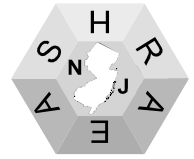




# THERMOGRAM



The New Jersey Chapter of ASHRAE Newsletter

WWW.NJASHRAE.COM

FEBRUARY 2008

REPLY@NJASHRAE.COM

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## COMMITTEES

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### STUDENT ACTIVITIES

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201-945-9999

### REFRIGERATION

JOHN TELLEFSON

### ROSTER/DIRECTORY

OPEN



## March 6th, 2008

**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 MARCH 5th, 2008

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

**“Understanding the relationship between AC Drives and harmonics, IEEE-519 and available mitigation methods”**

PRESENTED BY: Mr. Duane Rep / Sales Manager

*Eaton/Cutler Hammer*

Dinner Presentation will review impact of application of VFD drive harmonics on today's facilities, including in depth review of IEEE-519 Standard.

1. Why care about harmonics?
2. Background – Symptoms and Sources
3. Application of the IEEE-519 Standard
4. Solutions from a Drives Installation Perspective

**COMMITTEES  
(CONTINUED)**

**CTTC – TEGA**  
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**NEWSLETTER ADS**  
OPEN

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**MARCH SPEAKER BIOGRAPHY**

**Mr. Duane Rep**  
Drive Application Engineer  
Eaton/Cutler Hammer



Duane is Sales Manager for Solid State Power Control for Eaton's Power Controls Business Unit. He has over 20 years with Eaton in a variety of sales and marketing roles within Eaton's Electrical Group involving highly applied or specific purpose products. Last 5 years with Drives products. Currently responsible for driving growth programs and channel development for drives and soft starters for all markets inclusive of HVAC. Duane has a BSME from Purdue University.

**ASHRAE Satellite Broadcast/Webcast**

On April 16, 2008, ASHRAE's Chapter Technology Transfer Committee (CTTC) will present a satellite broadcast and simultaneous webcast on "Integrated Building Design: Bringing the Pieces Together to Unleash the Power of Teamwork."

Online registration for site coordinators and webcast viewers begins March 1 at [www.ashrae.org/idbbroadcast](http://www.ashrae.org/idbbroadcast). Registration for satellite viewers begins March 15. Information about the program and speakers is available at [www.ashrae.org/idbbroadcast](http://www.ashrae.org/idbbroadcast).

Three PDH credits will be granted to those who view the program and then complete the Participant Reaction Form on our webpage following the broadcast.

An added benefit of a \$50 discount will be taken off a one-year membership to anyone who joins ASHRAE as a new member in conjunction with the broadcast. Check out our website for more details.

Please see the enclosed brochure and share this information with your chapter members. Also be sure to keep watch for more information, as updates are sure to follow.

If you have questions, call (678) 539-1139 or email [ashrae-SatelliteBroadcast@ashrae.org](mailto:ashrae-SatelliteBroadcast@ashrae.org).

## Calendar of Upcoming Events

- March 27th**      ***ANHEUSER–BUSCH FACTORY TOUR***  
***NEWARK, N.J.***  
*“NEW GLYCOL DESICCANT COOLING SYSTEM”*
- April 3rd**      ***NJ ASHRAE STUDENT NIGHT***  
***WOODBIDGE SHERATON***  
***FABRIC DUCT***
- May 1st**      ***N.J. ASHRAE DINNER MEETING***  
*Scholarship Award Night / Installation of Officers*
- WOODBIDGE SHERATON***  
***“MECHANICAL DESIGN FOR GREEN BUILDING AND STANDARD 189”***  
 Tom Lawrence, Ph.D., P.E., LEED<sup>AP</sup> / ***UNIVERSITY OF GEORGIA***  
***ASHRAE DISTINGUISHED LECTURER***
- June 5th**      ***N.J. ASHRAE DINNER MEETING***  
*Spouses Night*  
*Location To Be Determined*

**ASHRAE**  
*Engineering  
 for  
 Sustainability*

### 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	200	1115	470	770	175	555	3285

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## 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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**T&M Associates is an award-winning, multi-discipline Consulting Engineering firm in business over 40 years. Join our 300 employees in Central Jersey and be a part of our continuing growth.**

Current opportunities at our Middletown, NJ location include:

### **ASSISTANT DIVISION MANAGER BUILDING DESIGN SERVICES**

Coordinate with and supervise Project Managers to complete projects for residential, educational, restaurant, municipal, industrial, pharmaceutical & commercial facilities. Minimum 15 years experience in mechanical and electrical engineering with strong Building Design background required. Good communication and organizational skills a must. The successful candidate must be able to develop work with clients, prepare proposals for services, monitor project progress, coordinate invoice preparation with Project Managers, instruct staff, and coordinate with Directors. BSME or BSEE required. P.E. required.

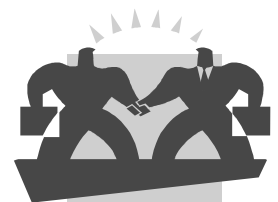
### **MECHANICAL ENGINEER**

Design projects for educational, municipal, industrial, pharmaceutical and commercial facilities. Minimum 5 years mechanical design experience, including HVAC design, required. AutoCad experience preferred. BSME required. EIT preferred.

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EEO/AA Employer



## SOCIETY NEWS.....

### ASHRAE Publishes Updated Version of Energy Efficiency Standard

ATLANTA – Energy reduction through new requirements related to lighting, façades, and mechanical systems is achievable in the latest energy efficiency standard from ASHRAE and the Illuminating Engineering Society of North America (IESNA).

Just published, the 2007 version of 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. The standard contains changes made through 47 addenda to the 2004 standard.

“One of the best ways to reduce building energy consumption is to reduce, or eliminate, the cooling or heating loads,” Mick Schwedler, chair of the Standard 90.1 committee, stated. “By doing so, the systems installed in buildings become smaller and use less energy. For example, on a hot, sunny day, having more insulation in the roof and better glass on the southern and western façades of a building reduce the air conditioning necessary as well as its resultant energy use. Two of the addenda do this by enhancing the insulation and fenestration (or window) requirements for the building exterior.”

The standard also addresses reduction of electrical and cooling loads and thus electricity by allowing less power for lighting. An addendum revised lighting allowances for retail displays, as it allows more flexibility for designers and better reflects actual retail lighting function. Schwedler cited forewords from three approved mechanical addenda to quantify a portion of the energy savings:

- Addendum an: “...would save about 18 trillion Btu of gas and oil annually once the existing boiler stock turns over.”
- Addendum g: “will save an estimated 1.05 Quads of cumulative primary energy by 2035.”
- Addendum f: “will save an estimated 2.3 Quads of cumulative primary energy by 2035.”

“These substantial savings are credited to the work of past Standard 90.1 Chair Jerry White, the Standard 90.1 committee, and those that aided in the rigorous public review process,” Schwedler said. “We know that many projects are achieving considerable energy savings at reasonable costs and ask the entire design, operation, and owner communities to share these project ideas and contribute toward future energy and energy cost savings.”

### New International Clean Energy Fund to Battle Climate Change

President Bush committed to provide \$2 billion over the next three years for a new international clean energy technology fund. The President mentioned the fund during his final State of the Union Address, while an accompanying White House fact sheet includes the funding commitment and touts the fund as a tool to help confront climate change throughout the world. The new fund will increase and accelerate the deployment of all forms of cleaner, more efficient technologies in developing nations like India and China. It will also help leverage substantial private-sector capital by making clean energy projects more financially attractive. President Bush first proposed the fund in September 2007 at the First Major Economies Meeting on Energy Security and Climate Change. See the White House fact sheets on the energy aspects of the State of the Union Address (<http://www.whitehouse.gov/stateoftheunion/2008/initiatives/energy.html>) and on the September 2007 proposal (<http://www.whitehouse.gov/news/releases/2007/09/20070928-1.html>).

### Natural Resources Canada Releases Modeling and Compliance Software

Natural Resources Canada (NRCan) launched the latest version of the EE4 software. Designers can use this tool to model new buildings and determine energy performance relative to the Model National Energy Code for Buildings (MNECB). If the simulated energy performance exceeds the MNECB by at least 25 percent, designers can submit it to NRCan for validation of new building designs (<http://oee.nrcan.gc.ca/commercial/newbuildings/validation.cfm>). Access to modeling assistance and information on EE4 training also is at this Web site. To download the free software, visit the EE4 Software Web site ([http://www.sbc.nrcan.gc.ca/software\\_and\\_tools/ee4\\_soft\\_e.asp](http://www.sbc.nrcan.gc.ca/software_and_tools/ee4_soft_e.asp)).

## SOCIETY NEWS.....

### DOE offers Solar Technical Assistance

The Department of Energy (DOE) is accepting requests for Technical Assistance for large-scale, high-visibility solar installation projects that have the ability to impact the market for solar technologies through large project size, use of a novel solar technology, and/or use of a novel application for a solar technology. In addition, it is desired that the project be replicable or have replicable components. Large-scale installations may include photovoltaic, concentrating solar power, solar water heating, and solar space heating applications. Technical assistance will not be provided for research, product development, or early stage testing and evaluation of any technology or product. Solar America Showcases focus on providing support to projects in which a commercially ready technology is to be installed in a large-scale application with full financial project commitment already in place.

Regarding the scale of the project, DOE is looking for projects with total capacity in excess of 100 kW. Projects may include multiple sites, and do not have to be co-located. In addition to the initial installation, the kW total may also include planned follow-on activities (direct replication efforts). Examples include installations in residential subdivisions, shopping centers, office buildings or parks, big box retail locations, factories, and utility solar produc- tion.

Regarding the novel solar technology, DOE proposes to support projects that introduce new solar technologies that hold the promise of reducing initial costs, simplifying installation, and boosting consumer confidence, but which have little testing to date that demonstrates such improvements. Examples include new cell or module technology, new materials, or innovative installation and mounting techniques. By offering Technical Assistance, DOE envisions helping these new solar technologies develop a performance record in the marketplace, identify technical problems early in mass product releases, and devise solutions and alternatives that move specific solar technologies to cost-competitiveness by 2015.

Regarding the novel solar application, DOE expects to support projects that utilize solar technology in new ways. One example would be to include new methods of building integration beyond traditional roof-mounted modules. DOE also supports innovative designs and methods that open up previously untapped markets or end uses to solar technology adoption. Acceptable Solar Applications could also include those that are currently in use in other geographic areas, but not in the vicinity (State, region) of the proposed site.

For more information, see the Federal Register announcement (73 FR 6172) available at <http://www.gpoaccess.gov/fr>.

### California Approves Feed-In Tariffs, Rewards Energy Efficiency

The California Public Utility Commission (CPUC) has approved long-term prices for the state's utilities to buy renewable energy from their customers. For seven of the state's utilities, the so-called "feed-in tariff," approved on January 31, applies to renewable energy systems located at public water and wastewater facilities, but for Pacific Gas and Electric Company (PG&E) and Southern California Edison (SCE), a separate feed-in tariff applies to any customer-located renewable energy system up to 1.5 megawatts in capacity. The tariff requires signing a long-term contract for 5, 10, or 15 years, but the price is adjusted based on the time of day of the power generation. For instance, for a system producing power throughout the day, a 15-year contract signed with SCE in 2008 would earn about 15 cents per kilowatt-hour on a summer weekday, while a system generating power from 8 a.m. to 6 p.m. (such as a solar power system), would earn about 22 cents per kilowatt-hour under the same circumstances. Overall, the tariffs range from 8 to 31 cents per kilowatt-hour. Facilities earning the tariff cannot be participating in other state incentive programs.

## SOCIETY NEWS.....

### California Approves Feed-In Tariffs, Rewards Energy Efficiency—cont'd

Feed-in tariffs have been used in other countries, such as Germany, to encourage a rapid growth in customer-located renewable energy systems, but the CPUC has set limits on the current tariffs. For systems at public water and wastewater facilities, the statewide capacity limit is set at 250 megawatts and is distributed among the seven utilities according to their size. For other customer-located facilities, the capacity limit is about 104.6 megawatts for PG&E and for SCE, about 123.8 megawatts. PG&E, SCE, and some of the other utilities offer their tariffs through two options: the customer can sell the utility only their excess power, or they can arrange to sell all the power from their facility to the utility. The new tariffs are effective immediately. See the CPUC order ([http://docs.cpuc.ca.gov/Published/Agenda\\_resolution/78255.htm](http://docs.cpuc.ca.gov/Published/Agenda_resolution/78255.htm)).

The CPUC also made a change to a program that provides financial rewards to utilities based on the performance of their energy efficiency programs. The program had allowed interim rewards to the utilities, but included a provision that could force a utility to repay the rewards if a review found that the program had fallen short. That provision was discouraging utilities from taking advantage of the program. To address the problem, the CPUC removed the payback provision but also lowered the size of the interim rewards. See the CPUC press release ([http://docs.cpuc.ca.gov/PUBLISHED/NEWS\\_RELEASE/78313.htm](http://docs.cpuc.ca.gov/PUBLISHED/NEWS_RELEASE/78313.htm)).

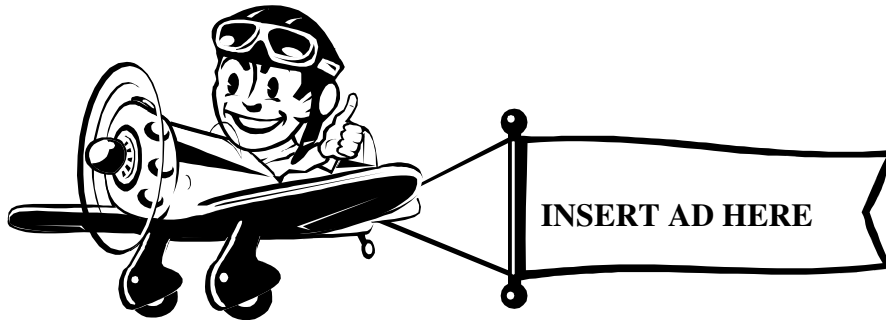
### President Bush Requests \$1.255 Billion for EERE in FY 2009

President Bush unveiled his proposed federal budget for fiscal year (FY) 2009, including \$25 billion for DOE. The budget requests \$1.255 billion for the DOE Office of Energy Efficiency and Renewable Energy (EERE), which is essentially equal to the President's budget request for FY 2008 but about 18% lower than the actual FY 2008 funding (not counting congressionally directed funds). Compared to the FY 2008 appropriations, the proposed budget boosts funding for geothermal energy by 51% to provide for field demonstrations of enhanced geothermal systems technologies. The budget also provides a 13.5% funding increase for research and development relating to biomass and biorefinery systems, a similar funding increase for efficient building technologies, and nearly level funding for the Federal Energy Management Program, vehicle technologies, industrial technologies, and wind energy. The budget proposal cuts hydrogen and fuel cell technologies by 69%, deferring hydrogen production research to focus instead on hydrogen storage and fuel cell technologies that are needed to develop a practical fuel cell vehicle by 2015.

The budget increases funding for state energy programs by 13% and proposes \$7.5 million in new funding for the Asia Pacific Partnership on Clean Development and Climate. It eliminates funding for Weatherization Assistance Grants, arguing that the energy efficiency retrofit program for low-income households has failed to catalyze broader solutions for the tens of millions of eligible homes that have never received retrofits. It also eliminates the Renewable Energy Production Incentive, which has become less effective as renewable energy technologies have become competitive and as limited funds have been distributed to a growing pool of eligible applicants. See the EERE Fiscal Year 2009 "Budget-in-Brief" ([http://www.eere.energy.gov/ba/pba/pdfs/FY09\\_budget\\_brief.pdf](http://www.eere.energy.gov/ba/pba/pdfs/FY09_budget_brief.pdf)).

The proposed budget includes \$3.2 billion for the President's Advanced Energy Initiative, a 28% increase, and \$225 million for the President's Solar America Initiative, with \$156 million in the EERE budget and \$69 million in the budget for DOE's Office of Science. It also requests \$19.9 million for the administrative expenses of DOE's new loan guarantee program, while requesting an extension of its authorization to issue loans through FY 2010 and FY 2011. The FY 2007 appropriations act authorized \$38.5 billion in loan guarantees, including \$10 billion for renewable energy, energy efficiency, and distributed energy generation, but gave DOE only two fiscal years to issue the loan guarantees. See the DOE press release (<http://www.energy.gov/news/5920.htm>) and page 42a (PDF page 86) of the explanatory statement that was issued with the appropriations act (<http://www.rules.house.gov/110/text/omni/jes/jesdivc.pdf>).

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