

TC/TG/TRG No. TC 4.2 DATE: June 23rd, 2014TC/TG/TRG TITLE: Climatic InformationDATE OF MEETING: January 21st, 2014 LOCATION: New York, NY

| MEMBERS PRESENT | MEMBERS ABSENT | | EX/OFFICIO MEMBERS AND ADDITIONAL ATTENDEES |
|--|--|---|---|
| Dru Crawley (Chair, Stnds ,VM) Joe Huang (Sec,Prog,VM) Steve Cornick (Res, VM) Didier Thevenard (Web,CM) Norm Bourassa (VM) Chip Barnaby (VM) Larry Degelman (VM) Chuck Khuen (VM) Ulrike Passe (CM) | Juan-Carlos Baltazar (Vice Chair,CM) Neal Lott (Hdbk,VM) Philip Jarrett (VM) Dave Westberg (VM) John Kennedy (VM) Evyatar Erell (VNQ) Geoffrey Levermore (VNQ) | Michelle Contri (PCM) Xin Qiu (PCM) Paulo Velasco (PCM) Anthony Arguez(CM) William Bahnfleth (ASHRAE Pres.,CM) Constantinos Balaras (CM) Bryan Becker (CM) Mahabir Bandari (CM) J Patrick Carpenter (CM) Jui-Chen Roger (CM) Don Colliver (CM) Reda Djebbar (CM) Brian Fricke (CM) Chris Gueymard (CM) Kenneth Hubbard (CM) Achilles Karagiozis (CM) John Keller (CM) Clayton Lampman (CM) Linda Lawrie (CM) Robert Lucas (CM) Stuart Malkin (CM) Robert Morris (CM) Joshua New (CM) Richard Perez (CM) Ronald Petersen (CM) Michael Roth (CM) Thomas Stoffel (CM) Charles Whitlock (CM) | Michael R Bilderbeck (TAC SH) Michael Vaughn (ASHRAE Staff Liaison) Peter Lyons (guest) Serge Bresin (guest) |

| | | | |
|----------------------|--------------------------|-------------------------------|----------------------|
| TAC CHAIR | Walter Grondzik | CHAP TECH TRANS LIAISON | Harris Sheinman |
| TAC SECTION HEAD | Michael Bilderbeck | PROGRAM LIAISON | Bill Dietrich |
| RAC RESEARCH LIAISON | Xudong Yang | PROF DEV COMM (ALI) | Hugh McMillan |
| SPECIAL PUBS LIAISON | William S Fleming | STANDARDS LIAISON | James Aswegan |
| HANDBOOK LIAISON | Larry Akers | 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 1st February 2014**TC/TG/TRG NO.:** TC 4.2**TC/TG/TRG TITLE:** Climatic Information**CHAIR:** Dru Crawley**VICE CHAIR:** Juan-Carlos Baltazar**SECRETARY:** Joe Huang**TC/TG/TRG MEETING SCHEDULE**

| Location-Past 12 Months | Date | Location-Planned Next 12 Months | Date |
|-------------------------|------------|---------------------------------|------------|
| New York, NY | 2014-01-21 | Seattle, WA | 2014-07-01 |
| Denver, CO | 2013-06-25 | Chicago, IL | 2015-01-27 |
| Dallas, TX | 2013-01-29 | Atlanta, GA | 2015-06-30 |

TC/TG/TRG SUBCOMMITTEES

| Function | Chairman |
|-----------|---------------|
| Handbook | Neal Lott |
| Research | Steve Cornick |
| Standards | Drury Crawley |
| Program | Joe Huang |
| Honours | Joe Huang |

RESEARCH PROJECTS-CURRENT

| Project Title | Contractor | Monitoring Comm. | Report Made At Meeting |
|--|--------------------------|--|--|
| 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 but a six months' extension will be needed. Expected to be complete by June 2014 (or is it Jan 2015 ?) |
| 1699-WS Update Climatic Design Data in Chapter 14 of the 2017 Handbook of Fundamentals | No | ? | A PES meeting was held however there were not enough PES members attending for a quorum consequently another PES meeting is to be scheduled after the Winter ASHRAE meeting. |

LONG RANGE RESEARCH PLAN

| 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 | No | No | No | WS withdrawn after further investigation indicated there are several existing transposition models that are adequate. |

| | | | | | | | |
|--|-----|-----|-----|-----|----|-----|---|
| 1700-RTAR Moisture Design Reference Years for Hygrothermal Analysis and Design of Buildings (1325-RP Update) | Yes | Yes | Yes | Yes | No | Yes | WS has been developed, but put on hold until SSPC 160 give some indication as to the disposition of previous 1325-RP. WS was conditionally approved by RAC and needs only RL approval to proceed. |
|--|-----|-----|-----|-----|----|-----|---|

HANDBOOK RESPONSIBILITIES

| Year | Volume | Chapter Title | No. | Deadline | Handbook Sub. Liaison |
|------|--------|-----------------------------|-----|-----------|-----------------------|
| 2016 | HOF | Climatic Design Information | 14 | Feb. 2016 | James 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.

TECHNICAL PAPERS from Sponsored Research-Title, when presented (past 3 yrs. present & planned)

- Development of 3012 IWEC2 Weather Files for International Locations (RP-1477) (NY-14-(RP-1477), Jan 2014)
- Revising ASHRAE Climatic Data for Design and Standards, Part 1: Overview and Data (RP-1613) (DE-13-016, June 2013)
- Revising ASHRAE Climatic Data for Design and Standards, Part 2: Clear-Sky Solar Radiation Model (RP-1613) (DE-13-017, June 2013)
- Poster Session, Methods for estimating heating and cooling degree-days to any base temperature (1453-RP) (LV-11-021, Jan 2011)

TC/TG Sponsored Transactions-Title, when presented (past 3 yrs. present & planned)

Technical Paper Session 5: Improvements to Climatic Data for ASHRAE Calculations – Denver CO, June 2013.

TC/TG Sponsored Seminars-Title when presented (past 3 yrs. present & planned)

- Seminar 65 - Impacts of Environmental Change on Building Design and Their HVAC Systems – San Antonio, TX, June 2012
- Seminar 18: New High Quality Solar Data Sources and Analysis Methods for High Resolution Weather Applications: Part 1 – Montreal, June 2011
- Seminar 48: New High Quality Solar Data Sources and Analysis Methods for High Resolution Weather Applications: Part 2 – Montreal, June 2011
- Seminar 16: Climate Change: It's Happening, So Who's Responding? TC 2.5 and TC 4.2 Co-sponsor – Las Vegas, January 2011

TC/TG Sponsored Forums-Title, when presented (past 3 yrs. present & planned)

- Climatic design information in the 2013 Handbook – Montreal, June 2011

JOURNAL PUBLICATIONS, when published (past 3 yrs. present & planned)

Attachments:

Schedule and Agenda

Minutes

Action Items

TC4.2 Handbook Meeting

TC/TG Activity Feedback Form

Research Subcommittee Agenda

**2014 Winter Meeting Schedule and Agenda, New York, NY
TC 4.2 (Climatic Information) and Related Activities**

| Time/Date | Meeting/Event | Hotel, Room, Floor |
|-----------------------------------|---|--------------------------------|
| Saturday, 18 January 2014 | | |
| <i>No activities planned</i> | | |
| Sunday, 19 January 2014 | | |
| 1:00 p.m. - 2:30 p.m. | 1561-RP PMS, " <i>Procedures to Adjust Observed Climatic Data for Regional or Mesoscale Climatic Variations</i> " | Bryant (Hilton 2) |
| 2:30 p.m. - 3:30 p.m. | TC 4.2 Program subcommittee | Bryant (Hilton 2) |
| 3:30 p.m. - 5:00 p.m. | 1699-RP PES, " <i>Update Climatic Design Data in Chapter 14 of the 2017 Handbook of Fundamentals</i> " | Bryant (Hilton 2) |
| Monday, 20 January 2014 | | |
| 10:00 a.m. - 12:00 p.m. | Weather Data SSPC 169, <i>Weather Data for Building Design Standards</i> | Hilton Boardroom (Hilton 4) |
| 4:15 p.m. - 6:00 p.m. | TC 4.2 Research Subcommittee Meeting | Madison 1 (Sheraton 5) |
| Tuesday, 21 January 2014 | | |
| 1:00 p.m. to 3:30 p.m. | TC 4.2, Climatic Information, Full Committee Meeting | Conference Room D (Sheraton L) |
| Wednesday, 22 January 2014 | | |
| <i>No activities planned</i> | | |

AGENDA, ASHRAE TC 4.2 Climatic Information

1:00 – 3:30 PM, Tuesday, 21 January 2014
Conference Room D (Sheraton L), New York, NY

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 | <ul style="list-style-type: none"> Call to order Roll call Introductions Approval of agenda Approval of minutes of Denver meeting (June 2013) Report from the Chair/Announcements Introduction of liaisons (liaison announcements/requests) | <p>Crawley Huang</p> |
| 1:15 PM | Membership Roster Rollovers (for July 2014) | Crawley |
| 1:20 PM | Review of Action Items and Status | Baltazar |
| 1:35 PM | <ul style="list-style-type: none"> Research Reports on status of current, future and completed research projects: <ul style="list-style-type: none"> ● 1561-RP (Mesoscale modeling of climatic data) ● 1610-WS Clear sky transposition model ● 1699-TRP, Update Climatic Design Data in Chapter 14 of the 2017 Handbook - Fundamentals ● 1700-RTAR, A Global Database of Moisture Design Reference Years for Hygrothermal Analysis and Design of Buildings: 1325-RP Update (Steve Cornick) ● Long-term research plan ● Other potential research projects | Cornick |
| 2:15 PM | <ul style="list-style-type: none"> Handbook <ul style="list-style-type: none"> ● 1699-TRP Update of Climatic Data for 2017 Handbook - Fundamentals ● Revisions and errata | Lott |
| 2:30 PM | <ul style="list-style-type: none"> Program <ul style="list-style-type: none"> ● Seattle, June 28-July 2, 2014 ● Chicago, January 24-28, 2015 ● Future conferences | Huang |
| 2:45 PM | <ul style="list-style-type: none"> Standards Report SSPC 169 Climatic Data for Building Design Standards | Crawley |
| 3:00 PM | Old business | Crawley |
| 3:10 PM | <ul style="list-style-type: none"> New business <ul style="list-style-type: none"> ● Retire old data CDs: Extremes Generator CD and Design Weather Sequence Viewer CD | Crawley |
| 3:30 PM | Adjournment | |

Next Meeting: Seattle, Washington, Tuesday 1st July 2014

Minutes of ASHRAE TC 4.2 Climatic Information meeting

1:00 – 3:30 PM, Tuesday, 21 January 2014

- 1:00 PM Call to order **Crawley**
Chair Dru Crawley opened the meeting
- (note: Secretary was unable to arrive until 1:12 due to wrapping up a Poster session that ended at 1 pm. Therefore, items in the minutes up through 1:12 were reconstructed from others' notes)
- Roll call **Crawley**
Roll Call and introductions. A voting quorum (6 of 11 voting members) was present at start of meeting, with a 7th member arriving late at 1:12.
- Approval of agenda
? move to approve the agenda, ? second
Voting: Unanimous (6-0-0)?
- Approval of minutes of Denver meeting (June 2013)
? move to approve the minute, ? second
Voting: Unanimous (6-0-0)?
- Report from the Chair/Announcements**
- Introduction of liaisons (liaison announcements/requests)
No liaison was present
- Membership Roster Rollovers (for July 2014) **Crawley**
Roster Rollovers (after July 2014)?
 .
- Review of Action Items and Status ?** **Crawley**
- 1:10 PM Research **Cornick**
- Reports on status of current, future and completed research projects:
- 1561-RP (Mesoscale modeling of climatic data)
PMS meeting was held on Sunday Jan. 19th with contractor attended via tele-presence. The meeting was shortened due to considerable technical difficulties. Cornick will arrange another web meeting in February to give the PMS and contractor enough time to review the progress. Project is on track but will probably require a 6 month extension..

Action: Cornick will reschedule a PMS for Feb. On time and progress, PMS met and has planned the draft final report for the 2014 annual conference

 - 1610 WS (Development of a Transposition Model for Clear-Sky Solar Irradiance)
Thevenard reviewed several existing transposition models, and concluded that these were sufficient to meet ASHRAE's needs. A new model will be selected from the existing models for inclusion in the 2017 Handbook – Fundamentals. Consequently 1610-WS will be dropped.

- 1700-WS (A Global Database of Moisture Design Reference Years for Hygrothermal Analysis and Design of Buildings)

The WS was conditionally approved by RAC and needed only a vote by the Committee and RL approval to proceed. Cornick had originally intended to submit the WS to the Committee for a vote, but changed his mind after Barnaby asked what use had been made of the results of the previous 1325-RP, i.e., the MDRY's, by the primary sponsor of the project, SSPC 160. Since it was not clear that the MDRY's are being used at all, Cornick decided not to recommend a vote on the WS, but rather to put the WS on hold until SSPC 160 gives some indication of their interest and use of the 1325-RP.

(Secretary arrives in meeting)

Action Item: Cornick will check with Standard 160 whether the hygrometric data have been incorporated into Standard 160, and give more indication of their use of what had been done in 1325-RP.

Action item: Crawley asked for volunteers to review the Google Group by Jan. 31.

- New Ideas and Research Plan

- Gueymard and Barnaby are working on a RTAR on sky temperatures*
- Huang and Bourassa are working on a RTAR on the evaluation of climate reanalysis data. Huang circulated a draft RTAR to the ListServ just prior to the meeting.*

Action Item: Huang would like to receive comments by Feb. 1, so that he could revise the RTAR and circulate it to the Committee for a letter ballot in time to meet the Feb. 15 deadline for submitting RTARs to RAC. *(note: it was later learned that the Feb. 15 applied only for Program, not for Research)*

- Bourassa and Cornick discussed better ways to deliver weather data on the Web. Bourassa suggested writing a two-pager stating the problem, and asking whether ASHRAE know how their data are being used, and do they know how the membership is using the HOF tables?*

Thevenard mentioned that John Kennedy (TC voting member) asked whether the Weather Data Viewer could be put on the Web?

Bourassa agreed that putting the Weather Data Viewer on the Web could be an initial effort in this direction.

- Cornick mentioned that Gueymard had posted something on the Committee's ListServ on urban climatology, but since Gueymard isn't here, the topic should be tabled.*

- Long-Term Research Plan

The Long-Term Research Plan will be updated as required.

Action Item: Cornick will revise and update the Long-Term Research Plan before the Seattle meeting.

- Old Business

1413-RP Xu Dong has completed the project and submitted the paper

1613-RP Xu Dong has filled out the disposition form for the project

Action Item: Cornick to send e-mail to Lott and Thevenard for paperwork to close out the project.

1561-RP Cornick needs quarterly reports if the contractor wants to get paid.

2:05 PM Handbook **Cornick**

There was no meeting at the conference, and not much to say except for selecting the contractor for RP-1699.

2:05 PM Program **Huang**

Huang gave a brief summary of the program at this conference, and the plans for the next conference in Seattle. The only presence of the Committee in this conference is a poster presentation by Huang on RP-1477.

For Seattle, there are two program ideas:

- a) Seminar on “Applications of Weather Statistics”, with proposed presentations by Crawley on Standard 169, someone from ORNL or LBNL on online weather data, possibly someone from WeatherBug on weather monitoring equipment, and Weather Analytics on trending.
- b) Chairing a Technical Session with accepted papers from previous or current projects, including Thevenard on 1413 RP, and Qiu Xin on 1561 RP. It might be possible to also a technical paper by Huang that’s currently under review.

Huang proposed that the seminar be given first priority, and the technical session given second priority.

2:15 PM Standards **Crawley**

*Crawley reported that Standard 169 has been published
Bourassa and Thevenard expressed concerns about climate ones changing in the new standards*

TAC Section Head Bill Bliderbeck spoke briefly about Section 4 liaison. The main concerns are to keep the roster updated and the recent lack of programs.

2:20 PM Old business **Crawley**

None

2:20 PM New business **from floor**

Chair Crawley made the following announcement and question:

1. *There is an ASHRAE Building Modeling Conference in Atlanta co-sponsored with IBPSA in September.*
2. *Should ASHRAE retire the following two CD products – the Extreme Generator CD, and the Design Weather Sequence CD? There were 167 copies sold of the second*

item.

Huang suggested the TC should maintain a copy of the CDs that could be duplicated and distributed to those who might be interested.

Degelman moved the two CD products be retired, seconded by Bourassa and Cornick.

Voting: approved by voice ballot.

Other New Business

Thevenard introduced a guest Serge Bresin of Conditionair (www.cnditionair.fr), which is an association that sells refrigeration in France. Bresin said that they have no information on weather data for France.

Passe asked whether anyone has knowledge about the validity of different degree-day data on the Web.

Huang introduced a guest Peter Lyons of Fenestralia in Australia. Lyons asked people's opinion of weather monitoring equipment because he had just received an Oregon monitor for Christmas.

There was a short discussion on wind reporting at 2 minutes near the top of the hour.

2:30 PM

Adjournment

Cornick moved, Bourassa seconded

Voting: Unanimous (7-0-0)

Minutes prepared by Joe Huang, TC 4.2 Secretary

ASHRAE TC 4.2 Climatic Information TC 4.2 Action Item Summary

New York (January 2014)

| <i>Item</i> | <i>Who</i> | <i>Status</i> |
|--|--------------------|---------------|
| Check with Standard 160 whether the hygrometric data have been incorporated into Standard 160, and give more indication of their use of what had been done in 1325-RP. | Steve Cornick | New |
| Contact Crawley if want to volunteer to review the Google Group by Jan. 31 | All voting members | New |
| Send comments to Huang on draft RTAR on evaluation of reanalysis data by Feb. 1 | All voting members | New |
| Revise and update the Long-Term Research Plan before the Seattle meeting. | Steve Cornick | New |
| Send e-mail to Lott and Thevenard for paperwork to close out the project. | Steve Cornick | New |



AGENDA

ASHRAE TC 4.2 Research Subcommittee

4:15-6:00 pm, Monday, January 20th, 2014

Madison 1, Sheraton 5th Floor

New York, New York

- 4:15 Call to order / introductions / changes to the agenda Cornick
- 4:20 **Active Research Projects**
- **1561-RP** Procedures to Adjust Observed Climatic Data for Regional or Microclimatic Variations
Cornick
- 4:50 **Draft Work Statements (on Research Plan or submitted)**
- **1610-WS** Development of a Transposition Model for Clear-Sky Solar Irradiance Thevenard
(submitted/returned with comments, revise/submit by Feb 2014)
 - **1699-WS** Update Climatic Design Data in Chapter 14 of the 2017 Handbook of Fundamentals Lott
 - **1700-WS** A Global Database of Moisture Design Reference Years for Hygrothermal Analysis and Design of Buildings
Cornick
 - **1709-URP** Development of a Web-Based Tool to Generate Climatic Design Tables Using NASA's MERRA Assimilation Model Meteorological Data
Cornick
 - **URP-1726**
- 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
 - 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.)
 - Long-term research plan
- 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**
- **Comparison of weather station with ISD**
- 6:00 **Adjourn**

Next Meeting: June 30, 2014 Seattle, Washington