



Shaping Tomorrow's  
Built Environment Today

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Reply To: Mike Adams  
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Chair TC 3.6

Or

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Vice Chair TC3.6

## TC 3.6 MEETING Minutes

**Date/Time:** ASHRAE TC 3.6 Meeting, Tuesday June 25 1:00 p.m. – 3:30 p.m.

**Room:** Director's Row I (PL)

**Note:** *TC3.6 Handbook / Program / Research Subcommittees*

**Date/Time:** Sunday, June 23 3:00 p.m. – 5:00 p.m.

**Room:** Suite 3366, Plaza Building (Third Floor)

### Scope:

**Technical Committee 3.6** is concerned with water treatment for building water systems including scale, corrosion and microbiological control (except sewage drainage systems) and the impacts of water treatment on building operations, maintenance, sustainability, energy efficiency, human health, and water resource conservation.

### Agenda:

1. CALL TO ORDER

At 1:06 PM by the Chair.

2. ROLL CALL & INTRODUCTIONS

Members and guests introduced themselves and their affiliations, signing in on the sign-in sheets provided.

3. REVIEW OF AGENDA

No additions were proposed for the Agenda.

4. APPROVAL OF MINUTES (*Winter Meeting, Dallas, TX*)

Corrections made to the minutes – Patton and Lucas should be listed as Members on the attendance sheet.

Motion by Miller to approve minutes as corrected; seconded by Pearson; Vote 10-0-0 CNV.

5. REVIEW OF SECTION 3 BREAKFAST

Adams reviewed the items discussed at the Breakfast Meeting, including electronic meetings, website update requirements, upcoming program and research submission dates, and the letter of support that ASHRAE will send to your employer for your work on TC 3.6. Adams also reported on the Section 3 discussion on challenges facing all of the TCs in the section in obtaining approval for their proposed program sessions for upcoming conferences. Key for approval, besides having an interesting program, is to comply with all of the submission requirements and deadlines.

6. MEMBERSHIP REPORT – BILL PEARSON

The Membership Report was presented by Pearson who remarked that TC 3.6 is a very robust Committee with a minimum of 14 to a maximum of 17 voting members. Each Voting Member has a four year term. Pearson read the scope of TC3.6, welcomed those interested in our scope, and encouraged all to be on the lookout for potential new members.

New members roll on to the Committee on July 1. We currently have a total of 16 Voting Members, 28 Corresponding Members, and 2 Provisional Members. Contact ASHRAE staff to be added as a Provisional Member at any time; at the Chair's discretion, Provisional Members can be added as a Corresponding Member. Pearson mentioned that you do not have to be an ASHRAE member to participate on the Committee in any role, with the exception of the Chair who must be an ASHRAE Member.

Pearson also mentioned that Mike Adams will be rolling off as Chair of the TC and that Morrison will be Chair after July 1. Sarah Ferrari has accepted the role of Vice Chair / Secretary of the Committee. Pearson mentioned that Adams is retiring from ASHRAE (but not Garrett Callahan) and regretfully will not be attending future meetings. However, Garrett-Callahan is allowing Todd Cornwell to replace Adams as a Committee Member.

Rolling on to the Committee are:

Ron Wood  
Mike Adams  
Paul Lindahl  
Tim Keane  
Sarah Ferrari (Vice Chair)  
Michael Patton  
Frank Morrison (Chair)  
Dan Weimar

7. LIAISON REPORTS – ASHRAE / AWT / CTI / OTHERS

7.1. Relevant Codes and Standard Issues

AWT – Pearson is the liaison with AWT; Pearson acknowledged Joe Hanigan as President of AWT in the meeting. AWT had record membership this past year as well as attendance at their last convention. The next AWT Convention will be held at the Mohegan resort in Connecticut in October. Pearson spoke highly of the technical



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training seminars and programs at their conferences. Pearson also encouraged all to participate in AWT (visit [awt.org](http://awt.org) for more information).

CTI – Lindahl reported that STD-159 related to Legionnaires Disease is fairly close to completion. There are two remaining issues which likely will require several months to resolve before sending the completed document back to the ad hoc reviewers. The two issues involve multiple comments on action tables and then tailoring the document for real world large towers (power plant, etc.) which have a legal prohibition on the use of chlorine along with other restrictions not typically found on smaller tower installations. Lindahl expects that once the review period is complete, the standard will go to the CTI Board of Directors at their Fall BOD meeting or at their BOD meeting in February.

Puckorius mentioned the timing of the CTI meeting in February and that CTI has an active water treatment section which offers the opportunity to learn more about water treatment.

ASHRAE Standard 90.1 - Lindahl reported that the WC/AC chiller study was being reviewed by the Chiller Plant Working Group. First pass showed the energy advantages of WC but results were not as good as one would have expected. The Working Group is trying to understand the reasons for this, which may center around an overestimation of the cooling tower water use in the system model. In addition, the Advanced Energy Systems (AES) WG is pursuing a system and subsystem analysis approach with ASHRAE and AHRI as opposed to the current individual component efficiency approach. The stance of the DOE on this issue is unknown at this time. Lindahl also thanked TC 3.6 Committee Members who assisted with the inputs to the WC/AC study (water treatment costs in the study's target cities, etc.). Pearson offered to review the water and sewer costs that were being used in the study; Morrison to send this information.

ASHRAE Standard 191P – Patton reported that the 191 draft received 231 comments. The Committee is now working through responses to these comments with a goal to have draft responses by the next ASHRAE meeting. Patton felt that the standard was unlikely to go out for second public review before NYC. Another full public review is likely due to the extent of the comments and required changes.

ASHRAE Standard 188P – Lindahl reported that the Committee continues to work through the comments to the third public review. Keane raised the potential issue of Standard 188P requirements making the use of cooling towers more expensive, resulting in a market shift towards the use of air cooled equipment.

#### 8. SECTION 3 CHAIR REVIEW – DR. WILLIAM MURPHY PE PhD

Dr. William Murphy, the Section 3 Chair, thanked TC members for all the hard work they do for the Committee and for ASHRAE. TC members are the backbone of ASHRAE. Murphy mentioned the opportunity for programs in Seattle which will have a special track on Refrigeration and encouraged the TC to submit programs for that Conference.

Dr. Murphy congratulated Mike Adams on his service as Chair of the TC and presented Adams with a certificate of appreciation from ASHRAE. Bill Pearson also presented

Adams with a shirt signed by Committee members, expressing the Committee's appreciation for Adam's service and friendship.



**Figure 1 Mike Adams Receives Gift from the TC for his Service**

#### 9. HANDBOOK - DAN WEIMAR

Weimar reported that the Handbook meeting on Sunday was well attended and productive. Handbook assignments were made. Goal is to finalize the updates in draft form by November and have a vote on the draft in NYC. A 2/3 majority of the voting members of the Committee is necessary for approval. Deadline for submission of the Handbook Chapter is April 14, 2014. Weimar advised that volunteers are still welcome to contribute to the upcoming Handbook revision.

#### 10. RESEARCH - MICHAEL PATTON

Patton, Chair of the Research Committee, reported that the Sunday R&D meeting was productive with a good turnout.

Puckorius reported that he has two potential projects – measurement of Drift and PM5 and PM10 particulates and the second on the impact of surfactants and wetting agents on drift rates. Puckorius is working to put together an RTAR for consideration by the Committee. Pearson reported that the AWT BOD would co-fund such a research project. CTI may also be a potential cosponsor in addition to ASHRAE and AWT.

Becker proposed a project on organic loading versus biological content of the system. This could potentially be accomplished through a field survey. Such information could be valuable as a reference in the ASHRAE Handbook. Patton volunteered to work with Becker on the draft of the RTAR.

Patton led a discussion on measuring biofilms in cooling and potable water to develop a "Method of Test" for biofilm. This potential RTAR would have a link to Standard 188P to justify ASHRAE funding and to STD 159 which would offer the potential for co-funding by the CTI.

Alain / Stout are working on an RTAR proposing to evaluate different treatment measures for LD, which is a very active topic.

Puckorius mentioned that the AWWA is investigating copper corrosion in potable water



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pipng potentially due to chloramines which may be of interest to the TC. Puckorius to send an email to Patton with more information.

RTAR 1643 on effectiveness of drift eliminators relative to LD is being abandoned by the Research Committee. This was due to the unworkability of a field survey or lab effort.

Patton mentioned that there currently is a dearth of research projects in pipeline. As such, ASHRAE is simplifying the RTAR process to encourage more RTARs. Pearson volunteered to survey AWT's committees for ideas and potential co-funding sources. As such, Patton solicited topics of interest and encouraged the Committee members to keep their research ideas coming! Our ASHRAE liaison will be our advocate.

Lastly, Patton is currently looking for volunteer to take over as Chair of Research for TC 3.6, having served well in this position for several years.

#### 11. PROGRAM - SCOTT MAYES

Workshop discussed and proposed on "Total Organic Carbon or Tic Toc Your Time is Running Out"; Motion for approval as a NYC Workshop by Mayes; seconded by Cohen; Vote 10-0-0 CNV. Weimar, Cornwell, and Becker volunteered to present.

Another motion by Mayes was made to support and cosponsor with TC8.6 a seminar on Codes such as Standard 90.1 and Standard 191P. Pearson seconded; Vote 10-0-0 CNV

Mayes mentioned that a Conference paper was going to be presented by Leon Shapiro and Daryn Cline.

For NYC, TC 8.6 is going to sponsor a workshop session – 1 hour – ½ presentation and ½ networking on Pros and Cons of recycled water in cooling systems – motion by Mayes, second by Pearson, Vote 9-0-1 CNV. Morrison, Weimar, and Spence volunteered to support session.

#### 12. WEBSITE UPDATE – JEREMY STOKES

Stokes, TC 3.6 WebMaster updated the TC website for this meeting. Pearson to send membership list to Stokes along with photos from the TC Social Night. Stokes requested that Committee members send suggestions to the WebMaster link on the TC 3.6 website.

#### 13. OLD BUSINESS

Puckorius IWC / NACE liaison – IWC meeting in Orlando soon. These are very active.

Puckorius (backed up by Cunningham) is to be the IWC and NACE liaisons. Puckorius to send info to Morrison on these organizations.

Patton reminded the TC of the international aspect of ASHRAE and to keep this in mind as Committee members work on the Handbook, generate research proposals, etc.

#### 14. NEW BUSINESS

Committee thanked Jon Cohen for the great job as Denver Social Night Chair which was held at the "Broker" restaurant. About 25 Committee members enjoyed the camaraderie and great food.

Patton volunteered as Social Night Chair for the NYC meeting.

#### 15. DATE AND LOCATION FOR NEXT MEETING

Winter Conference - NYC - January 2013

Note that due to Martin Luther King Day, the AHR Expo moves from a Monday start to a Tuesday start. ASHRAE meetings follow their normal Monday and Tuesday schedule (Sunday and Tuesday for TC 3.6 meetings). Conference Headquarters hotel is the NYC Hilton.

#### 16. ADJOURNMENT

A motion for adjournment was made by Mayes and seconded by Spence. Vote was unanimous in favour of adjournment; 10-0-0 CNV.