

1. Preliminaries
 - a. Call to order 2:18
 - b. Introduction of members and guests
 - c. Attendance list
 - i. Please make sure that everyone signs the attendance sheet with current email address.
 - ii. An agenda has been passed out. One was sent by email prior to the meeting.
 - iii. 8 voting members present, quorum achieved
 - d. Additions to agenda
 - i. None
2. Approval of Minutes
 - a. Las Vegas minutes sent by email
 - b. Comments on the minutes from Las Vegas
 - c. Motion to approve Cohen, second Beda
 - i. Approved unanimously
 - d. Web site shows minutes as not approved, by error. Paul will make sure this is addressed and changed.
3. Review of Section 8 breakfast
 - a. Paul will ask the section head if he can distribute notes from the section meeting to TC 8.6 because there is a lot of information included.
 - b. ASHRAE has been listening to issues regarding the program and they are trying to improve the process. There will be some iterations that the program chair will bring back at the next meeting.
 - i. Request for an interpretation regarding a non-voting vice chair that is covering for an absent chair. Concluded that the vice-chair does not get the chair vote and it would go to an email vote.
 - c. Bill McQuade, prior section head is becoming vice chair of TAC and we will have a new section head. Steve Duda will be the new section head.
 - d. CEC is going to start collecting the rating sheets for speakers for programs and will measure the ratings. The composite ratings for the speakers and sessions will be kept and if a score is 3.5 or below for three presentations, you will be encouraged to get training before another presentation. There are a people who do multiple presentations at conferences who score low. There is a possibility that the voting will be stacked in the future.
 - e. Encourage the subcommittee chairs to attend the subcommittee training meetings at each conference and bring what you find out back to the TC. There is a lot of motion with changes and would be beneficial to the TC to know what these changes are.
 - f. A good thing that is happening is that there is an upgrade to the existing roster system and they are working on a web tool to maintain the roster online. The process for scheduling meeting rooms will be

online as well. Activity forms for the meetings may also be included in the online forms. ASHRAE is investing in web upgrades.

- g. Training this fall by TAC and the electronic communications committee on how to set up and maintain Google Group to use for committee purposes. We need to make sure the subcommittee chairs are set up to use this functionality and go through training. The training Powerpoint from last year is on the website.
 - h. Pitch to members to recommend other members for awards and fellows. The comment was made that ASHRAE has less than 1% of members as Fellows, while ASME has close to 3%.
4. ASHRAE Liaison Reports
- a. None
5. Membership
- a. Pleased to announce that Ron Wood will start as Chair, Jon Cohen as Vice-Chair, Steve Kline as Secretary, Russ Lindemann as Handbook Chair, Leon Shapiro as Program Chair (we need to process an emergency change from Scott Mayes to Leon Shapiro), Mark Huber is Research and Standards Chair.
 - b. Mike Beda is a voting, non-quorum member.
 - c. Voting members for next year are Ron Wood, Steve Kline, Scott Mayes, Mike Beda, Mike Patton, Leon Shapiro, Dick LeClaire, Russ Lindemann, and Mark Huber.
 - d. Provisional membership is open to anyone who has interest. You can roll on as a corresponding member after attending a few meetings.
6. Handbook (Lindemann)
- a. Met this morning.
 - b. There were a couple additional comments that Russ is adding now to chapter 39. One on white rust and one on coil shed and associated products. Russ is incorporating those and will send out for an electronic vote before the end of the month.
 - c. The due date was the end of June, but we actually have until the end of July.
 - d. Please review the document quickly so we can get this in on time.
 - e. Still working with other committees on chapter 38, but there are no changes on TC 8.6 side.
 - f. Motion to approve chapter 38 by Cohen, second Mayes
 - i. Approved unanimously, CNV
 - g. Thank you to everyone who provided comments and modifications to the chapter for your contributions.
7. Standards (Huber)
- a. 2011 edition of Standard 64 has been published.
 - b. Not aware of any other standards actions by TC 8.6 at this time/
8. Research (Huber)
- a. Attended research meeting this morning
 - i. DOE has an organization called GPEX hub and works on energy efficient building that wants to work with ASHRAE

1. Funding of 125 million over 5 years
 2. Looking for mechanisms to pool resources
 3. Looking for fast results with ASHRAE technical rigour.
 4. Not much funding for the current year.
- ii. Session on RTAR's being returned
 1. Not appropriate
 2. Not enough references
 3. Not clear how it will advance state of the art
 4. Budget is not in line with the work
 - iii. New Liaison
- b. Current RTAR on water and Energy Nexus
 - i. Forum this morning with good attendance
 - ii. Good discussion, with some wandering off point.
 - iii. Some suggestions to look at:
 1. Incorporate the number of people that benefit
 2. Look to AWWA or other organization to get more data on energy used for water. John Koeller on SPC 191 is a representative from AWWA.
 3. CALWEC is another organization recommended to partner with
 4. How far back to you go when looking at the W/E Nexus
 5. Suggested that there are ISO standards on life cycle for products and we may gain insight from that work
 6. Suggestion to include process and agricultural users
 7. TP10-16 was a CTI paper on the Water/Energy Nexus
 - iv. There are several reference documents with volunteers to look at them from the subcommittee meeting.
 - c. RTAR 1643on "Evaluation of the Ability of Cooling Tower Drift Eliminators to Remove Legionella from Effluent Air Streams" was reviewed by RAC and returned with comments. There are more details needed. Mike Patton, Dick Miller, Claressa (CDC rep) and Sara Ferrari will resubmit.
9. Programs (Shapiro)
 - a. Sponsored Forum 6 today. Not as many ideas as we would have liked. The whole concept is going to be continuing and we need to look at that for future programs. This will have a direct affect on this committee membership and our organizations. We should look for other committees that are also impacted.
 - b. Another hot issue is recycled and reclaim water. This is becoming more important issue especially with respect ot irrigation and cooling tower make-up water. This also ties into 3.6. There is a movement toward this, but not a lot of practical information for application and the affects on equipment.
 - i. Discussion on what municipalities are doing with this and regulation. Blowdown, condensate recovery and increased

cycles have been discussed. This could be a topic for a forum to identify municipalities are regulating water use.

- c. Another topic to look at is hybrid towers and tower efficiencies. We could have a program on advancements in cooling tower technology and hybrid towers.
 - i. Could have a review of the technologies available by multiple presenters on the hybrid towers to reduce commercialism with a follow by how that impacts systems
 - ii. Get the engineers perspective on their use, application and system design. Possible Mike McDermott or John Dunlap.
 - iii. There was discussion on the type of program that we want to submit.
 - iv. If this is going to be a conference paper, we have time before Dallas submission dates.
 - v. Committee will work on developing the program with several members agreeing to work on this. If you have interest in working on the program development, please contact Leon Shapiro lshapiro@vrtxtech.com .
- d. For Chicago, we should look at water conservation and Title 24 was looking at this again last year. Leon proposes a program along those lines. "Regulations and standards regarding water and energy use; looking at the practical implications."
 - i. Possibly one on water savings criteria the government uses by Ron Wood. Energy savings contracts include water savings, including site/source requirements.
 - ii. Possibly Frank Morrison to present on Title 24 and/or 189.1
 - iii. Look at different parts of the country and why the regulations are there. Define the problems locally and the drivers in the different regions.
 - iv. 3-4 dectors
 - 1. regulations in country
 - 2. water issues that drive regulations
 - 3. practical implications for equipment
 - 4. practical implications for engineers and end users
- e. Motion to have a seminar in Chicago "Regulations and standards regarding water and energy use; looking at the practical implications."
 - i. Moved by Shapiro, second Cohen
 - ii. Approved unanimously, CNV

10. TC 3.6 (Patton)

- a. Routine business before the committee meeting tomorrow
- b. Looking at a program on aluminum boilers for Chicago

11. TC 2.8 (LeClaire)

- a. Green Guide
 - i. Third edition of the Green Guide was published last year.
 - ii. There will be a Forum soon for ideas for the fourth edition of the Green Guide.

- iii. Dave Grumman wants to generate more exposure in the Green Guide.
 - iv. Look to make it free to increase usage. The book was published, but there have not been many sales.
 - v. Discussion on making it web based and updated more frequently
 - vi. Discussion on making wiki's so that projects that have been done can be presented.
 - vii. Probably more people who would buy an online version
 - viii. John Swift is taking over as chair.
- b. STD 189.1
- i. Has not met yet
 - ii. There is a water use and energy efficiency subcommittee meeting tomorrow 8-10 and Energy efficiency from 12-3
12. STD 90.1 and Title 24 (Lindahl)
- a. Title 24
- i. Workshop on April 27th with good participation
 - ii. Fairly extreme proposal that would significantly increase efficiency of cooling towers, especially for data centers
 - 1. Gpm/HP increased from 38.2-100 for data centers, 80 for all others
 - iii. Frank has handouts with the response from TC 8.6 made by the TC working group. (Draft passed out)
 - iv. Motion to approve the draft letter from the subcommittee regarding Title 24 subject to final editorial review from the subcommittee by Cohen, second Beda
 - 1. Approved unanimously, CNV
- b. 90.1
- i. Chiller plant working group meeting was short, but intense.
 - ii. Made progress toward building a framework to require a performance analysis to use air-cooled systems. In some climate zones, air cooled systems do perform better.
 - iii. There is a goal of another 20% improvement over the 2004 version for the 2013 version after the 30% improvement accomplished in 2010. Push to raise efficiency of all equipment.
 - iv. Evaporative condensers are not in the standard.
 - v. Manufacturers should look at their model lines to determine where the gpm/Hp numbers should be and contact the chiller plant working group. This can be taken back to Title 24.
 - vi. Pacific labs has been hired by DOE to look at cooling tower efficiency.
 - vii. As they are taking about higher gpm/hp would mean a larger unit with lower fan power. May cause a recirculation issue and performance may be influenced. We should look at generating curves, like the chillers are able to do and not look full load

only. Minimum of 880 ft/sec to match a 10 mph wind speed. If design is 100 ft/sec, than at half speed the wind velocity will affect tower operation.

13. Web Site (Walicki)

- a. Our website was a little slow getting set up.
- b. We need to update the site with approved minutes for Las Vegas and Albuquerque. These are approved and the status must be updated.
- c. Frank and now Bob have done a nice job with keeping the site updated.
- d. In the future, we should consider sending a link to the website in lieu of sending by email.

14. Old Business

- a. None

15. New Business

- a. Daryn Kline brought up the consideration of a guide on the use of evaporative cooling to educate the public and promote the industry.
 - i. We could do that, but need a proposal of what this would look like.
 - ii. There is a European guide similar to this that we could look at.
 - iii. Maybe able to make this a joint ASHRAE and CTI project. Maybe Eurovent as well to cooperate in publishing.
 - iv. Develop it first and then go to the other organizations for approval.

16. Adjourn 4:11