

AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR-CONDITIONING ENGINEERS, INC.
1791 Tullie Circle, N.E./Atlanta, GA 30329
404-636-8400

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.: TC 4.1 DATE: July 2013

TC/TG/TRG TITLE: LOAD CALCULATION DATA AND PROCEDURES

DATE OF MEETING: January 20, 2014 LOCATION: NYC

MEMBERS PRESENT	YEAR APPT D	MEMBERS ABSENT	YEAR APPTD	EX-OFFICIO MEMBERS AND ADDITIONAL ATTENDANCE
Voting Rolando Legarreta Chip Barnaby Steve Bruning Larry Sun Suzanne LeViseur Som Shrestha Bob Doeffinger Non-Voting Stephen Roth Jeff Spitler Chris Wilkins Jim Pegues Fred Bauman Glenn Friedman Stephen Kavanaugh	2012 2010 2013 2013 2011 2012 2012	Voting Dan Fisher Doug Hittle Non Voting Lucy Armankwah David Ariyo Andrew Braum Jui-Chen Roger Chang Charlie Curcija Joe Ferdleman Ken-Ichi Kimura Brian Rock Branislav Todorovic Gary Wingfield Gabrielle Powell Ahmad Sleiti Kevin Wood Elyse Malherek	2011 2011	Visitors Chris Delgado Tim Devine Alireza Behfar Oman Farkye Rachel Spitler Bin Reynolds Russell Taylor

DISTRIBUTION:

All Members of TC/TG/TRG

ADDITIONAL DISTRIBUTION:

TAC Chairman: Walter Grondzik
 TAC Section Head: Michael R. Bilderbeck
 Chapter Tech Transfer: Harris M. Sheinman
 Research Liaison: Xudong Yang
 ALI/PDC: Hugh McMillan
 Special Publications: Francis A. Mills
 2013 HB Fundamentals: David Yuill
 Standard Liaison: James Aswegan
 Staff Liaison: Michael R. Vaughn

"These draft minutes have not been approved and are not the official, approved record until approved by this committee."

January 20, 2014
Committee Meeting Minutes
TC 4.1 Load Calculations Data and Procedures
NYC

1. Meeting called to order by Rolando Legarreta at 2:15 p.m.
2. Roll Call
 - a. 7 of 9 voting members present.
 - b. Quorum present.
3. Introductions
4. Denver Meeting Minutes Action
 - a. Motion to approve Denver minutes as submitted: Suzanne LeViseur.
 - Second: Larry Sun.
 - Vote 6-0-0, 2 absent, CNV.
5. Liaison Report – None
6. Research Subcommittee – Chris Wilkins
 - a. RTAR – Non-uniform Radiant Systems
 - Fred Bauman and Dove authored.
 - Focus on peak load, cooling, and constant air flow.
 - Larry Sun made motion to submit RTAR with clarification and correction made by the Subcommittee Chair, Second: Suzanne LeViseur.
 - Glenn Friedman requested to be involved.
 - Deadline for submittal May 2014.
 - Vote 6-0-0, 2 absent, CNV.
 - b. WS Low Energy Light Approved.
 - Posted for bidding.
 - Chairman Legarreta assigned Steve Bruning, Larry Sun, and Bob Doeffinger to the PES.
 - c. RT 1616 – Jim Pegues reported on Updating Load Manual
 - PMS to report comments to Jeff Spitler.
 - Jeff is to complete by spring for review.
 - Suzanne LeViseur made a motion for a no cost extension until Dec. 31, 2014.
 - Vote 6-0-0, 2 absent, CNV.
7. Programs/Standards Subcommittee Report – Glenn Friedman
 - a. Subcommittee Chairman Friedman submitted the attached Program/Standards Subcommittee Minutes.
 - b. Motion by Larry Sun to submit BIM and Load Calculation Seminar as first choice for Seattle..

- Second: Suzanne LeViseur.
- Vote: 6-0-0, 2 absent, CNV.

8. Standards

- a. See attached discussion on Standard SPC-203 Method of Test for Determining Heat Gain of Office Equipment Used in Buildings.
- b. SPC-183 Load Calculations submitted for reinstatement.

9. Handbook Subcommittee – Steve Bruning

- a. Subcommittee Chairman Bruning submitted the attached Handbook Subcommittee Meeting Minutes.
- b. Steve Bruning reviewed the schedule for the 2017 HoF Chapters (see attached).
- c. Reviewers were appointed.
 - Chapter 17 – Chip Barnaby, Chris Delgado.
 - Chapter 18 –Jim Pegues, Larry Sun, Stephen Roth.
 - Reviewers to be complete by end of May.

10. ASHRAE website for TC 4.1

- a. Jim Pegues reported the site is running and will be updated shortly.

11. Old Business

- a. Discussion on Chapter 17 Residential Loads between Chris Wilkins and Chip Barnaby revisiting load factors on different facades. Chip commented there is not much difference to worry about.
- b. Steve Kavanaugh commented the latent loads need more attention while computing residential loads.

12. New Business: None

13. Motion to Adjourn: Suzanne LeViseur

- Second: Larry Sun.
- Vote: 6-0-0, 2 absent CNV

Attachments:

1. Program/Standards Subcommittee Minutes
2. Handbook Subcommittee Minutes
3. NYC Agenda
4. Sign-In Sheet

TC 4.1 Meeting, Programs/Standards Subcommittee Report
New York, Monday, January 20, 2014

Glenn Friedman, Program Chair

PROGRAMS

1. Current Programs
 - a. New York
 - i. Seminar 8 - The Latest Trend and Abilities of Mobile Applications for Load Calculations and Building Energy Evaluations
 - ii. Seminar 42 - Cooling Load Calculations for Radiant and Underfloor Air Distribution (UFAD) Systems: Are They the Same as Traditional Methods?
2. Future Programs
 - a. Seattle, June 28-July 2, 2014
 - i. #1 Committee Approval - BIM and Load Calculations Seminar Update, *Roth, Bruning, Wilkins*. This will take time and work so maybe for Seattle or beyond. Work with MTG- BIM (MTG=Multidisciplinary Task Group). John Kennedy alleges there are improvements. Discuss what value it has in BIM to Load. Is it working? Should this "BIM in Practice" be an MTG BIM seminar rather than a TC4.1 seminar (Chris Wilkins)? Chip talked to Dennis Knight as a speaker and he is interested. MTG BIM is interested. TC4.1 could co-sponsor. Glenn to Chair and push it through with Chris and Chip in Fundamentals or Applications track. Chris will speak. Seminar or Workshop. Possible workshop. TC1.5 Computer Applications would like to co-sponsor per Stephen Roth. Move and passed by committee.
 - ii. Dual facades topic is supported by Branco. Push back until Branco or TC4.4 can help. Who can help? Need some speakers and materials for the handbook. Chris will do a literature search. Glenn to talk to Robert Marcial. Glenn to contact Branco and ask him.
 - iii. Guideline 20 discussed doing a workshop on use cases. So from information modeling they are interested in participating per Chip. Topic is about use case for load calculations as a workshop. One speaker from Guideline 20 and one speaker from TC4.1. This might be TC7.3. RP-1609 where they are developing use cases for O&M, Rob Hitchcock. Steve Bruning (Chris is the alternate) would be a possible speaker. SGPC-20 might be the sponsor. Use case 101 with a loads example with a person from both sides like architect and mechanical engineer to figure out how to do effective information exchange. Chip to send email to Guideline 20 and cc: Glenn.
 - b. Chicago, January 24-28, 2015
 - i. Back to Basics: The Science, Application and Art of Load Calculations. Applicable to young engineers. Track 2: Fundamentals and Applications, Track Chair: Dan Fisher – Hold for Chicago.
 1. Science: New ASHRAE Load Calculations User's Manual and the current overview of load calculations, by Jeff Spitzer
 2. Application: Zoning and load calculation basics, what do you do early in design when you don't have all the answers, by Larry Sun
 3. Art: Case studies, horror stories, what to watch for, and odd-ball cases, by Steve Bruning
 - c. Atlanta, June 27-July 1, 2015
3. Future Program Brainstorm Ideas
 - a. Seminar Session Proposals

TC 4.1 Meeting, Programs/Standards Subcommittee Report
New York, Monday, January 20, 2014

- i. Atrium load calculations, empirical case studies
- ii. Ventilation and infiltration
- iii. How Load Calculations Interact with Other ASHRAE Chapters
 - Weather
 - Infiltration
 - Building skin color
 - Ventilation
 - Fenestration, dynamic windows
- iv. Business Practices Risks of Loads Calc Codes Being so Hidden, *TC1.7 Legal*
- v. Forum on what is the Standard of Care for load calculations. Mitchell Swan.

STANDARDS

1. Standard SPC-203 Method of Test for Determining Heat Gain of Office Equipment Used In Buildings
 - a. SPLS granted a waiver of membership balance so we do not need Producers.
 - b. Advisory Public Review ended August 6, 2013 and there were no comments.
 - c. Have completed a public review draft with minor edits required for accuracy of test equipment. Should be ready for submission to committee for approval vote so revised draft can be submitted to SPLS for Public Review. Submission to SPLS is by February 14.



® ASHRAE American Society of Heating, Refrigerating and Air Conditioning Engineers, Inc.

TC4.1 Load Calculation Data & Procedures

New York, New York

January 18-22, 2014

Handbook Subcommittee Report

Sunday, January 19, 3:00 PM to 4:00 PM

Sheraton, NY Madison 2

1. **Handbook Committee Liaison Comments:** **David Yuill, Liaison to TC4.1.** – at Fundamentals coordination meeting Sunday morning David confirmed the below submittal dates for our chapters.

2. **Schedule for 2017 HoF Chapters:**
 - 2014 June – Complete Review of Chapters – Identify Improvements – Assign revisers
 - 2015 January – Revisers report progress – provide draft individual revisions
 - 2015 June – Rough draft overall chapters
 - 2016 January – Full draft overall chapters reviewed by Handbook subcommittee
 - 2016 April – Deadline for new research results to be incorporated in chapters
 - 2016 June – Final chapters approved by full TC**
 - 2016 July 12 – Chapter 17 submitted to Yuill/ASHRAE
 - 2016 July 19 – Chapter 18 submitted to Yuill/ASHRAE
 - 2017 June – HoF Published

3. **Handbook CD+:**

CD+ being discontinued in favor of Handbook On-Line. Enhancements like master example, RTS and CTS spreadsheets will be available via the On-Line version.

Membership will now have a choice between printed Handbooks and On-line access as part of basic dues. Third choice to get both will be \$29/year.

4. **Chapter 17 Residential Loads:**

Chip Barnaby noted by email that the Chapter had not undergone a significant revision in several years and felt it was time for that.

5. **Chapter 18 Non-Residential Loads:**

Three volunteered for conducting reviews of Chapter 18, Jim Pegues, Larry Sun and Stephen Roth. Those should be submitted on the attached review form to Steve Bruning by end of May to compile prior to the June meeting.

and make recommendations for its revision. A lead author/reviser for the chapter is selected.

Year 2: The lead author/reviser and others revise the chapter.

Year 3: The nearly-complete draft is reviewed by all members of the subcommittee, and then all members of the TC. After any changes are made, the subcommittee chair requests a recorded approval vote by the full TC. When approved, the lead author/reviser completes the chapter approval checklist and submits the revision and supporting material to the TC's assigned Handbook Committee liaison before the required deadline.

Year 4: The Handbook editor and staff prepare the chapter for publication and send a proof to the TC's designated final reviewer. After final corrections are made and queries answered, the chapter is complete. At the end of the fourth year, the revision is published and the process begins anew.

6.2 Chapter Review

For each chapter, the TC Handbook subcommittee chair selects one or more reviewers to

- check for errors that should be noted in the errata published with the next volume and on the ASHRAE web site (www.ashrae.org), and corrected in ASHRAE Handbook Online;
- recommend whether the chapter should be discontinued, what revisions should be made, or if no changes are necessary; and
- suggest reviser(s) for the chapter.

A checklist of review questions appears in Appendix C of this guide. The Handbook Committee liaison or the TC/TG/TRG may also send the chapter to external reviewers for comment. The results will be made available to the TC Handbook subcommittee chair.

TCs are encouraged to establish and maintain contact with other professional organizations or associations related to the topic of the TC's Handbook content for the purpose of soliciting reviews of the content between revisions. The TC's members are considered the best source of knowledge regarding the work and expertise of these organizations worldwide; many TC members are also members of these groups.

6.3 Chapter Revision

After the chapter review, the TC begins the revision, which lasts up to two years. The lead reviser normally sends interim drafts to various reviewers for their comments. After the draft is finalized, the chapter then receives TC approval by a recorded vote and is sent to the Handbook Committee liaison according to the schedule established by the editor.

6.4 Reviser's and TC's Responsibility

Material prepared for possible use in the Handbook is not to be released for publication outside ASHRAE, nor is material used elsewhere to be reprinted in the Handbook without proper review, permission, and referencing. Written permission must be obtained each time copyrighted material is used or reused. Any questions regarding this requirement should be discussed with the Handbook Committee liaison and the Handbook editor.

6.5 General Revision Guidelines

- The **audience** is expected to have a college degree or equivalent experience, probably technical; however, they will not generally have expertise in the chapter material.

ASHRAE® HANDBOOK CHAPTER REVIEW FORM

Handbook Volume Reviewed: _____ Volume Year: _____ Date: _____

Chapter No. _____ Chapter Title _____

1. Does this chapter, in your opinion, truly reflect the state of the art? Yes No Somewhat

If you answered “no” or “somewhat,” please indicate typical example(s) below or provide an attachment.

2. Check the description that most nearly categorizes the relevance and balance between theory and practice in this chapter:

- a. Too much theory, not enough practical application.
 b. Just about right.
 c. Too little theory to support the recommendations.
 d. Obsolete—remove this subject from ASHRAE publication.
 e. Other: _____

3. Tables in this chapter are (check all that apply):

- a. Clear and understandable.
 b. Adequately footnoted.
 c. Properly referenced in the text.
 d. Sufficient for the average user.
 e. Too voluminous for a Handbook chapter.
 f. Inadequately documented.
 g. Not required (please list specific tables):
 h. Other: _____

1. Please identify tables prompting negative comments:

2. Please suggest tables, if any, that should be added to make the chapter more useful:

4. Equations and derivations are (check all that apply):

- a. Clear and understandable.
- b. Sufficient for the average user.
- c. Properly referenced in text.
- d. Properly footnoted to identify variables.
- e. Too voluminous for a Handbook chapter.
- f. Inadequately documented.
- g. In need of improvement.
- h. Not required (please list specific equations or passages):
- i. Other: _____

1. Please identify derivations/equations prompting negative comments:

2. Please suggest alternatives:

5. The examples given in this chapter are (check all that apply):

- a. Clear and understandable.
- b. Adequate for the average user.
- c. Appropriately interfaced with the text.
- d. Mathematically correct.
- e. Use the tables as indicated by the text.
- f. Inappropriate.
- g. Obsolete.
- h. Too complicated.
- i. Useless.
- j. Not required (please list specific examples):
- k. Other: _____

1. Please identify examples prompting negative comments:

2. Please identify sections that need more explanation or examples to clarify them:

6. The figures and graphics in this chapter are (check all that apply):

- a. Clear and understandable.
- b. Adequate for the average user.
- c. Appropriately interfaced with the text.
- d. Properly footnoted.
- e. Hard to read.
- f. Inappropriate.
- g. Obsolete.
- h. Not required (please list specific figures): _____
- i. Other: _____

1. Please identify figures or graphics prompting negative comments:

2. Please suggest additional figures, if any, that should be added to the chapter:

7. ASHRAE maintains a reputation as the “Standard of the Industry” in HVAC&R matters, with the Handbook series serving as its “bible.” In this context, and on an ascending scale from 0 to 7, please rate your overall evaluation of this chapter as a worthy representative of and contributor to this traditional role:

- 7 Couldn't be better in any way.
- 6 Well done—only nominal review required.
- 5 Okay, but needs update more often.
- 4 Technically correct, but needs editing.
- 3 Technically acceptable, but needs amplification.
- 2 Not technically up to date, but better than nothing.
- 1 Completely revise and update or drop immediately.
- 0 Drop from Handbook or any other publication.

COMMENTS:

- Do you wish to receive feedback from this chapter's TC, in response to your comments?** (Please note that any contact information you provide will be used only for this purpose, and will not be shared with any other parties.)

Name (optional):

Contact information (optional):

Return Completed Review to

Mark Owen, Handbook Editor

mowen@ashrae.org

ASHRAE, 1791 Tullie Circle, Atlanta, GA 30329



ASHRAE Technical Committee 4.1

Agenda for - TC4.1 Load Calculation Data & Procedures

**New York City
January 2014**

**TC4.1 Load Calculation Data and Procedures
Monday, 2:15 PM to 4:15 PM
Executive Board Room (SL)**

- | | |
|--|--------------------|
| 1. Call to Order | Rolando Legarreta |
| 2. Roll Call | Robert Doeffinger |
| 3. Introduction of Visitors | Rolando Legarreta |
| 4. Approval and/or Corrections to Denver Meeting Minutes | Rolando Legarreta |
| 5. Liaison Comments | |
| TAC Chair | Walter Grondzik |
| Section Head | Michael Bilderbeck |
| Chapter Technology Transfer | Harris Sheinman |
| Research | Xudong Yang |
| Handbook | David Yuill |
| ALI/PDC | Hugh McMillon |
| Standards Liaison | James Aswegan |
| Staff Liaison | Michael R. Vaughn |
| 6. Research Subcommittee Report | Chris Wilkins |
| 7. Programs Subcommittee Report | Glenn Friedman |
| 8. Standards Subcommittee Report | Glenn Friedman |
| 9. Handbook Subcommittee Report | |
| Residential Chap 17 | Chip Barnaby |
| Non-Residential Chap 18 | Steve Bruning |
| 10. ASHRAE Website for TC 4.1 | Jim Pegues |
| 11. Old Business | Rolando Legarreta |
| 12. New Business | Rolando Legarreta |
| 13. Adjournment | Rolando Legarreta |



ASHRAE Technical Committee 4.1

Meetings – New York City, January 2014

TC 4.1 Load Calculation Data and Procedures
Monday 2:15-4:15p, Executive Board Room (SL)

TC 4.1 Handbook
Sunday 3:00-4:00p, Madison 2 (S5)

TC 4.1 Research
Sunday 4:00-5:00p, Madison 2 (S5)

TC 4.1 Programs & Standards
Sunday 5:00-7:00p, Madison 2 (S5)

TC 4.1 RP-1616 PMS
Tentative: During Handbook time slot, Madison 2 (S5)

Sponsoring: Seminar 8 Latest Trends and Abilities of Mobile Applications
Seminar 42 Cooling Load Calculations for Radiant and UFAD

Introduction of officers and voting members for 2014:

Rolando Legarreta	Chair	Voting
James Pegues	Vice Chair	Non-Voting
Robert Doeffinger	Secretary	Voting
Steven Bruning	Handbook Subc Chair	Voting
Chris Wilkins	Research Subc Chair	Non-Voting
Glenn Friedman	Stds/Prog Subc Chair	Non-Voting
Chip Barnaby		Voting
Dan Fisher		Voting
Doug Hittle		Voting
Suzanne LeViseur		Voting
Som Shrestha		Voting
Larry Sun		Voting

TC 4.1 Sign-In Sheet - New York City - January 2014

YES

2014 January	Name	Status	Affiliation	E-mail
1	No Bob DeStinger	VM	ZMM Inc	ncd@zmm.com
2	No STEANNE LELISSEK	VM	Haddad Engineering, Inc	slevisour@haddadeng.com
3	No James Williams	CM	Hollow-ics	cwillms@hollow-ics.com
4	YES CHRIS DELGADO		SIEMENS	CHRISTOPHER.DELGADO@SIEMENS.COM
5	No Sam Shrestha	VM	ORNL	SHRESTHA@ornl.gov
6	No Tim Devine		DNVGL NYSERDA	timothy.devine@dnvgl.com
7	Yes ALIREZA BEHFAR	Student	UML	albehfar@uconnmha.edu
8	N ROBERTO LEZARON	VM	Alegria Engineering	roberto@alegria-engineering.com
9	N Jim Beckus	NUM	CANONICAL	JAMES.F.BECKUS@CANON.UT.COM
10	N Fred Bauman	CM	Univ. of California, Berkeley	Fbauman@berkeley.edu
11	N Steve Brumby	VM	Newcomb & Boyd	sbrumby@newcomb-boyd.com
12	N Larry Sur	VM	tkIsc	lsm@tkIsc.com
13	N Steve Kavanaugh	CM	Univ. of Alabama	skavanaugh@eng.ua.edu
14	Chip Barnaby	VM	LeRightSoft	chbarneb@letrightsoft.com
15	🤔 Jeff Spitzer	CM	OSU	spitzer@ohstate.edu
16	N Owen Fackler		Steven Wmstr Assoc. Inc	owen.fackler@swmstr.com
17	student Rachel Spitzer		OSU student	rachel.spitzer@ohstate.edu
18	N Bin Reynolds		T&E, Inc.	BReynolds@tobainc.com
19	Russell Taylor		United Technologies	taylor@utrc.ut.com
20	N Stephan Roth	CM	Carmel Software	sroth@carmelsoft.com
21	N Glenn Friedman	VM	Taylor Engineering	gfriedman@taylor-engineering.com
22				
23				
24				