

# INDOOR COMFORT

JANUARY 2020

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**NEWS**

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THE WEST'S LEADING MONTHLY NEWSMAGAZINE FOR THE AIR CONDITIONING, HEATING, REFRIGERATION, SHEET METAL AND VENTILATING INDUSTRIES

HAPPY NEW YEAR 2020

## Edison, NASRC to Co-Host First-Ever Low-GWP Expo

Event to showcase latest commercial refrigeration technologies and solutions that offer both low-GWP and energy efficiency benefits.

On Jan. 15-16, the North American Sustainable Refrigeration Council (NASRC) and Southern California Edison (SCE) will co-host the first-ever Low-GWP & Energy Efficiency Expo, which will showcase the latest commercial refrigeration technologies and solutions that offer both low-GWP and energy efficiency benefits in new and existing facilities.

This event will build on a workshop NASRC co-hosted with Pacific Gas & Electric (PG&E) earlier this year, which sought to align the goals of California food retailers, California utilities, and the California Air Resources Board (CARB) by optimizing for energy efficiency with natural refrigerants.

"After our July workshop, it became clear that food retailers, service contractors, government agencies, and utilities were looking for an easy way to identify technologies that are both energy efficient and compatible with

refrigerants below 150 GWP," said Danielle Wright, executive director of the NASRC. "Our goal with this event is to provide a platform to showcase these technologies in the context of California regulations."

In 2017, CARB proposed new regulations that will require all new systems to use refrigerants with a GWP of 150 or less starting in 2022, causing many California grocers and food retailers to explore natural refrigerant technologies and solutions.

Natural refrigerants, including hydrocarbons, carbon dioxide, and ammonia, offer a "future-proof" solution in terms of regulations, but also present a unique set of challenges. Not only do these technologies often come at an upfront cost premium compared to traditional technologies, but a shortage of trusted data has

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## Inside

### Features

## Goodman Donates HVAC Makeover to Help Decorated Marine Battling Painful Injuries

A decorated U.S. Marine battling the aftermath of an IED explosion suffered while serving in Iraq is finding some solace in a newly renovated home, thanks to Goodman Manufacturing Company, L.P. and Lifetime Network's *Military Makeover with Montel* reality series.

When an IED detonated among his convoy vehicles in 2004, Wojcik sustained serious injuries, leaving behind chronic pain, challenges from PTSD and invasive surgeries that included shaving his vertebrae.

To reduce some burdens facing this veteran, Goodman donated an HVAC transformation designed to help lower utility bills, while providing consistent year-round indoor comfort for Wojcik, his wife Terri and their three teenaged daughters. Their home is now heated and cooled by a high-efficiency Goodman brand HVAC system complete with ComfortBridge,



(L-R) *Military Makeover with Montel* host Art Edmonds; Matt Feuerhelm, owner of Matt's Electric, Heating and Air Conditioning; and James Gilbert, product manager for Goodman, with a newly installed HVAC system outside veteran U.S. Marine Sgt. Steven Wojcik's family home during the show taping.

the industry's latest communicating technology, plus a media air filter, humidifier and UV light for enhancing indoor air quality.

Local independent Goodman HVAC dealer Matt's Electric, Heating and Air Conditioning in

Ellsworth, Wisconsin donated their time to install the system.

Goodman – a proud sponsor of *Military Makeover* since 2016 – is honored to help

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### INDUSTRY EVENTS



**2019 Trade Show Photos 16**  
ICN takes a look back at November's IHACI Product & Equipment trade show.



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**LIFETIME**  
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N80ESU0601716A    N80ESU1002120A



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**10 YEAR**  
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LIMITED  
WARRANTY  
Timely registration required.  
See warranty certificate for  
details and restrictions.

**20 YEAR**  
HEAT EXCHANGER  
LIMITED  
WARRANTY  
Timely registration required.  
See warranty certificate for details.

\* CALIFORNIA AQMD Jurisdictions: In Jurisdictions where warranty benefits cannot be conditioned to meet timely registration requirements, will receive the registered limited warranty periods. Please see warranty certificate for further details and restrictions.

\*\* Registration: Timely registration is required for 10-year parts limited warranty and lifetime limited heat exchanger warranty. Limited warranty period is 5 years for parts and 20 years for heat exchanger if not registered within 90 days of installation.

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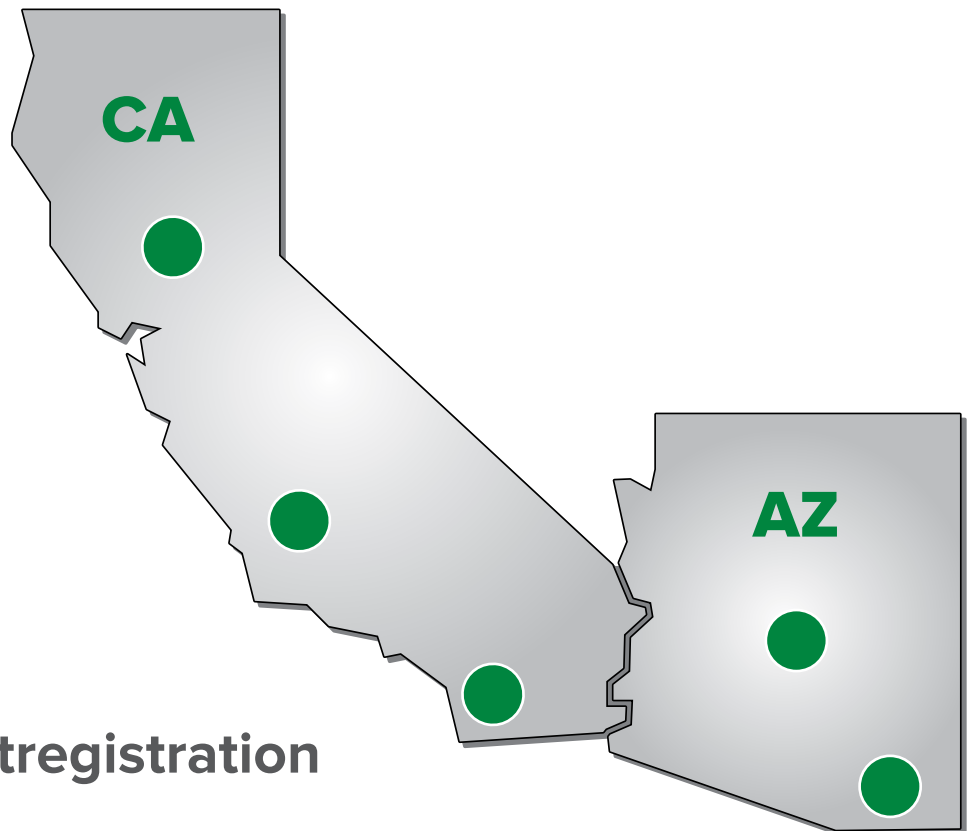
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# Industry News



## CALIFORNIA



### CEC Funds \$11M Project for Clean Energy Technologies

**Sacramento, Calif.** – A new California Energy Commission (CEC) funded program to help speed the commercialization of clean energy technologies launched recently at an event at the University of California, San Diego.

The California Test Bed

(CalTestBed) initiative is designed to reduce the stumbling blocks of time, cost, and bureaucracy most entrepreneurs face when trying to bring breakthrough concepts to market.

“The difficulties of navigating the landscape when attempting to commercialize any product can be daunting,” said CEC Chair David Hochschild. “That’s why we are pleased to support this effort through our EPIC funding program. It gives clean energy entrepreneurs a greater chance at success, which helps California further its nation-leading energy and climate goals.”

The program reduces the time it takes to move new energy technologies from the prototype stage to the pilot demonstration stage by giving innovators access to a

statewide network of testing facilities at University of California (UC) campuses in Berkeley, Davis, Irvine, Los Angeles, Merced, Riverside, San Diego, Santa Barbara, and Santa Cruz, and at the Lawrence Berkeley National Laboratory (LBNL).

The initiative will provide \$8.8 million in vouchers ranging from \$10,000 to \$300,000. It also includes a streamlined agreement process allowing entrepreneurs to test the design and performance of their prototypes at one of 30 testing facilities throughout the state.

“CalTestBed connects clean energy entrepreneurs with the immense resources within the UC system and at the Lawrence Berkeley National Lab,” said Sandra Brown, UC San Diego’s vice chancellor for research. “This effort can dramatically increase the commercialization of clean en-



School administrators and HVAC Excellence officials in front of Cypress College's signage.

ergy technologies for worldwide markets.”

CalTestBed is a collaboration between the CEC, the University of California Office of the President, Lawrence Berkeley National Laboratory, Momentum, the Los Angeles Cleantech Incubator and New Energy Nexus.

“We need thousands of successful startups to get to market if we are to achieve the ambitious goal of 100 percent clean energy for 100 percent of the community,” said Danny Kennedy, CEO of New Energy Nexus.

CalTestBed is funded through CEC’s Electric Program Investment Charge (EPIC), which drives clean energy innovation and entrepreneurship. New Energy Nexus received an \$11 million grant in December to develop CalTestBed.

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### Cypress College Granted HVAC Accreditation by HVAC Excellence

**Cypress, Calif.** – Cypress College in Cypress, Calif. has been granted accreditation of their Heating, Ventilation, Air Conditioning and Refrigeration (HVACR) program by HVAC Excellence.

Having built a reputation as a leader in education, the faculty and staff at Cypress College wanted to validate that their HVACR program was meeting the same standard. Understanding that the HVACR industry is one of the fastest growing occupations in the United States, featuring careers that cannot be exported or automated, it wanted to validate the program met nationally established standards. To accomplish this,

they voluntarily decided to pursue programmatic accreditation of their HVACR program.

Programmatic accreditation is an independent third-party review of an educational program. The process validates that established standards of excellence for HVACR educational programs are met. These standards are designed to ensure that our future workforce receives the quality of training required to provide the skills necessary for success in the HVACR industry.

In order to pursue accreditation, the staff at the school had to submit a self-study filled with narratives and examples of how they complied with each of the required standards. The self-study, once completed, was sent to HVAC Excellence, allowing their accreditation review board to thoroughly assess for compliance against each standard.

HVAC Excellence, having approved the self-study, sent a team to conduct an intense, onsite review of the program. The onsite team consists of two members, one who has served as an HVACR instructor, the other as a school administrator. These onsite team members are seasoned professionals that possess the knowledge, training, and experience to successfully evaluate every aspect of an HVACR program.

Upon a thorough review of all the documentation presented by the school and the onsite accreditation team, the HVAC Excellence accreditation review board decided to grant accreditation of the program.

Some of the many benefits of obtaining HVAC Excellence programmatic accreditation include:

- Provide prospective students with quality assurance of the program
- Give employers assurance that graduates have access to a quality education



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# Industry News

- Aid in establishing articulation agreements
- Serve as an eligibility determinant for funding
- Can lead to increased enrollment
- May enhance student placement and employer satisfaction
- Encourages faculty collaboration
- Can assist students in the acceptability of transfer credits

Now that the program has earned national accreditation, it is listed in a public directory of accredited HVACR programs. Learn more about the accredited HVACR program at Cypress College by visiting [www.cypresscollege.edu](http://www.cypresscollege.edu).

**TEXAS**



## Radiant Earns Awards for HVAC Service in Austin

**Austin, Texas** – Radiant Plumbing & Air Conditioning has been listed on the Austin Business Journal's Fast 50 and named The Austin Chronicle's Best of Austin for the HVAC and Plumbing categories.

Radiant Plumbing ranked 21st in Austin's Fast 50, presented by the Austin Business Journal. The Austin Fast 50 Awards recognizes Central Texas independent businesses for exceptional revenue growth over the three most recent fiscal years. Financial information is verified by a specified local accounting firm and companies must have generated a minimum of \$500,000 in revenue in 2016 to be eligible for nomination. In 2016, Radiant Plumbing had an annual net revenue of \$7.7 million. By 2018, Radiant Plumbing increased its net revenue to \$13 million.

"We were competing against some great businesses this year," said Brad Casebier, owner of Radiant Plumbing. "Austin is home to a lot of different industries, and we were the only home service company ranked in the Fast 50 Awards. This award is a testament to the hard work and dedication of everyone on the Radiant team. Our goal is to continue growing, and for that to happen, we need the best talent to join us in serving the Austin community."

Radiant Plumbing was also awarded the Best of Austin in the HVAC and Plumbing categories for the second consecutive year. The Best of Austin awards began in 1990 as a collaborative effort between The Austin Chronicle's audience members and the staff. Categories for these awards include arts and entertainment, nightlife, services, shopping and more. The Austin Chronicle has given over 300 awards to local businesses since 1990.

"Being named the Best of Austin in two categories is a great accomplishment for our team," Casebier said. "The two awards go hand-in-hand. We're delivering excellent service to the community, and we are receiving more business because of those efforts. Our team believes in our culture of excellence, and

it's represented by these awards from The Austin Chronicle and the Austin Business Journal."

For more information about Radiant Plumbing or available positions, please visit <https://info.radiant-plumbing.com/careers>.

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## Resideo Launches New Home App

**Austin, Texas** – "Gadgets don't make a smart home," said Mike Nefkens, president and CEO of Resideo during his opening remarks of Resideo Live. The industry event took place at the Austin City Limits Live at the Moody Theatre in Austin, Texas.

"At Resideo, we're committed to helping homeowners make sense of their homes, and in the process, help professionals modernize and



Mike Nefkens, president and CEO of Resideo, introduces the company's new home app at the Resideo Live event in Austin.

expand their businesses while giving a better experience to customers," he explained. "We do not believe that the critical systems of the home should be a do-it-yourself adventure."

It was then that Nefkens and

Niccolo de Masi, president of Products and Solutions, and CIO of Resideo, announced several new products. The focus of which was the new Resideo Home App which

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## SIMPLICITY REFINED

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Continued from Page 5

will make whole-home monitoring possible for the four critical networks of the home – water, air, energy, and security. Four key points were outlined throughout the presentations:

1. Resideo's upcoming products and subscription services will seamlessly connect homeowners with professionals to help make homes safer, more efficient, and smarter.
2. The company's existing portfolio of smart products and services will upgrade to Resideo Home app through 2020.
3. The app pairs homeowners with residential professionals to provide analytics and insights to help protect homes and identify trouble before it becomes catastrophic.
4. Subscription water services are immediately available in the app. A new Indoor Air Quality

(IAQ) Monitor expands indoor air subscription services for Pros.

Resideo also announced a new digital experience that can help its network of 110,000 trade professionals – and their 1 million technicians – build business for the future, simplify operations, and strengthen relationships with homeowners. The Resideo Pro Portal offers a single destination for product information, product support, access to services, and tools to promote and drive leads. A new training and loyalty program called Resideo Pro PERKS launches in January 2020.

Near the end of the presentation, Nefkens revealed the company's plan for its next-generation smart thermostat it will develop in partnership with professional contractors. Considered by Resideo to be more than a thermostat, the device will fully integrate with the Resideo Home app, providing insight into the four critical networks and access to subscription services through

on-the-wall control with a modern user interface.

The company plans to launch alpha and beta test programs with professionals in 2020.

## NATIONAL



## Oklahoma Magazine Honors AAON

Tulsa, Okla. – AAON Inc., a manufacturer of heating and cooling products, announced that it has been named one of Oklahoma Magazine's Great Companies to Work For. Companies are selected by Oklahoma Magazine utilizing a variety of resources, including

an online application process, a survey of the state's largest private-sector employers, and commercial and public-sector studies and surveys.

AAON employs more than 2,000 people at its Tulsa headquarters and manufacturing facility, and is a top 40 employer for the Tulsa area. Benefits offered at AAON include health insurance with 175 percent health savings account match, a 401(k) plan with 175 percent match up to 6 percent of pay, quarterly profit sharing for all employees, paid time off and paid holidays, and tuition assistance/reimbursement.

AAON also announced that the Association of Fundraising Professionals of Eastern Oklahoma, in recognition of the company's many corporate citizenship efforts, recently presented AAON with a Spirit of Philanthropy Award.

"We are honored to receive these recognitions," said Scott Asbjornson, vice president and chief financial officer, AAON. "We strive to be the employer of choice in the communities in which we operate. We are committed to hiring, retaining, and promoting a diverse workforce while advancing a culture of inclusion in which each team member is valued for their ideas, identities, experiences, and talents."

## AHRI Announces New Officers

Arlington, Va. – The Air-Conditioning, Heating, and Refrigeration Institute (AHRI) held its inaugural Leadership Forum in Puerto Rico, during which it elected its new officers and presented awards to industry leaders.

"The dedication of these industry leaders makes it possible for AHRI to continue to be the recognized voice of the industry and a reliable source for information," said AHRI President and CEO Stephen Yurek. "We are very grateful for their service to AHRI and the HVACR and water heating industry."

AHRI's new chairman is John Galyen, president, North America, at Danfoss.

The officers and Executive Committee are as follows:

- Vice Chairman: Mike Schwartz, CEO, Daikin Applied
- Vice Chairman: Ron Duncan, president, Magic Aire
- Treasurer: Megan Fellingner, president & CEO, Morrison Products

• Past Chairman: Bill Steel, president & CEO, Bard Manufacturing

Board of Directors:

- Kevin Beckett, president, R. W. Beckett
- Gary Bedard, executive vice president, president, and chief operating officer Worldwide Refrigeration, Lennox
- Mike Branson, president, Rheem Manufacturing Co.
- Bruce Carnevale, president and CEO, Bradford White Corp.
- Elizabeth Haggerty, vice president and general manager, Global Ducted Systems, Johnson Controls
- Chris Nelson, president, Carrier Residential and Commercial Systems
- Brent Schroeder, president, Air Conditioning Business, Emerson
- Donny Simmons, president, Commercial HVACR, Ingersoll Rand
- John Swann, president, Weil-McLain
- Kevin Wheeler, president, NA, Europe, and India, A.O. Smith

The Richard C. Schulze Award is given for distinguished service and commitment to AHRI and the industry's goals and objectives. AHRI congratulates:

- Henry "Skip" Ernst, Daikin Applied
  - Joe Sanchez, Bitzer U.S.
  - Rusty Tharp, Goodman Manufacturing
  - Robert Whitwell, Carrier
- AHRI presented the Public Service Award to Byron Horak of Intertek.

The Distinguished Service Award is AHRI's highest honor; it recognizes industry leaders who have made significant contributions throughout their careers. AHRI honored Mike Woodford, retiring this year from AHRI after 42 years of service.

## ASHRAE Publishes Updated Residential Construction Standard

Atlanta, Ga. – ASHRAE has released an updated edition of ANSI/ASHRAE/IES Standard 90.2-2018 Energy-Efficient Design of Low Rise Residential Buildings. The standard establishes minimum whole-building energy performance requirements (design, construction, and verification) for energy-efficient residential buildings.

The 2018 revision of Standard 90.2 outlines cost-effective residential building energy perfor-

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CLEAResult is a SoCalGas authorized contractor responsible for administering the Residential HVAC Program through December 31, 2019.





Continued from Page 6

mance measures that are at least 50% more efficient than those defined by the 2006 International Energy Construction Code (IECC).

“Standard 90.2 provides a mechanism by which any residential building design can be easily evaluated against performance objectives,” said Theresa Weston, Ph.D., chair of the Standard 90.2 committee. “This update to the standard offers better alignment between this standard’s requirements and marketplace product availability as well as some revisions to improve the document’s clarity and internal consistency.”

The 2018 edition of Standard 90.2 provides:

- Clarification for modeling software requirements
- Guidance on the use of international climate data presented in ASHRAE Standard 169
- A new normative appendix on proper installation techniques for critical thermal resistance building components
- Improved prescriptive envelope performance data tables
- New performance specifications for ground-source heat pumps
- Minimum lighting efficiency provisions for single-family, large single-family, and multifamily homes
- Guidance on pool heater pilot lights, pump motor efficiency, and exterior de-icing systems
- Clarifications to multi-zonal building air-leakage testing procedures

The cost of ASHRAE Standard 90.2-2018 is \$94 for ASHRAE members (\$110, non-members). To order, visit [www.ashrae.org/bookstore](http://www.ashrae.org/bookstore) or contact ASHRAE

Customer Contact Center at 1-800-527-4723 (United States and Canada), 404-636-8400 (worldwide) or fax 678-539-2129.

ASHRAE, founded in 1894, is a global society advancing human well-being through sustainable technology for the built environment. The Society and its more than 56,000 members worldwide focus on building systems, energy efficiency, indoor air quality, refrigeration and sustainability. Through research, standards writing, publishing, certification and continuing education, ASHRAE shapes tomorrow’s built environment today. For more information, visit [ashrae.org](http://ashrae.org) and connect on LinkedIn, Facebook, Twitter and YouTube.

## HARDI Urges Members to Take Action on HFC Phasedown

**Columbus, Ohio** – Heating, Air-conditioning & Refrigeration Distributors International (HARDI) has opened an online portal that allows individuals to easily take action in support of the American Innovation and Manufacturing Act.

Senator John Kennedy (R-LA) has introduced the American Innovation and Manufacturing Act, designed to allow the HVACR industry to transition to a new generation of refrigerants and maintain US leadership in air-conditioning and refrigeration technology.

Senators John Kennedy (R-LA) and Thomas Carper (D-DE) have introduced the American Innovation and Manufacturing Act (AIM Act) along with 12 other original bipartisan cosponsors which would give Environmental Protection

Agency (EPA) a limited grant of authority to phasedown the use of HFCs over the next 17 years. This regulation is necessary to move the industry to new HFO-based refrigerants and equipment.

HARDI has streamlined the process for members to take action through a portal that creates customizable action letters and sends them to the individual’s legislators, urging them to pass the AIM Act.

The portal will be available for individuals to take action on all issues that affect the HVACR industry as they arise, giving people the opportunity to participate in the issues that affect their business.

To view the portal, visit <https://hardinet.org/advocacy/take-action/#/22/>

## HVAC Community Reports Positive Outlook in 2020

**Westport, Conn.** – Members of the HVACR community reported a continued positive business outlook heading into 2020 in the latest AHR Expo and ASHRAE Journal Annual Economic Outlook Survey. The survey was distributed to past and prospective attendees, as well as industry manufacturers, to gauge the market leading into the new year. Additionally, for the first time, the 2020 report includes input on trends, issues, and opportunities as outlined by representatives from industry associations regarding their respective areas of expertise.

According to the report, 79 percent of respondents indicated good or excellent predicted sales prospects as the industry crosses into 2020. While there continues to be shifts in the market, overall, the industry remains in a positive economic position. For example, heading in to 2019 the ‘retrofit and renovation’ segment was ranked as having the highest business growth potential. This year, it fell to second place, falling behind maintenance and replacement jobs.

“Manufacturers and our attendee shareholders alike are reporting a strong economy,” said Mark Stevens, manager of AHR Expo. “Our recent report reveals that members of the HVACR community expect the successes of 2019 to hold in the new year. This will be evident on the Show floor as our exhibitors continue to introduce new and innovative products that meet the rising demand for smarter and more efficient solutions.”

Each year the AHR Expo kicks off the first business quarter with the industry’s first chance to see what’s new in HVACR. Exhibitors use the opportunity to launch



Johnstone Supply-Woburn Group employees at the ribbon-cutting ceremony for the company’s new location.

products at the Show and discuss new opportunities ahead. As a precursor to the Show, the survey conducted at the end of the fourth business quarter provides the opportunity to gauge what’s expected in the year ahead.

“The HVACR industry remains in a season of change, with innovation and advancement happening in all sectors,” continued Stevens. “Considerations such as the global market, changing customer demands, and new innovation demands are shaping product designs and the way we approach the built environment. Across the board, whether entirely new concepts or improvements upon existing product lines, our exhibitors are thinking smarter and delivering impressive solutions.”

When asked about 2019 sales, 34 percent of respondents reported an increase of 10 percent or more, and 70 percent indicated sales growth of at least 10 percent. Additionally, respondents reported expected growth in nearly all areas of the industry, with light commercial, health, and residential markets identified as having the highest potential in 2020 at 72 percent, 67 percent, and 64 percent respectively.

As in previous years, reliability holds steady as the most important consideration factor for consumers when making purchasing decisions. Both exhibitors and attendees alike ranked it as the most important, coming in at 81 percent for exhibitors and slightly more than 98 percent for attendees. For the second year in a row, both energy efficiency and indoor air quality secured a top spot in relation to consumer importance among exhibitors, at 67 percent and 64 percent respectively. Attendees, however, placed initial costs second at right under 98 percent, and comfort considerations third at 96 percent.

Areas of concern include rising tariffs and the need to recruit and retain a strong skilled workforce.

Additionally, changing Department of Energy (DOE) regulations and R-22 refrigerant phase-out remains high on respondent radars.

## Johnstone Supply-Woburn Group Opens New Store

**Woburn, Mass.** – Johnstone Supply-Woburn Group debuted its new showroom at 35 Industrial Parkway in Woburn. The new store location provides 30 percent more square footage than its previous building. In addition to the increase in size, the new store also features a 24-hour secure customer order pick-up, working displays, and a 30-person training facility.

“We are now able to offer a complete showcase for our products and services for our customers in conjunction with our knowledgeable staff,” said Johnstone Supply-Woburn Group president, Neal Reynolds.

The store has been designed to provide specialized consultations and support for HVAC technicians.

The new store is open six days a week beginning each day at 7:00 a.m.

## NIBCO Completes Acquisition of Milwaukee Valve

**Elkhart, Ind.** – NIBCO INC. announced it completed the acquisition of Milwaukee Valve Company.

“We are thrilled to build upon and deepen Milwaukee Valve’s long history of high standards of manufacturing excellence and serving its customers,” NIBCO Chairman Rex Martin said. “Our interest in Milwaukee Valve was driven by our admiration for its multi-generational family-owned

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Model Number	Heating BTUh	AFUE	Weight	Length (Inches)	Width (Inches)	Height (Inches)
TL8E060A12UH11	60k	80%	94	29.5	14.5	33.0
TL8E080C16UH11	80k	80%	114	29.5	21.0	33.0
TL8E100C20UH11	100k	80%	122	29.5	21.0	33.0

Model Number	Heating BTUh	AFUE	Weight	Length (Inches)	Width (Inches)	Height (Inches)
TL9E060B12UH11	60k	95%	122	29.5	17.5	33.0
TL9E080C16UH11	80k	95%	136	29.5	21.0	33.0
TL9E100C20UH11	100k	95%	145	29.5	21.0	33.0



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Continued from Page 8

history, strong corporate culture, and long term performance, which are consistent with NIBCO's core values."

Milwaukee Valve will continue to operate separately as a wholly-owned subsidiary of NIBCO, with no changes to its sales, customer service, administrative, manufacturing, or distribution operations. Rick Giannini, chief executive officer of Milwaukee Valve, will continue to lead the business supported by the experienced leadership team at Milwaukee Valve, who will remain in place in their current roles.

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## Trane Earns Two 2019 BIG Awards for Business

**Davidson, N.C.** – The Business Intelligence Group (BIG) has announced the winners of the 2019 BIG Awards for Business program, which includes two awards for Trane, a global provider of indoor comfort solutions and services and a brand of Ingersoll Rand. Trane was named Green Company of the Year, while Holly Paepfer, Trane's data center general manager and vice president of marketing, was named Enterprise Woman of the Year.

The BIG Awards for Business is

the Business Intelligence Group's annual program created to reward companies, products, and people that are leading their respective industries.

"Leadership, innovation and technology were all major themes shared by this year's winners of the BIG Awards for Business," said Maria Jimenez, chief nominations officer for Business Intelligence Group. "We are so proud to reward each of these people, products and organizations for setting such a positive example for the global business community."

"Sustainability is at the heart of how we serve customers and operate our business, and it's at the heart of our mission to reduce the energy intensity of the world," said Donny Simmons, president, Trane Commercial HVAC North America, Europe, Middle East, and Africa. "We are honored that the Business Intelligence Group has recognized our efforts and outstanding leaders such as Holly Paepfer who bring our mission to life with positive results for our people, customers and planet."

.....

## RenewAire Plant Receives LEED Gold Certification

**Waunakee, Wisc.** – RenewAire's energy recovery and indoor air quality (IAQ) equipment has helped numerous commercial building owners reach sustainability recognition. Now that same equipment, namely energy recovery ventilators (ERV) and dedicated outdoor air systems (DOAS), has helped the 35+ year-old HVAC firm's new 111,000-square-foot manufacturing plant achieve Leadership in Energy and Environmental Design (LEED®) Gold certification in November.

While the majority of LEED certifications go to high-performing office buildings, educational institutions and government facilities, any LEED level, let alone Gold, is a rare achievement for industrial buildings which account for less than five-percent of all levels of LEED certifications globally, according to the U.S. Green Building Council (USGBC). Industrial building owners typically concentrate more on price per square-foot costs than sustainability, according to the RenewAire project's consulting engineer, Eric T. Truelove, P.E., GGA, LEED AP, Principal of Green Building Resources (GBR), Madison, Wis.

"This new facility supports our mission of fostering sustainability, helping the planet by reducing



RenewAire's 111,000 square-foot plant received LEED Gold certification for its energy-efficient practices.

energy use and at the same time improving human health and well-being," said Chuck Gates, CEO, RenewAire.

The LEED Gold is added to RenewAire's three Green Globes certification from the Green Building Initiative making this one of only a handful of commercial buildings to achieve dual-certification through two independent rating systems. RenewAire is not a newcomer to sustainability, because it received two Green Globes and a LEED Silver certification for its former headquarters, a 32,000-square-foot Madison-based indoor soccer stadium it retrofitted in 2005 for its manufacturing headquarters. When its expanding business demanded a near quadrupling of space, RenewAire gutted a vacant Waunakee, Wis. industrial building in 2017 for its current headquarters.

RenewAire's stepped up LEED efforts racked up 60 of a possible 110 points, 14 which came from the "Optimize Energy Performance" category. RenewAire's seven energy recovery ventilators (ERV) and dedicated outdoor air system (DOAS) units accounted for nearly 25-percent of the 14 points. The ERVs and DOAS processes also reduce cooling/heating loads and resulted in smaller chillers and boilers, and less refrigerants, which helped earn two points in the refrigerant management category. Other energy performance credits came from LED lighting that cut lighting costs by half versus conventional industrial/office space lighting. Truelove, a 30-year-veteran of the construction and energy industries, who founded Green Building Resources in 2007, also assisted with a design that included split-system cooling systems with energy efficiency ratios (EER) that surpass the Wisconsin State Building Code by 30-percent and condensing boilers that surpass the code minimum by 10-percent for heating. The category also included enhanced commissioning and green power purchases that make this facility carbon-neutral.

While RenewAire achieved a high level of facility sustainability recognition, it was accomplished very economically due to strategic, efficient planning, according to Truelove who has participated on over 50 LEED and over 100 Green Globes projects. "The costs were managed efficiently, because the added cost of sustainability measures was less than two-percent of the total construction cost in both their building retrofits."

.....

## Winsupply Acquires Heavy Industrial Pumps Company

**Dayton, Ohio** – Winsupply Inc., one of the largest distributors in the nation, has purchased Industrial Equipment & Parts, a Plymouth, Minnesota-based distributor of heavy industrial pumps. Details of the asset purchase were not disclosed.

Industrial Equipment & Parts provides heavy industrial pumps and supporting value-added parts and services to its customer base of pulp, paper and ethanol industries in five surrounding states of the Upper Midwest. Scott Koontz, previously the general manager at Industrial Equipment & Parts, is staying and will make a substantial investment in the acquired company, and become minority owner and president of the single-location business. Winsupply is the majority owner, reflecting its entrepreneurial, shared-ownership business model.

Koontz will have autonomy as president and entrepreneur of Industrial Equipment & Parts, responsible for making local decisions that he believes are best for his company and his board of directors. In the Winsupply co-ownership business model, Winsupply Inc. has majority equity in each of its locations, while the local company presidents and sometimes employees own substantial equity.

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# Troubleshooting

## A Failed Ignition

By Jim Johnson  
Contributing Editor

In this troubleshooting situation the equipment is a gas furnace, and the customer's complaint is that the unit "is not heating at all." When you arrive, you find:

- ...This unit employs an Integrated Fan Control.
- ...The thermostat is set to the heating mode.
- ...The fault code display indicates a failed ignition.

After taking the necessary steps to attempt a cycle, you note that the Induced Draft Motor does not

COMPONENT CODE			
BLWR	BLOWER RELAY	IFC	INTEGRATED FURNACE CONT
C	COMMON	LC	LIMIT CONTROL
CC	COOLING CONTACTOR	LPC	LOW PRESSURE CONTROL
CT	CONTROL TRANSFORMER	M	MAIN
DISC	DISCONNECT SWITCH	MC	MEMORY CARD
EAC	ELECT. AIR CLEANER OUTPUT	MGV	MAIN GAS VALVE
FLMS	FLAME SENSOR	MRLC	MAN. RESET LIMIT CONTROL
FR	FAN RELAY	NEU	NEUTRAL
FU	FUSE	NPC	NEGATIVE PRESSURE CONT.
GND	GROUND	PBS	PUSH BUTTON SWITCH
GVR	GAS VALVE RELAY	PFC	POWER FACTOR CHOKE
HALC	HEAT ASSISTED LIMIT CONTROL	PL	PLUG
HCR	HEAT/COOL RELAY	PS	PRESSURE SWITCH
HPC	HIGH PRESSURE CONTROL	RC	RUN CAPACITOR
HUM	HUMIDIFIER OUTPUT	SE	SPARK ELECTRODE
IBM	INDOOR BLOWER MOTOR	TM	THERMISTOR
IDM	INDUCED DRAFT MOTOR	▲	WIRE NUT
IDR	INDUCED DRAFT RELAY		

FIGURE 2

operate on a call for heat. When you consult the wiring diagram (Figure One) and component legend (Figure Two), your next step is to initiate a cycle and check with

a voltmeter at the points shown on the schematic diagram, which confirms a reading of 115 VAC.

Your troubleshooting question: *What is the next step you need to take in servicing this equipment?*

If you believe you have the correct answer to one of Jim Johnson's Troubleshooting Problems, please submit it by email to Jim Johnson at [icntroubleshooting@techtrainassoc.com](mailto:icntroubleshooting@techtrainassoc.com) or by U.S. Mail to: Technical Training Associates, PO Box 2259, Green Valley, AZ 85622-2259.

In your email subject line please include "Troubleshooting Answer" and indicate which month the question you are responding to was published. Correct answers will be entered into a drawing and will be eligible to receive a copy of Jim Johnson's video "Evaluating Refrigeration Systems: Troubleshooting & Identifying Problems."

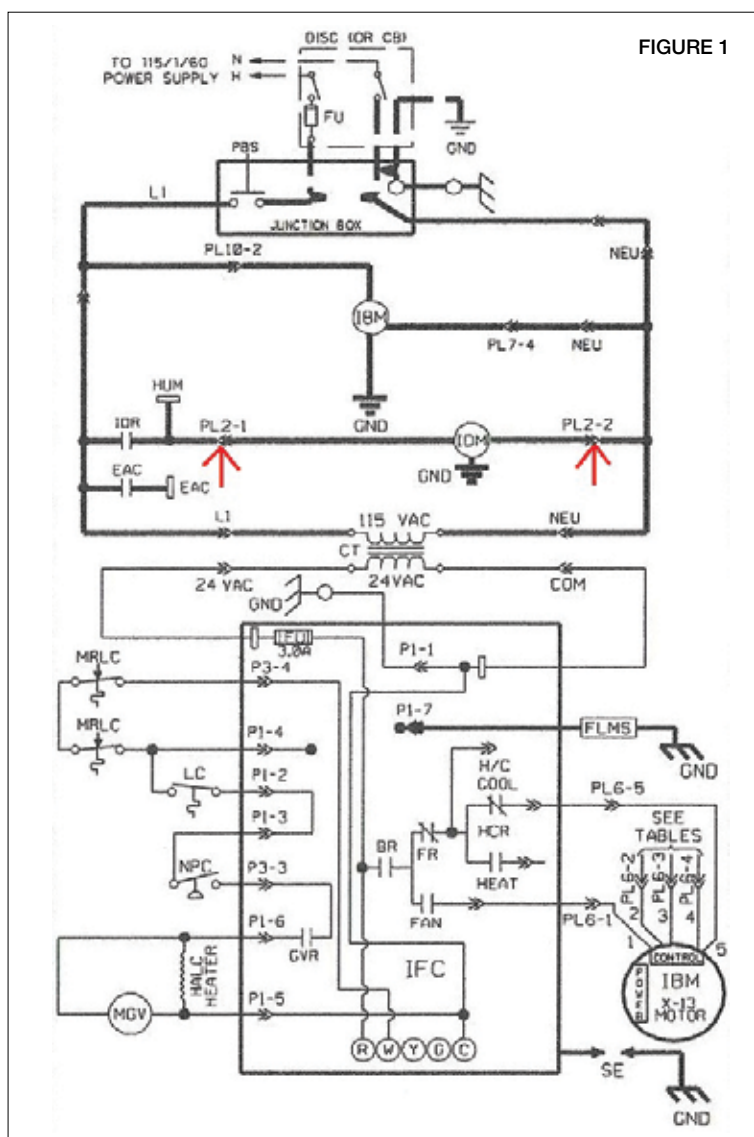


FIGURE 1

### Solution to Last Month's Problem

Our next step is to replace the failed thermostatic expansion valve. The winner of last month's problem is:

**John Meursing**  
Sierra Madre, Calif.

## Johnson Controls Opens Second HVAC Training Center

Johnson Controls celebrated the grand opening of a new Source 1™ HVAC Supply and YORK®NW Factory Direct training center on Nov. 20 in Fife, Wash. The opening marks the second training center Source 1 and YORK Factory Direct has opened as part of Johnson Controls nationwide training initiative.

The 2,450 square-foot facility features a classroom space that can hold up to 24 students as well as a live lab with 12 YORK HVAC units, ranging from basic to premium efficiency models, to provide hands-on learning to help technicians become YORK certified technicians. The training center also offers a variety of interactive and digital courses designed to educate and prepare the future workforce.

The grand opening event occurred on-site with more than 100 guests in attendance, including YORK dealers, customers, trade school representatives and

Fife Mayor Kim Roscoe. Attendees enjoyed commentary from guest speakers, a facility tour, food, raffles and giveaways.

Adjoined to the Fife, Wash. Source 1 HVAC Supply, the training center is the second of many facilities openings in the U.S. and Canada, following the 2018 opening in St. Louis, Mo. The center will focus primarily on residential and commercial service and installation, but it will also include training on VRF and ductless products. In addition, YORK sales teams can attend classes to gain a deeper understanding of the features and benefits of YORK products.

"The goal of the training center is to provide YORK certified technicians with the education and skills they need to ensure proper installation, service and maintenance," said Chad Unruh, regional service manager, Source 1™. "This new training center will provide valuable, hands-on training to HVAC technicians,

strengthening our commitment to educating and investing in the future workforce of the HVAC industry."

Most training facilities do not use fully operational HVAC units, so students lack the ability to properly test them with field tools. Having hands-on training with live equipment helps to reinforce learning that was completed in the classroom. On average, it takes 36-48 hours of training to become a YORK Certified Comfort Expert.

YORK Factory Direct and Source 1 HVAC Supply are the exclusive suppliers of factory authorized service parts and residential accessories for all Johnson Controls Unitary Products residential and light commercial HVAC equipment, carrying YORK, Guardian® and Source 1 products.

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Growing Green Technicians Part 123: Proper Air Volume, Static Pressure in PSC & ECM Blowers

By Jim Johnson  
Contributing Editor

In the December issue we discussed some of the specific factors that manufacturers list on their air flow performance charts when checking for proper static pressure....such as whether or not tests need to be accomplished with or without a filter, whether the air handler is installed in a horizontal or vertical position, or what mathematical corrections may need to be accomplished to be accurate in diagnosing air flow problems. In this issue, we'll look at some of the specific things green technicians consider when accomplishing performance evaluations on systems with different types of motors. In our first example in **Figure One**, we're showing a simplified air flow chart for a PSC blower motor.

In this case, our chart shows that this is a three-speed, PSC motor that could be typically found in an indoor air handler. For our purposes of explanation, we'll identify this equipment as a gas furnace with the unit operating in the heating mode. Another factor we'll apply here is that the motor is wired to operate in the medium speed for the heating mode in this specific situation. And, when we consult the chart in accordance with the factors mentioned, and consider that it's common for the TESP to be in the range of 0.5 inches of water column in a residential system when the blower is operating normally, we note that the air volume according to the chart should be 715 CFM for this particular equipment.

Now, with our normal operating characteristics understood, we'll consider a different TESP reading recorded, that of 0.7 inches of water column. When we consult our chart with this new information and apply simple arithmetic, we find that the air flow has dropped by 110 CFM. In the event that a technician notes the air flow is lower than that specified by the manufacturer's performance data chart to this degree, further evaluation of the operation of this equipment is necessary.

One step to consider here

would be checking the current draw of the motor. In the event that we found that reading to be lower than normal, we would know that there is a restriction in the duct system that is reducing air flow. The simple reason we would arrive at this conclusion is that the current draw is lower than it should be because the motor has less work to do with a reduced amount of air entering the squirrel cage blower.

When considering an ECM blower rather than a PSC, we would also need to consider a duct system issue if we found the TESP

to be excessive. However, with this type of blower, the reduction in air flow would not be as severe as it is with a PSC motor. Because of the different method of operation of an ECM, the actual airflow variable is

lower in the event of a duct restriction. In this type of air handler the control system recognizes that the static pressure it is working against is increased, so it adjusts the motor speed in order to maintain the

CFM necessary to ensure efficient operation of the equipment.

In considering the chart shown in **Figure Two**, we'll determine

PSC Blower	External Static						
Motor Speed	0.1" wc	0.2" wc	0.3" wc	0.4" wc	0.5" wc	0.6" wc	0.7" wc
High	1,150	1,095	1,045	1,025	950	865	775
Medium	890	855	835	775	715	665	605
Low	640	605	565	530	485	440	360

FIGURE 1

PSC Blower	External Static						
Motor Speed	0.1" wc	0.2" wc	0.3" wc	0.4" wc	0.5" wc	0.6" wc	0.7" wc
High	1,150	1,095	1,045	1,025	950	865	775
Medium	890	855	835	775	715	665	605
Low	640	605	565	530	485	440	360

FIGURE 2

Continued on Page 14



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## Stop Cold Drafts in their Tracks: Why You Should Consider Fan-Forced Wall Heaters

By Andrew Martin  
Marley Engineered Products

Blustery days with chilling winds can cause heating problems in many facilities with high volumes of foot traffic. While the main rooms within the building may be warm from the primary heating source, many areas are left out in the cold as drafts bring the temperatures down. Vestibules, lobbies, entrance ways and hallways can all see a steady flow of people moving in and out throughout the day, opening doors and letting in chilly air.

To counteract these cold drafts, facilities should consider fan-forced wall heaters that provide continuous comfort through optimized airflow. Gentle heat-

ing sources are often not powerful enough to provide sufficient warmth in drafty areas. Fan-forced wall heaters however, push back on the infiltrating cold air, ensuring occupants feel the warmth as soon as they enter the building and until the moment they leave.

### Functionality is Key

Cold air manages to find its way into facilities by any means necessary – whether it's through vents, cracks, crevices or unsealed windows. Specialized heating units can stop these drafts before they spread throughout a building, bringing down temperatures and reducing overall heating efficiency.

Fan-forced wall heaters with an automatic delay eliminate cold drafts on start-up and discharge

residual heat from the heater body during shut down. This helps attack drafts at their source while making the best use of available heat. In addition, consider fan-forced wall heaters that come with an integrated thermostat allowing for easy adjustment of room temperature to maintain a desired comfort level.

Perhaps a lobby is experiencing high foot traffic at the beginning and at the end of the workday, but have less heating requirements in the middle of the day. The adjustable thermostat allows occupants to alter the wall heater's output based on need, ensuring no heat is wasted and temperatures remain comfortable. QMark and Berko's commercial fan-forced wall heaters offer contemporary styles to match any room décor while ensuring adjustable warmth

throughout the year.

### Safety First

As with any heating unit, it is imperative to select high-quality products that offer protection against common safety risks. In terms of general design, fan-forced wall heaters come with a clear, easily accessible power on/off switch for added safety during maintenance, as well as a tamper-proof plug for the thermostat hole.

Also, look for fan-forced units with a manual reset thermal over-heat protector that disconnects the power in the event of accidental blockage. This will ensure a quick repair while mitigating risk of injury. Furthermore, units that include permanently lubricated fan motors report increased longev-

ity and lower maintenance needs, while gently distributing warmth throughout a designated area. Make sure the fan is powerful enough to offset drafts while quiet enough to eliminate unnecessary noises that may disrupt daily activities.

### Key Takeaways

Every time a door opens during the cooler months, drafts blow in and bring a chilling effect into heated spaces. To neutralize the draft threats, consider installing a fan-forced wall heater to regain warmth and ensure comfortability for all occupants. Commercial fan-forced wall heaters from Berko and QMark provide strong yet safe sources of heat for the draftiest of spaces.

*About the author:* Andrew Martin is a product manager at Marley Engineered Products®, a leading North American designer and manufacturer of reliable comfort heating and ventilation solutions for residential, commercial and institutional buildings. Recognized by contractors, architects, engineers and HVAC professionals for providing a wide range of high-performance, reliable heating and ventilation solutions, Marley Engineered Products' brands include QMark®, Berko®, Fahrenheit® and Leading Edge®.

## Troubleshooting

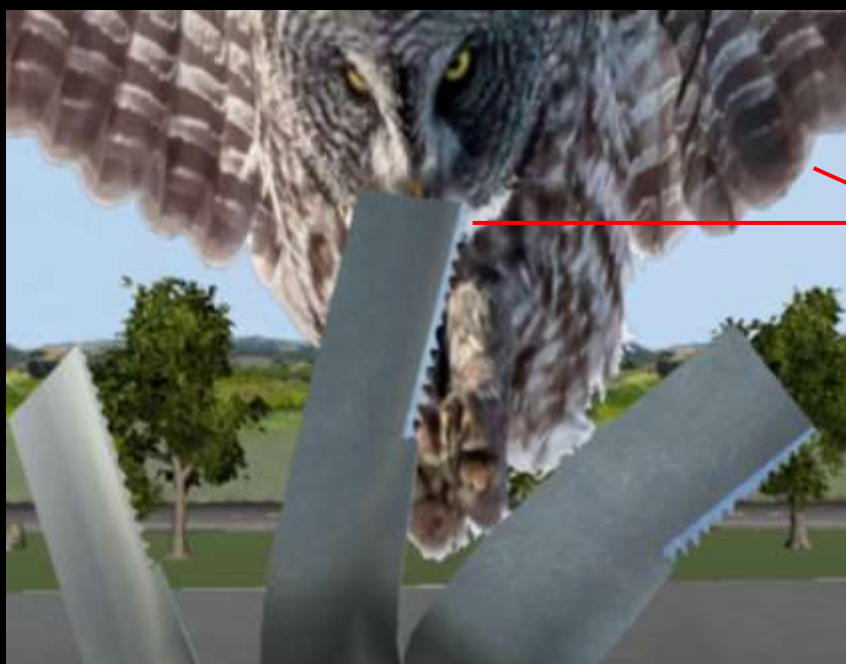
Continued from Page 13

that the blower is operating on Program B, and that our TESP reading is 0.7 water column inches rather than the 0.5 water column inch reading we would expect. With this information applied, we can see that our air flow loss is only 30 CFM.

An important point to keep in mind here is that although the air flow reduction isn't as severe as it was in our PSC example, it doesn't mean we don't have some work to do. The fact that the ECM ramped up in an effort to deliver and return the proper CFM means that it's costing more to operate the equipment, so we would still need to look for issues in the air handling system as the cause of the increased static pressure. In the next segment in this series we'll consider some factors within the ductwork that could be the source of air flow problems.



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# HAPPY NEW YEAR

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Thank you for helping make this a truly enjoyable, successful,  
and fulfilling year. All the best for the New Year ahead!





## IHACI 2019 TRADE SHOW

WEDNESDAY, NOVEMBER 20, 2019



Bruce Helft of the California Energy Commission at the Energy Regulations seminar.



The Lennox booth.



The Airex Manufacturing booth.



The Daikin booth (L-R): Sean Green, Bashiri Cooper, Randy Lee, and Dave Warren.



The Ferguson HVAC booth.



Sean Kerr (L) and Andrew Lisk of Sierra Truck Center.



Panasonic Heating & Air (L-R): Kensen Lee, Matt Lessner, and Joshua Kantor.



The IHACI superheroes.



AC Pro (L-R): Nicholas Arce, Joe Huerta, Sam Lovoy, and Leonard Estrada.



The Howard Industries booth.



The Mitsubishi Electric Cooling & Heating booth.

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### Low-GWP Expo

Continued from Page 1

led to uncertainty around energy performance and other lifecycle costs. What's more, because natural refrigerants are not a "drop-in" solution, existing stores require a full system replacement, making a natural refrigerant "retrofit" unfeasible in most facilities.

California utilities offer a variety of programs that can help finance the adoption of energy efficient refrigerant technologies, such as on-bill financing, emerging technologies funding, and custom incentive programs. By incorporating low-GWP refrigerant technologies into new and existing programs utilities can support CARB in reaching their emissions reductions targets

and California food retailers to adopt low-GWP technologies without breaking the bank.

"Utility incentives and other funding sources that offset the upfront costs of these technologies have the power to increase volumes of adoption and drive us closer to reaching economies of scale where we see the costs of these technologies fall," said Wright. "But for that to happen, utilities, government agencies, and supermarkets need to have a better understanding of which technologies below 150 GWP also offer energy efficiency benefits in both new and existing facilities."

This free, two-day event seeks to provide clarity by highlighting a diversity of commercial refrigeration products that

are compatible with refrigerants below 150 GWP and have proven energy efficiency benefits through a product expo, technomercials, case studies, and an emerging technologies "Shark Tank" session. Attendees will also hear updates on California refrigerant regulations, current and future offerings from California utilities, and 2022 Title 24 energy code impacts.

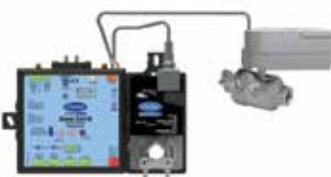
This event will be attended by grocery and food retailers, service contractors, equipment manufacturers & suppliers, utilities, policymakers, government agencies, and other key commercial refrigeration stakeholders.

For more information or to register for the expo, visit [www.nasrc.org/energy-efficiency-expo](http://www.nasrc.org/energy-efficiency-expo).



## HVAC Business & Contractor Technologies/Green Technologies/Heating Products

### Carrier i-Vu Smart Valves



Carrier is proud to add new i-Vu® Smart Valves to the suite of components available for the i-Vu® building automation system, making it even easier to maintain occupant comfort, optimize energy usage and resolve problems faster. The Smart Valves provide operators access to valve performance data from anywhere at any time, as well as quick error detection with integrated fault detection and diagnostics. Carrier is a leading global provider of innovative heating, ventilating and air conditioning (HVAC), refrigeration, fire, security and building automation technologies.

The new i-Vu Smart Valves were designed in collaboration with Belimo®, a leader in the development and production of actuator solutions. They integrate seamlessly with the i-Vu® building automation system, which automatically notifies operators if a valve has failed, becomes stuck, or is cycling or leaking.

The i-Vu Smart Valves are available for both pressure dependent and pressure independent applications. They feature a compact design for easy installation and the valve bodies snap directly to the actuator. This allows operators and technicians to install Valves quickly, easily, and without the use of tools, helping to reduce labor costs, and it also makes retrofitting traditional Valves a snap. The valve actuator is capable of providing fail open, fail close, or fail in the last position to meet project requirements.

The Valves are also easy to commission. Up to two Valves can be connected to the actuator sub-network on each Carrier terminal unit controller. Each valve is pre-addressed and supports local or remote access through the i-Vu® system. A field-adjustable maximum flow capacity setting helps technicians ensure that necessary design requirements are met.

The new Smart Valves are more energy efficient than typical Valves. They feature a patented, brushless DC motor that runs at

only 0.3 W, maximizing energy savings. The actuator also uses 95% less energy than classic digital output actuators that require constant power while a ball valve design with zero leakage also eliminates energy loss.

#### More information:

[www.carrier.com/commercial](http://www.carrier.com/commercial).

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### Fujitsu General America CYPETHERM



Fujitsu General America introduces CYPETHERM with EnergyPlus™ energy modelling and report generation software.

CYPETHERM software allows professionals to model and simulate HVAC energy demand and consumption in the building with Airstage VRF systems and compare results with other commonly used HVAC equipment. The system quickly and easily estimates potential energy savings and ROI values.

The software is pre-loaded with weather data from more than 200 U.S. cities (Canadian cities can be imported from EnergyPlus website). Default values are selected based on building types. Generating energy demand/consumption reports is simple and fast, to include ROI and NCV number.

**More information:** [www.FujitsuGeneral.com](http://www.FujitsuGeneral.com).

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### Lennox Furnaces



Lennox expanded its ultra-low emissions gas furnace line that meets new California state regulations for emission reduction, saving homeowners and contractors energy and money. Lennox developed four furnaces – the SL297NV, SL280NV, EL195NE and EL180NE – to comply with California's South Coast Air Quality Management District's

(SCAQMD) Rule 1111 and San Joaquin Valley Air Pollution Control District's (SJVAPCD) Ultra-Low NOx Rule 4905, both requiring reduced nitrogen oxide (NOx) emissions.

Made up of reactive gases that form ground-level ozone, NOx emissions are a key contributor to California's air pollution. NOx increases respiratory problems by inflaming the lining of the lungs, and can also have a negative effect on vegetation.

California residents living within the areas impacted by the SCAQMD regulation are required to install an ultra-low emissions furnace. Residents living in areas impacted by the SJVAPCD ruling can pay a fee up to \$400 and must

comply by March 30, 2020. To see which regulations you must comply to, please visit <https://www.lennox.com/landing/low-nox>.

"We engineered the Lennox ultra-low emissions furnace line so that California residents can have perfect air inside the home, save energy and help the environment, all while avoiding a fee," said Eric Zito, Director of Product Management – Heating at Lennox Residential. "Not only was Lennox the first company to introduce an ultra-low emissions gas furnace into the market, we now offer four compliant furnaces so homeowners can choose the product that best fits their level of comfort and lifestyle."

In 2017, Lennox introduced the SL280NV Variable-Speed, Ultra-

Low Emissions Gas Furnace, the first ever ultra-low NOx gas furnace available to consumers. In 2018, Lennox introduced the award-winning SL297NV Variable-Speed, Ultra-Low Emissions Gas Furnace and the EL195NE Ultra-Low Emissions Gas Furnace. Continuing the upward trajectory this year, Lennox expanded its ultra-low emissions line to include the EL180NE Ultra-Low Emissions Gas Furnace.

Lennox engineered its line of ultra-low emissions gas furnaces to ensure California is on the path to healthier, cleaner air.

**More information:** <https://www.lennox.com/landing/low-nox>.

Continued on Page 18



### HERS Rating Air & Hydronic Balancing Permit Expediting & Retrieval



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Continued from Page 17

## Marley Engineered Products THX Series



**Marley Engineered Products**, a leader in high-performance, reliable heating and ventilation equipment, introduces the out-of-sight, out-of-mind UL listed In-Floor Perimeter Convactor – THX Series heater, which delivers comfort, aesthetics and safety for the ultimate supplemental heat system for both new and existing buildings.

Offered by QMark and Berko brands, the THX Series directly addresses the building's need for supplemental heat against the curtain walls and glazing, while fully integrating with the architects' designed interior spaces. The unit drops directly into the floor, leaving only the grille visible, for unobstructed sightlines and more design space with which to work.

While THX can be installed in a small area for minimal disruption, it also features the highest output/cu.ft. of any pure convection, in-floor electric heater on the market today(1). With a comparable range of outputs as Marley's above-

ground convectors, THX comes with the added benefits of being virtually hidden.

Keeping interior aesthetics intact, THX also helps open rooms up to natural light and outdoor scenery as it keeps windowed surfaces free from fog and moisture. The units ward off condensation by warming the interior side of curtain walls and floor-to-ceiling glazing.

The benefits of the THX Series go beyond clarity. THX units create an effective draft barrier that protects a building's curtain walls, preventing the primary HVAC system from becoming overtaxed, and avoiding inefficiency and higher utility costs. The convection draft barrier improves overall HVAC performance with no fumes or exhaust for an environmentally-friendly heat solution.

THX saves time, effort and money with modularized units that can be configured by one service professional for easy field connection, control and installation. Additionally, each and every unit is factory wired and preassembled for out-of-the-box readiness, drop-in installation, and easy access for cleaning and maintenance.

The frame, leveling legs and grille options are standard for all THX units, allowing for the choice of mount that best fits

the install site. Options include flush or surface grilles, and three UL listed mounting styles, making it a highly versatile installation.

**More information:** [www.marleymep.com/en/berko/where-to-buy/](http://www.marleymep.com/en/berko/where-to-buy/).

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## Mitsubishi Electric Trane HVAC US SLZ-KF



**Mitsubishi Electric Trane HVAC US (METUS)**, the exclusive provider of Zoned Comfort Solutions® and a leading supplier of Variable Refrigerant Flow (VRF) heating and cooling systems, introduces the SLZ-KF Four-way Ceiling Cassette for residential installations.

The new SLZ-KF Four-way Ceiling Cassette, part of the M-Series product line from METUS, is designed to provide the utmost comfort to homeowners. Available in 9,000, 12,000, 15,000 and a newly introduced 18,000 BTUH size.

The unit offers flexible airflow with two, three or four-way vane control which allows homeowners

to personalize their settings. If applied with the optional 3D i-see Sensor™, the unit further customizes heating and cooling through the sensor's ability to read a room's thermal profile to calculate the occupancy rate. With the 3D i-see Sensor, direct and indirect airflow settings can be selected to offer 72 different combinations for vane direction and individual vane adjustment. The SLZ-KF automatically adjusts conditioning based on the heat signatures detected in the space and can switch into setback mode when the room is unoccupied. Monitoring a room's occupancy results in even temperature distribution and a more energy-efficient operation for homeowners.

The SLZ-KF Four-way Ceiling Cassette has a Seasonal Energy Efficiency Ratio (SEER) of over 19.8. This is well over the U.S. minimum SEER requirement of 13 and can translate to cost savings on users' heating and cooling bills. Additionally, the SLZ-KF offers a Heating Seasonal Performance Factor (HSPF) rating of 11.2 or more, which is a marked improvement in energy-saving performance as compared to previous models.

In addition to promoting sustainability through energy efficiency, the ceiling cassette helps to better the environment within a home through improved indoor air quality and reduced operating noise. The SLZ-KF Four-way Ceiling Cassette includes an easy-to-clean washable air filter with multi-stage allergen filtration to reduce dust and debris circulation. The unit also uses a new 3D-turbo fan to operate

at noise levels as low as 25 dB(A). These features lead to a quieter, more comfortable air-conditioning experience for occupants.

**More information:** [www.mitsubishicomfort.com](http://www.mitsubishicomfort.com).

• • • • •

## Johnson Controls YORKworks



**Johnson Controls** has released an updated version of its YORKworks Customer Edition, an HVAC equipment selection software for commercial and industrial applications. The improvements to this edition include updates to YORKcalc, allowing the user to generate detailed reports and calculate energy use based on chiller plant operating hours and real-world weather data across cities around the globe.

YORKworks is used by customers, including engineers, building owners and contractors, to select, rate and configure small tonnage chillers, air handling units (including factory-packaged controls), packaged systems and related components. The technology was created with the intent to provide facility decision-makers with the tools they need to select, rate and configure Johnson Controls Equipment on their own. This makes for a smooth process during the estimate and bidding phases of a project.

**More information:** [www.york.com](http://www.york.com).

## Goodman HVAC

Continued from Page 1

support military veterans in need and their families, explains Nathan Walker, SVP, CEO Staff for Goodman.

"Sgt. Wojcik is a remarkable individual, driven to serve and ensure public safety," Walker says. "Partnering with Military Makeover allows us to offer some hope and a helping hand to the unsung heroes and their families who have sacrificed for our country."

Despite his injuries, Wojcik never stopped serving his country.

After four years in the Marine Corps and another 16 in the Army Reserve, Wojcik now works for the Wisconsin State Police. Along the way, he earned a Purple Heart, Meritorious Service Medal and National Defense Service Medal, plus Army Achievement and an Army Accommodation medal.

Terri Wojcik says she is grateful for this makeover, hoping it will relieve stress as Steven works on his

health.

Presented by decorated U.S. Naval officer Montel Williams and hosted by Art Edmonds, *Military Makeover with Montel* is a unique home improvement series that aims to honor those who served our country by renovating and renewing their homes. Episodes air 7:30 a.m. EST/PST on Lifetime Network.

Ongoing *Military Makeover* HVAC renovations are just some of the many projects Goodman and its independent dealers have pursued to help veterans.

A member of the DAIKIN group, Houston-based Goodman Global, Inc. is a leading manufacturer of heating, ventilation and air conditioning products for residential and light commercial use. Goodman brand products are predominantly sold through company-operated and independent distribution networks, with more than 1,000 total distribution points throughout North America. For more information, visit [www.goodmanmfg.com](http://www.goodmanmfg.com).

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# INSTITUTE OF HEATING AND AIR CONDITIONING

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## SOCALGAS, ERC, DOWNEY

## SoCA EDISON, ENERGY EDUCATION CENTER, IRWINDALE

## PACIFIC GAS AND ELECTRIC ENERGY TRAINING CENTER, OAKDALE

### JANUARY

#### NATE HVAC/R Support Training (Four-Night Class)

**Instructor: Andrew Smith**

Wed., Jan. 22 – Part 1

Thurs., Jan. 23 – Part 2

Wed., Jan. 29 – Part 3

Thurs., Jan. 30 – Part 4 (NATE Exam)

### MARCH

#### System Diagnostics Module (Four-Night Class, Cont. in Apr.)

**Instructor: John Dalton**

Tues., March 24 – Part 1

Wed., March 25 – Part 2

### APRIL

#### System Diagnostics Module (Four-Night Class, Cont. From Mar.)

**Instructor: John Dalton**

Wed., April 1 – Part 3

Thurs., April 2 – Part 4

### MAY

#### System Performance Module (Four-Night Class)

**Instructors: John Dalton / Andrew Smith**

Wed., May 20 – Part 1

Thurs., May 21 – Part 2

Wed., May 27 – Part 3

Thurs., May 28 – Part 4

### JUNE

#### Chiller Module (Two-Night Class)

**Instructor: John Dalton**

Wed., June 10 – Part 1

Thurs., June 11 – Part 2

#### Commercial Cooling Tower Module (Two-Night Class)

**Instructor: John Dalton**

Wed., June 17 – Part 1

Thurs., June 18 – Part 2

### SEPTEMBER

#### Air Distribution Module (Four-Night Class)

**Instructors: Mike Griffin / Andrew Smith**

Wed., Sept. 2 – Part 1

Thurs., Sept. 3 – Part 2

Wed., Sept. 9 – Part 3

Thurs., Sept. 10 – Part 4

### OCTOBER

#### NATE Training (Four-Night Class)

**Instructor: John Dalton**

Wed., Oct. 21 – Part 1

Thurs., Oct. 22 – Part 2

Wed., Oct. 28 – Part 3

Thurs., Oct. 29 – Part 4

Sat., Oct. 31 – NATE Exam, 7:30 a.m.

### JANUARY

#### 2019 Title 24 Module (Two-Night Class)

**Instructors: Mike Griffin / Jayme Carden**

Wed., Jan. 8 – Part 1

Thurs., Jan. 9 – Part 2

#### Gas Heating Module (Two-Night Class)

**Instructor: John Dalton**

Wed., Jan. 22 – Part 1

Thurs., Jan. 23 – Part 2

### FEBRUARY

#### NATE HVAC/R Support Training (Four-Night Class)

**Instructor: John Dalton**

Wed., Feb. 5 – Part 1

Thurs., Feb. 6 – Part 2

Wed., Feb. 12 – Part 3

Thurs., Feb. 13 – Part 4 (NATE Exam)

### MARCH

#### CAQI/QM/QS Electrical Module (Four-Night Class)

**Instructor: John Dalton**

Wed., March 4 – Part 1

Thurs., March 5 – Part 2

Wed., March 11 – Part 3

Thurs., March 12 – Part 4

### APRIL

#### CAQI/QM/QS Air Distribution Module (Four-Night Class)

**Instructors: Mike Griffin / Jayme Carden**

Wed., April 1 – Part 1

Thurs., April 2 – Part 2

Wed., April 8 – Part 3

Thurs., April 9 – Part 4

### MAY

#### CAQI/QM/QS AC/HP Refrigeration Module (Four-Night Class)

**Instructor: Andrew Smith**

Wed., May 6 – Part 1

Thurs., May 7 – Part 2

Wed., May 13 – Part 3

Thurs., May 14 – Part 4

### JUNE

#### NATE Training (Four-Night Class)

**Instructor: Andrew Smith**

Wed., June 3 – Part 1

Thurs., June 4 – Part 2

Wed., June 10 – Part 3

Thurs., June 11 – Part 4

Sat., Jun. 13 – NATE Exam, 7:30 a.m.

### SEPTEMBER

#### System Diagnostics Module (Four-Night Class)

**Instructor: John Dalton**

Wed., Sept. 2 – Part 1

Thurs., Sept. 3 – Part 2

Wed., Sept. 9 – Part 3

Thurs., Sept. 10 – Part 4

### OCTOBER

#### Chiller Module (Two-Night Class)

**Instructor: John Dalton**

Wed., Oct. 7 – Part 1

Thurs., Oct. 8 – Part 2

#### Commercial Cooling Tower Module (Two-Night Class)

**Instructor: John Dalton**

Wed., Oct. 14 – Part 1

Thurs., Oct. 15 – Part 2

### NOVEMBER

#### Non-Residential Acceptance Testing (Two-Night Class)

**Instructor: Bill Brown**

Wed., Nov. 4 – Part 1

Thurs., Nov. 5 – Part 2

#### 2019 Non-Residential Title 24 (Two-Night Class)

**Instructors: Mike Griffin / Jayme Carden**

Wed., Nov. 18 – Part 1

Thurs., Nov. 19 – Part 2

### JANUARY

#### CAQI/QM/QS Gas Heating Module (Two-Night Class)

**Instructor: John Dalton**

Wed., Jan. 8 – Part 1

Thurs., Jan. 9 – Part 2

### FEBRUARY

#### NATE HVAC/R Support Training (Four-Night Class)

**Instructor: John Dalton**

Wed., Feb. 5 – Part 1

Thurs., Feb. 6 – Part 2

Wed., Feb. 12 – Part 3

Thurs., Feb. 13 – Part 4 (NATE Exam)

### MARCH

#### NATE HVAC/R Support Training (Four-Night Class)

**Instructor: John Dalton**

Wed., Mar. 4 – Part 1

Thurs., Mar. 5 – Part 2

Wed., Mar. 11 – Part 3

Thurs., Mar. 12 – Part 4

### APRIL

#### CAQI/QM/QS Electrical Module (Four-Night Class)

**Instructor: John Dalton**

Wed., April 1 – Part 1

Thurs., April 2 – Part 2

Wed., April 8 – Part 3

Thurs., April 9 – Part 4

### MAY

#### CAQI/QM/QS Air Distribution Module (Four-Night Class)

**Instructors: Mike Griffin / Jayme Carden**

Wed., May 6 – Part 1

Thurs., May 7 – Part 2

Wed., May 13 – Part 3

Thurs., May 14 – Part 4

### JUNE

#### CAQI/QM/QS AC/HP Refrigeration Module (Four-Night Class)

**Instructor: Andrew Smith**

Wed., June 6 – Part 1

Thurs., June 7 – Part 2

Wed., June 13 – Part 3

Thurs., June 14 – Part 4

### SEPTEMBER

#### System Diagnostics Module (Four-Night Class)

**Instructor: John Dalton**

Wed., Sept. 2 – Part 1

Thurs., Sept. 3 – Part 2

Wed., Sept. 9 – Part 3

Thurs., Sept. 10 – Part 4

### OCTOBER

#### System Performance Module (Four-Night Class)

**Instructors: Mike Griffin / Andrew Smith**

Wed., Oct. 7 – Part 1

Thurs., Oct. 8 – Part 2

Wed., Oct. 14 – Part 3

Thurs., Oct. 15 – Part 4

### NOVEMBER

#### NATE Training (Four-Night Class)

**Instructor: John Dalton**

Wed., Nov. 4 – Part 1

Thurs., Nov. 5 – Part 2

Wed., Nov. 11 – Part 3

Thurs., Nov. 12 – Part 4

Sat., Nov. 21 – NATE Exam, 7:30 a.m.

**Note:** When registering for a training class please make sure you honor that commitment and show up on time and prepared. If you cannot attend, please call (818) 551-1555 and cancel in ample time. Thank you.

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# CLASS SCHEDULE

SERVICE (CAQI/QM/QS) & NORTH AMERICAN TECHNICIAN EXCELLENCE (NATE)

**ELECTRIC COMPANY,  
CENTER, STOCKTON**

**SoCA EDISON,  
ENERGY EDUCATION CENTER, TULARE**

**SOCALGAS, CHATSWORTH**

**JANUARY**  
Gas Heating Module  
(Two-Night Class)  
*Instructor: Mitch Bailey*  
Wed., Jan. 8 – Part 1  
Thurs., Jan. 9 – Part 2

**JANUARY**  
New Hire Module  
(Two-Night Class)  
*Instructor: Jeff Painter*  
Wed., Jan. 5 – Part 1  
Thurs., Jan. 6 – Part 2  
Wed., Jan. 12 – Part 3  
Thurs., Jan. 13 – Part 4

**MARCH**  
Support Training  
(Two-Night Class)  
*Instructor: Jeff Painter*  
Wed., Jan. 4 – Part 1  
Thurs., Jan. 5 – Part 2  
Wed., Jan. 11 – Part 3  
Thurs., Jan. 12 – Part 4 (NATE Exam)

**APRIL**  
Electrical Module  
(Two-Night Class)  
*Instructor: Jeff Painter*  
Wed., Jan. 11 – Part 1  
Thurs., Jan. 12 – Part 2  
Wed., Jan. 18 – Part 3  
Thurs., Jan. 19 – Part 4

**MAY**  
Distribution Module  
(Two-Night Class)  
*Instructor: Mike Griffin / Jayme Carden*  
Wed., Jan. 20 – Part 1  
Thurs., Jan. 21 – Part 2  
Wed., Jan. 27 – Part 3  
Thurs., Jan. 28 – Part 4

**JUNE**  
Refrigeration Module  
(Two-Night Class)  
*Instructor: Jeff Painter*  
Wed., Jan. 3 – Part 1  
Thurs., Jan. 4 – Part 2  
Wed., Jan. 10 – Part 3  
Thurs., Jan. 11 – Part 4

**SEPTEMBER**  
System Diagnostics Module  
(Two-Night Class)  
*Instructor: Mike Griffin*  
Wed., Jan. 16 – Part 1  
Thurs., Jan. 17 – Part 2  
Wed., Jan. 23 – Part 3  
Thurs., Jan. 24 – Part 4

**OCTOBER**  
Performance Module  
(Two-Night Class)  
*Instructor: Mike Griffin / Jayme Carden*  
Wed., Jan. 7 – Part 1  
Thurs., Jan. 8 – Part 2  
Wed., Jan. 14 – Part 3  
Thurs., Jan. 15 – Part 4

**NOVEMBER**  
Training  
(Two-Night Class)  
*Instructor: Jeff Painter*  
Wed., Jan. 4 – Part 1  
Thurs., Jan. 5 – Part 2  
Wed., Jan. 18 – Part 2  
Thurs., Jan. 19 – Part 3  
NATE Exam, 7:30 a.m.

**JANUARY**  
CAQI/QM/QS Gas Heating Module  
(Two-Night Class)  
*Instructor: Mitch Bailey*  
Wed., Jan. 15 – Part 1  
Thurs., Jan. 16 – Part 2

**2019 Title 24 Module**  
(Two-Night Class)  
*Instructors: Mike Griffin / Jayme Carden*  
Wed., Jan. 22 – Part 1  
Thurs., Jan. 23 – Part 2

**FEBRUARY**  
CAQI/QM/QS Electrical Module  
(Four-Night Class)  
*Instructor: Mitch Bailey*  
Tues., Feb. 18 – Part 1  
Wed., Feb. 19 – Part 2  
Tues., Feb. 25 – Part 3  
Wed., Feb. 26 – Part 4

**MARCH**  
CAQI/QM/QS Air Distribution Module  
(Four-Night Class)  
*Instructors: Mike Griffin / Jayme Carden*  
Wed., March 11 – Part 1  
Thurs., March 12 – Part 2  
Wed., March 18 – Part 3  
Thurs., March 19 – Part 4

**APRIL**  
CAQI/QM/QS AC/HP Refrigeration Module  
(Four-Night Class)  
*Instructor: Mitch Bailey*  
Wed., April 15 – Part 1  
Thurs., April 16 – Part 2  
Wed., April 22 – Part 3  
Thurs., April 23 – Part 4

**MAY**  
System Diagnostics Module  
(Four-Night Class)  
*Instructor: Mitch Bailey*  
Wed., May 13 – Part 1  
Thurs., May 14 – Part 2  
Wed., May 20 – Part 3  
Thurs., May 21 – Part 4

**JUNE**  
CAQI/QM/QS System Performance Module  
(Four-Night Class)  
*Instructors: Mike Griffin / Jayme Carden*  
Tues., June 9 – Part 1  
Wed., June 10 – Part 2  
Tues., June 16 – Part 3  
Wed., June 17 – Part 4

**SEPTEMBER**  
Chiller Module  
(Two-Night Class)  
*Instructor: Mitch Bailey*  
Tues., Sept. 22 – Part 1  
Wed., Sept. 23 – Part 2

**Commercial Cooling Tower Module**  
(Two-Night Class)  
*Instructor: Mitch Bailey*  
Tues., Sept. 29 – Part 1  
Wed., Sept. 30 – Part 2

**OCTOBER**  
NATE Training  
(Four-Night Class)  
*Instructor: Mike Griffin*  
Wed., Oct. 14 – Part 1  
Thurs., Oct. 15 – Part 2  
Wed., Oct. 21 – Part 3  
Thurs., Oct. 22 – Part 4  
Sat., Oct. 24 - NATE Exam, 7:30 a.m.

**NOVEMBER**  
2019 Non-Residential Title 24  
(Two-Night Class)  
*Instructors: Mike Griffin / Jayme Carden*  
Tues., Nov. 3 – Part 1  
Wed., Nov. 4 – Part 2

**Non-Residential Acceptance Testing**  
(Two-Night Class)  
*Instructor: Bill Brown*  
Tues., Nov. 17 – Part 1  
Wed., Nov. 18 – Part 2

**JANUARY**  
CAQI/QM/QS Gas Heating Module  
(Two-Night Class)  
*Instructor: Mike Griffin*  
Wed., Jan. 15 – Part 1  
Thurs., Jan. 16 – Part 2

**FEBRUARY**  
CAQI/QM/QS Electrical Module  
(Four-Night Class)  
*Instructor: Mike Griffin*  
Wed., Feb. 19 – Part 1  
Thurs., Feb. 20 – Part 2  
Wed., Feb. 26 – Part 3  
Thurs., Feb. 27 – Part 4

**APRIL**  
CAQI/QM/QS AC/HP Refrigeration Module  
(Four-Night Class)  
*Instructor: Mike Griffin*  
Wed., April 22 – Part 1  
Thurs., April 23 – Part 2  
Wed., April 29 – Part 3  
Thurs., April 30 – Part 4

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**JANUARY**  
CAQI/QM/QS Gas Heating Module  
(Two-Night Class)  
*Instructor: Dave Highland*  
Wed., Jan. 8 – Part 1  
Thurs., Feb. 9 – Part 2

**FEBRUARY**  
NATE HVAC/R New Hire Module  
(Four-Night Class)  
*Instructor: Andrew Smith*  
Wed., Feb. 5 – Part 1  
Thurs., Feb. 6 – Part 2  
Wed., Feb. 12 – Part 3  
Thurs., Feb. 13 – Part 4

**MARCH**  
NATE HVAC/R Support Training  
(Four-Night Class)  
*Instructor: Dave Highland*  
Wed., March 4 – Part 1  
Thurs., March 5 – Part 2  
Wed., March 11 – Part 3  
Thurs., March 12 – Part 4 (NATE Exam)

**APRIL**  
CAQI/QM/QS Electrical Module  
(Four-Night Class)  
*Instructor: John Dalton*  
Wed., Apr. 15 – Part 1  
Thurs., Apr. 16 – Part 2  
Wed., Apr. 22 – Part 3  
Thurs., Apr. 23 – Part 4

**MAY**  
CAQI/QM/QS Air Distribution Module  
(Four-Night Class)  
*Instructors: Mike Griffin / Jayme Carden*  
Wed., May 6 – Part 1  
Thurs., May 7 – Part 2  
Wed., May 13 – Part 3  
Thurs., May 14 – Part 4

**JUNE**  
CAQI/QM/QS AC/HP Refrigeration Module  
(Four-Night Class)  
*Instructor: Dave Highland*  
Wed., June 3 – Part 1  
Thurs., June 4 – Part 2  
Wed., June 10 – Part 3  
Thurs., June 11 – Part 4

**SEPTEMBER**  
System Diagnostics Module  
(Four-Night Class)  
*Instructor: Dave Highland*  
Wed., Sept. 2 – Part 1  
Thurs., Sept. 3 – Part 2  
Wed., Sept. 9 – Part 3  
Thurs., Sept. 10 – Part 4

**OCTOBER**  
NATE Training  
(Four-Night Class)  
*Instructor: Dave Highland*  
Wed., Oct. 7 – Part 1  
Thurs., Oct. 8 – Part 2  
Wed., Oct. 14 – Part 3  
Thurs., Oct. 15 – Part 4  
Sat., Oct. 17 - NATE Exam, 8:00 a.m.

## LOCATIONS

SoCal Edison  
Energy Education Center - Tulare  
3136 Boeing Way  
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IHACI is looking for qualified Commercial HVAC/R/SM instructors to join its education team. These are evening classes (typically 4 nights/4 hrs. per night.) Locations: Chatsworth, Downey, Irwindale, San Diego, Stockton, and Tulare, CA. We offer competitive hourly rates, mileage reimbursement, hotel/meal accommodations when needed. Previous training experience very helpful.

HVAC/R/SM disciplines – Candidates should indicate all applicable areas of expertise.

- HVAC/R/SM Industry Certifications
- Commercial Components and Applications
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- Chillers
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1. Instructors should have a minimum of twenty (20) years of actual field experience in the HVAC/R/SM industry.

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2. Instructors should have recognized HVAC/R/SM industry certifications.

3. Instructors should have the ability to teach face-to-face, HVAC/R/SM material as determined by the IHACI Education Committee (typical 80 to 160 seminar attendees).

4. Instructors should have minimum computer skill sets to present existing and future formatted IHACI curriculum.

5. Instructors should be able to pass HVAC/R/SM work history and security background checks.

6. Instructors should be able to travel as needed to the different training venues.

7. Instructors must be able to attend required education and training meetings.

Interested instructor candidates should submit their resumes to the IHACI office for review and evaluation by IHACI's Education Committee. Please send resumes to: [s.evans@ihaci.org](mailto:s.evans@ihaci.org) or fax to 818-551-1115.

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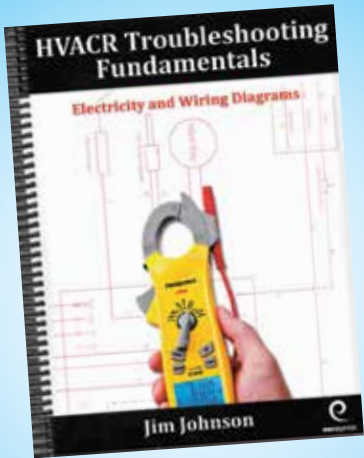


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