



1/3/2005

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ASHRAE TC3.6 Meeting 29-Jun-2004

I. CALL TO ORDER

Vice-Chair Paul Lindahl acting for Chair Scott Mayes who was unable to attend.

II. INTRODUCTION OF MEMBERS AND GUESTS

8 voting members – quorum

Liaison - Dick Coley – difficulties with RP1307. Dick talked w Dave Geary. Dave is trying to get contractors fired up, need submitters to respond.

III. MINUTES OF ANAHEIM MEETING

Corrections. First sentence, Ron Brown should be changed to Ron Wood. Barry Fields commented on last sentence regarding Best Practices. Barry Fields asked if Bill Pearson or another water treater was involved in the seminar. Bill commented that he was not and John Lane stated he is taking lead on seminar. Paul Lindahl asked to check that all listed on the seminar are staying involved. Motion to approve requested by Paul Lindahl, Bill motions and Ron seconds, the minutes are approved.

IV. CHAIRMAN'S COMMENTS

Paul Lindahl lead meeting in Scott Mayes absence  
Scott Mayes wanted to recognize work from Frank Morrisson and BAC for getting website up and running. Additionally he requested suggestions for research projects.

Notes from Section meeting – new policy of ASHRAE concerning recording of presentations and audio to make for sale – seminars speakers can opt out if they desire. This topic resulted in significant discussion at section meeting – some people expressed strong feelings about the issue of copyright. Significant discussion at this meeting ensued on the topic; Mark Hodgson stated some have said they won't sign



and they are looking to modify, Paul Lindahl stated to his knowledge it is non-exclusive, Barry Fields stated presentations without copyright assignment aren't published.

This was the first year a laptop was provided in each room and the speaker used this laptop with a USB drive generated by ASHRAE in the speakers room. It saved time and aggravation – went very smoothly.

#### V. PURPOSE AND SCOPE

#### VI. MEMBERSHIP SUBCOMMITTEE

Email from Dave Geary – Stan Trzcinski has left ASHRAE and is no longer in group. Sarrah Ferrari is to be upgraded from corresponding member Mike Adams is coming back based on email – asked if everyone agreed Mike should be a voting member, no negatives. Is there a GE person on roster? Hal Roth is listed but not voting. Excel list from December is no longer accurate Bill McCoy wants to be voting member but only if he gets on guideline 12. Requests were made for an updated listing of members with correct email and pertinent information.

Written report submitted by Geary to Scott.

#### VIII. HANDBOOK SUBCOMMITTEE – BILL PEARSON

6 people attended subcommittee meeting – handbook committee reports the consensus was that the form 11 is worthwhile. Lively discussion with a lot of good ideas as well as guidance and direction for next revision of chapter 48 which was last revised 5 years ago by Bob Petterson of Marley.

Bill asked how many attending read the chapter – approx 5 at meeting had read chapter.

Bill initially wanted to upgrade but now wants an extensive revision of the chapter based to give a better introduction on the reasons for water treatment including the importance in design and commissioning. Additionally there maybe less technical detail in the chapter as one chapter cannot give a detailed summary of all the chemistry involved. The chapter could include references to other recommended areas. A specific item discussed was reducing the verbage on legionella in this chapter and using the ASHRAE position paper 12-2000 as a reference. Similarly research project 1155 on water treatment can be referenced in chapter but not detailed in chapter. Bill passed out proposed verbage for revision regarding magnetic devices. There was a great deal of discussion on this topic.



Charlie Sanderson said the unit is designed so flow velocity is 2.3 within treatment chamber so the reference to velocity is a manufacturer's design factor and need not be listed in the chapter. Distributors just need to know gpm and design the unit appropriately, for instance a 100 ton tower system has a device designed for 300 gpm. In apt buildings or hotels where an added pumping is needed the unit is modified to suit. Charlie said he has 350,000 installations and the wording of optimum flow gives the impression that the devices must be designed in place.

The rest of section will stay in the chapter. Only this new paragraph will be added. Statement – for electronic handbook – “of all these devices when configured in optimum conditions” will replace last phrase in item Bill Pearson handed out. Bill will be working on outline revision for chapter 48 and will send that to others to see who wants to work on the general revision.

Move to insert as revision to chapter – the wording submitted by Bill Pearson as modified. Motion seconded and approved by vote of 7 to 1.

Charlie said units have 25 limitations listed in the manual only three were listed in chapter. Additionally Charlie stated that equipment is not sold off the shelf and sellers must be properly trained and knowledgeable. In short there are more than 3 specific limitations in the item. The only items listed in the chapter should be general in nature as with water treatment. Lastly Charlie requested that the section be revised prior to Dr Hill's retirement, which should be interpreted as very soon.

Move to strike sentence on 3 limits in chapter. Motion seconded and approved 8 to 0.

Revision follows these minutes.

*With reference to the brief address to the ASHRAE Board of Directors by Chuck Sanderson Jr., we have been requested by Charles Sanderson to include in the minutes his assurance to those involved that there is no reason for liability concern.*

## IX. RESEARCH SUBCOMMITTEE - SARRAH FERRARI

Sarah reviewed subcommittee meeting notes from Monday.

Projects are prioritized based on presented flow chart. 45% value is how well your project matches ASHRAE plan. RAC had forum on strategic planning today for next 5 years. Planning is split into 8 categories. A draft will be available hopefully in Orlando with a final document by next summer.

RP1307 fill removal project was sent to 7 bidders. The current plan is to send out to bidders in early July and bid period is early November. Linda Sessenback (?) runs environmental biology lab at UNLV. Barry said she has a big lab and will send



Sarah her contact info. Bidders were concerned about potential apparatus so may want to discuss.

Barry suggested industry handle industry side and microbiologist handle mb side. Does Barry's contact an UNLV have ability to house the full study equip?

Rich Miller said if you can get it though the campus health and safety it would be relatively easy for a university to do the project. The general consensus was a private individual would require local and state approval for the entire process which could be prohibitive if even possible.

Sarah said will send out request as is and see responses.

Sarah will email the latest request to all.

RTAR on non-chemical biological devices was discussed and committee needs to review. - Sarah Ferrari passed to John Lane. John said he will review with Dave Geary and send to Sarah by mid July. Sarah to distribute. All will need to review ASAP and have response back to Sarah so it can be finalized by August 1.

*Post Meeting Update: RTAR 1361, "Biological Control in Cooling Towers Using Non-Chemical Water Treatment Devices" was passed by the TC by a 14-0-0 email vote, and sent on to the RAC for their meeting at Orlando.*

Future projects - Grey water for open systems

Case studies are available, Ken Mortensen from Marley is looking at. There have been published papers on the subject at CTI. .

Tertiary treated effluent can have 100 cfu's of coliform. Mark Hodgson stated that EPA definition of grey is recycled municipal water and grey water is not used in HVAC. Sarah said a push is towards HVAC. Paul Lindahl suggested discussion be deferred to program committee discussion.

Tc5.7 evap cooling would like to do research on use of ozone in evaporative coolers used for humidification. Study could be done but would have to look at health impact of ozone in humidified air.

Risk assessment for LD - do we want to do risk assessment project? Paul Lindahl stated that plume modeling would be very sophisticated and expensive.

Larry Speilvogel, Chair of homeland security committee stated that we are actively involved in getting info out on risk assessment, including cooling tower.

ASME has huge project under way on risk and vulnerability assessment. Project was funded by homeland security.

Will defer risk assessment but keep it on a list.

## X. PROGRAM SUBCOMMITTEE



Ian smith was to have a poster but there was none nor was he seen at the seminar. His contract required a poster and attendance.

Orlando forum on bio control w/ magnets.

Winter, Ron will do paper on commissioning. Tim Keane will do abstract on legionella for commissioning and send to John. Bill Pearson will get abstract within 1 week to John on passivation

Chicago in 2006. - The date for submittal of papers is April 2005 with final review August 2005. We need 3 minimum papers from ASHRAE for this. Barry Fields is preparing a paper that is a review of all guidelines in the US and Internationally.

Denver seminar need ideas no rush because all we need is abstract. Grey water is topic for forum. Viability for grey water for comfort and cooling water applications.

## XI. OTHER BUSINESS

Frank passed out demo on website.

Guideline 12-2000 – action happened within ASHRAE Environmental, Health and Safety prompting them to reopen 12-2000. They appointed a chairman from EH&S.

David Geary tried to resolve with Clair. Clair did not know status. Dick Charles just got on the Env Health committee. They discussed in committee. Env health did not know status. There is a place on Env health website to sign up for membership. Dave Geary suggested to Sidney Parsons to reconstitute the previous committee.

Sidney Parsons is in South Africa. He did not know much if anything about this. His contact info is [saparsons@csir.co.za](mailto:saparsons@csir.co.za) [www.csir.co.za](http://www.csir.co.za)

Dick Charles and Paul Lindahl will follow-up with Dave Geary on members for 12-2000.

Barry Fields stated that WHO legionella guidelines are presently very messy and not near a point for review. They will be revised and out for final comment in September with final document out in December. Barry will pass on to committee once next draft is received.

Legionella Prevention Conference is chaired by Dave Geary, Janet Stout, Richard Bentham, ASHRAE is a sponsor. Notice and call for papers will be put in ASHRAE journal.

## XII. NEXT MEETING



**ASHRAE** American Society of Heating, Refrigerating and Air-conditioning Engineers, Inc.

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Same as usual.

XIII. ADJOURNMENT



**ASHRAE** American Society of Heating, Refrigerating and Air-conditioning Engineers, Inc.

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Respectfully,

Paul Lindahl, Vice-Chair



1. Here is the new verbiage for the (entire) section on Non-chemical water treatment in the ASHRAE Handbook Chapter 48 -- it reflects the changes voted upon by TC3.6 in Nashville:

### **Non-chemical Methods**

Equipment based on magnetic, electromagnetic, or electrostatic technology has been used for scale control in boiler water, cooling water, and other process applications.

**Magnetic systems** are designed to cause scale-forming minerals to precipitate in a low-temperature area away from heat exchanger surfaces, thus producing nonadherent particles (e.g., aragonite form of calcium carbonate versus the hard, adherent calcite form). The precipitated particles can then be removed by blowdown, mechanical means, or physical flushing.

The objective of **electrostatics** is to prevent scale-forming reactions by imposing a surface charge on dissolved ions that causes them to repel.

Results of side-by-side comparative tests with conventional water treatment have been mixed. A Federal Technology Alert report regarding these technologies (DOE 1998) stresses that success of the application depends largely on the experience of the installer. The report includes a discussion of the potential benefits achieved and the necessary precautions to consider when applying these systems.

An **ASHRAE Research Project (RP-1155)** on **physical water treatment (PWT)** was sponsored by TC 3.6 Water Treatment Committee and presented at the ASHRAE 2003 winter meeting in Chicago. For this study, a PWT device was defined as a non-chemical method of water treatment utilized for the purpose of scale prevention or mitigation and bulk precipitation was proposed as the mechanism of scale prevention. Three different devices described as permanent magnets, a solenoid coil device, and a high-voltage electrode were tested under laboratory conditions. Fouling resistance data obtained in a heat transfer test section supported the benefit of all three devices when configured in optimum conditions.

2. From the old (existing) handbook verbiage (see below) we essentially (FIRST) added the last paragraph (as stated above) to report/reflect the ASHRAE RP-1155 project of TC3.6; then (SECOND) eliminated the last sentence of the 2nd paragraph ("the effectiveness ...") -- this was reasoned by the objection that only the magnetic devices were mentioned as to some limitations and did not cover the other two non-chemical devices or the many more limitations of all three.

### **(OLD/CURRENT HANDBOOK VERBIAGE)**

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**Magnetic systems** are designed to cause scale-forming minerals to precipitate in a low-temperature area away from heat exchanger surfaces, thus producing nonadherent particles (e.g., aragonite form of calcium carbonate versus the hard, adherent calcite form). The precipitated particles can then be removed by blowdown, mechanical means, or physical flushing. The effectiveness of a magnetic system can be diminished by a low ratio of dissolved calcium to silica, by the presence of excessive iron in the water, or if it is installed in close proximity to high-voltage power lines.

The objective of **electrostatics** is to prevent scale-forming reactions by imposing a surface charge on dissolved ions that causes them to repel.

Results of side-by-side comparative tests with conventional water treatment have been mixed. A Federal Technology Alert report regarding these technologies (DOE 1998) stresses that success of the application depends largely on the experience of the installer. The report includes a discussion of the potential benefits achieved and the necessary precautions to consider when applying these systems.



Attendance:

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