

**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 01/16/2016

TC/TG/MTG/TRG TITLE FUELS AND COMBUSTION
DATE OF MEETING 06/30/2015 LOCATION Atlanta, GA

MEMBERS PRESENT	YEAR APPTD	MEMBERS ABSENT	YEAR APPTD	EX-OFFICIO MEMBERS AND ADDITIONAL ATTENDANCE
Paul Sohler (VM-chr)	7/01/2011			Jonathan Kane
Tom Butcher (VM-vchr)	7/01/2014	Earl Rightmier (VM)	7/01/2013	Steve Hancock RAC Liaison
Tom Neill (VM-sec)	7/01/2014	David Bixby (CM-std)		
Jennifer Guerrero (VM-hb)	7/01/2013	Bill Roy (VM-re)	7/01/2014	
Larry Brand (CM)		George Kusterer (VM)	7/01/2014	
Mehdi M Doura (VM)	7/01/2013			
Anuj Mistry (CM)				
Diane Jakobs (CM)				
Shamel Kassab (CM)				
Steven Sill (CM)				
Craig Grider (CM)				
Cory Weiss (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: June 30, 2015

Location, Atlanta, GA

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 Atlanta Agenda – Agenda was approved
4. Review and Approval of Chicago Minutes – Minutes were approved

Motion was made by Seconded by Mehdi Doura passed 5-0-0

One correction Mr. Sill is a CM

5. Chair Breakfast Report – Tom Neill for Paul

Minor items brought up at the Chair's breakfast mention ASHRAE Code of Ethics at meetings. New method to add CM can go directly to Web site to have access to it. They do have information under TC tab which include training material, forms etc. to help the TC. If anyone needs a letter for their Employer they can be requested through the Web Site. It was also asked

that everyone update their Bio's since only about 30% have been updated recently. There are subcommittee chair meeting sessions are available as Power Points of Video session are available on the main ASHRAE site. If a TC subcommittee we can contact Mike Vaughn to make arrangements

TAC has developed a new TC activity form that they would like all TC's at this meeting to use report to their section head. Upcoming Tracks for next Meeting were listed see our agenda. Program statistics 107 available slots in Atlanta 153 paper 138 approved, 74 received and 67 were presented, technical papers 53 received 36 presented, seminars 104 sub 66 presented, Workshops 15 5 presented Forums 10 submitted and 4 presented. This is the pecking order that At 2016 meeting in Saint Louis bias disclosure speakers and presenters must disclose any potential bias i.e. project they are reporting was funded by a manufacturer that they are talking about. CEC looking for suggestions on tracks.

6. Liaison Reports – Paul Sohler No report due to 8:00 am seminar.
7. Handbook – Jennifer reported that Chapter 31, 35, have been submitted and acknowledged by ASHRAE editing department there have been no feedback. Chapter 28 Combustion and Fuels, there are a couple of things that the committee would like to have added to the Chapter. Larry Brand volunteered to look at the gaps in gasses covered in the chapter. Tom Butcher will do same for liquid fuels and solids. Larry has forwarded information about renewables and bio fuels. Anaerobic digester gases, land fill gas and thermal process gas. The committee will review and see how much information could be added.

Mr. Kane forwarded information on Combustion analyzers it is basic but will be forwarded to the committee to review and see where the best place to include in the current chapter of perhaps 31 or 35. ASHRAE most likely will not be interested in placing it in those chapters at this point. The third thing we would like to add to the chapter is some content from the research project on combustion driven oscillations but do not want to go too much into detail with the interactive information or 3d graphics since we feel the ASHRAE handbook committee is not quite ready for that type of content at this point. We will stay with 2-d models and blur any pictures where necessary to be sure any manufacturer's products are not readily identifiable. Mr. Shacker who is liaison will check with Mark to see how much we are allowed to put in the handbook at this time. We should be in good shape with this chapter is due April 2016 if we do not go too crazy with contend. Mr. Doura will be taking over HB and move the final chapter forward.

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

8. Research – Paul Sohler for Bill Roy

Bill Roy started on a work statement for RP 1517 follow up project looking at combustion driven oscillations in water heaters not quite sure what we currently have as far as products for testing we did get an offer of a fire tube boiler.

We did discuss other research projects on agenda question was raised about type of combustion systems Pre-Mix combustion and whether this was to be residential or commercial products. Also questions on new material for venting condensing equipment. It was felt this could be a good topic for a seminar.

Working group for common venting of condensing appliances needs to begin reviewing work in this area no report was available.

Tom Neill and Mehdi Doura had discussed the variation of fan performance on pre-mix burner fan performance. They do not seem to follow the “fan laws” as far as the need for increased rpm for an effective increase in CFM at altitude. The turbine fan wheel design seems to provide more CFM at less than of an increase in rpm. Should the research of these fan performance be performed by the fan manufacturers. Discussion revolved around changes in density.

Next step would be to write a Work Statement that is general in scope. “Fan Laws do not appear to apply to premix burners at altitude” This could be a follow on from the oscillation project but perhaps. What is the benefit to manufacturers? Flame stability, Quality assurance of performance at altitude.

Action item look for volunteers to turn this idea into a Research Project. to discuss with Bill after the 1517 project is complete draft an RTAR to get a quick read from RAC. This would be best be approached by involving other TC’s perhaps 5.1 fans and 6.1 boilers.

Tom Butcher volunteered to write RTAR

Tom Neill to write a one paragraph on topic and run past Mehdi Doura and then Tom B. perhaps making it broader to include High Efficiency combustion systems. If this could be tied into a handbook or standard and “residential”

Research projects are a staged process to give PMS time to terminate a project earlier if it is not working out like they thought it was. Right now the way it is structured you would run it all the way through. With the staged approach they can be terminated earlier. Training modules are to be set up as webinars to walk TC through how to write a work statement, what you need to do and how to do it. Project monitoring etc. to make it easier for TC’s that do not run a lot of projects. There are currently 61 active projects with an annual budget of \$10,000,000. There are 11 more that are to be kicked off. Harvey Sachs will be rolling on to chair Projects.

9. Website – Effective tomorrow 7/01/2015 Jennifer will be new web chair.

There are to be changes on ASHRAE site to make things easier to maintain. Looking to include Pictures, Members Only area on the site, also post research papers. Please also advise any other ideas. Also what is ASHRAE’s position on linking other organizations to our web site?

Programs – Tom Butcher the seminar went well commendations to all three presenters. Attendance was light but it was a Sunday AM .We want to keep up the momentum. The next move for future topics are for Seminars or Symposiums could be venting systems, new fuels increased Bio in heating oil, there are a lot of different fuel types in different parts of the world such as sugar cane. A state of fuels type of usage. Over 1,000 buildings in NYC have converted to 100% BIO fuel. Pyrolysis oils, solid fuel also changing with two stage gasification boilers, the changes in DEP regulations. There is movement to Zero Energy sources. Renewable Natural Gas. Perhaps three speakers presenting on gas (Larry B), liquid and solid (Tom B). We should push for something other than Sunday morning to gain better attendance. Other ideas include Chimneys vs. Efficiency, Problem linking appliance standards with equipment standards as to applicability. Positive pressure common venting and its effect on safety. Biggest problem is distilling this down to cover the selected topic in the 90 min time frame. We need to include the correct words to attract attention for the seminar approval. Due August 10th for Orlando.

We did not see a list of speakers coming out of the discussion. Best to hold this off.

The meeting in St. Louis may offer an opportunity on Direct Fired equipment seminar. Manufacturers Emerson, Cambridge Engineering? Possible Cover the % of recirculation with direct fired equipment, and how the size of the building arrangement affects this. Action Item for Craig to contact a Mark Braun to see if he would be interested in presenting, for another topic could be on closed loop control, constant lambda controls which ties into the residential theme.

Does GCI owe a program activity from the High Altitude project from a couple of years ago? Could we get CJ to present in St. Louis on High Altitude applications?

2017 Las Vegas Jan 28th – Feb 1st
2017 Long Beach June 24th – June 28th
2018 Chicago January 20th – 24th

Look to having tour at GRI in Chicago need to propose by January 2017 so we do not loose site of this. Washington University in St Louis has an advanced research combustion program.

Paul Sohler passed along George Kusterer this thanks for all involved in getting the Combustion analyzer done.

10. Standards – Diane Jakobs indicated SPC103 working on 2015 revision there is a ballot our to vote for Public Review, at same time NOPR by DOE talked about adopting in 2007 Version comments are Due July 10th.Addition include Regarding multistage equipment tests and cycling tests based on testing done recently. Boilers are three cycles per hour and furnaces are 5 cycles per hour. This will be based on cycling on low fire. This may affect overall efficiency. This has to do with condensate collection and weight of condensate collected. Relative

humidity is going to have a maximum value in the new standard. Testing may to be conducted to see what effect the % of humidity has on the test results.

SPC-124 Last meeting was dominated by talk about calculations and the standard. Biggest issue is cleaning up the standard language and making a revolutionary new standard which is testing integrated appliance as they actually operate. That part is not so active lately. There was a lot of discussion about Canadian Standard P.9 and how it may apply to the combination appliances.

SPC-155P Tom Butcher this is a Commercial Boiler System Efficiency standard to develop a performance map over various loads. It is different than AHRI 1500 in that its data can be used by other programs to predict building heating system efficiency over the heating season. It is a dramatic change from what we have now. Standard came in to encourage that this committee get standard out. Committee is working hard to get revised draft standard out by April 2016 for a draft review followed up by Public review. This discussion is still ongoing. TC 6.1 meeting Tom Capelle some of the inquiries with projects for ASHRAE the computer software is surfacing at the ASHRAE level as to when it is going to get done.

11. Membership – Paul Sohler is rolling off committee; Tom Neill will be Chairman, Tom Butcher will be Vice Chair (Program Chair). VM added include Diane Jakobs (Standards Chair), Shamel Kassab, Craig Grider, 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. Membership chair position tabled at this time.
12. Old Business – None
13. New Business – Jennifer noted our Research Paper received Awards. Three papers and the Project received an award also. It was suggested to put the Abstract up on our Web Site for Program. Reach out to ASGE. American Society of Gas Engineers.
14. Next Meeting – St. Louis 2016

The tracks in St Louis are:

- **Advances in Refrigeration Systems and Alternative Refrigerants**
- **Research Summit**
- **Fundamentals and Application**
- **HVAC Systems and Equipment**
- **Smart Building Systems/Remote Monitoring and Diagnostics**
- **Indoor Environment: Health, Comfort, Productivity**

- **Professional Skills Beyond Engineering**
- **Renewable Energy Systems and Net Zero Buildings**

Certificate of Appreciation presented to Paul Sohler for his great work as Chairman over the last two years.

15. Adjournment – Meeting Adjourned 5:59 PM