TC/TG/MTG/TRG Title: Thermal Energy Storage

DATE & LOCATION OF MEETING: Monday, January 20, 2014, New York, NY

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<tr>
<th>VOTING MEMBERS PRESENT</th>
<th>YEAR APPTD</th>
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<th>EX-OFFICIO MEMBERS AND ADDITIONAL ATTENDANCE</th>
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<td>Geoffrey Bares</td>
<td>2011</td>
<td>Chang Sohn</td>
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<td>Blake Ellis - CM</td>
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<td>Guy Frankenfield</td>
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<td>Harshal R. Upadhye</td>
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<td>Gregory Henderson-CM</td>
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DISTRIBUTION
All Members of TC/TG/MTG/TRG plus the following:

TAC Section Head: Guy Frankenfield, of DN Tanks
TAC Chair: Chris Mincey of Crom - Programs
ALL COMMITTEE LIAISONS AS SHOWN ON TC/TG/MTG/TRG ROSTERS:
John Lau of BAC - Handbook
Manager Of Standards: Robert Willis of IE Technology
Manager Of Research: Brian Silvetti of Calmac
ASHRAE Technical Subcommittee 6.9 – Thermal Storage

Meeting Minutes – New York City, NY

January 20, 2014

1. Preliminaries
   a. The meeting was called to order at 4:36 PM by Guy Frankenfield, Chair.
   b. Agendas, sign-in sheets and Denver, CO meeting minutes were distributed to all members.
   c. The Purpose Statement was read by Chairman Frankenfield.
   d. Members introduced themselves and quorum was determined; 11 of the 12 members were present.
   e. There were no changes to the agenda as proposed.

2. Approval of Minutes
   a. On Page 4 (ii) (motion on reaffirmation of ASHRAE Standard 94.2) – the vote should be amended to 11-0-0 instead of 10-0-0. John Andrepont made a motion to approve the minutes after correction. John Dunlap seconded the motion. Approved unanimously by the voting members (11-0-0).

3. Announcements by Chair – Guy Frankenfield
   a. Recognized the Hightower award recipient, a member representative of TC 5.7 Committee.
   b. A new award category has been announced – “Outstanding TC”.
   c. ASHRAE recommends all members to update their Bio, specifically referring to populating the “Employee Discipline” field online.
   d. Although ASHRAE is considering teleconference options for TC/SPC meetings, a formal decision has not yet place within the organization.

4. Liaison Reports
   a. Professional Development Committee (John Nix)
      • There is a training course for TC 6.9 and is currently out for review.
      • John Nix proposed a “Thermal Storage” course presentation during future ASHRAE summer/winter meeting. Information on this course presentation is currently being put together for Professional Development Committee’s consideration. This will be a half-day course.

   a. ASHRAE Chapter 51 is currently in second year of the 4 year cycle.
   b. The following additions/revisions are being worked upon:
      • Addition of Sustainability, grid reliability, TES and renewable power
      • Addition of Emergency cooling (incorporate research results RP-1387)
      • TES system commissioning (already received by Lucas Hyman)
• Hot water TES
• Underground TES
• Phase change materials
• Delete obsolete info, update the references and bibliography, as necessary

c. The reviewers for this revision have been selected as follows:
• John Andrepont (Voting Member)
• Keith Ponitz
• Charles Upshaw, Dennis Alejandro - Sustainability, grid reliability, TES and renewable power section.
• Jeff Kane (will be a Voting Member)
• Jeff Bares (Voting Member)
• Umbreto Berardi

d. Chairman appreciated John’s and other author’s efforts on Handbook sections and upcoming future revisions

6. Programs – Chris Mincey
a. Review of Past Programs (Denver, CO)
• Two technical papers were released along with a conference paper:
  o TES emergency cooling Part 1
  o TES emergency cooling Part 2
b. Review Current Program (NYC, NY)
• Conducted a panel discussion: “Dispelling the Myths about TES – Why aren’t you using TES?”
• Had a three part series on TES District Energy, Combined Heat and Power, and Thermal Energy Storage. The seminar was well attended, with approximately 250 attendees.
• Chairman Frankenfield mentioned that there were 141 seminars submitted for NYC session. Only a third of them (62) were approved. Out of these 62, TC 6.9 had three seminars. This was well appreciated by all TC 6.9 members.
c. Discuss Future Programs
• The next ASHRAE conference will be held in Seattle, WA. Program abstracts for Seattle conference are due on February 14, 2014.
  o Proposed conference will be based on “Green” and “Sustainability”
    o Motion: To approve the seminar on “SPC 150” to be presented by John Nix
      ▪ Motion: Chris Mincey; Second: Geoff Bares
      ▪ Motion unanimously approved (11-0-0).
    o Motion: To approve the seminar on “TES and Renewable Energy” to be chaired by Lucas Hyman
      ▪ Motion: Chris Mincey; Second: John Dunlap
      ▪ Motion unanimously approved (11-0-0).
• The ASHRAE conference after Seattle will be held in Chicago.
  o Proposed Topic for ASHRAE Conference is “Conserving Energy and Water With TES Systems”
  o No vote taken at this time on this seminar

7. Standards – Robert Willis
   a. Standard 94 series
      • Current through 2015.
      • ASHRAE Standard 94.1 and 94.3 were voted to be withdrawn.
        o Withdrawal public review for Standard 94.3 and 94.1 went out in November 2013.
      • ASHRAE Standard 94.2 to be revised.
   b. SPC 150
      • SPC 150 is currently under revision. Several interim meetings have been held between ASHRAE Denver and ASHRAE New York City.
      • SPC 150 committee looking to have the document ready in June, 2014

8. Research – Brian Silvetti
   a. Work statement 1607
      • Most revisions already conducted for this work statement.
      • Comments received on this work statement, include:
        o The project should be co-funded by DOE.
        o Shortening of the executive summary.
   b. RTAR on Design Guide
      • Received comments and are currently being addressed.
   c. URP 1708 has been submitted by Purdue University.
   d. New items under research include:
      • Research project on diffuser design
        o An RTAR is yet to be developed
        o No vote yet taken on this research project but members showed support for the development of this RTAR

9. Chairman appreciated all TC subcommittee chairman’s efforts

10. Long Range Planning/Website – Guy Frankenfield
    a. Chair Frankenfield mentioned that the meeting date & time for next meeting needs to be updated on the TC 6.9 website. Also, Meeting minutes for this meeting will be posted on TC 6.9 website
    b. Information on SPC 150 will also be posted on TC 6.9 website

11. Honors and Awards
    a. Chair Frankenfield mentioned that currently no individual is in charge of handling Honors and Awards from TC 6.9 committee.
    b. Mike Filler has volunteered to take up this position.
c. Mike mentioned to all members to update their Bio on ASHRAE website in order to be help in consideration for awards.

12. Old Business
   a. ASME Meeting on Thermal Storage Equipment
      • Several individuals were invited to the ASME Thermal Energy Storage Open Research Forum in September, 2013. A report on recommendation was released for this topic.
      • The report covers three major areas:
         o Building Applications
         o Transportation Applications
         o Electric Utility Applications
      • Possible partnership with TC 6.9 is in discussion for moving forward with ASME’s initiative on Thermal Energy Storage Equipment
      • John Lau to get permission to circulate this report to TC 6.9 members

13. New Business
   a. Mandate on Energy Storage (OIR on Thermal Energy Storage) in California
      • Offers permanent load shift incentives
      • CA has allocated $31 million for these incentives

14. Adjournment