

TC/TG/TRG No. TC 4.2 DATE: January 15<sup>th</sup>, 2014TC/TG/TRG TITLE: Climatic InformationDATE OF MEETING: June 25<sup>th</sup>, 2013 LOCATION: Denver, CO.

<b>MEMBERS PRESENT</b>	<b>MEMBERS ABSENT</b>		<b>EX/OFFICIO MEMBERS AND ADDITIONAL ATTENDEES</b>
Didier Thevenard (Chair, Web, VM) Dru Crawley (VC, Res, Stds, VM) Juan-Carlos Baltazar (Sec, VM)  Neal Lott (VM) Philip Jarret (VM) Joe Huang (VM) Chip Barnaby (VM)  Steve Cornick (CM) Larry Degelman (CM) Dave Westberg (PCM) Chuck Khuen (PCM)	Norm Bourassa (VM) J Patrick Carpenter (VM) Stuart Malkin (VM) Ronald Petersen (VM) John Kennedy (VM)  Evyatar Erell (NQ) Geoffrey Levermore (NQ)	Anthony Arguez (CM) William Bahnfleth (CM) Constantinos Balaras (CM) Bryan Becker (CM) Jui-Chen Roger (CM) Don Colliver (CM) Reda Djebbar (CM) Brian Fricke (CM) Chris Gueymard (CM) Kenneth Hubbard (CM) Achilles Karagiozis (CM) Clayton Lampman (CM) Linda Lawrie (CM) Robert Lucas (CM) Robert J Morris Richard Perez (CM) Michael Roth (CM) Thomas Stoffel (CM) Charles Whitlock (CM)	David Beswarth Abram Conant Lu Xing  Michael R Bilderbeck (TAC SH) Harris Sheinman (Liaison)

TAC CHAIR	Charles Culp	CHAP TECH TRANS LIAISON	Harris Sheinman
TAC SECTION HEAD	Michael R Bilderbeck	PROGRAM LIAISON	Bill Dietrich
RAC RESEARCH LIAISON	Srinivas Garimella	PROF DEV COMM (ALI)	John H Nix
SPECIAL PUBS LIAISON	William S Fleming	STANDARDS LIAISON	James Tauby
HANDBOOK LIAISON	James Dale Aswegan	STAFF LIAISON (RESEARCH/TECH)	Mike Vaughn

Abbreviations: VM = Voting Member, CM = Corresponding Member, NQ= Member Non-quorum

**ASHRAE TC/TG/TRG ACTIVITIES SHEET****DATE:** Current as of 1<sup>st</sup> February 2013**TC/TG/TRG NO.:** TC 4.2**TC/TG/TRG TITLE:** Climatic Information**CHAIR:** Didier Thevenard**VICE CHAIR:** Dru Crawley**SECRETARY:** Juan-Carlos Baltazar**TC/TG/TRG MEETING SCHEDULE**

Location-Past 12 Months	Date	Location-Planned Next 12 Months	Date
Denver, CO	2013-06-25	New York, NY	2014-01-21
Dallas, TX	2013-01-29	Seattle, WA	2014-07-01
San Antonio, TX	2012-06-26	Chicago, IL	2015-01-27

**TC/TG/TRG SUBCOMMITTEES**

Function	Chairman
Handbook	Neal Lott
Research & Standards	Drury Crawley
Program	Joe Huang
Honours	Joe Huang

**RESEARCH PROJECTS-CURRENT**

Project Title	Contractor	Monitoring Comm.	Report Made At Meeting
1413-TRP Developing Standard Procedures for Filling Weather Data-Gaps During Analysis of Measured Building Energy Use	University of Oklahoma	Didier Thevenard (Chair), Chip Barnaby, Steve Cornick, Neal Lott	No cost extension to the end of September 2013
1613-RP Update Climatic Design Data in Chapter 14 of the 2013 Handbook of Fundamentals	Numerical Logics	Robert Morris (Chair), Neal Lott, Steve Cornick, Steve Bruning, Dru Crawley	completed
1561-RP Procedures to Adjust Observed Climatic Data for Regional or Microclimatic Variations	Novus Environmental Inc.	Robert Morris (Chair), Neal Lott, Steve Cornick, Dru Crawley	On progress and in time. Expected to be complete by June 2014
1700-RTAR Moisture Design	Yes	Yes	Reference Years for Hygrothermal Analysis and Design of Buildings (1325-RP Update)

<b>LONG RANGE RESEARCH PLAN</b>							
Rank Title	RTAR			Work Statement			RAC Approval for bidding
	Writ-ten	TC Approved	Subm'd to RAC	Writ-ten	TC Approved	Subm'd to RAC	
1610-WS, Development of a Transposition Model for Clear-Sky Solar Irradiance	Yes	Yes	Yes	Yes	Yes	Yes	No progress
1700-RTAR Moisture Design Reference Years for Hygrothermal Analysis and Design of Buildings (1325-RP Update)	Yes	Yes					Cornick will put a draft RTAR on the TC Google group by August 15th

<b>HANDBOOK RESPONSIBILITIES</b>					
Year	Volume	Chapter Title	No.	Deadline	Handbook Sub. Liaison
2013	HOF	Climatic Design Information	14	2013-02	James Dale Aswegan

**STANDARDS ACTIVITIES – List and Describe Subjects**

TC 4.2 is the cognizant TC for Std. 169 *Weather Data for ASHRAE Building Standards*. The TC 4.2 HOF data has been incorporated into this proposed standard. Other coordination will be undertaken as needed such as with SSPC 169.

<b>TECHNICAL PAPERS from Sponsored Research-Title, when presented (past 3 yrs. present &amp; planned)</b>
<ul style="list-style-type: none"> <li>Revising ASHRAE Climatic Data for Design and Standards, Part 1: Overview and Data (RP-1613) (DE-13-016)</li> <li>Revising ASHRAE Climatic Data for Design and Standards, Part 2: Clear-Sky Solar Radiation Model (RP-1613) (DE-13-017)</li> <li>Poster Session, Methods for estimating heating and cooling degree-days to any base temperature (1453-RP) (LV-11-021)</li> <li>Updating the ASHRAE Climatic Data for Design and Standards (1453-RP) (AB-10-012)</li> <li>Impact of Typical Weather Selection Approaches on Energy Analysis of Buildings (RP-1477) (OR-10-042)</li> <li>Influence of Long-term Trends and Period of Record Selection on the Calculation of Climatic Design Conditions and Degree-Days (OR-10-045)</li> <li>Evaluation of Typical Weather Year Selection Approaches for Energy Analysis of Buildings (1477-RP) (Louisville, June 2009) (LO-09-072)</li> </ul>

<b>TC/TG Sponsored Transactions-Title, when presented (past 3 yrs. present &amp; planned)</b>
Technical Paper Session 5: Improvements to Climatic Data for ASHRAE Calculations – Denver CO, June 2013.

<b>TC/TG Sponsored Seminars-Title when presented (past 3 yrs. present &amp; planned)</b>
<ul style="list-style-type: none"> <li>• Seminar 65 - Impacts of Environmental Change on Building Design and Their HVAC Systems – San Antonio, TX, June 2012</li> <li>• Seminar 18: New High Quality Solar Data Sources and Analysis Methods for High Resolution Weather Applications: Part 1 – Montreal, June 2011</li> <li>• Seminar 48: New High Quality Solar Data Sources and Analysis Methods for High Resolution Weather Applications: Part 2 – Montreal, June 2011</li> <li>• Seminar 16: Climate Change: It's Happening, So Who's Responding? TC 2.5 and TC 4.2 Co-sponsor – Las Vegas, January 2011</li> <li>• Seminar 11: Background on Load Calculations Methodologies (Past and Present); Current ASHRAE Information (Handbook and Publications), TC 4.1 (TC 4.2 co-sponsor) – Orlando, January 2010.</li> </ul>
<b>TC/TG Sponsored Forums-Title, when presented (past 3 yrs. present &amp; planned)</b>
<ul style="list-style-type: none"> <li>• Climatic design information in the 2013 Handbook – Montreal, June 2011</li> </ul>
<b>JOURNAL PUBLICATIONS, when published (past 3 yrs. present &amp; planned)</b>
Monthly average clear-sky broadband irradiance database for worldwide solar heat gain and building cooling load calculations, by Christian Gueymard & Didier Thevenard. I, Volume 83, Issue 11, November 2009, Pages 1998-2018.

**Attachments:**

Schedule and Agenda

Minutes

Action Items

TC4.2 Handbook Meeting

TC/TG Activity Feedback Form

Research Subcommittee Agenda

**2013 Annual Meeting Schedule and Agenda, Denver, CO  
TC 4.2 (Climatic Information) and Related Activities**

Time/Date	Meeting/Event	Hotel, Room, Floor
<b>Saturday, 22 June 2013</b>		
<i>No activities planned</i>		
<b>Sunday, 23 June 2013</b>		
9:30 a.m. - 10:30 a.m.	1413-RP, <i>“Developing Standard Procedures for Filling Climatic Data Gaps for use in Building Performance Monitoring and Analysis”</i>	Colorado (TZ)
11:00 a.m. - 12:30 p.m.	Conference paper session 1 (intermediate) <i>Energy Efficiency Modeling in Buildings</i> Evaluation of a Climate Modelling Procedure Against Observed Meteorological Data, by Qui, Roth, Fuquan, Hains and Slusarczyk	Governors Square 14
1:00 p.m. - 2:00 p.m.	1613-RP, <i>“Update Climatic Design Data in Chapter 14 of the 2013 Handbook - Fundamentals”</i> and TC 4.2 Handbook Subcommittee Meeting	Columbine (TT)
2:00 p.m. - 3:00 p.m.	TC 4.2 Program subcommittee	Columbine (TT)
3:00 p.m. - 4:30 p.m.	1561-PES, <i>“Procedures to Adjust Observed Climatic Data for Regional or Mesoscale Climatic Variations”</i>	Columbine (TT)
<b>Monday, 24 June 2013</b>		
8:00 a.m. – 9:30 a.m.	Technical paper session 5 (intermediate): <i>Improvements to Climatic Data for ASHRAE Design Calculations</i> <ul style="list-style-type: none"> <li>• Revising ASHRAE Climatic Data for Design and Standards, Part 1: Overview and Data, by Thevenard and Cornick</li> <li>• Revising ASHRAE Climatic Data for Design and Standards, Part 2: Clear-Sky Solar Radiation Model, by Gueymard and Thevenard</li> </ul>	Plaza Ballroom A

- An Analysis of NASA's MERRA Meteorological Data to Supplement Observational Data for Calculation of Climatic Design Conditions, by Westberg, Crawley, Hoell, Chandler and Zhang

10:00 a.m. - 12:00 p.m.	Weather Data SSPC 169, <i>Weather Data for Building Design Standards</i>	Director's Row I (PL)
4:15 p.m. - 6:00 p.m.	TC 4.2 Research Subcommittee Meeting	Century (TZ)

**Tuesday, 25 June 2013**

1:00 p.m. to 3:30 p.m.	TC 4.2, Climatic Information, Full Committee Meeting	Plaza Court 6 (PC)
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**Wednesday, 26 June 2013**

*No activities planned*

## AGENDA, ASHRAE TC 4.2 Climatic Information

1:00 – 3:30 PM, Tuesday, 25 June 2013

**Scope: TC 4.2 is concerned with identification, analysis and tabulation of climatic data for use in analysis and design of heating, refrigeration, ventilation and air-conditioning systems. Promotion of effective use of weather information in these applications is also included.**

1:00 PM	Call to order Roll call Introductions Approval of agenda Approval of minutes of Dallas meeting (January 2013) Report from the Chair/Announcements Introduction of liaisons (liaison announcements/requests)	<b>Thevenard Baltazar</b>
1:15 PM	Membership Roster Rollovers (for July 2013)	<b>Thevenard</b>
1:20 PM	Review of Action Items and Status	<b>Crawley</b>
1:35 PM	Research Reports on status of current, future and completed research projects: <ul style="list-style-type: none"> <li>● 1413-RP (Filling of data gaps in climatic records)</li> <li>● 1561-RP (Mesoscale modeling of climatic data)</li> <li>● 1610-WS Clear sky transposition model</li> <li>● 1613-RP (Update Climatic Design Data in Chapter 14 of the 2013 Handbook - Fundamentals)</li> <li>● Draft WS, Update Climatic Design Data in Chapter 14 of the 2017 Handbook - Fundamentals (Lott)</li> <li>● A Global Database of Moisture Design Reference Years for Hygrothermal Analysis and Design of Buildings: 1325-RP Update (Steve Cornick)</li> <li>● Long-term research plan</li> <li>● Other potential research projects</li> </ul>	<b>Crawley</b>
2:05 PM	Handbook <ul style="list-style-type: none"> <li>● 1613-RP Update of Climatic Data for 2013 Handbook - Fundamentals</li> <li>● Revisions and errata</li> </ul>	<b>Lott</b>
2:20 PM	TC-4.2 developments	<b>Cornick</b>
2:40 PM	Program <ul style="list-style-type: none"> <li>● New York, Jan 18-22, 2014</li> <li>● Seattle, Jun 28-Jul 2, 2014</li> <li>● Future conferences</li> </ul>	<b>Huang</b>
2:55 PM	Standards Report SSPC 169 Weather Data for Building Design Standards	<b>Crawley</b>
3:10 PM	Old business	<b>Cornick/Thevenard</b>
3:20 PM	New business	<b>from floor</b>
3:30 PM	Adjournment	
<b>Next Meeting: New York, NY, Tuesday 21<sup>st</sup> January 2014</b>		



## Minute: ASHRAE TC 4.2 Climatic Information

1:00 – 3:30 PM, Tuesday, 25 June 2013

**Scope: TC 4.2 is concerned with identification, analysis and tabulation of climatic data for use in analysis and design of heating, refrigeration, ventilation and air-conditioning systems. Promotion of effective use of weather information in these applications is also included.**

- |         |   |
|---------|---|
| 1:00 PM | <p>Call to order <span style="float: right;"><b>Thevenard</b></span><br/> <i>Chair Didier Thevenard opened the meeting</i></p> <p>Roll call <span style="float: right;"><b>Baltazar</b></span><br/> <i>Roll Call and introductions. A voting quorum (7 of 11 voting members) was present</i></p> <p>Approval of agenda<br/> <i>Mr. Barnaby move to approve the agenda, Dr. Lott second</i><br/> <i>Voting: Unanimous (7-0-0)</i></p> <p>Approval of minutes of Dallas, TX meeting (June 2012)<br/> <i>Crawley move to approve the minute, Mr. Barnaby second</i><br/> <i>Voting: Unanimous (7-0-0)</i></p> <p>Report from the Chair/Announcements</p> <ol style="list-style-type: none"> <li>1) <i>New MTG(CCDG) Cold Climate Design Guide</i></li> <li>2) <i>Recommended that the Field of employment Activity be selected in ASHRAE individual profiles</i></li> <li>3) <i>Thanks you letter for your employer are available on request</i></li> <li>4) <i>September 23th, 2013 is the Hightower Award Outstanding technical leadership.</i></li> <li>5) <i>2013-2014 Services ASHRAE Research nominations by the end of September</i></li> <li>6) <i>Deadline to submit abstracts and full papers for 2014 Annual conference- Seattle June 28-July2</i></li> <li>7) <i>Call for Papers for ASHRAE-CIBSE Technical Symposium April 3-4, 2014   Dublin</i></li> <li>8) <i>Call for Papers for 2014 ASHRAE/IBPSA-USA Building Simulation Conference – September 10 - 12, 2014   Atlanta, GA, USA</i></li> </ol> <p>Introduction of liaisons (liaison announcements/requests)<br/> <i>No Liaison was present</i></p> |
| 1:15 PM | <p>Membership Roster Rollovers (for July 2013) <span style="float: right;"><b>Thevenard</b></span><br/> <b>Roster Rollovers (after June 2013)</b><br/> <i>Dr. Thevenard and Dr. Baltazar will be vicechair will roll to Corresponding Member for a year</i><br/> <i>Dr. Cornick and Prof. Degelman Dr. Khuen will become Voting Member</i><br/> <i>Mr. Huang becomes Secretary</i><br/> <i>Dr. Neil Lott continue of subcommittee chair of the Handbook</i></p>   |
| 1:20 PM | <p>Review of Action Items and Status <span style="float: right;"><b>Crawley</b></span><br/> <i>TC 4.2 members to review Long-term research plan and provide comments back to Cornick</i><br/> <i>No other Action Items</i></p>  |
| 1:35 PM | <p>Research <span style="float: right;"><b>Crawley</b></span></p>   |

Reports on status of current, future and completed research projects:

- 1413-RP (Filling of data gaps in climatic records)  
*Contractor is having progress is preparing final reports and the PMS make a recommendation of no cost extension to the contractor thru the 30 of September 2013.*  
*No discussion*  
*Voting: Unanimous (7-0-0)*
- 1613-RP (Update Climatic Design Data in Chapter 14 of the 2013 Handbook of Fundamentals)  
*Dr. Crawley informed that: Contractor have provided final and handle the material to be published there a minor issue with the WViewer5.0, which will be resolved relatively quick. Dr. Lott informed that PMS recommended and vote to accept the report, with not comments except that some mentioned that it was very well written. Dr. Lott move the motion to be approve the report, Dr. Crawley seconded*  
*No discussion*  
*Voting: Unanimous (7-0-0)*
- 1561-RP (Mesoscale modeling of climatic data )  
*On time and progress, PMS met and has planned the draft final report for the 2014 annual conference*
- 1610 WS  
*No progress*
- 1700RP A Global Database of Moisture Design Reference Years for Hygrothermal Analysis and Design of Buildings: 1325-RP Update (Steve Cornick)  
*This project will be co-sponsored by the TC4.4*  
*It is targeted to be completed by August 15th, 2013*
- 1699WS, Update Climatic Design Data in Chapter 14 of the 2017 Handbook of Fundamentals (Lott)  
*It has been conditioned accepted last meeting of RAC. PES*  
*A PES was integrated by: Dr. Lott- chair, Prof. Degelman, Dr. Cornick, Mr. Brunning, Dr. Arguez and Dr. Jarret.*
- Long-term research plan  
*Receiving inputs and expected to be reviewed in New York winter meeting. Posted in the TC4.2 google site.*
- Other potential research projects  
*1709 URP, PES formed by Dr. Cornick- chair, Mr. Bourassa, Dr. Crawley, Dr. Lott and Mr. Huang.*

2:05 PM

Handbook

**Lott**

- 1613-RP Update of Climatic Data for 2013 Handbook of Fundamentals
- Revisions and errata

*Dr. Lott/Thevenard gave a report of the issues with the clear sky model between Chapter 14 and Chapter 35 (Solar energy), and it was mentioned that the old model will be fixed and retire. Also is being review the sun position formulas and nomenclature that are used*

*in both chapters.*

*Weather Data Viewer is almost completed with enhancements and available pretty soon to ASHRAE.*

- |         |   |                          |
|---------|---|--------------------------|
| 2:20 PM | TC-4.2 developments<br><i>No developments</i>   | <b>Cornick</b>           |
| 2:40 PM | Program<br>Mr. <i>Huang</i> reported:<br>● New York, Jan 18-22, 2014<br><i>Denver Seminar was rejected for second time. But there was a Technical Session given to TC4.2 with technical paper already accepted.</i><br><i>New York Seminar will be propose: "Extreme Weather and Building Design Liability"</i><br><i>Dr. Cornick will deal with the paper work and Mr. Bourassa will chair it.</i><br>● Seattle, Jun 28-Jul 2, 2014<br><i>Technical Papers from 1413 and 1561 RP will be ready for the annual conference of Seattle.</i><br>● Future conferences<br><i>No information was provided</i>   | <b>Huang</b>             |
| 2:55 PM | Standards Report<br>SSPC 169 Weather Data for Building Design Standards<br><i>Dr Crawley informed that SSPC 169 will in Public review on this coming Friday June 28th, 2013</i>   | <b>Crawley</b>           |
| 3:10 PM | Old business<br><i>None</i>   | <b>Cornick/Thevenard</b> |
| 3:20 PM | New business<br>● Special Visitor: John Proctor from Proctor Engineering Group, Ltd., made a presentation and wanted to bring to the attention of the TC 4.2 that the Cooling Degree days are having a trend and need to be considered for the Handbook of 2017.<br><i>It was informed that the TC4.2 is aware of the fact and is being that was published in a couple of papers wich will be send it to the presenter in a near immediate opportunity</i><br><i>The last paper summarizing the results of ASHRAE 1613-RP (later in that day Dr. Thevenard send and email with the following information: The last paper summarizing the results of ASHRAE 1613-RP (the research project that was tasked with updating the tables of climatic design conditions in the Handbook; Revising ASHRAE Climatic Data for Design and Standards—Part 1: Overview and Data, by D. Thevenard and S. Cornick, DE-13-016) states:</i><br><i>As was noted in previous editions of Handbook, climatic design conditions change somewhat from one edition to the next. Although conditions may vary either way for each individual station, the general trend is an increase in dry-bulb and dew point design conditions, an increase in cooling degree-days, and a decrease in heating degree-days. These changes are consistent with a general warming of the climate but may also include the influence of changing local land use patterns, such as increased urbanization, resulting in a greater heat island effect. In addition, some changes at a few individual</i> | <b>from floor</b>        |

*weather stations maybe due to siting or instrumentation changes These trends are confirmed with the 2013 edition of Handbook. Average station-to-station changes between the 2009 and 2013 editions amount to a*

- +0.30°F (+0.16°C) increase in 99.6% heating dry-bulb temperatures,*
- +0.19°F (+0.10°C) increase in 0.4% cooling dry-bulb temperatures,*
- +0.06°F (+0.03°C) increase in 0.4% evaporation wet bulb temperatures,*
- +0.07°F (+0.04°C) increase in 0.4% dehumidification dew point temperatures,*
- +0.17°F (+0.09°C) increase in yearly average temperatures,*
- -45.4°F-day (-25.2°C-day) decrease in annual heating degree-days base 18.3°C (65°F), and*
- +31.0°F-day (+17.2°C-day) increase in annual cooling degree-days base 50°F (10°C).*

*These changes are consistent with values observed in past editions of Handbook and those published in Thevenard (2010). In particular, the increase in cooling dry-bulb temperatures is similar to the increase in average temperatures, while the increase in heating dry-bulb temperatures is higher. Also noticeable is the increase in cooling degree-days and decrease in heating degree-days; as a consequence of these changes, climate zones will shift northward in future editions of Standard 169 (and a new climate zone, "0," will be added for extremely hot climates).*

*We also took note of your desire to have those trends reflected at the station level; we will consider that suggestion in future editions of the Handbook (the form this can take is still open to discussion; if you have any idea let us know).*

3:30 PM

Adjournment

*Crawley moved, Jarret seconded*

*Voting: Unanimous (7-0-0)*

*Minutes prepared by Juan-Carlos Baltazar, TC 4.2 Secretary*

**ASHRAE TC 4.2 Climatic Information  
TC 4.2 Action Item Summary**

Dallas, TX (January 2013)

<i>Item</i>	<i>Who</i>	<i>Status</i>
TC 4.2 members to review Long-term research plan and provide comments back to Cornick	TC 4.2 Members	Continued

**TC 4.2 -Handbook - Chair: Neil Lott  
ASHRAE, June 2013 meetings**

**1613-RP, 1699-WS, and HOF subcommittee (Jun 23 primary meeting, Jun 24 Research meeting, Jun 25 TC 4.2 meeting)**

- 1613 PMS members:
  - o Steve Cornick, [steve.cornick@nrc.ca](mailto:steve.cornick@nrc.ca)
  - o Dru Crawley, [dbcrawley@gmail.com](mailto:dbcrawley@gmail.com)
  - o Neal Lott, [neal.lott@noaa.gov](mailto:neal.lott@noaa.gov)
  - o Steven Bruning, [sbruning@newcomb-boyd.com](mailto:sbruning@newcomb-boyd.com)
  - o Bob Morris, [robert.morris@ec.gc.ca](mailto:robert.morris@ec.gc.ca)
- 1613 Contractors:
  - o Didier Thevenard (lead), [dthevenard@numlog.ca](mailto:dthevenard@numlog.ca)
  - o Mark Shephard, [mark.w.shephard@gmail.com](mailto:mark.w.shephard@gmail.com)
  - o Chris Gueymard, [chris@solarconsultingservices.com](mailto:chris@solarconsultingservices.com)
- Handbook subcommittee meeting and follow-up (Jun 23-25):
  - o Present for Jun 23 meeting:
    - Didier Thevenard
    - Neal Lott (PMS)
    - Philip Jarret
    - Steve Cornick (PMS)
    - Larry Degelman
    - Dave Westberg
    - Juan-Carlos Baltazar
    - Research Liaison - [Srinivas.garimella@me.gatech.edu](mailto:Srinivas.garimella@me.gatech.edu), being replaced by TBD
  - o Vote on 1613 final report (emailed by Didier to the PMS) will occur during full TC meeting.  
**Action:** Vote occurred and all in favor to accept.
  - o Chap 14 galley proof review – Didier, Bob, Neal reviewed galley proofs and provided extensive feedback. This is now finalized.
  - o Chap 14 vs Chap 35 solar data issues – differences in solar data info was evaluated by Didier, Neal, and Steve C – final resolution to be determined in updated Chap 35. **Action:** Didier and Neal attended TC 6.7 meeting where this was discussed. Main issue is Chap 35 referencing the older clear sky model – TC 6.7 agreed to remove this entirely and reference the new model in Chap 14. Other lesser issues were discussed during the meeting with consensus generally reached on all questions.
  - o Weather Data viewer in final testing – not working well in Google Chrome. Didier made numerous changes and enhancements based on TC 4.2 input. Will be provided to ASHRAE in next few weeks.
  - o **Action:** Didier to provide Neal/NCDC with information concerning errors found in ISD metadata and data.
  - o 1699-WS (2017 HOF update) was conditionally approved 10-0-0 by RAC – will address question about the \$150K budget and add sentence(s) showing that all tasks will be approved by PMS before moving on to next task. Consensus of those at this meeting is that \$150K is reasonable, especially given the expanded scope (eg – using 1561-RP results). **Action:** Neal will update and follow up with Research Liaison and RAC. Will also provide PES names/contacts to RAC and Research Liaison. The PES members were confirmed at the TC 4.2 meeting. Had brief discussion regarding potential inclusion of climate trends in the 2017 tables. Details on this TBD. **Action:** Neal to see if additional wording is needed in the WS regarding climate change.





## AGENDA

### ASHRAE TC 4.2 Research Subcommittee 4:15-6:00 pm, Monday, June 23<sup>rd</sup>, 2013 Century, Mezzanine Floor, Sheraton Tower Denver, Colorado

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- 4:15 Call to order / introductions / changes to the agenda Crawley
- 4:20 **Active Research Projects**
- **1413-RP** Developing Standard Procedures for Filling Weather Data-Gaps During Analysis of Measured Building Energy Use Thevenard
  - **1561-RP** Procedures to Adjust Observed Climatic Data for Regional or Microclimatic Variations Cornick
  - **1613-RP** Update Climatic Design Data in Chapter 14 of the 2013 Handbook of Fundamentals Lott
- 4:50 **Draft Work Statements (on Research Plan or submitted)**
- **1610-WS** Development of a Transposition Model for Clear-Sky Solar Irradiance (submitted/returned with comments, revise/submit by Feb 2014) Thevenard
  - **1699-WS** Update Climatic Design Data in Chapter 14 of the 2017 Handbook of Fundamentals Lott
  - **1700-RTAR** A Global Database of Moisture Design Reference Years for Hygrothermal Analysis and Design of Buildings Cornick
- 5:05 **New Research Topics/Research Plan**
- XX-RTAR Models for Generating Sky Temperatures for Building Modeling Barnaby/Gueymard
  - XX-RTAR Evaluation of CSFR Data Applicability for Climatic Data and Simulation Bourassa/Huang
  - XX-RTAR Delivering Design Data in New Ways Cornick/Bourassa
  - XX-RTAR Urban Climatology Gueymard
  - Heat and cold waves Thevenard
  - New Research Topics (RTARs and WSs can be submitted 4 times a year—six weeks before Winter and Annual meetings and 1 March/1 August.)
- 5:20 **Old Business**
- Progress by the NASA Power Team to Generate ASHRAE Climatic Design Conditions and Global Climate Zone Maps using MERRA Data Westberg
  - GPC 20 XML Definitions / gbXML / Climatic Data Definitions Barnaby
- 5:50 **New Business**
- 6:00 **Adjourn**
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**Next Meeting: January 20, 2014 New York, New York**



