Manager Of Standards Manager Of Research & Technical Services	Stephanie Reiniche (MOS@ashrae.net) Mike Vaughn (MORTS@ashrae.net)

ASHRAE TC6.10 Meeting Minutes

Date: January 27, 2015

Location, Chicago, IL

Chair: Paul Sohler

1. Call to order – Meeting was called to order at 3:30 pm
2. Sign-in and Quorum Determination – Quorum was established
3. Review and approval of Chicago Agenda – Agenda was approved
4. Review and Approval of Seattle Minutes – Minutes were approved
5. Chair Breakfast Report – Paul Sohler

A number of people expressed their frustration at getting program accepted. We do have the ability to sponsor our own event. If we do, we would reserve a room and let ASHRAE know when it was going to occur they would place it into the program, There is a review process to be sure there is no commercialization. Spoke with Mark Hegberg but he needed to research the process involved. Technical tours can take up to a year to get in place. GTI facility tour proposed to program by O'Hare, (limited number of slots available). They are not done in the morning due to limited time slots.

There was some discussion on Standard 100 "Energy Efficiency in Existing Buildings" there has been an ongoing discussion about how to account for energy consumption whether is site

versus source. The direction that that standard had gone was not really correct to vote it out. The way it was written to day there was no energy savings for district heating

6. Liaison Reports -

7. Handbook – Jennifer reported that Chapter 35 has been submitted. Chapter 31 was reviewed in subcommittee and it was recommended for a vote to be sent out for printing in the Handbook.

Bill Roy moved to submit Chapter 31 as edited, seconded and passed.

Requested information about Chapter 31. David will write some formulae for basic ‘building blocks’ to see where effects occur. Also video for on-line addition.

Action item – we need to request permission from manufacturers to show their equipment in the video.

Will show downward impedance vs. input change dampening with series, inlet condition with no plain transfer function will not be seen in model or length of tube. You can change inlet conditions length of tube, outlet condition then hit run and the program will run and show up to five outlet conditions. Davis is retooling up with a student to prepare for any work that will be coming up.

Figures from project will be provided by David. They are from his output from his program.. Paul and Tom have asked David for a copy of the drawing of the Feedback loop for Chapter 28.

Chapter 28 due April 2016 went to approval in Orlando. Want to get this chapter approved this year, we would like to add information on Bio Fuels etc. Larry has volunteered to work on adding a section about Bio Gas for the chapter. Tom Butcher was asked to provide information about Liquid Bio Fuels. Larry is looking at sources , composition , Trace groups and challenges.

Larry will expand definition on Gaseous Bio Gas. Solid and liquid biofuels – Tom Butcher.

New Bio Oil being introduced as a possible candidate.

We need to obtain permission for all figures at publication yearly.

Moved back to Approval of Seattle Minutes, Motion to accept, seconded and passed unanimously.

8. Research –

Bill Roy working on extensions of research project – Combustion Resonance.

Need to review fire tube design which was originally a residential storage style water heater. If someone else has a product type that would like to be included in the new project if there is another direction we want to pursue, such as a fire tube this will require an RTAR with a Research Work Statement will be required. The objective is to review a broader base of combustion systems, those being a single fire tube water heater, multiple fire tube boilers could still be considered, and these units need to be readily available. This is to confirm that the model works for other style equipment, get more data points such as another boiler that exhibits oscillation at different conditions. The original project was for pre-mix burner assemblies. We are looking for smaller residential boilers, small wall-hung equipment to be provided for testing. There is at least one standard design that is widely used and we could see if they could come to the table for this new phase of the project. We would be looking for 2 models of different designs than we tested last time, preferably of a fire tube design. This should include testing on LP as well as Natural Gas.

Student who submitted this oscillation project won the Homer Adams Honor Award.

Deadline to offer equipment, product ideas is May 15, 2015 for product that would like to be tested.

- a. Paul Sohler to send out e-mail regarding equipment and have AHRI (Aykut Yilmaz bring up at HI TC in Spring 2015 for discussion. Describe project, what has been accomplished and any interest in participation from the members).
In the south coast area, propane may be limited in testing due to the need to have a vaporizer for product over approximately 200,000 BTUH. If the lab did not have the capability to perform this would another lab be used?
- b. Pellet stoves and storage could be a project if we could get with participation of Chapter 610.
- c. Common venting with category III & IV appliances.

Larry discussed types of equipment that was seen at the show showing 5 condensing boilers common vented. The equipment was set up so all the units “talk” to each other. One solution was when one unit was running all the other units draft inducers were running. This operational arrangement has been improved with the inclusion of tight sealing vent dampers however all the units need to talk to each other and this may present a problem in a multi-story building where equipment is located on different floors. People are beginning to think about this arrangement. The question was asked about what type of safety controls are implemented to correct.

Paul Sohler indicated safety standards do not indicate what type of safety controls are needed. AHRI is looking at common venting of all Non Cat1 appliances.

Common venting was suggested as a possible research project. Looking at a GTI project that included venting an atmospheric water heater with a condensing appliance using B-

Vent. Or vent systems with multiple condensing appliances. Deliverables from such a project could include the Ashrae hand book chapter to include design guidelines for common venting Cat III and Cat IV it was agreed the first step would be to identify the barriers to common venting condensing appliances.

It was reported that a working group was formed consisting of Mr. Neill, Mr. Roy and Larry Brand, Paul Sohler. The working group has no report.

Any review of NFPA-54 is also silent on this subject. We need to establish a working group to study this. Tom Neill and Larry Brand to chair the working group and establish meeting, determine measure of test and performance perhaps joining forces with another group to compare data.

George Kusterer indicated that NFPA-54 is an installation standard, not a safety standard. We need to define what our goal is and show NFPA-54 what thresholds result in problems. NFPA-54 has already been revised, they have a 5 year revision cycle. NFPA-31 is in revision cycle currently.

Paul Sohler indicated what need to be accomplished in order to do the venting safely by identifying sizing, or whatever steps to prevent flue products backing out of boilers and into living spaces. What changes need to be made? What does that Research Project look like, how do we do this in a technically sound and safe manner, and what codes are affected.

- d. Tom Butcher suggested a future research on biodiesel. Bill Roy indicted it took over a year to get the research project accepted by ASHRAE and another year to get approval for a total of 2 years.

9. Website – There were discussions with people on the committee, due to Tom Butcher’s work load as Chair of 155p, the Webs site Chair will be handed over to Jennifer G. We need to develop a list of well-defined changes:

- a. Still having problems with tabs and functionality
- b. Get Membership Roster up to date.
- c. Research Papers links.
- d. Presentations related to our TC
- e. Previous Research Projects
- f. Post Agenda’s and Current Approved Minutes
- g. Look to have a ‘members only’ area of site for access to Draft Minutes.
- h. Format PDF Minutes on the site.
- i. Post upcoming meeting dates for the committee.

10. Programs – Paul Sohler reported that portable combustion analyzer program was rejected for the Chicago meeting. He will resubmit for Atlanta. Additional options are to submit for Orlando or go the self-sponsoring route (reserve a room and have ASHRAE place it in the program which would still have to be vetted). Presentation slides would not be published to the ASHRAE website. Repackaging as “field instruments” get two TC’s to sponsor (6.10, 6.3) or tie into load-based testing. This ties into the tracts for Atlanta #1, #5 and #6. Tom Butcher suggested having the author write an article for the ASHRAE Journal to help “promote combustion analyzers”. Bill Roy suggested to re-package as “Field Instrumentation Seminar” at the Atlanta Meeting and reach out to 6.3 and 6.10 agree to support it; otherwise, submit as “Combustion”. Paul Sohler will redraft and submit to Tom Butcher for submission. Diane Jakobs to e-mail contact information for 6.3 to Paul Sohler. Ideas for the tour in Atlanta – Georgia Tech. Bill Roy will check on this.

11. Standards – Diane Jakobs indicated SPC103 is almost ready to go to review. They have added SI units, code language updated, clarification of figures, etc. are expected to be ready for public comment by Atlanta.

George Kusterer - SPC124 combined appliances (boilers and water heaters) indicated the only thing remaining is a heat pump MOT. Target for vote in Atlanta put out for public review. Review include Canadian Standard P.10.

Tom Butcher - SPC155 commercial boiler and major decision to determine thermal efficiency by measuring combustion efficiency minus jacket loss and power losses. Idle losses has been written up in standards language. Jacket losses to be defined. A vented jacket losses correction factor to be determined when combustion air is drawn through the jacket. Bill Roy asked if any document was coming out regarding jacket loss that could be useful to SPC-103. Also, what was the status of the Ron Nelson 155P Computer Tool? The standard would have appendices for different areas of the country. Tom Butcher indicated we need to capture what has been done, but would be included as an informative index while SPC155 includes idle losses, SPC103 does not.

George Kusterer indicated 118.1 and 118.2 are open. They are revising their scope to comply with new DOE standards. 118.2 moves to 150,000 BTU light duty commercial. Aykut Yilmaz indicated that AHRI standard 1330 is a performance standard for radiant heaters and establishes an infrared factor. AHRI standard 1260P combustion analyzer standard is being drafted. Action item – Aykut to forward information to George Kusterer.

12. Membership – Paul Sohler is rolling off committee; Earl Rightmier will be dropped as a VM; Diane Jakobs, Aykut Yilmaz, Shamel Kassab and Larry Brand are rolling on as voting members; Mehdi Doura is taking over Handbook Subcommittee and Aykut Yilmaz as Secretary. Roster changes are effective July 1, 2015.

13. Old Business – None

14. New Business – How do we make the Technical Committee relevant and ‘flashier’? Improve website, create good seminars that interest people and provide information about the importance of Combustion Testing as well as networking.

15. Next Meeting – Atlanta 2015

The tracks are:

- **Systems and Equipment:**
- **HVAC & R Fundamentals and Applications:**
- **Research Summit:**
- **Refrigeration:**
- **Indoor Air Quality:**
- **Modeling throughout the Building Life Cycle:**
- **High Performance Buildings:**
- **Moving Advanced Energy Design Guidance to the Mainstream**
- **Laboratories**
- **Modeling Best Practices**
- **Tours**

16. Adjournment – Meeting Adjourned 5:59 PM