

TC Cover Sheet  
TC 6.3, Central Heating and Cooling

January 27, 2009

Attendance (ending year of membership)

**Members Present**

Mark Olsen (11)  
Keith Temple (09)  
Michael Lubliner (09)  
Dianne Griffiths (10)  
Gary Nelson (12)  
Jim Cummings (12)  
Jeff Siegel (12)  
Chuck Gaston (10)

**Members Absent**

David Delaquila (11)  
Harvey Sachs (10)  
Jonathan Douglas (11)  
Roger Hedrick (10)  
Paul Haydock (12)  
William Rittleman (12)

**Distribution**

All entries shown on committee roster

**Corresponding Members Present**

Paul Francisco  
Iain Walker  
Roy Crawford  
John Andrews

**Guests**

Jaap J Hogeling, Research Liaison  
Tom Ponder  
Collin Olson  
Eric Wilson  
Larry Brand  
Byron Horak  
George Yaeger  
Neil Leslie  
Bert Phillips

ASHRAE TC6.3  
Central Forced Air Heating and Cooling

Minutes of Meeting  
January 27, 2009  
Chicago, IL

**Call to Order**

The meeting began at 1:10 p.m. in Clark 5 of the Palmer House Hilton with introductions. Copies of the agenda and the Salt Lake City minutes were previously distributed.

A quorum was present.

**Minutes of Last Meeting**

Temple noted a couple errors. The second Forum identified for Chicago should be changed to a Seminar. An incorrect Program Plan was attached to SLC Minutes.

The SLC minutes were moved for approval as amended (Siegel/Nelson) and the motion was passed 6-0-0 CNV.

**Announcements**

Chair Olsen discussed various items from the TC Chair's breakfast.

- 1) Announced Hightower award recipient.
- 2) Two new chapters announced. One on Dedicated Ventilation Systems may be of interest to TC 6.3.
- 3) Upcoming conference announced.
- 4) Proposed change in procedure for standards publication. They are asking for comment, but vote is tomorrow (Wed.) Proposed change raises the bar by increasing the % votes required. Francisco believes that it's an over reaction in response to a problem that occurred with 90.1. Proposed changes could make it very difficult to get anything passed.

**Subcommittee Reports**

*Handbook (Gaston)*

The next revision of the Handbook chapters is underway.

Chapter 28 has become Chapter 32 so many references will need to be changed. CD+ allows for much more material to be included (photos, videos, ) Suggestions for material for the CD are welcome. The CD can be updated at anytime.

Request for volunteers to review and comment on Chapters 9 and 32. Collin Olson volunteered for both chapters. Andrews had already prepared revisions for Chapter 9. Temple volunteered to review Chapter 9.

### *Programs (Temple)*

Keith Temple circulated the program plan. (attached to these minutes)

Seminar tomorrow at Convention Center. Jeff Siegel chair with Francisco, Walker, and Temple as speakers. Since it's being held at the Convention Center, there's hope for a good turnout even though it's on Wednesday.

Lubliner described the Forum planned for Louisville, *Duct and HVAC Insulation*. Intend to discuss confusion and inconsistencies between insulation requirements on equipment versus ducts. Also, other issues such as "Is R-8 really R-8?" Test is on a flat sample, but insulation is then applied to round duct.

Siegel/Nelson moved to approve the program plan as submitted. Motion approved 7-0-0 CNV.

TC 8.11, Unitary Air Conditioners and Heat Pumps, has inquired about TC 6.3 cosponsoring the seminar *Should There Be Regional Energy Efficiency Ratings for Residential and Light Commercial Air Conditioners and Heat Pumps*. Motion by Temple/Nelson to approve co-sponsoring the session passed 7-0-0. Ray Wright chairing session. Discussion on whether both sides of argument would be presented but it was noted that it's not easily done. Manufacturers' perspective is not of much interest. Four speakers are lined up and Francisco offered to be an additional speaker.

Discussion of proposed Transactions Session for Orlando, *Moving Forced Air Distribution Systems into the Conditioned Space*. Lubliner to chair and would be at the Basis level with mostly papers from Building America projects. Three papers have been identified (2 are done) and a fourth is possible. Suggestion was made to add "Residential" to the title. Motion to support was made Nelson/Temple, approved 7-0-0 CNV.

Proposed Seminar for Orlando briefly discussed. Cummings to chair *Should we allow building cavities to be part of the distribution system in residential or small commercial buildings*. 3-5 speakers likely. Suggestion made to change "allow" to "disallow" or "discourage" because it's currently allowed in many codes.

Temple noted that several programs proposed for Albuquerque, but no discussion.

Olsen noted the possibility of another transaction session on refrigerant charge and indoor airflow impacts on system performance. Three potential authors were identified. TC 8.11 was suggested as a co-sponsor. The proposed program does not have a chair and anyone interested should contact Temple or Olsen.

### *Research (Lubliner)*

Well attended subcommittee meeting (15).

RP 1489, Residential Humidity Control, was awarded to Building Science Corporation. Two-year project started in Sept. 08. PMS met prior to Research SC meeting. Task 1 report is available for review. It identifies what systems they plan to move forward with and those not and why. Conference calls are planned and expect to have information to report at Louisville. Noted that PMS meetings are open to all.

Siegel discussed RTAR that was approved, *"Impacts of Duct Leakage on Residential Indoor Air Quality."* Siegel and Francisco to develop into WS. Strategies were developed to distinguish from other WS on

garage interaction being developed in 62.2. Welcomes involvement from others. Walker noted that 4.3 is very interested in co-sponsoring. 62.2 also agreed to co-sponsor (Francisco)

Olsen discussed Research Chairs Breakfast meeting and plans for next 5-year Research Plan. 11 Goal Topics and Champions identified (attached). They are looking for joint TC participation to address these topics. 50% of Research \$ will go to these topics. Next step is to get brief write-ups (1 page) better defining the topic (the key issues, tasks, ....) Olsen read topics, Champions, and 6.3 liaisons where appropriate.

Lubliner noted that significant funding in stimulus package for improving existing homes and that ASHRAE should identify needed research to support this area.

TC 8.11 requested vote of support for RTAR titled, *Develop alternate setup guidelines for Unitary Air Conditioner test configurations which cannot adhere to ASHRAE specified duct dimensions and external pressure tap locations*. The problem is that larger, more efficient systems do not fit test apparatus. Research SC will send out a letter ballot for support. This had been discussed in Salt Lake City, but RTAR was not available. Feb 9<sup>th</sup> is next deadline for submission.

#### *Web Site*

Olsen stated that Steve Kowalsky is no longer available to maintain website and it is currently very out of date. Requested a volunteer to manage the TC 6.3 website, but no volunteers. No one has expertise.

#### *ASHRAE Learning Institute (Gaston)*

They are beginning to go electronic and ASHRAE is asking for course material contributions.

#### *Standards*

Mike Lubliner discussed SPC 193P activity. The meeting did have a quorum and there was good discussion. Progress is being made and they expect to move to ballot soon. They voted to change the title to state air “tightness” rather than “leakage” because of the static nature of the test method. The Standard’s content would not be affected. There is still some word-smithing to do. They discussed the need to expand scope to cover all types of boxes and the issue of testing under positive or negative pressure. Currently the standard gives manufacturers the flexibility to choose either method. Walker briefly discussed his test results for different test methods. Tracer gas methods are very difficult and thus not practical. Lubliner noted that he is getting pressure from other organizations to move the Standard forward so it can be referenced by others.

Francisco discussed SPC 152R. They met from 6-10 on Sunday, but had problems maintaining a quorum because members have conflicts with other Standard committees. Discussed trying to adapt the Standard to light commercial buildings (Modera to lead drafting effort) and efficacy issue (Plan to write language to close loop hole, but not go any further). Will not make June deadline with these changes to expand scope. Conference call planned for next couple months. Expect it to be easier to achieve a quorum away from the ASHRAE conference.

#### **Old Business**

Olsen briefly reviewed roster status.

**New Business**

Lubliner welcomed Olsen as new chair and Francisco's past service as chair was acknowledged.

New Canadian Standards activity noted by Phillips. C823 on electric consumption of furnaces (Ian involved on his own time) and P10 on appropriate weightings for furnace test conditions (full and part load).

**Adjournment**

The meeting adjourned at 2:50 p.m.

TC 6.3 – Program Plan

January 2009

Meeting	Transactions	Seminar	Forum
Chicago January 2009  Sustainable Urban Design		Wednesday 9:00  Flow Measurement for Small Forced-Air Systems (Siegel) 3 speakers	
Louisville June 2009  Optimal Air Quality			<i>Duct and HVAC Insulation: sweating, noise, energy etc. (Stoops)</i>
program due 2/6/09			
Orlando January 2010  Humidity and Sustainable Indoor	<i>Moving Forced-Air Distribution Systems into the Conditioned Space (Lubliner) 2 or 3 papers</i>	<i>Should Building Cavities be allowed to be used as part of the HVAC Distribution System? (Cummings)</i>	
papers due 4/3/09 program due 8/7/09			
Albuquerque June 2010  Energy Efficient System Design for High Elevations and Dry Climates	<i>Advances in Duct Leakage Measurement (Stoops)</i>	<i>Perspectives on Standard 193 (Lubliner)</i>	
papers due 9/27/09 program due 2/7/10			
Las Vegas Zero Energy Design January 2011			
Montreal Net-Zero Buildings June 2011	<i>Energy Efficient Approaches to Humidity Control (Cummings)</i>		

## **ATTACHMENT 1**

Forum: Air-tight Air-Handlers and Furnaces – Issues for Standard 193P (Lubliner)\* \*Program  
approved for NYC, SLC, and Chicago by TC but not accepted in Program

**TC 6.3 – Program Plan**

**Other Potential Program Topics:**

HVAC System Improvements in Modular Homes

Results of ARTI research projects

Changes to Standard 152

Energy Tax Credits for Residential HVAC – Is It Working and What Does It Cost? (Rocky)  
approved for Long Beach

Performance of Wall-mounted Residential Supply Air Outlets for Forced-air Systems

Measured Performance of Small Forced-Air HVAC Systems (Francisco)



TC 6.3 – Past Programs

Meeting	Symposium / Transactions	Seminar	Forum
Minneapolis June 2000	Field Validation of ASHRAE Standard 152P (Andrews) 21 attendees	Depressurization and Venting Issues for Residences (Hemphill) 44	Residential HVAC in Cold Climates (Jakob) 11 attendees
Atlanta January 2001		Exploring Alternative Energy Efficiency Factors (Temple) 30 attendees	Residential Cooling and Dehumidification in Hot and Humid Climates (Jakob) 35
Cincinnati June 2001		Update on Standards for Residential and Light Commercial Central Systems (Haydock) 50	Experiences with Residential HVAC in HUD-Code Manufactured Homes (Lubliner) 22 attendees
Atlantic City January 2002	Depressurization and Venting Issues for Residences (Jakob) 37		
Honolulu June 2002		Uncontrolled Airflows in Small Commercial Buildings (Kweller) 50	
Chicago January 2003	Advances and Issues in Residential Thermal Distribution System Efficiency (5 speakers - Andrews) 35		What should the “Design of Small Forced Air Systems” Chapter of the Handbook include on Duct Design? (Temple) 7 attendees
Kansas City June 2003	Advances and Issues in Residential Thermal Distribution Efficiency (5 speakers - Temple) 35	Impacts of Duct Systems on Indoor Air Quality (5 speakers - Siegel) 50 attendees	
Anaheim January 2004	Factors Influencing the Energy Performance of Forced-Air Systems		

# ATTACHMENT 1

Meeting	Symposium / Transactions	Seminar	Forum
	(3 speakers -Lubliner) 60		
Nashville June 2004	Forced Air Distribution System Performance (5 speakers - Andrews) 60 attendees	Best Choice Cooling System Airflow Rates for Different Climates (5 speakers - Cummings)	
Orlando February 2005		What can ASHRAE Standard 152 Tell Us About Conditioning Our Houses? (4 speakers - Francisco) 20 attendees	
Denver June 2005	HVAC Systems and Performance in Building America Homes (Vohra) 50 attendees	How Should Thermal Distribution Efficacy be Defined? (Rittelmann) 40 attendees	What Often Ignored Factors Affect Performance of Residential Forced-Air Systems (Gaston) 15 attendees
Chicago January 2006	Managing Return Air in Residential and Small Commercial Buildings (3 authors - Francisco) 50 attendees		A look forward to 2020 for small forced-air H and C systems (Rocky) 21 attendees
Quebec City June 2006			The Role of Forced-Air Systems During Extraordinary Events (Siegel) 30 attendees
Dallas January 2007		Design Considerations for Multi-zone Residential Forced-Air Systems (Rittelmann) 50 attendees	
Long Beach June 2007	HVAC System Improvements in Manufactured Housing (4 papers - Walker) 25 attendees	Heating with Forced Air Heat Pump Systems – Past, Present and Future (4 speakers -Lubliner)	What is Needed to Commission Air Distribution Systems for Small Commercial Buildings (Wray) 35 attendees
New York January 2008	Ability of Ratings to Identify Better Performance: Do We Know What to Expect? (2 papers -		

**ATTACHMENT 1**

Meeting	Symposium / Transactions	Seminar	Forum
	Francisco) 40 attendees		
Salt Lake City June 2008		Climate Optimized Cooling: Improved Energy Efficiency and Better Rating Standards (3 speakers - Cherniack)  ASHRAE's Impact and Potential for Weatherization (3 speakers - Francisco)	

## 2010-2015 Research Strategic Plan – Draft Goal Topics – January 2009

<b>Goal Topic</b>	<b>Goal Champion</b>	<b>Preliminary TC List</b>
Maximize actual operational energy performance of buildings & facilities	<b>Martha Hewett</b> (RAP.BldgOpEffic@ashrae.net)	TG 3, TC 1.2, 4.4, 7.1, 7.2, 7.3, 7.4, 7.5, 7.6, 7.7, 7.8, 7.9, TRG7, SBOMC, BPM
Progress toward cost-effective net-zero energy buildings	<b>Jim Brodrick</b> (RAP.NetZero@ashrae.net)	TG 1, TC 1.10, 4.4, 4.7, TRG 4, 5.5, 6.7, 6.8, 6.9, 7.1, 7.4, 7.6, TRG 7, Sect. 9, 10.1, 10.5, AEDG
Residential retrofit energy efficiency	<b>Larry Markel</b> (RAP.Residential@ashrae.net)	TG 3 & 4, TC 4.1, 4.7, 5.11, 6.3, 6.5, 6.6, 6.7, 6.8, 6.9, 6.10, 8.9, 8.11, 9.5, AEDG
Quantification of IEQ benefits	<b>Bill Fisk</b> (RAP.IEQ@ashrae.net)	EHC, IAQ DG, BPM, Sect. 2, 5, 7, 9, TC 1.12, 4.7, 4.10
Energy Standards Development, Compliance & Enforcement	<b>Steve Taylor</b> (RAP.Stds@ashrae.net)	Sect. 4 & 9, TC 1.4, 1.5, 1.8, 1.10, 5.5, 6.6, 6.7, 6.8, 6.9, 6.10, 7.1, 7.4, 7.5, 7.6, TG1 & 3, AEDG, BPM
Building Information Modelling of energy efficient, high performing buildings	<b>Hywel Davies</b> (RAP.BIM@ashrae.net)	BIM, TC 1.5, 1.6, TG3, Sect. 4, 5, 6, 7, 8, 9
Load calculation methods, energy calculation methods and design procedures suitable for low energy and net-zero energy buildings	<b>Jeff Spittler</b> (RAP.BldgCalcs@ashrae.net)	TG 1, TC 4.1, 4.3, 4.4, 4.5, 4.7, 4.10, 7.4, 7.5, 7.6, TRG 4, AEDG
Natural refrigerants and refrigerant charge reduction	<b>Zahid Ayub</b> (RAP.Refrig@ashrae.net)	REF, Sect. 10, TC 9.5, 9.3, 9.2, 9.1, 8.11, 8.9, 8.8, 8.6, 8.5, 8.4, 8.2, 8.1, 3.8, 3.3, 3.2, 3.1, 1.3
Improve specific components of HVAC&R systems	<b>Wayne Reedy</b> (RAP.Components@ashrae.net)	TC 1.3, 1.11, 3.1, 5.1, 5.2, 5.5, 6.3, 6.6, 6.10, 8.1, 8.2, 8.3, 8.4, 8.5, 8.8, 8.9, 8.11, TG8, REF
Support of Advanced Energy Design Guides	<b>Jim Brodrick</b> (RAP.AEDG@ashrae.net)	TG 1, TC 1.10, 4.4, 4.7, TRG 4, 5.5, 6.7, 6.8, 6.9, 7.1, 7.4, 7.6, TRG 7, Sect. 9, 10.1, 10.5
Transform engineering and architectural education	<b>Alison Kwok</b> (RAP.EDU@ashrae.net)	TC 1.1, 1.3, 3.1, 2.5, 2.8, 7.1, PDC, SAC, YEA

Contact Mike Vaughn at [mvaughn@ashrae.org](mailto:mvaughn@ashrae.org) if you have problems reaching RAP champion via e-mail alias above.