



**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. 2.5 DATE 06/27/2017

TC/TG/MTG/TRG TITLE Global Climate Change  
DATE OF MEETING 27 June 2017 LOCATION Long Beach

| MEMBERS PRESENT    | YEAR APPTD | MEMBERS ABSENT  | YEAR APPTD | EX-OFFICIO MEMBERS AND ADDITIONAL ATTENDANCE |
|--------------------|------------|-----------------|------------|----------------------------------------------|
| William Walter -NQ | 2015       | Cynthia Gage    | 2015       | See Attachment A                             |
| Alamelu Brooks     | 2015       | Julian deBullet | 2015       |                                              |
| Eric Sturm         | 2015       | David Godwin    | 2015       |                                              |
|                    |            |                 |            |                                              |
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**DISTRIBUTION: All Members of TC/TG/MTG/TRG plus the following:**

|                                                                                           |                                                   |
|-------------------------------------------------------------------------------------------|---------------------------------------------------|
| TAC Section Head: Bert Phillips                                                           | SH2@ashrae.net                                    |
| All Committee Liaisons As Shown On TC/TG/MTG/TRG Rosters (Research, Standards, ALI, etc.) | See ASHRAE email alias list for needed addresses. |
| Mike Vaughn,<br>Manager Of Research & Technical Services                                  | MORTS@ashrae.net                                  |

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## **DRAFT MINUTES**

Technical Committee TC 2.5 (*Global Climate Change*)<sup>1</sup>

Long Beach, California

Tuesday, 27 June 2017, 1:30 - 3:30 pm

### **1. CALL TO ORDER**

- 1.1. Introduction of members and guests: Meeting was called to order at 1:30 p.m.
- 1.2. Agenda revision / acceptance – No changes or revisions.
- 1.3. Establishment of a quorum – With 3 of 6 voting members present, quorum was established.
- 1.4. Meeting minutes:
  - Meeting Minutes – January 2016 Winter Meeting, Orlando, Florida – Approved 3-0-0-CV
  - Meeting Minutes – June 2016 Annual Meeting, St. Louis, Missouri – Approved 3-0-0-CV

### **2. ASHRAE CODE OF ETHICS COMMITMENT**

### **3. CHAIRMAN'S ANNOUNCEMENTS**

- 3.1. Historical Committee is interested in submissions for the society 125th anniversary
- 3.2. An updated TAC presentation template is available for TC presentations to chapters
- 3.3. Thank you letter requests being sent out in July
- 3.4. CEC has a standing request for track suggestions; send suggestions to Tony Giometti
- 3.5. Research Summit track planned for Houston annual meeting; Society collaborating with *Science and Technology for the Built Environment*

### **4. UPDATE ON SOCIETY'S CLIMATE CHANGE POSITION DOCUMENT (DON BRUNDAGE)**

- 4.1. Committee convened in Long Beach to discuss new position document
- 4.2. Committee plans to meet again in Chicago and have a draft completed for Tech Council

### **5. Liaison reports**

- 5.1. Research (Wargocki)

### **6. SUBCOMMITTEE REPORTS**

- 6.1. Programs (Sherwood)
  - 6.1.1. Seminar 33 – Flooding – Superstorm Sandy: Lessons Learned and Strategies Implemented
    - 6.1.1.1. 40-45 attendees
    - 6.1.1.2. Good discussion after seminar
  - 6.1.2. Chicago Tracks
    - 6.1.2.1. Track 4 – Earth, Wind, and Fire
      - 6.1.2.1.1. Two program submissions: Flooding and Resiliency (Tomlinson); Extreme Heat (Sherwood)
  - 6.1.3. Additional ideas:
    - 6.1.3.1. Resiliency
    - 6.1.3.2. Refrigeration transport

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<sup>1</sup> SCOPE: TC 2.5 is concerned with the impact that the activities of the HVAC&R industry may have on the global environment, including greenhouse warming and ozone depletion. This Task Group coordinates activities and planning for the Society to address these issues. This includes identifying factors within the scope of the HVAC industry, which may impact, favorably and unfavorably, the global environment and the role that ASHRAE is serving and could serve.

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6.1.4. Should TC 2.5 have liaisons to other committees?

6.1.4.1. Suggested TCs:

- 6.1.4.1.1. TC 5.10
- 6.1.4.1.2. TC 2.7
- 6.1.4.1.3. TC 7.1 – Haley volunteered
- 6.1.4.1.4. TC 9.9
- 6.1.4.1.5. MTGs?

6.2. Research (Sherwood)

6.2.1. Wargocki suggests we suggest one research RTAR

- 6.2.1.1. Tomlinson discussed climate models with a University of Minnesota in-kind donation of \$1M
- 6.2.1.2. Literature review – determine what projects and issues exists; what’s been done
  - 6.2.1.2.1. Typically costs between \$35,000-60,000 per literature review
  - 6.2.1.2.2. Generates a list of ideas for TC to work on going forward

6.2.2. Submissions require a TC vote

6.3. Handbook (Brooks)

- 6.3.1. No progress
- 6.3.2. Several volunteers added, including Karpman, Sachs, and those who shared cards with Brooks
- 6.3.3. Requested a Basecamp site
  - 6.3.3.1. **Action item:** Sturm to request Basecamp site for Handbook
- 6.3.4. Deadline: 2019; goal of having 1/3 done by Chicago winter meeting; finish everything by annual 2018 meeting

6.4. Climate Change Chapter for 2012 Handbook (Brooks)

6.5. Standards (Walter)

- 6.5.1. Standards 34 and 15 adding low GWP refrigerants
- 6.5.2. Suggest getting updates from other committees (see earlier liaison discussion)
  - 6.5.2.1. 90.1 – Brundage
  - 6.5.2.2. 189.3
  - 6.5.2.3. 100
  - 6.5.2.4. TC 7.1

6.6. Low GWP MTG

6.6.1. A2L refrigerant update

- 6.6.1.1. Three research programs
  - 6.6.1.1.1. 18.06
    - 6.6.1.1.1.1. Ignition events and severity of such events; results available in August
  - 6.6.1.1.2. 18.07
    - 6.6.1.1.2.1. Refrigerant handling and service with A2L fluids
  - 6.6.1.1.3. 18.08
    - 6.6.1.1.3.1. Qualification of joints
      - 6.6.1.1.3.1.1. Concerned about leaks and flammable refrigerant leaking out
      - 6.6.1.1.3.1.2. Reviewing brazed joints, compression joints, press fittings, etc.
      - 6.6.1.1.3.1.3. Results expected between August and December; report due in December

6.7. Website (Munroe)

7. **UPDATE REPORTS ON RELATED TREATIES, ACCORDS, AND ACTIVITIES**

- 7.1. Paris Agreement
- 7.2. Kigali Amendment
- 7.3. Canada
- 7.4. Australia

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7.5. Columbia

8. **OTHER BUSINESS**

9. **ADJOURN** at 3:25 p.m.

**TC 2.5 Action Items  
Long Beach Meeting**

| Item | Responsible Party | Action                                          |
|------|-------------------|-------------------------------------------------|
| 1.   | Eric Sturm        | Setup a Basecamp site for Handbook subcommittee |



Shaping Tomorrow's  
Built Environment Today

### TC 2.5 Global Climate Change Sign-in Sheet

Meeting Info: 2017 Annual Meeting; Long Beach, California Date: Tuesday, June 27, 2017

| Name              | Affiliation         | E-mail                         | Member<br>(Voting, Corresponding, or Guest) | YEA<br>Member?<br>(Yes/No) |
|-------------------|---------------------|--------------------------------|---------------------------------------------|----------------------------|
| ALAN LEW BREWER   | ICF                 | alan.lew.brewer@icf.com        | V                                           | N                          |
| Jerome Lemens     | JACOBS              | jerome.lemens@jacobs.com       | CORRESPONDING                               | N                          |
| Michir Kobayashi  | DAIKIN              | Michir.Kobayashi@daikin.com    | Guest                                       | Y                          |
| Eric Haley        | Baskervill          | ehaley@baskervill.com          | C.M.                                        | N                          |
| Hitoshi Hashimoto | Daikin              | hitoshi.hashimoto@daikin.co.jp | Guest                                       | N                          |
| Jeff Newel        | Hillphoenix         | jeff.newel@hillphoenix.com     | Guest                                       | N                          |
| MARK LONK         | SYSTEMAIR           | MARK.LONK@SYSTEMAIR.COM        | Guest                                       | N                          |
| Nicholas Loluse   | Syracuse University | nloluse@sy.edu                 | Guest                                       | N                          |
| LARRY BUNNS       | CARRIER             | larry.bunns@carrier.utc.com    | CORRESPONDING                               | N                          |
| ALLEN KARPMAU     | ARKEMA              | allen.karpman@arkema.com       | Guest                                       | N                          |

| Name                          | Affiliation                 | E-mail                     | Member<br>(Voting, Corresponding, or Guest) | YEA<br>Member?<br>(Yes/No) |
|-------------------------------|-----------------------------|----------------------------|---------------------------------------------|----------------------------|
| G.D. MATHUR                   | CALSONIC                    | gd_mathur@ck-mail.com      | CM                                          | ND                         |
| STAN SVEEN                    | UPONOR                      | stan.sveen@uponor.com      | Guest                                       | ND                         |
| GUS ROLOTTI                   | CANVIER                     | Gus.Rolotti@canvier.com    | GUEST                                       | <del>ND</del>              |
| Gerold Wenzel                 | EPA                         | wenzel.gerold@epa.gov      | Guest                                       | No                         |
| FLORENTINO<br>ROSON RODRIGUEZ | ARGENTINA<br>CHPTON         | F.Roson@supercanhol.com.ar | CONTRIBUTOR                                 | ND                         |
| LEE SIEM EARLE                | NUS, SINAPORA               | ljesee@nus.edu.sg          | Guest                                       | No.                        |
| Galen Coery                   | Vertiv                      | Galen.Coery@vertiv.com     | Guest                                       | No                         |
| Bob Buchanan                  | BLUE HEAVEN<br>TECHNOLOGIES | bb@blueheavenstech.com     | GUEST                                       | ND                         |
| Monroe Brist                  | Green Leaf                  | MonroeBrist@ballsouth.net  | Guest                                       | ND                         |
| Harvey Sachs                  | ACEEE                       | hsachs@alumni.ice.edu      | Guest                                       | No                         |

| Name                  | Affiliation            | E-mail                       | Member (Voting, Corresponding, or Guest) | YEA Member? (Yes/No) |
|-----------------------|------------------------|------------------------------|------------------------------------------|----------------------|
| AARON DICKERSON       | MERRICK & CO           | aaron.dickerson@merrick.com  | Corresponding                            | No                   |
| Scott Sherwood        | EcoCue Cup             | ImproveYourAir-Qtynd.com     |                                          | No                   |
| Beth Tomlinson        | TKDA                   | elizabeth.tomlinson@tkda.com |                                          | No                   |
| Don Brundage Southern |                        | donbrundage@southern.com     | YES                                      | No                   |
| GERARDO ALFONSO       | INGEAL                 | ventas@ingeval.com           | PCH                                      | No                   |
| Bill Walter           | Carrier                | william.walter@carrier.com   | VM NB                                    | No                   |
| Erica Galasso         | Carrier                | enrica.galasso@carrier.com   | Vice Chair (CA)                          | Yes                  |
| Walt Vernon           | Mazzetti               | waltvernon@mazzetti.com      | Visitor - 409.3, willvolunteer           | No                   |
| MITESH KUMAR          | IAQA SINGAPORE CHAPTER | miteshkumar84@gmail.com      |                                          | Yes                  |
| Kris Tan              | IAQA Singapore Chapter | kristan.1983@gmail.com       |                                          | Yes                  |

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