

Pile of Bones

Published by the Regina Chapter of the American Society of Heating, Refrigerating and Air Conditioning Engineers

MARCH 2010

President's Message

by Greg Fluter

Well, wasn't that a fantastic hockey game! A little hard on the ol' ticker, but we succeeded and got the gold metal. Good job Canada!

Thanks to everyone who came out to February's meeting to listen to the legendary George Reed talk about his playing days with the Saskatchewan Roughriders. I thought it was very interesting to listen to his stories, as well as those told by Larry Mueller (Ron Lancaster's son-in-law), who came along to introduce George. A big thank you to Don Bell for setting this up and to George and Larry for taking the time to come out to our meeting.

For this month's meeting, please remember that it has been moved to **Monday March 8th** to accommodate our speaker. Our speaker is Julian R. de Bullet, from McQuay International, who is an ASHRAE Distinguished Lecturer. Julian will be presenting on Variable Refrigerant Flow Systems. Refer to Program section for more details.

At the next meeting, we will be presenting and voting on the budget for the next operating year, 2010/2011, so please try to attend so you can have a say where your chapter dues get spent!

We will also be asking for nominations for Regina Chapter Board of Governor positions. There will be a few people leaving the current board in the next couple of years and we need to find replacements for them. Please consider putting your name forward. Please see Rob's newsletter article for more information.

For April's meeting, we will be back to our regular Wednesday date (April 14th). April's meeting will be our Student Night where three 4th year UofR engineering student groups will present their design projects. Please plan to attend. More information will follow as the meeting date approaches.

And finally, the 2010 CRC agenda and registration forms are now available online at: <http://regina.ashraechapters.org/html/crc.html>. Please take a look and consider attending. Jerry and his committee have planned some excellent events.

Hope to see you on Monday!

Meeting Notice! Monday March 8, 2010

Hotel Saskatchewan
Radisson Plaza
2125 Victoria Avenue
Regina, Sk.

5:00 -Social/Cocktails

5:30 – Julian R. de Bullet,
ASHRAE Distinguished
Lecturer from McQuay
International will present on
“Variable Refrigerant Flow
Systems”

6:30 - Dinner

7:15 - Chapter Meeting

PLEASE NOTE:

John Ross Curling Classic -
Saturday, March 20th in
Saskatoon. Curlers leave in
the morning and return at
night. There is no cost to
compete. Anyone interested
(regardless of skill level!) can
please contact Jerry Boulanger
at 352-0656 or
jclan@sasktel.net.

**2010 CRC – May 5-8th HERE
IN REGINA!** We will require
volunteers during the event -
anyone who has not already
signed up to volunteer is
encouraged to contact Jerry
Boulanger at 352-0656.

Technical Program for March

For our March meeting, we have a DL presentation from McQuay International's Julian R. de Bullet. His presentation will be on Variable Flow Refrigerant Systems.

Julian R. de Bullet, Director, Industry Relations, McQuay International is active in industry associations concentrating on energy efficiency and responsible refrigerant use.

As ASHRAE Vice President, he served on the Board of Directors. He is an ASHRAE Distinguished Lecturer, and has an Electrical Engineering degree and Diploma in Marketing.

Variable Refrigerant Flow (VRF) Systems

The seminar will discuss the concept of multiple outdoor inverter driven compressors serving numerous indoor units while varying the refrigerant flow to meet individual zone requirements. The concept has been successfully applied for more than 20 years in Europe and Asia, and is rapidly gaining acceptance in North America. A typical VRF system uses ductless indoor units, but new applications can apply ducted indoor fan coils and even water cooled applications. A comparison will be made between simple chilled water systems and VRF hybrid applications. Finally, energy savings will be compared to more conventional systems.

2009/2010 Meetings and Events

Schedule

September 9, 2009: Darron Rempel - Chilled Beams and Displacement Ventilation

October 14, 2009: Darren Alexander (TWA Panel Systems) – Radiant Sails & Stanley Mumma, Distinguished Lecturer (DL) - DOAS Systems & Radiant Panels

November 18, 2009: CSC & HDA Engineering Ltd. - Saskatchewan Disease Control Laboratory Tour

December 10, 2009: Christmas Social – Dinner and Entertainment at the Lazy Owl on the U of R Campus

January 12, 2010: Presidential Visit, President Gord Holness

February 10, 2010: George Reed

March 8, 2010: Variable Refrigerant Flow Systems - Julian R. de Bullet (McQuay International) DL

April 14, 2010: Student night

May 12, 2010: Shawn Wedewer - SRC presentation - Commercial Cogeneration
Jerry Boulanger - J-Clan Services - Delta T and How to Get it

June, 2010: ASHRAE Research golf tournament
(Location and Details to be Confirmed)

Board of Governors for the Regina Chapter

President: Greg Fluter

Past President: Ted Cooke

President Elect & Chapter Technology

Transfer Chair: Heric Holmes

Vice President & Newsletter: Jason Danyliw

Membership: Rob Craddock

Research Promotion: Ted Cooke

Treasurer: Kris Pockett

Secretary: Carla Spriggs

Student Activities: Dean Nagel

Historian: Jerry Boulanger

Ways & Means: Trevor Hobman

Committee Chair Reports

President Elect & Chapter Technology Transfer Chair

by Heric Holmes

This month, we will have a DL visit from McQuay International's Julian de Bullet. His presentation will be on Variable Refrigerant Flow Systems. I am looking forward to this presentation, because we've seen an increase in use of these systems in our area.

Thanks to Don Bell for hosting George Reed's talk at ASHRAE last month. It was a really good time. George Reed spend quite a while taking questions and his views on his career with the Riders was quite insightful.

Next Month will be student night, and CTTC awards. This is always a good night to see innovative ideas from the students at the University of Regina. We are also still looking for CTTC chapter awards from our members.

If anyone has other suggestions for programs this year, please forward them to Heric at h.holmes@mac-eng.ca.

Heric Holmes

President Elect and Chapter Technology Transfer Chair

Membership Promotion Chair

by Rob Craddock

Membership Application:

http://www.ashrae.org/docLib/20080710_MemberAssocAffilApp.pdf

Application to upgrade membership:

http://www.ashrae.org/docLib/20080710_108.pdf

We are at the time of the ASHRAE year that nominations for the chapter and Regional executive take place. If you are interested in becoming a member of the chapter Board of Governors or the Regional executive, please contact any of the members of the current chapter Board.

There is a minimum requirement to sit on the chapter board of Governors:

- Active Society membership either Associate or Full Member grade
- Paid chapter membership

Here is a list of the chapter Board of Governor positions:

- President
- President Elect and Chapter Technology Transfer Chair
- Vice President and Newsletter
- Membership
- Research Promotion
- Treasurer
- Secretary
- Student Activities
- Historian
- Ways & Means

If you are interested in putting your name forward for a Regional position, here is a list of the Regional positions and their term length:

- Director and Regional Chair (DRC) 3 years as chair and 2 years as Assistant Chair
- Regional Vice Chairs (RVC) 3 years
- Research Promotion
- Student Activities
- Membership Promotion
- Chapter Technology Transfer
- Nominating Delegate and Alternate Term length is a Max of 7 years
- Regional Historian
- Regional Treasurer

If you are interested in any of the Regional positions, you will need to have a copy of your updated Bio. given to any of the chapter Board of Governors members prior to CRC in May. There are a few more areas that you can be nominated for in Society positions. This information can be found at the ASHRAE Society web site at: <http://www.ashrae.org/publications/detail/14347>

Please log onto the ASHRAE Society web site and make sure your Bio is up to date and accurate. If you want to join any of the many society TC's (Technical Committee's) or become involved at the

Regional level or Society level, you will need to keep this up to date.

The other thing that will take place at CRC will be nominations for Honors and Awards. If there is anyone from the chapter that qualifies for Honors and Awards, the chapter will be putting their name forward at this time. If you are interested in putting a project forward for one of the Regional Technology awards and then for the Society Awards, you need to contact Heric about what paperwork needs to be filled out as he will be the Chapter Delegate at CRC in May.

Rob Craddock

Membership Promotion Chair

Student Activities

by Dean Nagel

I would like to remind everyone that next month will be our Student Presentation night. This time around, the exams are not in direct conflict with the monthly Ashrae meeting to be held on April 14th, so all is well. I would like to personally thank Marie Iwaniw on behalf of the chapter for her hard work and dedication in bringing us the student's ideas and promotion of the student night. There is sure to be some very interesting projects, so we hope to see you all there.

Dean Nagel

Student Activities

Vice President & Newsletter

by Jason Danyliw

Regina Chapter Email Address:

<mailto:ashraeregina@accesscomm.ca>

Regina Chapter Website Address:

<http://regina.ashraechapters.org/>

ASHRAE HVAC&R Industry eNewsletter

If you wish to subscribe to the ASHRAE HVAC&R Industry eNewsletter, e-mail subscribe-enews@ashrae.org with "Subscribe this address to The HVAC Industry eNewsletter" in the e-mail subject line.

ASHRAE Learning Institute

The ASHRAE Learning Institute is offering on-line courses. There are 2 ways to register:

1. Internet : <http://www.ashrae.org/onlinecourses>

2. Phone: Call toll-free at 1-800-527-4723 (US and Canada) or 404-636-8400 (worldwide)

NOTE: You may register up to 24 hours prior to an online seminar. Course times are in Eastern US Time Zone.

Dates Confirmed for Next Satellite Broadcast/Webcast

The April 22, 2010, ASHRAE Webcast, "**Right From the Start – Commissioning for High Performing Buildings,**" will provide the building community with tools to overcome commissioning hurdles and make the process "business as usual." This **free** webcast will be transmitted **live** via the internet from 1:00 – 4:00 p.m. EDT. Webcast participants may earn three (3) Professional Development Hours (PDHs) or (3) AIA Learning Unit and chapters can earn 100 PAOE Points for hosting the program. The webcast presenters are:

- o **Rick Casault, P.E., CCP, CDT,**President, Casault Engineering, Seattle, WA
- o **H. Jay Enck, CxAP, HBDP, LEEDTMAP, CPMP,** Founder/Principal/Senior Commissioning Agent, Commissioning & Green Building Solutions, Inc., Buford, GA
- o **Michael L. Weiss, Ph.D. ABD, HCCP,** Managing Principal and President, WorkingBuildings, LLC, Atlanta, GA
- o **Ronald Wilkinson, P.E., LEEDTMAP,** Senior Commissioning Project Manager, AKF Group, LLC, New York, NY

Online registration via the ASHRAE website will begin March 2, 2010. There is no fee for registration.

Watch for additional information regarding registration and the program and via email, www.ashrae.org, and *ASHRAE Insights*. Please share this information with your colleagues to assist them with scheduling. If you have questions, please contact rdouglas@ashrae.org or call (678) 539-1128.

ASHRAE Receives NIST Grant to Study IAQ in Retail Stores

ATLANTA—ASHRAE has been awarded \$1.5 million dollars in grant money from the National Institute of Standards and Technology (NIST) to conduct a three-year research project on ventilation and indoor air quality in retail stores.

ASHRAE's project, *Ventilation and Indoor Air quality in Retail Stores*, is one of 27 projects funded by NIST for measurement science and engineering research. The NIST Measurement Science and Engineering Research Grants Program, made possible through the American Recovery and Reinvestment Act provides \$34.12 million in grants at higher-education, commercial and nonprofit organizations in 18 states. The project will be conducted through ASHRAE's research program.

"ASHRAE thanks NIST for recognizing the great need for more information on ventilation and IAQ in retail stores," Society president Gordon Holness said. "The data gathered through this project will benefit not only the industry but the general public who work and shop in retail stores around the world."

Currently, there is little published information about air quality and ventilation rates in retail spaces in the United States—ventilation requirements for retail and other space types have been set largely by data for commercial office buildings.

Given that there are some 14.6 billion ft² of retail space in the United States where people shop up to 24/7, it is vital that ventilation systems operate as efficiently as possible while maintaining good indoor air quality.

Through this study, ASHRAE is seeking to improve the energy efficiency of ventilation systems in retail stores while maintaining air quality by establishing a method to determine the relationship between ventilation rates and IAQ, using measured ventilation and pollutant concentration data.

Specifically, the project will provide a quantitative basis for improving energy efficiency, while maintaining air quality, by increasing maintenance frequency and reducing ventilation rate requirements.

Existing pollutant and ventilation rate data, on which ventilation requirements for retail spaces are based, largely come from measurements in office buildings, which may not be appropriate. The project will conduct measurements in up to five retail building types: general merchandise, department, supermarket, restaurant, and home improvement/hardware.

Holness noted that the results will provide a more rigorous basis for the ventilation rate requirements in retail spaces and provide incentives for improved maintenance if it can be shown that clean and dry spaces will lead to lower pollutant concentrations and improve the perception of good air quality.

Ultimately, the project will establish a methodology for collecting real world ventilation and air quality data.

Founded in 1901, NIST is a non-regulatory federal agency within the U.S. Department of Commerce. NIST's mission is to promote U.S. innovation and industrial competitiveness by advancing measurement science, standards and technology in ways that enhance economic security and improve our quality of life.

ASHRAE, founded in 1894, is an international organization of 55,000 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.

BACnet Adds Language Options for Both Computers and Humans

ATLANTA – At ASHRAE's 2010 Winter Conference held recently in Orlando, the BACnet committee celebrated the approval for final publication of eight addenda to the ANSI/ASHRAE Standard 135, *A Data Communication Protocol for Building Automation and Control Networks*.

The addenda are expected to be available on ASHRAE.org by the end of February.

The addenda include a specification for a standard way of representing data in XML that will give BACnet new capabilities for communications between a wide range of applications. The Extensible Markup Language (XML) is a popular technology in the data processing and communications worlds due to its capability to model complex data and its flexibility to be transformed and extended.

"With this new IT-friendly way of representing building data, BACnet will open up new ways to communicate. XML can be used for exchanging files between systems, communicating with the Smart Grid, and expanding enterprise integration with richer Web services," said Dave Robin, chair of the BACnet committee.

The XML syntax is intended to be the core data representation for a variety of uses:

- Powerful new Web services that are capable of efficient exchange of complex structured data.
- An electronic version of a BACnet PICS document, consumable by workstations and other tools, to describe the capabilities of a device.
- An "as built" description of a deployed device, distributed either as a separate file or as a BACnet File object resident in the device itself.
- Descriptions of proprietary objects, properties and data types, which may be simple, for basic data sharing purposes, or extremely rich, providing complete descriptions of the meaning and usage of the data in multiple human languages.
- An export/import format for tools and workstations publish their knowledge of a complete system of devices and networks.
- An XML version of an EPICS, including the complete test database and other test-oriented data.

In addition to the new "computer language" of XML, another addendum has added an important new capability for human languages as well. When the Unicode character set was created many years ago, it was constructed to be universal set of characters to support most of the world's languages together in one stream. However, its original 2-byte encoding caused trouble with a lot of existing systems that were designed to process only the 1-byte characters common in western languages. The "UTF-8" encoding was created to solve this problem and quickly became a very popular method of conveying international text on the World Wide

Web. BACnet has also embraced this standard and uses it in a way that fully takes advantage of its compatibility with the existing and ubiquitous ANSI/ASCII character set.

BACnet has also added support for more data types as well. A set of new "Value" objects rounds out BACnet's ability to represent different data types in a uniform and standard way. Added to the original Analog, Binary and Multi State Value objects, are new Value objects for every primitive datatype that BACnet supports, including support for character strings and large numerics.

ASHRAE '10: Building the Future

ATLANTA – A standard set to be a game changer in the industry was introduced at ASHRAE's 2010 Winter Conference, while work continued on other programs and standards that will help the Society build a more sustainable future.

Some 2,500 people attended the conference, held Jan. 23-27, in Orlando, Fla. Also taking place in conjunction with the meeting was the Air-Conditioning, Heating, Refrigerating Exposition, which attracted nearly 45,000 registered visitors and exhibitor personnel. The Expo featured an 8 percent registered visitor increase from the last show in Orlando in 2005 and a new record for the Southeast. Other highlights included 1,823 exhibiting companies representing 29 countries and 206 first-time exhibiting companies covering 354,013 net square feet or more than eight acres.

The ASHRAE conference offered a technical program with more than 100 sessions, 22 educational courses and numerous social events. The meeting also featured more than 600 meetings of technical, standards and standing committees, developing guidance for the future of the industry and ASHRAE.

"These are exciting times," ASHRAE President Gordon Holness said. "The industry reaction to our Building Energy Quotient program has been very positive. We are happy to have such distinguished partners as the General Services Administration join with us in piloting the program. The long-awaited Standard 189, which was published at the Orlando conference, will have a tremendous impact on the industry. In my travels this year, there has been much excitement about moving

forward toward greater energy efficiency. As U.S. Department of Energy Secretary Steven Chu told us last year, ‘energy efficiency isn’t just low hanging fruit; it’s fruit laying on the ground.’ The time has come for truly sustainable buildings.”

The biggest buzz at the conference centered on publication of the green standard from ASHRAE, the Illuminating Engineering Society of North America and the U.S. Green Building Council. Standard 189.1, *Standard for the Design of High-Performance, Green Buildings Except Low-Rise Residential Buildings*, is the first code-intended commercial green building standard in the United States. The standard provides a long-needed green building foundation for those who strive to design, build and operate green buildings. From site location to energy use to recycling, this standard will set the foundation for green buildings through its adoption into local codes. Learn more at www.ashrae.org/greenstandard.

Other conference highlights included the technical program, with its theme of *Building Sustainability from the Inside Out*, featuring more than 100 sessions. The most well-attended sessions were *How to Assess the Performance of Sustainable Buildings*, *Standard 189.1 Overview*, *Enhanced Dehumidification Strategies with Energy Recovery in a Hot Humid Climate*, *High Performance HVAC Systems in LEED Platinum Projects: A Selected Showcase*, *Noise and the Mechanical System Design Process* and *High Density Cooling Issues Update*. More than 400 people attended the technical plenary session addressing H1N1.

In addition, the two-part *Standard 189.1 Overview* seminar can be viewed for free at www.ashrae.org/greenstandard. The seminars are part of ASHRAE’s first-ever Virtual Conference, which provides access to more than 250 presentations and PDFs of posters. Register or access presentations at www.ashrae.org/OrlandoVirtual.

Also offered were the ASHRAE Learning Institute’s five Professional Development Seminars and 17 short courses. The most popular courses were *Successful Solar Applications*, *Using Standard 90.1 to Meet LEED Requirements*, *The Basics of a Proposed Standard on High-Performance Green Buildings*, *Designing toward Net-Zero-Energy Commercial Buildings*, *Determining Energy*

Savings from Energy Efficiency Projects: Applying IPMVP and Guideline 14 to Performance Contracting and LEED, and *District Heating and Cooling*.

The Conference also served as the launch of ASHRAE’s newest certification program, the Building Energy Modeling Professional certification, with 62 candidates taking the exam. As building owners and developers become increasingly concerned about rising energy costs and potential obligations under climate change programs, building energy modeling helps provide a preview into a building’s likely energy use and allows decisions affecting energy use to be made before a shovel even hits the ground. The new certification ensures that professionals modeling a building’s energy use have the skills necessary to produce an accurate model.

Top selling publications included Standard 189.1-2009, *The 2009 Pocket Guide* and newly published books including the *Indoor Air Quality Guide: Best Practices for Design, Construction and Commissioning*; the *Energy Efficiency Guide for Existing Commercial Buildings: The Business Case for Building Owners and Managers*; and *Dampers and Airflow Control*.

ASHRAE Celebrates National Engineers Week

ATLANTA –Engineers don’t just shape our buildings and infrastructure; they help shape our world.

The Atlanta-based American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) is a partner in the National Engineers Week program (**Feb. 14-20**), a celebration of the contributions that engineering makes to our society and encourages engineering as a career path among young students by promoting pre-college literacy in math and science. For specific information about the program, please visit www.EWeek.org.

“National Engineers Week showcases how our profession truly engineers the world we live in,” ASHRAE President Gordon Holness, said. “From buildings to manufacturing and transportation, engineers have been behind so many modern-day marvels. ASHRAE is proud to be involved in this program and celebration.”

ASHRAE has twice served as lead organization in National Engineers Week. The last time, in 2003, ASHRAE launched the New Faces of Engineering program as part of the weekly celebration.

The New Faces program promotes the accomplishments of young engineers across various disciplines by highlighting their engineering contributions and the resulting impact on public welfare. The program targets those age 30 and younger. Engineering associations, societies and government groups nominate candidates each year, from which 15 are selected for recognition in USA Today.

ASHRAE's New Face for 2010 is Aaron Smith, a mechanical engineer at M&R Engineering, Ltd., Halifax, Nova Scotia. Smith has travelled the world bringing engineering to isolated communities, from wind project in northern Alaska, to solar energy projects in Nicaragua. Smith also wrote a bilingual construction manual based on the photovoltaic assembly techniques and organized an educational workshop on solar ovens. Other recent projects include a maintenance facility and a farmers' market that incorporate geothermal heat pumps with solar thermal assist, wind turbines, in-floor radiant heating, natural ventilation and dedicated outdoor air systems with energy recovery.

The New Faces of Engineering will be featured in USA Today on Tuesday, February 16.

Several events will take place in conjunction with National Engineers Week, including Introduce a Girl to Engineering Day (Feb.20) and the Future City Competition.

Now in its 18th year, the competition attracted 33,000 middle-school students during the 2009-2010 school year from a record-breaking 1,100 schools in diverse regions across America to work with teachers and volunteer engineers to envision the future in large, tabletop models of cities of tomorrow. The teams presented their Future Cities before engineer judges at regional competitions in January. First place teams from qualifying regional competitions won a trip to Washington for the Future City National Finals, February 15-17. For more information, visit www.futurecity.org. ASHRAE will be presenting special awards for sustainability and indoor air quality.

ASHRAE offers 14 spring online courses **Updated Course on New Green Building Standard Available**

ATLANTA—With publication of the green building standard, an updated online seminar reviewing its requirements is now available from ASHRAE.

ANSI/ASHRAE/USGBC/IES Standard 189.1, *Standard for the Design of High-Performance, Green Buildings Except Low-Rise Residential Buildings*, is the first code-intended commercial green building standard in the United States. It provides a long-needed green building foundation for those who strive to design, build and operate green buildings. The standard covers key topic areas of site sustainability, water use efficiency, energy efficiency, indoor environmental quality and the building's impact on the atmosphere, materials and resources, and also includes construction practices as well as plans for operation of the building after occupancy.

A course from ASHRAE on the requirements of the standard, *Understanding Standard 189.1P for High-Performance, Green Buildings*, takes place March 15 and is taught by Tom Lawrence, a member of the committee that developed the standard. The course is one of 14 being offered this spring.

"The course has evolved as the standard has taken shape, and I anticipate that the course will continue to evolve as changes and addenda are approved, resulting from changes in concepts, technologies and design for green buildings" Lawrence said. "Standard 189.1 has the potential to be a 'game changer' in the industry and thus anyone who is working with green design would benefit from learning more about the standard. One way to do that is by taking this course."

The 14 online, instructor-led seminars that will run from March until May and are available to those interested in expanding their knowledge of the HVAC industry and keeping up to date with the latest technology and their applications.

A full list of seminars and registration information can be found at www.ashrae.org/onlinecourses. Other courses are:

- *Humidity Controls: Basic Principles Loads and Equipment*
- *Humidity Controls: Application, Control Levels & Mold Avoidance*
- *Introduction to Green Buildings and Sustainable Construction*
- *The Commissioning Process and Guideline 0*
- *Introduction to Thermal Energy Storage Systems for Air Conditioning*
- *Complying with Standard 90.1-2007 HVAC/Mechanical*
- *Energy Management in New and Existing Buildings: a Sustainable Activity*
- *Complying with Standard 90.1-2007 Envelope/Lighting*
- *Using Standard 90.1-2007 to Meet LEED Requirements*
- *Introduction to Cleanroom Design*
- *District Cooling and Heating Systems: Central Plants*
- *Complying with Requirements of ASHRAE Standard 62.1-2007*
- *Understanding and Designing Dedicated Outside Air Systems*

The three-hour-long courses are taught in real-time, from 1 p.m. to 4 p.m. EDT, and feature interactive audio. Three professional development hours or American Institute of Architects learning units or 0.3 continuing education units are available for each course.

ASHRAE Government Affairs Update

Welcome to ASHRAE's Government Affairs Update. Along with the Government Affairs webpage, these periodic e-mail updates feature information on government affairs related activities of interest to ASHRAE members and others interested in the built environment. Archives of previous updates are available from the government affairs webpage (<http://www.ashrae.org/advocacy>).

Please pass this information on to interested colleagues who also may subscribe from the ASHRAE Government Affairs webpage. Should you wish to unsubscribe, information appears at the end of this e-mail.

If you have any recommendations regarding content, or have questions about or would like to participate in Washington Office activities, please contact ASHRAE Government Affairs staff at (202) 833-1830 or washdc@ashrae.org.

ASHRAE Government Affairs Update, 2/19/10

- [U.S. Wind Energy Industry Installed Nearly 10,000 MW in 2009](#)
- [U.S. Geothermal Energy Capacity Grew 6% in 2009](#)
- [SEC: Businesses Should Disclose Climate Change Impacts](#)
- [Administration Launches \\$130 Million Building Energy Efficiency Effort](#)
- [SMUD Receives Huge Response to its Renewable Energy Feed-in-Tariff](#)
- [DOE Guides Data Centers in Standardizing Energy Efficiency Metrics](#)

U.S. Wind Energy Industry Installed Nearly 10,000 MW in 2009

The U.S. wind industry installed nearly 10,000 megawatts (MW) of new wind turbines in 2009, increasing its generating capacity by 39%, according to the American Wind Energy Association (AWEA). The industry group credited the American Recovery and Reinvestment Act for the record-breaking year, which topped 2008 by nearly 19%. AWEA's fourth quarter report places wind power neck-and-neck with natural gas as the leading source of new electricity generation for the country. Together, the two account for about 80% of the new capacity added in the country last year. The new wind capacity is enough to serve more than 2.4 million homes. See the AWEA press release (http://www.awea.org/newsroom/releases/01-26-10_AWEA_Q4_and_Year-End_Report_Release.html) and the AWEA 2009 report (<http://www.awea.org/publications/reports/4Q09.pdf>).

Globally, wind power capacity grew by 31% in 2009, adding 37.5 gigawatts (GW), according to the Global Wind Energy Council (GWEC). China added a third of the additions, growing from 12.1

GW in 2008 to 25.1 GW in 2009. That's an increase of 13 GW, about 31% greater than the wind capacity growth in the United States. The fast pace landed China in third place for total installed wind capacity, falling just behind Germany, but still about 10 GW behind the United States. Overall, the main markets driving worldwide growth continue to be Asia, North America, and Europe, each of which installed more than 10 GW of new wind capacity in 2009. See the GWEC press release (http://www.gwec.net/index.php?id=30&tx_ttnews%5bttn_news%5d=247) and supporting tables (http://www.gwec.net/fileadmin/documents/PressReleases/PR_2010/Annex%20stats%20PR%202009.pdf).

U.S. Geothermal Energy Capacity Grew 6% in 2009

Geothermal energy capacity expanded 6% in the United States in 2009, due to six new geothermal plants which came online, adding 176.68 megawatts (MW). Three projects came into service in Nevada, with one apiece in California, Oregon, and Utah. The total online capacity in the U.S. reached 3,152.72 MW as of August 2009, according to the Geothermal Energy Association (GEA), an industry trade association.

There is further expansion on the horizon. GEA has identified 6442.9 MW of new U.S. geothermal power plant capacity under development, though some of those may not go forward. However, there are seven projects with an estimated 125 MW of capacity that have drilling and facility construction underway. Those projects include two in California, totaling 85 MW; one in Florida generating 0.2-1.0 MW; three in Nevada, totaling 39.4 MW; and one in Oregon producing 0.2 MW. The Florida and Oregon projects will be the first geothermal projects in those states. One of those projects—at Jay Oil Field in Florida—will use the hot water produced by oil and gas wells to generate power. Two such projects started up in Louisiana and Mississippi in 2009, and more are planned for Louisiana, Nevada, and Wyoming. See the GEA press release (http://www.geo-energy.org/pressReleases/Year-end_release_-_December_14_2009.pdf), the GEA report update ([\[energy.org/GEA_January_Update_Special_Edition_Final.pdf\]\(http://energy.org/GEA_January_Update_Special_Edition_Final.pdf\)\), and the Web site for DOE's Geothermal Technologies Program \(<http://www.eere.energy.gov/geothermal/>\).](http://www.geo-</p></div><div data-bbox=)

SEC: Businesses Should Disclose Climate Change Impacts

The Securities and Exchange Commission (SEC) issued "interpretive guidance" to companies on January 27 to indicate how companies should handle the impacts of climate change in their financial disclosures. While the SEC guidance does not create new legal requirements, it points out where companies could be liable if they fail to disclose potential climate change impacts. Specifically, the SEC directs companies to consider the impacts of existing laws and regulations regarding climate change, and in certain circumstances, the potential impact of pending legislation or regulation. Companies should also consider the impacts of international accords, the indirect consequences of climate change regulation or business trends (which might create new opportunities or risks), and the actual and potential physical impacts of climate change on their businesses. See the SEC press release (<http://www.sec.gov/news/press/2010/2010-15.htm>).

Administration Launches \$130 Million Building Energy Efficiency Effort

The Obama Administration announced a multi-agency initiative to spur regional economic growth while making buildings more energy efficient. Seven federal agencies issued a combined Funding Opportunity Announcement (FOA) of up to \$129.7 million over five years to create a regional research center. The center will develop new building efficiency technologies and work with local partners to implement the technologies in area buildings. DOE is providing up to \$22 million for this project in the first year, and as much as \$100 million over the next four years. The agencies are working together to leverage funding and resources to promote regional growth through an Energy Regional Innovation Cluster (E-RIC) that is centered on an Energy Innovation Hub. The hub,

one of three funded by Congress in fiscal year 2010, is focused on developing new technologies to improve the design of energy-efficient building systems.

The E-RIC will be based at a university, DOE national laboratory, nonprofit organization, or private firm. The entity will partner with local or state government officials, drawing on the expertise of local architects, builders, and manufacturers. In addition to DOE, the agencies participating include the U.S. Department of Commerce's Economic Development Administration and Commerce's National Institute of Standards and Technology; the Small Business Administration; the National Science Foundation; and the U.S. Departments of Labor and Education. They will work together to leverage this funding with regional sources. Because buildings account for nearly 40% percent of U.S. energy consumption and carbon emissions, this initiative is designed to provide an array of benefits, which include reducing energy use, lowering utility bills, and decreasing carbon emissions. See the DOE press release (<http://www.energy.gov/news/8637.htm>), the Energy Regional Innovation Cluster Web site (<http://www.energy.gov/hubs/eric.htm>), and the FOA (http://www.energy.gov/hubs/documents/ERIC_FOA.pdf).

SMUD Receives Huge Response to its Renewable Energy Feed-in-Tariff

A California utility's feed-in tariff (FIT) program for renewable or combined heat and power generating facilities met with an overwhelming response last month. The Sacramento Municipal Utility District (SMUD) reported that applications for the new FIT, which were all for solar photovoltaic power, exceeded its 100-megawatt allotment. SMUD lists only five applicants for the new program, and they are all commercial entities. The program, approved in September 2009, is designed to remove barriers to interconnection with the utility by providing standard rates and contract conditions that make it easier for SMUD and its power-generating customers to do business. For example, for contracts signed in 2010, SMUD customers with photovoltaic

systems will be paid on average \$0.0968 per kilowatt-hour (kWh) for a 10-year contract, \$0.1040 per kWh for a 15-year contract, and \$0.1107 per kWh for a 20-year contract. Applications must include \$1,400 for the Interconnection Review Fee and a deposit of \$20 per kilowatt, and each system is limited to 5 megawatts in capacity. See the SMUD press release (<http://www.smud.org/en/news/Documents/10archive/FIT-response-1-19-10.pdf>) and Feed-In Tariff Web page (<http://www.smud.org/en/community-environment/solar-renewables/pages/feed-in-tariff.aspx>).

FITs, which are widely used in Europe, face regulatory constraints in the United States. However, according to a January 2010 report from DOE's National Renewable Energy Lab (NREL), the path for states seeking to provide legal FITs is tricky, but possible. The report, "Renewable Energy Prices in State-Level Feed-in Tariffs: Federal Law Constraints and Possible Solutions," concludes that states can offer feed-in tariffs, but need to create them in such a way as to meet federal requirements under the Public Utility Regulatory Policies Act of 1978 and the Federal Power Act of 1935. The report describes several possible ways for states to proceed to create incentives for renewable energy. One suggestion is for payments based on cost of generation, in keeping with federal limits, but then adding incentives on top of that cost through subsidies, Renewable Energy Credits, or state tax credits. The report notes that given the legal uncertainties, state regulatory groups should consider getting advice from the appropriate federal agencies. See the NREL report (<http://www.nrel.gov/docs/fy10osti/47408.pdf>).

DOE Guides Data Centers in Standardizing Energy Efficiency Metrics

The U.S. Department of Energy (DOE) joined with the Environmental Protection Agency (EPA) and industry leaders (including ASHRAE) to announce a breakthrough agreement on energy efficiency measurements, metrics, and reporting conventions for data center facilities. As data center usage continues to escalate and energy costs rise, energy efficiency has become a growing concern for data

center owners and operators. There has been no standard approach for such key questions as how to measure energy usage, where to take the measurements, and how frequently to do the measuring. As a result, data center operators have difficulty identifying energy usage problems as well as potential solutions.

The new agreement provides guiding principles for data center operators to gauge energy use and create opportunities for improved energy performance. By providing clear direction for data center energy management, the groups participating in the agreement hope to spur data center operators to improve their measurement practices leading to higher efficiency and reduced energy consumption.

Given the rapidly increasing number of data centers nationwide and the steady growth in size and corresponding electricity demand of individual data centers throughout our economy, improving the energy efficiency in data centers is an important part of reducing overall energy use in the Information and Communications Technology sectors. The progress made in this agreement will also support the Department of Energy's broader goal of reducing industrial energy intensity 25% over the next 10 years.

Organizations that collaborated in the effort to develop these guiding principles include the 7x24 Exchange, ASHRAE, The Green Grid, Silicon Valley Leadership Group, DOE's Save Energy Now and Federal Energy Management Programs, the U.S. Environmental Protection Agency's ENERGY STAR® Program, the United States Green Building Council, and the Uptime Institute.

More information on the agreement and its guiding principles can be found in the press release (http://www1.eere.energy.gov/industry/datacenters/news_detail.html?news_id=15799).

The guiding principles include:

- Power Usage Effectiveness (PUE) using source energy consumption is the preferred energy efficiency metric for data centers. PUE is a measurement of the total energy of

the data center divided by the IT energy consumption.

- When calculating PUE, IT energy consumption should, at a minimum, be measured at the output of the uninterruptible power supply (UPS). However, the industry should progressively improve measurement capabilities over time so that measurement of IT energy consumption directly at the IT load (i.e. servers) becomes the common practice.
- For a dedicated data center, the total energy in the PUE equation will include all energy sources at the point of utility handoff to the data center owner or operator. For a data center in a mixed-use building, the total energy will be all energy required to operate the data center, similar to a dedicated data center, and should include cooling, lighting, and support infrastructure for the data center operations.

A task force has been created to further refine these metrics and to identify a roadmap for the future. The group also aspires to address IT productivity and carbon accounting in the future.

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