

THE HOT AIR DIFFUSER

Chapter Newsletter

OCTOBER 2014

Volume 20 Issue 8



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CHAPTER MEETING

OCTOBER:

Topic: Modern Hydronic System Designs for Condensing Boilers

The presentation will discuss the principals behind primary only variable flow hydronic designs, the shortfalls of primary/secondary arrangements, proper control strategies for modular plants, and an example system applying this knowledge. A certificate for one professional development hour will be issued to those in attendance.

This month's speaker will be Kyle Bottorff from Fulton Boiler. Kyle is a commercial heating sales engineer at The Fulton Companies. He is a graduate of Syracuse University's mechanical engineering program. Kyle is responsible for engineering application and sales support for the hot water commercial heating product lines, including proposal development, technical and professional development presentations, heating and process systems design, education of proper product application to maximize both boiler and overall system efficiency, and project management through collaboration with an array of internal departments and external vendors. Kyle is located at Fulton's Centerville Road, Pulaski New York office.

When:

Wednesday, October 8th, 2014
11:45am to 1:00pm MST

Where:

Idaho Power Building
1221 West Idaho Street
Boise, ID 83702



Please Register online at:
www.idahoashrae.com

SEPTEMBER:

Topic: Practical Noise Control—Avoiding Sound Traps

For the September meeting we learned about commonly tried sound reduction techniques that accomplish little or nothing. From the presentation we will be able to apply information from this talk to your current work. We started with the "how" and "why" of sound production and sound transmission, then covered the basic principles of noise control, and explain some of the industry jargon. We finished with case studies of some real-world projects, describing the noise control solutions that were used.



ASHRAE, founded in 1894, is an international organization of some 50,000 persons. ASHRAE fulfills its mission of advancing heating, ventilation, air conditioning and refrigeration to serve humanity and promote a sustainable world through research, standards writing, publishing and continuing education.

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HISTORY LESSON

OCTOBER

Five Years Ago

The chapter president was Spencer Shepard. The meeting was held on October 9th, 2009 at the Idaho Power Building. Wayne D. Meuleman, Attorney-at-Law, gave a talk regarding construction laws and understanding and interpreting the laws.

Ten Years Ago

The chapter president was Tony Sutton. The meeting was held on October 8th, 2004 at the Foothills Environmental Building. The program was a tour of the facility.

Fifteen Years Ago

The chapter president was Ben Strawn. The meeting was held on October 8th, 1999 at the Double Tree Riverside. Eric Shannon, Idaho Transportation Department, gave a presentation on the current progress of the Flying Y with computer drawings showing what the finished project will look like.

Twenty Five Years Ago

The chapter president was Dave Musgrove. The meeting was held on October 9th, 1989 at the Kings Table Restaurant. Shirl Boyce, Chamber of Commerce, gave a presentation on "The State of the Economy in Idaho".



ASHRAE Proposes Alternate Compliance Path for Existing Buildings in IAQ Standard

ATLANTA— Recognizing that the ventilation rate procedure in its indoor air quality standard may be difficult to apply in existing buildings, ASHRAE is proposing an alternate compliance path.

Proposed addendum *b* is one of six addenda to ANSI/ASHRAE Standard 62.1-2013, *Ventilation for Acceptable Indoor Air Quality* currently open for public comment from Sept. 5 to Oct. 5, 2014. To comment or learn more, visit www.ashrae.org/publicreviews.

Responding to increasing interest in sustainability in existing buildings, Standard 62.1 is cited frequently as a criterion for evaluating ventilation systems in existing buildings. Examples include LEED-EBOM, ENERGY STAR and bEQ. Some building categories, such as K-12 schools and office buildings, are frequently renovated and often have multiple zone systems that provide HVAC to similar space types.

Section 6 (including the ventilation rate procedure) of the standard was developed as a design standard. As such, Section 6 and Normative Appendix A have the complexity to allow for many complex system designs and airflow pathways. The scope of the standard states in part that “the provisions of this standard are not intended to be applied retroactively when the standard is used as a mandatory regulation or code.”

“For existing buildings, it may be difficult to apply the ventilation rate procedure (VRP), particularly for buildings with multiple-zone recirculating ventilation systems,” Roger Hedrick, chair of the Standard 62.1 committee, said. “This is because determination of some of the values needed to calculate ventilation rates may be difficult or impossible because required information is not available. An example is system ventilation efficiency (Ev), used in equation 6.2.5.4.”

Proposed addendum *b* provides an alternate path of compliance that is needed by the marketplace for those situations where information required to determine system performance is unavailable or for smaller facilities with straightforward multiple zone applications, he said.

Also open for public comment is proposed addendum *c*, which would revise the current definition of environmental tobacco smoke (ETS) to include emissions from electronic smoking devices and from smoking of cannabis (now allowed by some jurisdictions). The existing requirements for separation of ETS-free spaces from ETS spaces remain unchanged. The proposed addendum also would clarify that provision of acceptable indoor air quality is incompatible with the presence of ETS, including cannabis smoke and e-cigarette emissions.

Other addenda open for public comment from Sept. 5 to Oct. 5, 2014, are:

- *d* adds an exception to Section 5.8 (Particulate Matter Removal). In sensible-only cooling, the equipment's purpose is to provide only sensible cooling. A chilled beam is an example of this type of equipment. In this case the coil surface would never be wet and the filtration requirements intended for wetted surfaces should not apply. Latent cooling for these systems would be provided by other portions of the system, such as cooling coils in the primary air stream, which would then have independent upstream air filtration.
- *e* modifies Section 8, Operation and Maintenance, incorporating calibration requirements for airflow monitoring sensors and systems and harmonizes Table 8.4.1 (Minimum Maintenance Activity and Frequency) with ASHRAE/ACCA Standard 180-2012, *Standard Practice for Inspection and Maintenance of Commercial-Building HVAC Systems*.
- *p* – At present, all occupancy types are required to provide no less than the area component of the minimum ventilation rate during periods when the space is “expected to be occupied.” A previous interpretation clarified that this prohibited the use of occupancy sensors to reduce the ventilation rate to zero during these times. This proposed addendum would allow the ventilation to be reduced to zero through the use of occupancy sensors (not through contaminant or CO₂ measurements) for spaces of selected occupancy types.

q modifies Section 5.2 (Exhaust Duct Location) to clarify requirements by including air classes instead of descriptive language, and modifies the requirements by allowing positively pressurized exhaust ducts inside the space of origin.

ASHRAE/IES Propose Adding Verification Requirements to Energy Standard

ATLANTA— Multiple compliance options to ensure verification of delivered building envelope performance are being proposed for the ASHRAE/IES energy standard.

“Uncontrolled air leakage has long been an unquantified variable in load calculations for buildings large and small,” Chris Mathis said. “It has also been identified as the ‘weak link’ in many otherwise well insulated building enclosures. These newly proposed envelope testing, inspection and verification procedures are intended to not only help deliver better performing building envelopes, but also should help reduce errors associated with envelope air leakage in equipment sizing calculations.”

Addendum *l* is one of 14 proposed addenda to ANSI/ASHRAE/IES Standard 90.1-2013, *Energy Standard for Buildings Except Low-Rise Residential Buildings*, currently open for public comment. To comment or learn

NEWS FROM THE HOME OFFICE CONTINUED...

"The addendum addresses several items of timely and critical importance to users," Mathis, a member of the 90.1 committee who helped to develop the proposal, said. "First, it seeks to clarify several inspection and performance verification items that have long been requirements of the standard, with the goal of improving delivered performance and code compliance. Secondly, the proposed addendum includes new language addressing important building envelope inspection and verification requirements, especially as they relate to controlling air leakage. The proposal provides for multiple compliance methods including whole building air leakage testing and continuous air barrier inspection and performance verification procedures."

Mathis notes that the proposed changes would likely have an impact on construction first costs.

"Data provided to the committee showed that the savings of these various approaches to envelope performance verification more than justify the potential increases in first cost," he said. "Additionally, the costs of the verification procedures will go down over time as builders become more familiar with envelope performance testing, inspection and other verification techniques and their construction practices improve due to the important feedback they will provide."

Building enclosure professionals are encouraged to carefully review the proposed changes and to offer their comments to assist ASHRAE in strengthening these important code compliance provisions, Mathis noted.

Other addenda open for public review from Sept. 5 until Oct. 5, 2014 are:

- *e* relaxes the existing threshold for lighting control alterations while capturing a lot of energy efficiency by requiring more of the control requirements.
- *f* clarifies an exception to the automatic daylight responsive controls requirements for daylight areas under skylights
- *j* removes an exception to the variable air volume system ventilation optimization when energy recovery ventilation is installed.
- *k* requires envelope assemblies to comply with Appendix A when complying with the Energy Cost Budget Method in Appendix G.
- *m* updates the text in Section 10.4.1 on electric motors to provide information about the required efficiency of small electric motors shown in Tables 10.8-4 and 10.8-5. In addition, small electric motors were not included in the scope of the Energy Independence and Security Act of 2007, but now have performance requirements and are being added to the standard.
- *n* updates the IEER values for air-cooled variable refrigerant flow air conditioners and heat pumps above

65,000 Btu/h. Depending on the cooling capacity and product classes, the new IEERs are between 15 and 20% better than the values they are replacing. The new IEERs become effective on Jan. 1, 2017.

- *o* clarifies wording regarding duct seal class to avoid misinterpretation that compliance with the text that is struck out could substitute for the seal class requirement.
- *p* updates Cooling Technology Institute Standard 201 in Table 6.8.1-7.
- *q* limits systems that can take advantage of the fan power pressure allowance for fully ducted return and/or exhaust air systems.
- *r* revises Section G3.1.1 Baseline HVAC System Type and Description to confirm the hierarchy for selecting baseline HVAC systems, clarify what floors to count and specify what building type to use when no one use is predominant.
- *s* adds Exception 2 to 6.5.2.1 to address single duct variable air volume reheat systems with direct digital control.
- *u* adds new requirements for transfer air in exhaust systems.

Also open for public comment from Sept. 5 to Oct. 20, 2014 is addendum *bm*, which makes the requirements from 90.1-2004 the baseline for modeling when using Appendix G. In addition, it allows Appendix G to be used as a compliance path.

ASHRAE Selected as 2014 Best of Building Award Recipient by USGBC Members

ATLANTA—ASHRAE is pleased to announce today that it received the U.S. Green Building Council's (USGBC) Best of Building award for Best Professional Association.

"ASHRAE is proud to be recognized as the Best Professional Association in the Best of Building Awards," Tom Phoenix, ASHRAE president, said. "ASHRAE strives to set an example for the industry in sustainability through efforts such as increasing the stringency of its standards, developing guidance that will lead to high performing buildings and offering resources to professionals in the building industry to keep them up to speed with the latest sustainable technology. We look forward to building on our foundation as future industry issues come to the forefront."

The Best of Building Awards celebrates the year's best products, projects, organizations and individuals making an impact in green building. Nominees and winners were selected exclusively by the members of USGBC, a vibrant and diverse community of nearly 13,000 of the world's leading organizations invested in sustainability.

NEWS FROM THE HOME OFFICE CONTINUED...

"USGBC's membership represents a diverse community of leaders that have made significant contributions to the advancement of green building," said Mahesh Ramanujam, chief operating officer, USGBC. "We congratulate ASHRAE as these peer-chosen awards reflect new and innovative achievements that are to be commended."

There are 30, peer-selected awardees selected for 48 individual categories in the competition. Awardees were selected based on their region, size and area of specialization and are designed to showcase the most progressive, innovative organizations in the fields of green architecture, landscape, engineering, interior design and manufacturing. A full list of winners can be viewed at usgbc.org.

ASHRAE Releases Legionellosis Standard for Fourth Public Review Draft

ATLANTA— A fourth version of ASHRAE's proposed legionellosis standard is open for public comment until November 10, 2014.

Standard 188P, *Legionellosis: Risk Management for Building Water Systems*, currently under development, will establish minimum legionellosis risk management requirements for building water systems. The standard is intended for use by building owners and managers and those involved in the design, construction, installation, commissioning, operation, maintenance and service of centralized building water systems and components.

The draft of the document and instructions on submitting comments can be found at www.ashrae.org/publicreviews. The proposed standard will be available for access until Nov. 10, 2014.

Changes to the proposed standard since its last public review in January 2013 include:

- Alignment of the document with the revised title, purpose and scope.
- Removal of hazard analysis and critical control points (HACCP) terminology; some of the principles of the HACCP process are consistent with the process utilized in the document.
- Inclusion of a normative appendix for health care facilities meeting specific requirements that provides an alternate compliance path that is more stringent than for other facilities.
- More emphasis on requirements for design, construction, installation, commissioning, operation, maintenance and service.

Tom Watson, chair of the Standard 188P committee, notes that the standard contains both normative sections and appendices that specify what is required to comply. It also contains informative appendices and references as guidance about how to do things that may be necessary for a given building water system.

"Building water systems vary substantially in their design and their capability for transmission of Legionella," Watson said. "Scientific evidence is either lacking or inconclusive in certain aspects of Legionella control. The informative guidance is included to provide suggestions, recommendations and references."

ASHRAE, AHR Expo Return to Chicago for 2015 Winter Conference, Expo

ATLANTA— Registration is open for ASHRAE's 2015 Winter Conference in Chicago where attendees have the chance to discuss and examine the latest topics in the building industry, network; participate in technical tours; attend ASHRAE Learning Institute courses; earn professional credits; and obtain ASHRAE certifications.

The ASHRAE Conference takes place Jan. 24-28, Palmer House Hilton, while the ASHRAE co-sponsored AHR Expo is held Jan. 26-28, McCormick Place. Complete Conference information and registration can be found at www.ashrae.org/chicago, and Expo information at www.ahrexpo.com.



In keeping with ASHRAE's goal of continuing education, the Conference offers over 200 Professional Development Hours, as well as Continuing Education Units, which can be applied toward a Professional Engineering license.

The Technical Program features more than 100 sessions and 300 speakers over eight tracks: Systems and Equipment; Fundamentals and Applications; Industrial Facilities (new); Large Buildings: Mission Critical Facilities and Applications (new); Energy Efficiency; Life Safety (new); Design of Energy and Water Efficient Systems (new); Hospital Design and Codes (new). Specifically, the program features sessions on cold climate design, tall buildings, hospital and clean room de-

NEWS FROM THE HOME OFFICE CONTINUED...

Register at www.ashrae.org/chicagocourses.

Additionally, ASHRAE offers a special administration of all six certifications on Jan. 28: Building Energy Assessment Professional (BEAP); Building Energy Modeling Professional (BEMP); Commissioning Process Management Professional (CPMP); High-Performance Building Design Professional (HBDP); Healthcare Facility Design Professional (HFDP); and Operations & Performance Management Professional (OPMP). Register at www.ashrae.org/certification.

The keynote speaker at the opening Plenary Session is Aron Ralston, adventurer and subject of the film *127 Hours*. In April 2003, during a hike into a remote area of Utah's canyon country in April 2003, Ralston accidentally dislodged a boulder that crushed and pinned his right hand. After six days of entrapment alone, he freed himself with a cheap multi-tool knife and hiked to a miraculous rescue.

Since his amputation, Ralston has written an internationally bestselling book, *Between a Rock and a Hard Place*, later turned into a movie nominated for six Oscars.



Also offered are technical tours, which include Walgreens net zero store, a brewery and McCormick Place.

New Air Conditioner Standards Would Rank as Biggest Energy Saver in US DOE History

Washington, D.C.—The Department of Energy (DOE) proposed new efficiency standards today that would slash commercial rooftop air conditioner energy use by about 30%. The proposed standards would achieve the largest national energy savings of any standard ever issued by the U.S. Department of Energy.

"DOE's new standards are a breath of cool air for businesses since air conditioners account for about 10 percent of a typical commercial building's electricity cost," said Steve Nadel, executive director of the American

Council for an Energy-Efficient Economy. "The new standards will drive innovative, energy-efficient air conditioners into buildings across America, not only saving businesses money, but also reducing electricity demand and environmental emissions."

"Commercial cooling is a big part of the electricity load in many parts of California," said Vincent Davis, senior director of energy efficiency at Pacific Gas and Electric Company (PG&E). "Working through our efficiency programs, PG&E and the other California utilities have encouraged installation of high efficiency commercial cooling systems. These proposed new national standards will help further drive energy savings for customers." DOE estimates that over the lifetime of units sold over thirty years, the proposed standards would save businesses between \$16 and \$50 billion and reduce electricity consumption by about 1.3 trillion kilowatt-hours, or enough energy to cool all the commercial buildings in the U.S. for 7 years. The new standards would net a typical building owner between \$3,500 and \$16,500 over the life of a single commercial rooftop air conditioner. Overall savings will often be higher since most buildings have multiple units. For example, a big-box store can have more than 20 rooftop air conditioners. Rooftop air conditioners are commonly used in low-rise buildings such as schools, restaurants, big-box stores, and small office buildings. They cool about half of the total commercial floor space in the United States. (Most of the other half is cooled by chilled water systems, residential-type central air conditioners, or individual air conditioners mounted in windows or external walls.)

The current efficiency standards for rooftop air conditioners measure efficiency at full capacity despite the fact that air conditioners rarely operate at that level except on the hottest days. The new proposed standards are instead based on a metric called IEER (integrated energy efficiency ratio) which captures efficiency at 25, 50, 75, and 100% of full capacity and better reflects real-world performance. Typical new rooftop air conditioners that just meet the commercial building energy code have efficiency levels of about 9.5 to 11.5. However, DOE's High Performance Rooftop Unit Challenge has helped spur several manufacturers to develop and bring to market high-efficiency rooftop air conditioners. Equipment on the market today achieves IEER levels as high as 21. Today's proposed standards would set minimum efficiency levels of 12.3 to 14.8 depending on equipment type and capacity.

"Energy efficiency standards covering a range of products have been one of America's most successful policies for meeting the nation's energy needs," said Andrew deLaski, executive director of the Appliance Standards Awareness Project. "Thanks to already existing standards, U.S. electricity use will be about 14% lower in 2035. The new commercial AC standards along with other new standards completed this year will add to that record of achievement."

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The Chapter is now accepting advertisements
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Sponsorship Rates are as follows:

	Per Issue	Annual (9 issues)
Business Card	\$10.00	\$50.00
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THIS CARD TO THE SHOW FOR FREE EXHIBIT HALL REGISTRATION

Building Simulation User's Group (BSUG) October Meeting

When: October 22nd @ 12:00pm—1:00pm MST

Where: Integrated Design Lab located on 306 S. 6th St Boise, ID

Topic: Modeling Tips & Tricks

Description: A few local BSUG members will be sharing tips and tricks they use during the simulation process. More details to come!

*Free lunch will be included if you RSVP by October 21st @ noon.

*Register @ [Live Presentation](#) or [Remote Webinar](#)

*Contact Katie Leichter for more information @ 208-429-0220



Video Archive: Check out past BSUG presentations [HERE!](#)

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