

Mid-Columbia Chapter of  
the American Society of  
Heating, Refrigerating and  
Air Conditioning

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January 2014

# The

# Tumbleweed



<http://www.midcolumbia.ashraechapters.org>

## Refrigeration Commissioning Guide Seeks to Ensure Systems Work Right

### ***Don't Miss This Month's Event***

No chapter program meeting for January or February 2014.

See details on Page 3 regarding the Engineer's Week Banquet in February!

**ATLANTA** – Sixty percent of energy use in supermarkets is attributed to refrigeration, and studies have shown commissioning could result in 7 to 25 percent energy savings. A new guide from ASHRAE outlines a commissioning process that would result in substantial savings.

"Refrigeration Commissioning Guide for Commercial and Industrial Systems" provides user-friendly, how-to guidance for commissioning of custom-engineered refrigeration systems in commercial and industrial facilities. The book was funded in part by the U.S. Department of Energy through the National Renewable Energy Laboratory.

The book is available for free download at [www.ashrae.org/freeRefCxGuidance](http://www.ashrae.org/freeRefCxGuidance).

"Custom refrigeration systems are complex and individually designed for each facility," Richard Royal, who served as chair of the committee that wrote the guide, said. "Deficiencies in the system design found at start-up are not easily resolved and, as a result, maintenance managers or operators deal with unnecessary shortcomings and expenses over the life of a facility. The value of commissioning is to establish a consistent stepwise process that helps 'get it right the first time,' resulting in refrigeration systems that 'work right' and minimize maintenance and energy costs."

The U.S. Environmental Protection Agency (EPA) estimates that supermarkets typically use approximately 3,000,000 kWh of electricity per year, with 60 percent of that energy use attributed to refrigeration (EPA 2007). Portland Energy Conservation, Inc. (PECI) predicts that commissioning in existing grocery stores would result in 7 percent to 25 percent energy savings per year (PECI 2010). Based on these estimates, this commissioning guide, if widely adopted, would lead to substantial energy savings.

"Thousands of refrigeration systems are installed every year in facilities ranging from convenience stores to large, sophisticated frozen food distribution centers," Royal said. "Properly commissioned systems reduce energy cost, are easier to maintain, help minimize liabilities from refrigeration leaks and reduce loss of product to system failures or unreliable performance."

Royal noted that commissioning of refrigeration systems is uncommon in the industry. One reason is a belief that commissioning results in added cost and time without sufficient or measureable value.

"Certainly, commissioning is an investment, but it provides significant financial value in several ways," he said. "First, systems operate more reliably with lower maintenance cost and lower energy cost when commissioning is applied as described in this Guide. Second, incorporating commissioning can reduce first cost through improved understanding of system performance and lead to better equipment design and installation methods."

The guide will help achieve cost-effective and cost-efficient refrigeration systems for new projects, expansions, remodels and existing systems that simply need a tune-up. For commercial facility owners and managers, this means improved profitability through lower operating and service costs as well as reduced product loss. For industrial plants, this means improved "up time" and improved labor productivity in addition to reduced operating cost, according to Royal.

Also included in the Guide is information on commissioning during planning and design; construction and installation; and system start-up and first-year operation. A matrix helps delineate roles and responsibilities. Examples of commissioning checklists and acceptance plans can be used for reference or template.

A printed version of the Guide is slated to be available in early January 2014. The cost of the printed version is \$99 (\$84, ASHRAE members). To order, contact ASHRAE Customer Contact Center at 1-800-527-4723 (United States and Canada) or 404-636-8400 (worldwide), fax 678-539-2129, or visit [www.ashrae.org/bookstore](http://www.ashrae.org/bookstore).

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## Message from the President

By Jian Zhang

I just came back from the 2014 ASHRAE Winter Conference in New York, NY last week. Although I only stayed there for two days, I got a deep dive in some standard committee meetings, as well as a taste of the conference program and the 2014 AHR Expo. I was really amazed by the huge Expo with 387,000 sf of booth space. According to the news, it sets the largest HVACR expo record in northeast U.S. If you are interested in the most innovative technologies today in the industry, make sure to read the 2014 AHR Expo Innovation Award Winners list.

Thanks to Yunzhi (Lucy) Huang, Vrushali Mendon and others CRC committee members, you should have already received an electronic copy of our 2014 CRC tri-fold brochure. The hard copies were also distributed to members in our region at the ASHRAE Winter Conference by our regional chair, Kevin Marple.

This year's Tri-Cities Engineers Week Banquet will be held on Friday, Feb 21st 2014 at the Red Lion in Kennewick. Please let me know ([j.zhang@pnml.gov](mailto:j.zhang@pnml.gov)) if you would like to join our members at an ASHRAE table for the banquet by Feb 13<sup>th</sup> 2014. Note, the Tri-Cities Engineer of the Year Selection Committee is calling for nominations for Tri-Cities Engineer of the Year. Two important deadlines are,

- Feb 5th, 2014, Nominators notify Chair, Tri-Cities Engineer of the Year Selection Committee of intent to submit nomination
- Feb 12th, 2014, Nomination and Application forms due to Chair, Selection Committee

Please contact me if you need more details at [j.zhang@pnml.gov](mailto:j.zhang@pnml.gov).

## Debate Focuses on Relationship Between Manufacturers And Designers

**ATLANTA** – When it comes to building performance, who has the biggest influence? Manufacturers who develop the equipment or designers who design the systems?

Listen and take part in a debate on the question as part of the Technical Program at ASHRAE's 2014 Winter Conference, Jan. 18-22, at the New York Hilton, New York, N.Y. The International Air-Conditioning, Heating, Refrigerating Expo®, held in conjunction with the Winter Conference, runs Jan. 21-23, [www.ahrexpo.com](http://www.ahrexpo.com). The Expo, held at the Javits Convention Center, takes place Tuesday, Wednesday and Thursday as opposed to the traditional Monday, Tuesday and Wednesday.

For complete Conference information and to register, visit [www.ashrae.org/newyork](http://www.ashrae.org/newyork).

The debate, Manufacturers are the Real Designers, is part of a track focused on Systems and Equipment. It takes place at 8 a.m. on Monday, Jan. 20.

Victor Goldschmidt, consultant, Northport, Mich., is chairing the debate, which is the fourth in a series offered by the College of Fellows to address issues of importance in the industry. The first three addressed the sustainability of cities, relevance of ethics and the sustainability of sustainability.

"In most instances there is a healthy cooperation between equipment manufacturers and design consulting engineers," Goldschmidt said. "At times there can be conflicts in resolving responsibilities. The debate will allow opposite arguments to be considered leading to the best results."

Some of the issues Goldschmidt expects to hear addressed include the impacts and relationships of integrated product development and building information modeling; the difference between equipment-driven and system-driven designs; the roles and expectations for design manufacturers and for professional design engineers.

A fun twist in the debate is that lots are drawn on Monday morning just prior to the start of the debate for which side each team will argue, so debaters have to be prepared for either their pro or con arguments. Each speaker presents a team by team opening argument. The audience joins in the debate before closing argument.

Team One is made up of Larry Spielvogel, P.E., consulting engineer, Bala Cynwyd, Pa.; George Adams, president of the Chartered Institution of Building Services Engineers (CIBSE); and ASHRAE Presidential Member Tom E. Watson, P.E., Dai-kin Applied, Staunton, Va.

Team Two is made up of ASHRAE Presidential Member Richard Rooley, FEng, Rooley Consultants, Bucks, United Kingdom; Don Beaty, P.E., DLB Associates, Eatontown, N.J.; and ASHRAE Presidential Member Bill Coad, P.E., Coad Engineering Enterprises, St Louis, Mo.

## This Month's Event

**There was no program meeting for January 2014, and for February 2014, we will again be looking for interested members to attend the Engineer's Week banquet on Friday February 21st. As Jian mentioned in his President's Message in the newsletter, we will reserve a table for our ASHRAE Chapter if sufficient member interest is expressed. If you are interested in attending the banquet, please contact Jian Zhang by February 13th.**

**We are also looking for candidates to nominate for the Tri-City Engineer Of The Year award. Our chapter Board of Governors has so far decided to nominate our own chapter historian, Steve Strecker, for that award. We can also submit other nominations, but you must act quickly to do so. If you believe the BOG should consider any additional nominees, or if you have any additional questions, please send them to Jian Zhang by February 4th, 2014.**

-Derek Archer, President-Elect, CTTC Chair, and Newsletter Editor

## Program Calendar (2013–2014)

*September 17, 2013:* Chris Lawrence - Active Chilled Beams

*October 8, 2013:* Ron Jarnagin  
ASHRAE's Building Energy Labeling Program—A First Look

*November 12, 2013:* Nate Deibler, PE—Seismic Restraint of Mechanical Systems

*December 10, 2013:* Kevin Marple—"ASHRAE and You"—Regional and Society Updates

*January 2014:* : No Program Meeting.

*February 21st, 2014:* Engineers Week Banquet. No Program Meeting.

*March 11, 2014:* Steve Kinkel, Data Center HVAC Design Standards

*April 9, 2013:* TBD

*May 2013:* ASHRAE Region XI Chapter Regional Conference. Richland, WA.

*June 2014:* Mid-Columbia ASHRAE Golf Tournament to benefit ASHRAE Research, Location and date TBD





## Mid-Columbia ASHRAE Chapter

### 2013-2014 Officers/ BOG

President	Jian Zhang <a href="mailto:j.zhang@pnnl.gov">j.zhang@pnnl.gov</a>
President-Elect	Derek Archer <a href="mailto:dlarcher@meierinc.com">dlarcher@meierinc.com</a>
Secretary	David Atkinson <a href="mailto:dcatkinson@meierinc.com">dcatkinson@meierinc.com</a>
Treasurer	Rahul Athalye <a href="mailto:Rahul.Athalye@pnnl.gov">Rahul.Athalye@pnnl.gov</a>
BOG Member at Large	Weimin Wang <a href="mailto:Weimin.wang@pnl.gov">Weimin.wang@pnl.gov</a>
BOG Member at Large	Jay Ashbaugh <a href="mailto:jpashbaugh@energy-northwest.com">jpashbaugh@energy-northwest.com</a>
BOG Member at Large	Position Vacant
<u>Committee Chairs</u>	
Membership	Weimin Wang <a href="mailto:Weimin.wang@pnl.gov">Weimin.wang@pnl.gov</a>
Research Promotion	Jay Ashbaugh <a href="mailto:jpashbaugh@energy-northwest.com">jpashbaugh@energy-northwest.com</a>
CTTC	Derek Archer <a href="mailto:dlarcher@meierinc.com">dlarcher@meierinc.com</a>
Honors & Awards	Jay Ashbaugh <a href="mailto:jpashbaugh@energy-northwest.com">jpashbaugh@energy-northwest.com</a>
Newsletter	Jay Ashbaugh <a href="mailto:jpashbaugh@energy-northwest.com">jpashbaugh@energy-northwest.com</a>
Historian	Steve Strecker <a href="mailto:slstrecker@charter.net">slstrecker@charter.net</a>
Web Page	Rahul Athalye <a href="mailto:Rahul.Athalye@pnnl.gov">Rahul.Athalye@pnnl.gov</a>

*The Mid-Columbia Chapter of the American Society of Heating, Refrigerating and Air Conditioning Engineers was chartered in 1981 in Richland, Washington. We are part of ASHRAE Region XI and represent ASHRAE members in Eastern Washington State.*

### Help Sponsor our Website with a Business Card Ad

How would you like to place your business card in front of more than seventy eastern Washington ASHRAE members? For a low \$10 an issue, we can place your business card with company logo in a prominent location in our newsletter.

Interested??? Contact  
Derek Archer at (509) 737-6982  
[dlarcher@meierinc.com](mailto:dlarcher@meierinc.com)

### Important Notice About Future Meeting Dates

Registration is now open for ASHRAE's 2014 Winter Conference in New York, NY, January 18-22, 2014 at the New York Hilton.

2014 Region XI CRC coming up May 1st -3rd located at the Red Lion Hotel in Richland, WA. Details to be announced.

Mid Columbia ASHRAE Golf Tournament June 2014. Details to be announced







## Red Lion Hotel

Richland Hanford House

802 George Washington Way  
Richland, WA 99352



Ask for conference  
group rate

www.redlion.com

509.946.7611



MAY 8 - 10

# Other Activities



## Region XI Chapters Regional Conference

**Red Lion Hotel**  
Hanford House  
Richland, WA



CRC Chair  
**Dr. Sriram Somasundaram**  
sriram.somasundaram@pnnl.gov

**Mid-Columbia Chapter**  
www.midcolumbia.ashraechapters.org



## Directions

### From I-182W:

Take the George Washington Way Exit (5B) into Richland  
continue for 2 miles. The hotel is on the right hand side

### From Tri-Cities Airport (PSC) :

Heading south on 20th Avenue from the airport  
Take the ramp to I-182 West. Follow instructions from I-182W

### From Portland/395N/I-82W:

Travel north to the junction with I-182  
Take the ramp to I-182W. Follow instructions from I-182W

### From Spokane/395S:

Travel south to the junction with I-182  
Take the ramp to I-182W. Follow instructions from I-182W

### From Seattle/I-90E/I-82E:

Follow I-90E, then exit 110 to merge on I-82E  
Then exit 102 to merge on I-182E  
Take the George Washington Way Exit (5B) into Richland  
continue for 2 miles. The hotel is on the right hand side

### May 8, Thursday GOLF at Columbia Point

Located only minutes from the hotel.  
Par 72- 6400 yards.

Let golf chair know if you need  
rental clubs.

Golf chair [Jay Ashbaugh]:  
jaashbaugh@energy-northwest.com

### May 9, Friday Wine Tour & Lunch

Visit two of the area's finest  
wineries with wine tasting and  
wine paired luncheon.





# Conference Schedule

**May 8, 2014  
Thursday**

Registration  
Technical Seminars  
Lunch  
Technical Seminars  
YEA Mixer  
Welcome Party

**May 9, 2014  
Friday**

Registration  
Breakfast  
Business Session #1  
President's Luncheon  
Training Sessions  
Banquet and Awards

**May 10, 2014  
Saturday**

Breakfast  
Business Session #2  
Lunch  
Debrief Session  
Optional Windup Dinner

**Other  
Activities  
(afternoon)**

Thursday: **Golf**

Friday: **Wine Tour & Lunch**

## Technical Seminars



All participants who complete the Technical Seminar(s) earn Continuing Education Units (CEUs)

1

May 8, Thur. 8:30 am - 10:00 am

### **What You Need to Know about the Energy Standard for Buildings**

-- ASHRAE/IES Standard 90.1-2013

Bing Liu, Rahul Athalye, Eric Richman, Mike Rosenberg  
Pacific Northwest National Laboratory

This session will highlight the major changes that have been made to the latest version of ASHRAE Standard 90.1. This session is for anyone who wants advanced insight into the new standard's expected impacts on the industry.

2

May 8, Thur. 10:15 am - 11:45 am

### **Healthcare Engineering...Avoiding a Nightmare...Making a Difference**

Traci Hanegan  
Coffman Engineers, Inc.

Join Traci as she shares some lessons from the school of hard knocks. Get the skinny on new research and upcoming code revisions that will make us change our designs and enjoy a few stories of the joys she has found along the way.

3

May 8, Thur. 1:00 pm - 2:30 pm

### **Overview of Commercial Building Re-Tuning**

Srinivas Katipamula, Ronald Underhill  
Pacific Northwest National Laboratory

Many commercial buildings are operated inefficiently wasting as much as 30% of the energy. Periodic re-tuning of building controls and HVAC systems is likely to enhance building operations and improve building efficiency. This presentation will provide an overview of two training methods, available re-tuning resources and lessons learned.

4

May 8, Thur. 2:45 pm - 4:15 pm

### **Ammonia Refrigeration for Fruit Storage**

Kem Russell  
Doubl-Kold

Key factors in determining the refrigeration load will be discussed, along with the types of refrigeration that have been and are used for fruit storage. Particularly the focus will be on the "flooded" style of system and its advantages.



# Registration

## Rates

General Registration **\$330**

Student Registration  
ASHRAE member **\$100**  
non-ASHRAE member **\$120**

Technical Seminars  
Morning **\$60**  
Lunch **\$25**  
Afternoon **\$60**  
Full day with lunch **\$140**

Late Registration (after 4/1/14) **\$370**

Other Activities  
Golf - per round **\$60**  
(includes half cart)  
Companion Package **\$150**  
(includes Thursday lunch, welcome party, Friday Awards dinner, Wine tour & lunch)

## You can register

👉 online:

<http://www.midcolumbia.ashraechapters.org/>



by mailing your check:

P.O. Box 3055  
1011 Wright Avenue  
Richland, WA, 99352

📍 onsite

