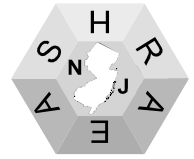




# THERMOGRAM



The New Jersey Chapter of ASHRAE Newsletter

WWW.NJASHRAE.COM

NOVEMBER 2007

REPLY@NJASHRAE.COM

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### REFRIGERATION

JIM CASEY

### ROSTER/DIRECTORY

OPEN



## DECEMBER 6th, 2007

## RESEARCH AND PROMOTION NIGHT

### Woodbridge Sheraton

Route 1, Gill Lane, Iselin, NJ

**Cost:** \$50.00 Members  
\$55.00 Guests  
\$ 5.00 Student

**RSVP:** [REPLY@NJASHRAE.COM](mailto:REPLY@NJASHRAE.COM)  
NO LATER THAN DECEMBER 5th, 2007

**SCHEDULE:** 4:30 Board of Governors Meeting  
5:30 Guest Registration /Cocktail Hour  
6:30 Chapter Announcements  
7:15 Dinner and Presentation

**DINNER TOPIC:** "Radiant Heating & Snow Melting Design Fundamentals"

PRESENTED BY Mr. Richard McNally  
*Watts Radiant*

Richard will present on the fundamentals of commercial radiant heating and snow melting system design addressing layouts, installation details, and piping specifications



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**Research and Promotion Night**

**December Speaker Biography**

**Mr. Richard McNally  
Watts Radiant**

Richard graduated from Norwich University in Northfield, VT in 1974. He immediately entered the field of HVAC distribution in the Boston area where he remained until 1995. He then became an HVAC technical representative until moving to Virginia. In 2000, he joined Watts Radiant as Eastern Regional Sales Manager where he is employed today. Rich is an instructor at the Watts Radiant Warm University in Springfield MO, where hundreds of contractors are trained each year in the arts of radiant heating and snow melting. Rich also educates HVAC industry people throughout his region, which extends from Georgia, to Maine, to Michigan. He has a lovely wife and two beautiful daughters.



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## November Dinner Presentation Re-cap

Past President's night always an eventful evening. This dinner meeting was no exception.

Our dinner speaker Peter Rimassa, Aerco International, presented on the design considerations of high efficiency condensing boilers, including implementing lower water temperature and higher temperature differential system considerations over traditional boiler plant designs as well as coupling with domestic water needs.

Mark Richter  
*Programs Chair*



**Left: Happy Birthday to Gene Koski**



**Right: 2006/2007 Past President Jori Fahrenfeld presented with Certificate of Distinguished Service and Appreciation.**

### **SMILE !!**

#### **Past President Dinner Attendees**

**Front Row (L to R):** Barbara Altenburg ('96-97), Linda Carolyn ('03-04), Ruth Giacobbe ('90-91), and Jori Fahrenfeld ('06-07)

**Back Row (L to R):** Gordon Stillwell ('75-76), Spencer Morasch ('94-95), Stan Slabinski ('98-99), Fred Nguyen ('99-00), Robert Daly ('93-94), Garry Myers ('88-89), and Russ Graham ('05-06)



## Calendar of Upcoming Events

- December 6<sup>th</sup>**     *NJ ASHRAE RESEARCH AND PROMOTION DINNER MEETING,  
WOODBRIDGE SHERATON  
“RADIANT HEATING/SNOW MELTING”, PRESENTED BY  
WATTS RADIANT*
- January 16<sup>th</sup>**     *NJ ASHRAE JOINT DINNER MEETING WITH N.J. MECHANICAL  
CONTRACTOR’S ASSOCIATION, WOODBRIDGE HILTON  
DINNER PRESENTATION & SPEAKER TBA*
- January 20<sup>th</sup>—24<sup>th</sup>**     *ASHRAE 2008 WINTER MEETINGS,  
N.Y. HILTON, NEW YORK, N.Y.  
  
AHR EXPOSITION  
JAVITS CONVENTION CENTER, NEW YORK, N.Y.*
- February 7<sup>th</sup>**     *MEMBERSHIP AND HISTORY DINNER MEETING  
WOODBRIDGE SHERATON  
DINNER PRESENTATION ON RENEWABLE ENERGY TOPICS*
- March 6<sup>th</sup>**     *N.J. ASHRAE DINNER MEETING  
WOODBRIDGE SHERATON  
“VARIABLE FREQUENCY DRIVES” PRESENTED BY CUTLER HAMMER*
- March 20<sup>th</sup>**     *NJ ASHRAE STUDENT NIGHT  
WOODBRIDGE SHERATON  
SUSTAINABLE TOPIC, MR. KENT PETERSON, ASHRAE PRESIDENT  
2007/2008*

### 2007-2008 PRESIDENTIAL AWARD OF EXCELLENCE (PAOE) SUMMARY

Chapter #	Chapter Name	Chapter Members/ students	Member Promotion	Student Activities	Research Promotion	CTTC	History	Chapter Operations	Chapter PAOE Totals
007	N.J.	762	0	0	330	0	0	310	640

## CHAPTER COMMITTEES.....

### Membership

**ATTENTION ALL PRINCIPALS OF ENGINEERING FIRMS!**

New Jersey ASHRAE and ASHRAE society need your help! Please encourage your associates to attend our monthly meetings and to take advantage of the opportunity to enhance their professional development. Attendance and participation are at an all time low and it is vital that we re-double our efforts to involve all of our members.

We need your feedback in order to improve our ability to serve you and your employees. New Jersey boasts one of the largest chapters, by membership, in the world and we need greater involvement in order to be successful.

**Please help us to help you.**

Russ Graham

*Membership Chair*

### CTTC

I would like to thank those chapter members who have approached me and offered to volunteer time to assist in the NJ CTTC position; committing their time to ensure a successful year. As we approach the halfway mark in the year, with volunteer efforts, the CTTC committee is hard at work with some additional programs to be provided in the spring of 2008. They include:

- A February dinner program on Renewable Energy Systems. This will be very informative program for Engineers, contractors, manufacturers, Building Owners, and any related in the building industry.
- A all day seminar on ASHRAE Standard 90.1-2004, which is compliance standard used in the industry.
- A half day tour of local facility in New Jersey to large refrigeration plant.

As we solidify arrangements on seminars and tours, we will send out special mailers.

As this years CTTC Chair, I am excited at the opportunity to provide Chapter Members with the latest information at both the Society and State Levels, which includes Technology, Government Affairs, or Refrigeration topics. However, I am requesting your input on what is happening at the local level, or simply, what activities you would like to see from our chapter.

We would like to hear from you. Have you designed, constructed, commissioned any unique projects, which could be submitted for both Society CTTC and Refrigeration award competitions? The Society has many awards, presented at the national level, which would provide great exposure for your firm and yourself. The various award categories are summarized below:

- **ASHRAE TECHNOLOGY AWARDS:** Technology awards can be registered at Society, Regional, or local level. This award is in recognition of ASHRAE members for innovative designs. These awards can be applied to any project, whether commercial, institutional, healthcare, industrial, residential.
- **GOVERNMENT ACTIVITIES AWARD:** Relates to Chapter or Chapter member involvement with State, Provincial, and/or local Governments.
- **MILTON W. GARLAND COMMEMORATIVE REFRIGERATION AWARD:** Recognizes a non-comfort cooling refrigeration application which highlights innovation and/or new technologies.
- **REFRIGERATION COMFORT COOLING AWARD:** Recognizes a comfort cooling refrigeration application which highlights innovation and/or new technologies.

Mark J. Richter, P.E / CTTC Chair

Email: [mrichter@akf-eng.com](mailto:mrichter@akf-eng.com)

## HELP WANTED

CUH2A ([www.cuh2a.com](http://www.cuh2a.com)) is a leader in the Science & Technology arena. We are currently seeking a **Sr. Instrumentation & Controls Engineer** for our Princeton office.

### Requirements:

10 or more yrs experience in the design, documentation and specification of commercial/light industrial automatic control systems related to HVAC systems, including boilers and chilled water plants. Competency in the design of control systems associated with cGXP areas, clean rooms and sterile suites, as well as BSL-2 and BSL-3 laboratories. Experience in pharmaceutical, research facilities, government, institutional research, academic, corporate and/or emerging technology. B.S. degree in related field, P.E. license, strong communication skills. (LEED accreditation preferred). Selected candidate will perform inter-discipline coordination, estimate project budgets, construct instrumentation & control diagrams, and also run projects independently. CUH2A employees enjoy competitive salaries, comprehensive benefits, stimulating projects & a great work environment with high employee retention. To apply, pls. send your resume to [recruiting@cuh2a.com](mailto:recruiting@cuh2a.com) with "NJ-ASHRAE Ad" on subject line.

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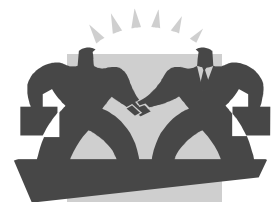
### **MECHANICAL ENGINEER**

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*Director and Regional Chair I*Reply to: 73 Bonnie Way  
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☎ 212-951-2815  
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## Announcement

*The combined REGION I, III and V DINNER at the New York City Winter Meeting will be at Bond 45 Located at 154 West 45<sup>th</sup> Street, New York, N.Y. 10036 (A few feet east of Broadway) Phone: 212-869-4545*

On

**SUNDAY, January 20, 2008 (Note new night)**  
**DINNER: 7:00 PM Cash Bar**  
**COST (per Person): \$50.00 (with reservation)**

**This dinner has limited seating and reservations received after January 13 (including meeting sign ups) are subject to space availability.**

**If RESERVATIONS are received by January 13, 2008.... \$50.00**

**Meeting sign ups (cut off Noon January 20<sup>th</sup> ) subject to availability ....\$55.00**

**MAKE OUT YOUR CHECK TO: *ASHRAE Region I Fund***  
**SEND YOUR CHECK TO: Garry Myers, 73 Bonnie Way, Allendale, NJ 07401**

**If you would like to submit project or technical articles in the Thermogram, please contact Mark Richter @ 212-354-5656 or via email [mrichter@AKF-eng.com](mailto:mrichter@AKF-eng.com) for further details.**

## SOCIETY NEWS.....

### **Water-Cooled Chiller Proposal Represents Energy Savings for 90.1**

ATLANTA – An estimated annual energy savings of 13 percent relative to ASHRAE/IESNA Standard 90.1-2004 should result from a proposed addendum regarding air- and water-cooled chillers.

ANSI/ASHRAE/IESNA Standard 90.1, *Energy Standard for Buildings Except Low-Rise Residential Buildings*, provides minimum requirements for the energy-efficient design of buildings except low-rise residential buildings. Fourteen proposed addenda to the 2007 standard, due out for publication later this year, currently are open for public comment.

Among the addenda is proposed addendum *m*, which establishes effective Jan. 1, 2010, an additional path of compliance for water-cooled chillers as well as consolidation and new requirements for some of the existing categories. The proposed addendum was developed by a team of Standard 90.1 members, industry manufacturers and energy advocacy groups, including the American Council for an Energy Efficiency Economy and the Air-Conditioning and Refrigeration Institute (ARI) and was supported by ARI chiller manufacturers.

Product development for water-cooled chillers in recent years has focused on improving off-design and part-load performance where most of the operating hours occur, according to Drake Erbe, chair of the standard's mechanical subcommittee. Variable speed drives (VSD) technology has advanced and is finding widespread application in water-cooled chillers. The use of VSDs has led to off-design and part load improvement of the chiller's performance with efficiencies of up to 30 percent in integrated part-load value (IPLV).

Under the proposed addendum, an alternative set of efficiency levels, Path B, is established for water-cooled chillers intended for applications where significant time is expected at part load. All Path B chillers must be equipped with demand limiting controls. Under this proposal, compliance with Standard 90.1 can be achieved by either meeting the requirements of Path B or Path A (intended for applications where significant operating time is expected at full load conditions). However, both full-load and IPLV levels must be met to fulfill the requirements of Paths A or B, according to Erbe.

The proposed addendum also combines water-cooled positive displacement chillers into one category and adds a new size category for centrifugal chillers at or above 600 tons. The air-cooled chiller without condenser equipment type category has been eliminated. All air-cooled chillers without condensers must now be rated with matching condensers.

The minimum efficiencies of air-cooled chillers have also been updated, Erbe said. Efficiencies in the inch-pound version of Standard 90.1 are now expressed in energy efficiency ratio (EER) for air-cooled chillers, kW/ton for water-cooled chillers and coefficient of performance (COP) for absorption chillers to reflect industry practices. Tables 6.8.1 H through J listing minimum full load and non-standard part load value (NPLV) efficiencies of water-cooled centrifugal chillers at non-standard rating conditions have been eliminated and replaced by an algebraic equation. The tables will now be included in the User's Manual.

This proposal is estimated to save 457.6 GWh of energy per year compared to the requirements of the 2004 version of Standard 90.1. This represents an annual chiller energy savings of 13.3 percent over Standard 90.1-2007, according to Erbe.

### **ASHRAE Receives NCEES Accreditation for Educational Programs**

ATLANTA – ASHRAE has received accreditation for its education program from the National Council of Examiners for Engineering and Surveying (NCEES).

This accreditation from NCEES' Registered Continuing Education Providers Program (RCEPP) gives ASHRAE's educational offerings, part of the ASHRAE Learning Institute, another level of creditability in the eyes of licensing and renewal authorities.

ASHRAE Learning Institute offers on-site and online educational programs addressing a wide variety of engineering topics, such as commissioning and compliance with ASHRAE standards. For more information, visit [www.ashrae.org/ali](http://www.ashrae.org/ali).

RCEPP is a comprehensive registry of continuing educational providers that have demonstrated adherence to high-quality, effective practices in the development and delivery of professional education activities for engineers and surveyors.



## SOCIETY NEWS.....

### Prediction of Building Lifecycles via BIM Explored in ASHRAE Session

ATLANTA – Imagine having a crystal ball that allows you to predict the design, construction and operation of a building while still in concept phase.

Building information modeling (BIM), which is the use of real-time, intelligent, multi-dimensional and dynamic models long used in the manufacturing and aerospace industries, provides you with that look into the future of a building. A look at how BIM is changing the building industry will be presented in a seminar at ASHRAE's 2008 Winter Meeting, Jan. 19-23, New York City. The seminar, *Building Information Modeling*, takes place from 8-9:30 a.m. Jan. 20 at the New York Hilton. "Although buildings will continue to be unique undertakings that will never enjoy the refinements and economies that mass production industries do, BIM allows the construction industry to accurately design, construct and operate buildings in a virtual environment before the first yard of earth is moved or the first brick or bath of mortar ordered," Dennis Knight said. "By allowing for greater collaboration between disciplines and trades involved in the process, we will produce better buildings that are safer, healthier, environmentally more sustainable and economically more efficient with fewer errors, omissions and less waste."



Knight is vice chair of ASHRAE's technical committee on integrated building design, which is sponsoring the session. The session seeks to provide practical information from practicing HVAC&R design professionals on how to begin the process of implementing BIM into a design or construction practice. Knight notes that ASHRAE is actively participating in the process of making BIM a preferred method of designing, constructing and operating buildings. ASHRAE has established a Building Information Modeling and Interoperability Steering Committee to develop and identify initiatives and opportunities presented by interoperability, BIM, and related topics. "We need to be cognizant of the bigger picture – the potential impact of BIM on almost everything we do as a technical society, not just on technology associated with buildings but the actual process of design, construction, commissioning and operation," Gordon Holness, chair of the steering committee, said.

The committee also is working to develop informational and educational programs on BIM and interoperability.

Externally ASHRAE is participating in collaborative efforts to help develop common terminology and common technologies to ensure data exchange across operating platforms and software systems is reliable and accurate. ASHRAE has representation on the "buildingSMART" Alliance, which is an independent body of the National Institute of Building Sciences. The alliance, whose members include the International Code Council, the International Alliance on Interoperability and the Construction Specification Institute, is working to develop an open information environment for knowledge based collaborative processes throughout the lifecycle of a building.

Speakers in the ASHRAE seminar are:

- *Automating Code Compliance Checking with BIM*, David Conover, International Code Council, Washington, D.C.
- *The Promise and Reality of BIM*, Christopher Wilkins, P.E., Hallam-ICS, Burlington, Vt.
- *Building Information Modeling and ASHRAE's Steering Committee on BIM and Interoperability*, Gordon Holness, P.E., Grosse Pointe Shores, Mich.

For more information about the ASHRAE meeting, Jan. 19-23, New York Hilton, visit [www.ashrae.org/newyork](http://www.ashrae.org/newyork).

## SOCIETY NEWS.....

### DOE Announces \$44 Million to Provide Net-Zero-Energy Homes

DOE announced that more than \$44 million would be invested in four Building America teams over the next five years. The funds will be used to develop net-zero-energy homes that consume 70% less energy than conventional homes. Energy Secretary Samuel Bodman announced the funding awards in an appropriate setting: at the closing awards ceremony of the Solar Decathlon, where university teams displayed their own net-zero-energy homes.

From fiscal year 2008 to 2012, DOE plans to award \$40 million to the Building Science Corporation; IBACOS; the Consortium of Advanced Residential Buildings; and the Building Industry Research Alliance, as well as a consortium of academic and building industry leaders. DOE is also awarding \$4.1 million to two regional building technology application centers that will accelerate the adoption of new and developing energy-efficient technologies. The two centers, located at the University of Central Florida and Washington State University, will serve 17 states, providing information and training on commercially available energy-efficient technologies.

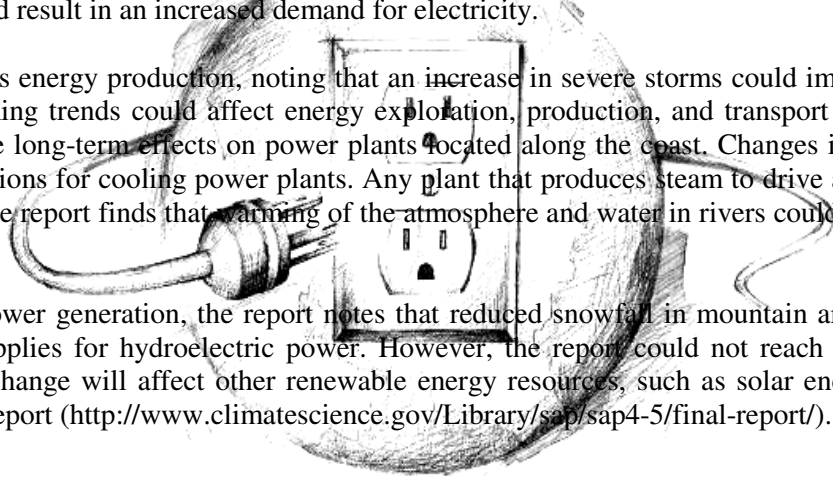
This funding is part of Building America, a DOE-sponsored private and public partnership that conducts research to find energy efficiency solutions for new and existing housing. Building America combines the knowledge and resources of industry leaders with the DOE's technical capabilities. Together, they act as a catalyst for change in the home building industry, with the aim of developing affordable net-zero-energy homes by 2020. See the Building America Web site ([http://www.eere.energy.gov/buildings/building\\_america/](http://www.eere.energy.gov/buildings/building_america/)).

### Report: Climate Change Could Boost U.S. Electricity Demand

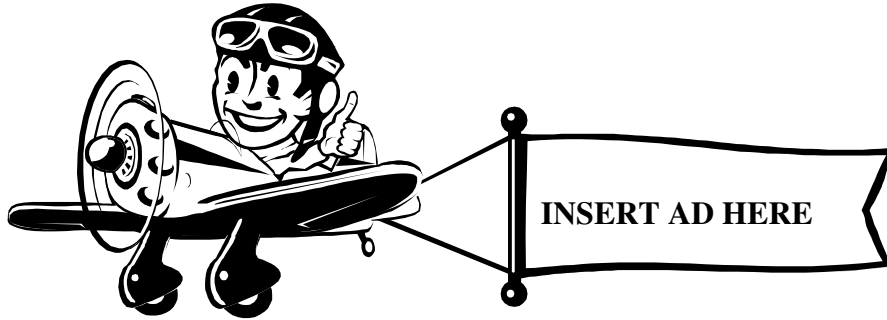
A growing demand for electricity could be one of the primary effects of global climate change on energy use in the United States, according to a new report. The U.S. Climate Change Science Program released the report, "Effects of Climate Change on Energy Production and Use in the United States," which is the third in a series of 21 reports on climate change and its impacts. The report concludes that a higher average temperature in the United States would decrease the need for heating and increase the need for cooling. Because electricity powers nearly all of the country's cooling needs, this would result in an increased demand for electricity.

The report also examines energy production, noting that an increase in severe storms could impact energy production and supply, while warming trends could affect energy exploration, production, and transport in Alaska. In addition, sea-level rise could have long-term effects on power plants located along the coast. Changes in precipitation patterns could also have implications for cooling power plants. Any plant that produces steam to drive a turbine requires air or water for cooling, and the report finds that warming of the atmosphere and water in rivers could reduce the efficiencies of these power plants.

Regarding renewable power generation, the report notes that reduced snowfall in mountain areas in the West would mean reduced water supplies for hydroelectric power. However, the report could not reach a definitive conclusion about whether climate change will affect other renewable energy resources, such as solar energy, wind energy, and bioenergy. See the full report (<http://www.climatechange.gov/Library/sap/sap4-5/final-report/>).



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