

INDOOR COMFORT

FEBRUARY 2021

THE VOICE OF THE INDUSTRY

www.indoorcomfortnews.com

NEWS

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



Editorial Focus

Indoor Comfort News spotlights the latest offerings in refrigerants and green technologies, heating products, and residential ductless.

Page 13

Pressure Temperature Chart	
Pressure (PSIG)	Temperature (°F)
100	100.0
90	90.0
80	80.0
70	70.0
60	60.0
50	50.0
40	40.0
30	30.0
20	20.0
10	10.0
0	0.0
-10	-10.0
-20	-20.0
-30	-30.0
-40	-40.0
-50	-50.0
-60	-60.0
-70	-70.0
-80	-80.0
-90	-90.0
-100	-100.0

Technical Training

In the latest installment of his Growing Green Technicians series, Jim Johnson discusses discharge pressures in refrigeration equipment.

Page 18



Indoor People

ICN puts the spotlight on the movers and shakers in the heating and air conditioning industry.

Page 19

CARB OKs HFC Refrigerant Rules for AC, Refrigeration Equipment to Reduce GWP

By Ted Rieger
Northern Calif. Correspondent

The California Air Resources Board (CARB) approved proposed rules December 10, 2020 to limit global warming potential (GWP) levels for refrigerants, specifically hydrofluorocarbons (HFCs), in new stationary air-conditioning (AC) equipment, and in new stationary refrigeration equipment used for commercial and industrial process refrigeration and cold storage systems in California. The regulations were revised since CARB issued a 45-day rule-making document (and since last reported in ICN in October 2020) and include later effective dates for most stationary AC equipment to reflect concerns and proposals in public comments by industry stakeholders.

The new CARB rules establish a GWP limit of 750 for new room AC equipment and dehumidifiers effective January 1, 2023; for

new residential and commercial stationary AC equipment effective January 1, 2025, and for new AC equipment with variable refrigerant flow (VRF) or variable refrigerant volume (VRV) systems effective January 1, 2026. This covers all types of residential and commercial/non-residential AC equipment manufactured after the effective dates. A limit of 750 GWP for new chillers used for AC systems is effective January 1, 2024.

The CARB ruling also establishes a new "Refrigerant Recovery, Recycle, and Reuse (R4) Program," with the requirement of a minimum use of reclaimed refrigerant in an amount equal to 10 percent of the amount of R-410a that enters California in new equipment in 2023 and 2024. This requirement will not apply to room ACs and dehumidifiers.

Continued on Page 10

Inside

DEPARTMENTS

Industry News 4

Troubleshooting 16

Classifieds 22

IHACI 2021

Training Classes

Keep your skills up-to-date!
See pages 20-21
for more information.



Features

Nortek Saves Charity's Holiday Season by Designing a Visiting Booth with COVID-19 Safe HVAC

Custom-engineered booth protects Center of Family Love residents from virus during family visitation.

COVID-19 precaution was the Grinch that tried to steal the 2020 holiday season's annual family and Santa Claus visitation from the intellectually and physically disabled residents at the Center of Family Love (CFL).

However, custom HVAC equipment manufacturer Nortek Air Solutions (NAS), Oklahoma City, helped preserve the holiday season with an innovative visiting booth solution it custom-engineered with cutting-edge, anti-viral ventilation.

Annual holiday visitation was originally cancelled by the CFL last fall based on Oklahoma State Department of Health's (OSDH) and CDC COVID-19 safety recommendations amid intermittent coronavirus spikes within the state. Consequently, CFL principals were concerned the cancellation might affect the psyches of its 130 residents, who look forward to holiday season visits by hundreds of family members and even Santa Claus himself. "Our residents crave love, attention and physical interaction from their family

Continued on Page 17



Nortek's COVID-19 free visitation booth during the holiday season.

PRST STD
U.S. POSTAGE
PAID
LITTLE ROCK, AR
PERMIT NO. 1884

INDOOR COMFORT NEWS
454 W. Broadway
Glendale, CA 91204
CHANGE SERVICE REQUESTED



RACE TO THE FINISH



THE NEW 2021 RUUD® PRO PARTNER™ PROGRAM*

Contractors now have access to three Ruud Dealer Program Levels to fit any business.

DISCOVER THE STRENGTH OF DISTRIBUTOR AND MANUFACTURER PARTNERSHIP

Partner with us to find out how to get instant access to RUUD at more locations near you.

RUUD PRO PARTNER™

- Exclusive Promotions
- Ratings and Reviews
- Pro Rewards

SPRING CASHBACK PROMOTION

- Earn Cashback per qualifying system
- Call an associate for details

DIGITAL CONTRACTOR SOLUTIONS

- Website Lead Generation
- Review and Reputation Management

UP TO \$625 PER SYSTEM

IN CASHBACK
EXCLUSIVELY
STARTING
FEB. 1 FOR
PRO PARTNERS

GET UP TO \$625 CASHBACK PER SYSTEM PLUS 8% KWIKCOMFORT® FINANCING REBATE

Reward yourself for selling and installing Ruud® qualifying equipment by participating in the Pro Partner CashBack & Residential KwikComfort® Financing Promotion. From Feb. 1 – May 31, on qualifying Rheem equipment, you can receive up to \$625 cash back for each home installation, and from Feb. 1 – July 31 you can receive up to a 8% rebate on all Residential KwikComfort® Financing menus. This special offer is only available to Pro Partners.

READY...SET...GO PRO!

Zoom past your competition and become a RUUD Pro Partner today. Check out all the Pro Partner Benefits you will receive:
FERGUSONHVAC.COM/RUUD-PRO-PARTNER-PROGRAM

Make Time for Your Success

For more information on the Road to join us at the 2022 National Pro Partner Conference in Las Vegas, call a Ferguson HVAC sales manager in your area listed below.

ARIZONA

Marcus Bates
(602) 388-3921

NORTHERN CALIFORNIA

Richard Sousa
(209) 483-2930

SOUTHERN CALIFORNIA

Jesse Bolton
(805) 431-5424

GOING ALL-ELECTRIC JUST GOT EASY. INTRODUCING THE NEW 115V INDOOR BLOWER FROM TRANE.

Clean. Green. 115V.

Upgrade or retrofit that furnace
to all electric variable speed.



THE P-SERIES MODULAR BLOWER FAMILY PROVIDES:

- Drop-in 34" furnace replacement using existing ducting and electrical service
- Perfected technology of heat pump operation
- Cost effective solution to avoid the ULN alternative
- Ferguson HVAC and Trane provides training for dealers, company principals and technicians

VARIABLE AND SINGLE-STAGE HEAT PUMP SYSTEMS

- Outdoor lineup: 14–20 SEER
- Indoor lineup: communicating, variable and single-stage



XR14

TONS	SKU #
1.5	4TWR4018G1000A
2.0	4TWR4024G1000A
2.5	4TWR4030G1000A
3.0	4TWR4036G1000A
3.5	4TWR4042G1000A
4.0	4TWR4048G1000A
5.0	4TWR4060G1000A

XR16

TONS	SKU #
1.5	4TWR6018H1000A
2.0	4TWR6024H1000A
2.5	4TWR6030H1000A
3.0	4TWR6036H1000A
3.5	4TWR6042H1000A
4.0	4TWR6048H1000A
5.0	4TWR6060H1000A

XR17

TONS	SKU #
2.0	4TWR7024A1000D
3.0	4TWR7036B1000D
4.0	4TWR7048A1000D
5.0	4TWR7060A1000D



XR16 (LOW PROFILE, SIDE DISCHARGE)

TONS	SKU #
1.5	4TWL6018A1000A
2.0	4TWL6024A1000A
2.5	4TWL6030A1000A
3.0	4TWL6036A1000A
3.5	4TWL6042A1000A
4.0	4TWL6048A1000A
5.0	4TWL6060A1000A

Download the Trane P-Series Modular Blower Brochure

www.trane.com/content/dam/Trane/residential/downloads/brochure/airhandlers/19_0763-TR-01.pdf



Please contact your Territory Manager or closest location to discuss your project.

Text To Pick Up Your Orders Fast!

Text your requests for curbside pick-up directly to our product experts at the participating locations highlighted below.

Monday – Friday, 7:00 a.m. – 4:00 p.m.

CALIFORNIA | NEVADA

ANAHEIM (714) 520-6440	CATHEDRAL CITY (760) 770-6762	CULVER CITY (310) 391-2291	GILROY (408) 846-6469	LANCASTER (661) 945-6902	ONTARIO (909) 969-2272	POMONA (909) 517-3810	S SACRAMENTO (916) 210-7993	LAS VEGAS, NV (702) 260-9388
AZUSA (626) 969-1874	CHATSWORTH (818) 341-5200	EL CAJON (619) 258-9382	HAYWARD (510) 782-9820	MANTECA (209) 239-6407	PASO ROBLES (805) 434-3114	RIVERSIDE (951) 784-0506	SAN FERNANDO (818) 364-9300	
BAKERSFIELD (661) 335-7200	CHICO (530) 893-2114	FRESNO (559) 538-6124	INDIO (760) 775-7400	NEWBURY PARK (805) 376-3576	PITTSBURG (925) 778-1237	N SACRAMENTO (916) 924-8661	SAN JOSE (408) 271-1685	



Industry News



CALIFORNIA



CoolSys Acquires C.E. Holt Inc.

Brea, Calif. – CoolSys announced it has acquired C.E. Holt Refrigeration Inc. This acquisition increases market presence for CoolSys in North and South Carolina, Virginia, and Georgia.

“The acquisition of C.E. Holt was our fourth in 2020, all of which were along the East Coast, stretching from South Carolina to Connecticut,” said Adam Coffey, CEO of CoolSys. “This strategic acquisition builds density in the Southeast market and continues our aggressive growth strategy with the goal of becoming a national service provider. C.E. Holt has a great reputation in the Southeast as a premier, high-quality service provider. We are extremely pleased to welcome them to the CoolSys family!”

“We are very excited to join the rapidly growing CoolSys family,” said Sam Daniels, vice president of installation at C.E. Holt. “We believe the values of C.E. Holt are very much aligned with CoolSys and look forward to combining our strengths and broadening our capabilities. In addition, we anticipate that becoming part of CoolSys will provide potential career growth opportunities for our team.”

“At C.E. Holt, we share the CoolSys commitment to client service and our ultimate goal is customer satisfaction,” said Jordan Newsome, vice president of service at C.E. Holt. “We are thrilled to be able to provide the expanded CoolSys service offerings to our customers and to continue to deliver the high level of service that our clients have come to expect.”

ARIZONA



RYNO, KickCharge Launch Partnership

Phoenix, Ariz. – RYNO Strategic Solutions and KickCharge Creative announced a collaboration.

“KickCharge and RYNO are two of the most reputable brands in the home services industry,” said RYNO CEO Chris Yano. “It makes sense that if you put them together, it streamlines and supercharges the innovative, proven solutions we offer contractors. When you combine RYNO’s superior digital marketing services with KickCharge’s award-winning creative, we can deliver something that’s truly world-class.”

“We know this will be a valuable partnership,” said Dan Antonelli, president of KickCharge. “It’s the best of both worlds for each of us and more importantly for our clients. When branding, creative, and

digital are all in sync, everything gets kicked up to the next level. There’s an extra energy that comes when the best of the best team up, and through that we’ll be giving our clients the best opportunity to grow and succeed.”

.....

The Refrigeration School, Sigler Form Employee HVAC Bootcamp

Phoenix, Ariz. – The Refrigeration School Inc. has further expanded its partnership with Sigler Wholesale Distributors by creating a skilled trades training bootcamp. The RSI Pro Tech Bootcamp is a series of customizable programs designed to provide hands-on HVAC technician training, with Sigler as the supply house and provider for all training materials.

“We are excited to be partnering with Sigler again to train and educate workers to become skilled trades professionals,” said Mary Kelly, president and CEO of StrataTech Education Group. “At RSI, we are passionate about bringing awareness to skilled trades education by addressing stigmas and encouraging people to take part in this growing essential industry. We are happy to bridge the skilled trades labor gap locally by collaborating with Sigler to help them increase the level of skill for HVAC technicians, resulting in profitable companies providing an incredible customer experience.”

The courses will be taught on campus at RSI by expert HVAC instructors. COVID-19 precautions will be in place including mask wearing, social distancing, and regular temperature checks. Program certification timelines range from two-day to two-week training courses including:

- Install Apprentice
- Mechanical and Electrical Troubleshooting
- Warranty Tech
- Advanced Install
- Zoning
- Brazing and Soldering

The RSI Pro Tech Bootcamp is an extension of RSI and Sigler’s ongoing partnership. The two entities have previously collaborated on Sigler’s HVAC Technician Hiring Program. This apprenticeship program provides qualified RSI students with tuition reimbursement. Participating students receive a guaranteed job opportunity with Sigler, rooted in a one to

three-year employment contract, following their program completion and graduation with RSI.

Sigler is also advertising this partnership to all employers that purchase from them, giving them the opportunity to enroll their own hires in RSI’s bootcamp program.

TEXAS



Air Pros USA Expands in Texas

Dallas, Texas – Air Pros Residential and Commercial Air Conditioning Services expanded its presence in the Dallas-Fort Worth metro region by opening a new office in Plano, Texas. This second location was launched in response to the increasing demand by consumers and business owners seeking better indoor air quality since the onset of the pandemic.

“We’re extremely proud of the growth and success Air Pros USA has achieved in the Dallas-Fort Worth area in just one year since debuting in the market,” said Anthony Perera, founder of Air Pros USA. “We are pleased with the loyalty and trust our customers place in us. Air Pros USA was found on the premise of putting customers first, and we will continue to uphold our promise and commitment to our customers.”

.....

Goodman Buys Robinson Supply

Houston, Texas – Goodman Distribution Inc. announced the purchase of Robinson Plumbing & Heating Supply Co. Inc.

“The acquisition of Robinson supports our growth strategy and is a key step in expanding our distribution footprint in the Northeast,” said Ardee Toppe, senior vice president and president of Goodman, Quietflex, and PTAC Business Units.

Robinson will continue to supply and promote the full line of residential unitary and light commercial Goodman, Amana, and Daikin ductless HVAC products, as well as controls, air

quality products, parts, plumbing, and accessories throughout its seven branch locations across Massachusetts, Connecticut, and Rhode Island.

“We are confident our new alignment with Goodman will provide more personal and professional growth and learning opportunities for our employees and enhance training and technical service for the benefit of our valued customers,” said Russell Robinson, who will remain with the company as a strategic advisor after serving as Robinson Supply president.

Robinson will maintain its Fall River, Massachusetts, headquarters and management structure throughout its existing branch locations.

“Goodman and Robinson have enjoyed a great relationship since 1994 working with one another as separate entities,” Toppe said. “As we embark on this new chapter, I am confident our greatest successes are ahead of us as part of the same organization.”

.....

RectorSeal Acquires TRUaire Company

Houston, Texas – RectorSeal, Houston, a leading manufacturer of quality HVAC/R tools and accessories, and a wholly-owned subsidiary of CSW Industrials, Inc. [Nasdaq: CSWI], announces its acquisition of TRUaire® to provide residential and commercial grilles, registers, and diffusers to its expanding product line designed for professional contractors.

Following an integration period, the combined organization will operate with a unified market approach giving distributors access to RectorSeal and TRUaire products. As leading brands, the transaction provides a compelling value proposition to HVAC/R and plumbing contractors.

The combined organization will focus on five key goals necessary for maintaining and growing its customer base. The goals include robust product availability, timely and accurate shipments, ease of doing business, enhanced product quality, and industry-leading training programs supported with differentiated technology.

“Both RectorSeal and TRUaire products have distinct advantages that will continue to serve our customers,” said Don Sullivan, President of RectorSeal. “This

Duct Leakage Testing?



MAKING GREEN FASTER™



CHEAPER



SAFER



FASTER



www.VentCapSystems.com

Install a PlasmaPURE Air Purifier on every HVAC job you service or install.



Over 25 independent laboratory tests have shown Plasma Air HVAC devices safely and effectively reduce bacteria, viruses, allergens, volatile organic compounds, and particulate matter. For research studies, visit www.plasma-air.com/resources/574. For videos, visit <https://youtu.be/nDW8IYrwHtU>.

**UNDER
\$200**



Installs in less than 10 minutes on existing or new HVAC systems!

- Bipolar ionization technology replicates nature's process for cleaning air by producing an equal amount of positive and negative oxygen ions
- Ideal for residential, light commercial, and commercial use
- Silent and invisible to the home or business owner
- Independently proven safe and effective for continuous use
- Compact design allows for flexible and easy installation on:
 - Furnace or AC units
 - Ductless Mini Splits
- Fan inlet mounted with magnets or screws
- Treats up to 2400 CFM (6 ton capacity)
- Available in 12V DC, 24V AC, 120V AC and 230V AC voltages
- Energy efficient and fuse protected
- Filterless and requires no replacement parts
- 3-year standard warranty
- Support, training and extended warranties available
- Tested and passed UL 867 for ozone and safety

PlasmaPURE



BACTERIA
& VIRUSES



ODOR & VOCs



SMOKE



PET DANDER
& DUST



MOLD SPORES



POLLEN

YORK
INSTALL CONFIDENCE

SAMSUNG
HVAC. Built brave.

USAirconditioning
DISTRIBUTORS

GUARDIAN
Always on Duty.

QuietCool
ADVANCED WHOLE HOUSE FANS

www.us-ac.com • [f](#) [i](#) [t](#)

800/937-7222

ARIZONA Avondale 602/572-2953 Deer Valley 623/580-4101 Fort Mohave 928/768-2197 Gilbert 480/813-4628	Peoria 623/334-8302 Phoenix 602/253-2771 Tucson 520/903-3117	CALIFORNIA Anaheim 714/776-3170 Bakersfield 661/322-7222 Concord 925/349-3712 Burbank 818/840-0089 Cathedral City 760/770-4520	Chatsworth 818/678-1750 City of Industry 626/854-6868 Escondido 925/349-3712 Culver City 310/204-2230	El Cajon 619/258-0672 El Centro 760/370-5530 Lake Forest 760/291-1281 Fairfield 707/424-6050	Fresno 559/268-9347 Hesperia 760/948-8045 Lake Forest 949/837-8104 Lancaster 661/726-5106	Los Angeles 323/897-6969 Modesto 209/577-2335 Newbury Park 805/376-1723 North Highlands 916/482-3572	Ontario 909/987-5016 Oxnard 805/988-3650 Palm Desert 760/200-5225 Paso Robles 805/238-9353	Redding 530/722-0144 Riverside 951/786-3500 S. San Francisco 650/871-8100 San Bernardino 909/885-3206	San Diego 858/279-9750 San Jose 408/278-1555 San Leandro 510/618-2300 Santa Barbara 805/962-2999	Santa Fe Springs 562/801-5432 Santa Rosa 707/566-9810 Signal Hill 562/981-2010 Stockton 209/466-4153	Temecula 951/296-6557 Valencia 661/666-9544 Van Nuys 818/464-3387	IDAHO Boise 208/672-1244 or 800/727-9936 Idaho Falls 208/542-5270	NEVADA Sparks 775/329-3455 UTAH Salt Lake City 801/485-8071 or 800/333-8436
---	--	--	--	---	--	---	---	--	---	---	---	---	---

Not all brands available at all locations

Continued from Page 4

combination will only enhance the performance of both organizations. I would like to personally thank Yongki Yi and Tony Yi of TRUAire for trusting us to be the long-term stewards of their legacy.”

Current customers will continue to enjoy the same service level and support they enjoy today.

One change resulting from the acquisition will be the implementation of new technology platforms across both organizations. An ERP system, an eCommerce system, and many additional technology tools will become available to support TRUAire customer interactions. The systems will support business automation to help manage costs, increase sales visibility, and upgrade orders, billing, and additional customer touchpoints.

“The opportunity to continue to provide the legendary quality of TRUAire products combined with upgraded technology tools is an instant win for our customers and our company,” stated Ken Grubbs, VP of Sales, TRUAire.

With a legacy of maintaining and promoting the brand names known to contractors in a given market segment, the TRUAire brand becomes the largest brand within the RectorSeal family of brands. Further efforts will be made to expand and grow the TRUAire brand.

As part of the acquisition, legacy RectorSeal distribution centers will be used to deploy products across many TRUAire distribution centers, while maintaining the outstanding service levels familiar to current TRUAire customers.

• • • • •

Diversified CPC Completes First Phase of New Beaumont Facility

Beaumont, Texas – Diversified CPC International has completed the first phase of its new Beaumont, Texas, plant. This new facility, which is located at the Iron Horse Terminals, launched a commercial operation in late November 2020. The company has invested \$10 million in Phase I of the project.

“The addition of the new Beaumont facility is a key step in strengthening our competitive position and ensuring DCPC has all the resources to fully support our customers,” said Bill Auriemma, DCPC president and CEO. “We



Diversified CPC International's new facility in Beaumont, Texas.

have significantly improved our supply chain capabilities for our aerosol, industrial refrigerant, and solvent extraction customers by consolidating several rail trans-loading operations at one location.”

Company officials have shared that Phase II will include the construction of bulk storage and processing

capabilities, while Phase III will bring additional manufacturing capacity on-line in the following years.

“Our in-house engineers have incorporated the latest in manufacturing, safety, and environmental control technology into the design of the Beaumont site,” said William Fraunheim III, DCPC vice president of Operations. “We are proud of the entire project management team and our partners at Ironhorse for working diligently during this challenging time to complete Phase I on schedule.”

The Beaumont operation will be the second major production and distribution facility the company operates along with its Corporate Headquarters in Joliet, Illinois. DCPC also has regional facilities in Illinois, New Jersey, Florida, Mississippi, and California.

NATIONAL



Johnson Controls and Microsoft Announce Global Collaboration

Redmond, Wash. – Johnson Controls and Microsoft Corp. announced a global collaboration. The companies launched an integration between Open-Blue digital twin and Azure digital twins.

“Our partnership with Microsoft is a vital ingredient in our innovation strategy, as the company shares our vision of using technology to transform the environments where people live, work, learn, and play,” said Mike Ellis, vice president and

Baker
Distributing Company

We have Solutions that enable you to continue your day-to-day transactions efficiently and productively:



The new degree of comfort.™



Ordering

- Online at Bakerdist.com
- Online through the **Baker Mobile App**
- Call your **Sales Representative**
- Orders can be emailed

Delivery / Pickup

- Delivery
- Curbside Pickup
- Bakerdist.com Express Pickup

Online Payments

- Payments can be made online with **BakerPay**

After Hours

- 24/7 After Hours service available
(800) 217-4698

Visit www.bakerdist.com to find a Baker Distributing location near you.

Continued on Page 8



GET UP TO \$1,000 IN SOCALGAS® RESIDENTIAL NATURAL GAS FURNACE REBATES

The SoCalGas® Residential HVAC Rebate Program offers distributors generous rebates on high-efficiency heating equipment sales.

Our increased incentive levels will help you attract new clientele, increase customer satisfaction and give you a sense of pride in delivering energy-efficient products to the market.

Limited SoCalGas residential natural gas furnace rebates.

- **\$1,000 per unit** for natural gas furnace units that are 97% or higher AFUE
- **\$400 per unit** for natural gas furnace units that are 95% and 96% AFUE

To learn more or to enroll as a participating distributor, contact us at efficientfurnace@clearesult.com.



The Residential HVAC Program is funded by California utility customers and administered by Southern California Gas Company (SoCalGas®) under the auspices of the California Public Utilities Commission, through a contract awarded to CLEAResult. Program funds will be allocated on a first-come, first-served basis until such funds are no longer available. This program may be modified or terminated without prior notice. SoCalGas makes no warranty, whether expressed or implied, including warranty of merchantability or fitness for particular purpose of selected goods and services. California customers who choose to participate in this program are not obligated to purchase any additional services offered.

CLEAResult is a SoCalGas authorized contractor responsible for administering the Residential HVAC Program through December 31, 2021.

©2020 Southern California Gas Company. The trademarks used herein are the property of their respective owners. All rights reserved. Some materials used under license, with all rights reserved by licensor.

Continued from Page 6

chief digital and customer officer at Johnson Controls. “Digital twins are playing an increasingly important role in the design, construction, and ongoing operation of healthy buildings and spaces, and can be particularly valuable when analyzing large datasets and predicting patterns and trends to tell our customers things they don’t yet know. Our OpenBlue digital platform, closely connected with Microsoft’s platform and workplace technologies, represents an unbeatable opportunity to help our customers make shared spaces safer, more agile, and more sustainable.”

“We have an incredible opportunity to use advances in cloud and compute capabilities to help customers reimagine the physical world,” said Scott Guthrie, executive vice president, Cloud + AI, Microsoft. “By integrating the power of Azure Digital Twins with Johnson Controls OpenBlue Digital Twin platform, our collaboration will provide customers with a digital replica and actionable insights to better meet their evolving needs.”

Among the numerous pilots currently under development is an effort at The National University of Singapore (NUS).

“National University of Singapore is excited about using

Microsoft’s Azure Digital Twins technology and Johnson Controls OpenBlue platform, in our digital transformation journey that changes the way we design and manage our buildings and infrastructure, while retaining smart, sustainability, and safety principles at the core of the entire campus,” said Professor Yong Kwet Yew, senior vice president, campus infrastructure, NUS.

.....

Regal Introduces Real World Solution Video Series

Beloit, Wisc. – Regal Beloit Corporation announced the introduction of its Real World Solution video series.

The series, produced by the Regal Power Transmission Solutions team, contains under-two-minute videos featuring real-world solutions in applications using Regal product(s).

“It can be a real challenge for companies to try to achieve their productivity goals while dealing with unplanned maintenance or unexpected downtime,” said Dawn Williams, marketing specialist, Regal. “For decades, we have helped countless customers fight downtime and save money in a broad range of industries in some of the toughest applications. Our goal with this video series is to bring these best practices to life in an easily digestible format so other companies can seek similar benefits by utilizing the techniques seen in these videos.”

Some of the videos featured include:

- A distribution warehouse that saves over \$300,000 annually with a gear drive solution that decreased downtime, increased efficiency, and consolidated inventory and labor costs.
- A starch plant that saves \$48,000 annually with a gear drive solution by standardizing gearing and consolidating inventory.
- A brewery that saves \$30,000 annually with a bearing solution on their bottling and canning line.

The video library will continue to grow with future episodes featuring different industries and applications.

.....

Mac Jones Wins the 2020 Johnny Unitas Golden Arm Award

Milwaukee, Wisc. – University of Alabama quarterback, Mac Jones, has won the 2020 Johnny Unitas Golden Arm Award, presented annually by the Johnny Unitas Golden Arm Educational Foundation, Inc. and A. O. Smith Corporation. Jones becomes the third Alabama quar-



terback to win the Golden Arm Award, joining Jay Barker, 1994 and AJ McCarron, 2013.

In his first full season as the University of Alabama’s quarterback, Jones has led his team to an 11-0 record, an SEC title win and the top seed in the College Football Playoff. In addition to being named to the All-SEC First Team, the 22-year-old is also the SEC Scholar-Athlete of the Year, completing 275-of-357 passes for a nation-leading completion percentage of 77.0 while his passer rating of 203.0 is also first. Jones has thrown for 4,036 yards (second-most in the nation) and 36 touchdowns (tied for second most).

The Golden Arm Award is presented annually to the top upperclassman quarterback set to graduate with their class. The award acknowledges performance on the field, but it goes beyond completion percentage and touchdown strikes. The award values character, citizenship, integrity and those who honor the game. The semifinalists, finalists, and award recipient are selected by the distinguished Golden Arm Award Selection Committee, a group of prominent football journalists, former coaches and players, general managers, commentators, announcers, and other former award recipients.

Since the Award’s inception, the Johnny Unitas Golden Arm Educational Foundation has donated over \$750,000 through college scholarships to graduating high school scholar athletes to pursue their higher education and continue playing football. In addition, the Foundation gives back to community youth football leagues in both Kentucky and Maryland.

Sharing a tradition of innovation with Johnny Unitas, who invented football’s two-minute drill, A. O. Smith has been an innovator in its industry for more than a century. A. O. Smith offers its customers an additional advantage in that the company designs, builds, distributes and supports the world’s broadest and deepest line

of residential and commercial water heaters, as well as commercial boilers. This single-source concept simplifies ordering, installation and service and is backed by 80 years of research and innovation.

.....

NTEA Announces New Climate Change Policy

Farmington, Hills, Mich. –

NTEA – The Association for the Work Truck Industry announced its Board of Directors adopted a climate change policy that continues the Association’s commitment to facilitating productive use of alternative fuels and advanced technologies for commercial vehicles. The policy explains the work truck industry represents a positive force in reducing greenhouse gas emissions. Further, it provides NTEA the opportunity to educate the public, regulators and legislators about how the industry is already putting in place solutions to society’s environmental concerns.

“The work truck industry is at the forefront of alternative fuels and advanced technologies, and plays a key role as part of the solution to the environmental challenges we face,” said Peter Miller, NTEA chair. “NTEA’s policy emphasizes the importance of multiple technology and fuel options on the path to zero emissions, as work trucks do not represent a one-size-fits-all situation.”

“Climate change is a serious global challenge that requires long-term commitments – and every industry has a role to play,” said Mike Kastner, NTEA’s managing director who leads legislative and regulatory lobbying efforts across United States and Canada. “NTEA recognizes the work truck industry is well-positioned to make a significant difference through continued development of innovative new technologies to reduce fuel consumption and vehicle greenhouse gas (GHG) emissions. The industry will produce vocational trucks for the future that both increase overall vehicle efficiency and reduce GHGs on the path to zero emissions.”

A black and white photograph of a man in a white shirt working on a piece of equipment, likely a vacuum pump. The equipment has a digital display and various hoses. A large, stylized 'NEW' starburst graphic is overlaid on the image. The text 'VP85 Vacuum Pump' is prominently displayed. Below the main title, a list of features is provided: '8CFM DC motor protects against voltage drop', 'On-the-fly oil change in seconds', 'Garden hose exhaust port', 'Large back-lit oil reservoir', and 'Water resistant'. The Fieldpiece logo is at the bottom right.

VP85 Vacuum Pump

- 8CFM DC motor protects against voltage drop
- On-the-fly oil change in seconds
- Garden hose exhaust port
- Large back-lit oil reservoir
- Water resistant

www.fieldpiece.com

Fieldpiece

BUILDING A BETTER BUSINESS TOGETHER**Single & Multi-Zone****Air Handlers****Ceiling Cassettes****Floor Mount****Designer Series****Partnership Benefits For You**

- BEST:** Distributors in the Industry
- BEST:** Local & National Inventory of Ductless Products
- BEST:** Local Sales & Technical Support Teams
- BEST:** Product Solutions
- BEST:** Sales & Marketing Programs
- BEST:** Consumer Lead Generation Tools
- BEST:** Coop Advertising Program
- BEST:** Way to Grow Your Business

Compare our products and our benefits to any other brand and you will know why Mitsubishi Electric Trane HVAC is the number 1 brand of ductless in America.

Contact your local Mitsubishi Electric Trane distributor to learn about our industry leading contractor programs and how you can join our exclusive group of Diamond Contractors or Ductless Pros.



CARB OKs HFC Refrigerant Rules for AC, Refrigeration Equipment to Reduce GWP

Continued from Page 1

The rules include recordkeeping requirements for AC manufacturers for information about AC sales, refrigerant type and amount; and for equipment labeling with refrigerant type and amount, and date of manufacture, in order to support enforcement.

By modifying the originally proposed rules with later effective dates for most AC equipment, presented as 15-Day rulemaking language, CARB took into account concerns by industry stakeholders about needing approvals for specific refrigerant uses from codes and standards organizations, fire safety organizations, and energy building code updates by the California Energy Commission. More time is

also needed for training for contractors and technicians on equipment with new refrigerants ahead of the effective dates.

Additional actions and rulemaking will begin in 2021 to include long-term requirements for the R4 refrigerant recovery and recycling program, with plans to build partnerships with additional stakeholders to design a national recycling program.

Background

The rules are intended to meet requirements of state legislation, SB 1383 of 2016 that established a California requirement to reduce HFC emissions 40 percent below 2013 levels by 2030. HFCs are potent greenhouse gases (GHGs) with a GWP up to four times greater

than carbon dioxide (CO₂) on a pound for pound basis. Just 1 pound of R-410A is equal to 2,088 pounds of CO₂. HFCs are one of the fastest growing categories of GHGs, and are expected to increase as they replace R-22 in AC systems. Stationary refrigeration and AC systems are one of the largest sources of HFC emissions in California.

Although CARB is not recommending specific alternative refrigerants for equipment manufacturers and installers, available AC refrigerant alternatives with less than 750 GWP include: R-32, R-452B, R-454A, R-454B, R-454C, R-457A, and R-466A. Some types of alternative refrigerants such as A2Ls are classified as "slightly flammable" and include R-32, R-452B, R-454B, and others. Based on market reports from

ASHRAE, from 25 to 90 percent of markets in Australia, Europe and Japan have already transitioned to lower GWP refrigerants, commonly with R-32 (GWP=675).

New Stationary Refrigeration System Rules

The proposed regulations for stationary refrigeration systems include a limit of 150 GWP for refrigerants in new refrigeration equipment containing more than 50 pounds of refrigerant, effective January 1, 2022. This applies to newly constructed and fully remodeled facilities for retail food refrigeration systems, industrial process refrigeration systems, and systems in cold storage warehouses.

The numbers of low GWP systems in supermarkets and grocery

stores are increasing in California and the U.S., and thousands of stores worldwide have such systems. Low-GWP refrigerants available include: CO₂ (GWP=1), ammonia (GWP=0), hydrocarbons such as propane and isobutane with GWPs less than 4, and HFO-based systems.

The CARB rules allow for company-wide GWP reduction programs for companies with multiple retail food facilities as follows:

- Requires existing companies owning or operating 20 or more retail food facilities in California, and national supermarket chains operating in California, to reduce their company-wide, weighted-average GWP for all refrigeration systems containing more than 50 pounds of refrigerant to less than 1,400 GWP, or achieve a 55 percent or greater reduction in their GHG potential below 2019 levels by January 1, 2030 with a progress step in 2026.

- Requires existing companies owning or operating fewer than 20 retail food facilities in California to reduce their company-wide, weighted-average GWP for all refrigeration systems containing more than 50 pounds of refrigerant to less than 1,400 GWP by January 1, 2030, or achieve a 55 percent or greater reduction in their GHG potential below 2019 levels by January 1, 2030.

For new chillers in non-retail facilities for industrial process refrigeration in newly constructed, fully remodeled and existing facilities, GWP limits will range from 750 to 2,200 depending on minimum evaporator temperature, effective January 1, 2024.



NOW AVAILABLE!

Airtemp®

COOLING & HEATING SYSTEMS

Ductless Mini-Splits

- Field proven, durable, quality equipment
- 9,000 thru 48,000 BTU capacities
- Single & multi-zone heat pumps up to 23 SEER
- Multiple styles of indoor units (Wall, ceiling, floor/ceiling and ducted models)
- Inverter compressors
- Variable speed blowers



R.E. MICHEL COMPANY

WHOLESALE DISTRIBUTORS • AIR CONDITIONING • HEATING • REFRIGERATION
PROPANE • EQUIPMENT • PARTS • SUPPLIES

— Since 1935 —

We're Open Every Saturday Morning!

Connect with us on



GILBERT, AZ
480-571-3710

MESA, AZ
480-968-0168

PEORIA, AZ
602-269-0300

PHOENIX, AZ
602-841-7385

SCOTTSDALE, AZ
480-725-9928

TOLLESON, AZ
(SW Phoenix)
602-973-8063

TUCSON, AZ
520-795-1484

YUMA, AZ
928-248-2576

ANAHEIM, CA
714-635-5956

EL CAJON, CA
619-449-9550

ESCONDIDO, CA
760-291-4745

FRESNO, CA
559-459-0100

IRVINDALE, CA
626-962-0286

LONG BEACH, CA
562-200-0089

ONTARIO, CA
909-987-4207

PASO ROBLES, CA
805-434-1460

POMONA, CA
909-392-5626

RIVERSIDE, CA
951-271-8290

SAN JOSE, CA
408-477-1799

SANTA MARIA, CA
805-621-7070

TEMECULA, CA
951-308-2661

THOUSAND PALMS, CA
760-343-0754

UNION CITY, CA
510-483-8031

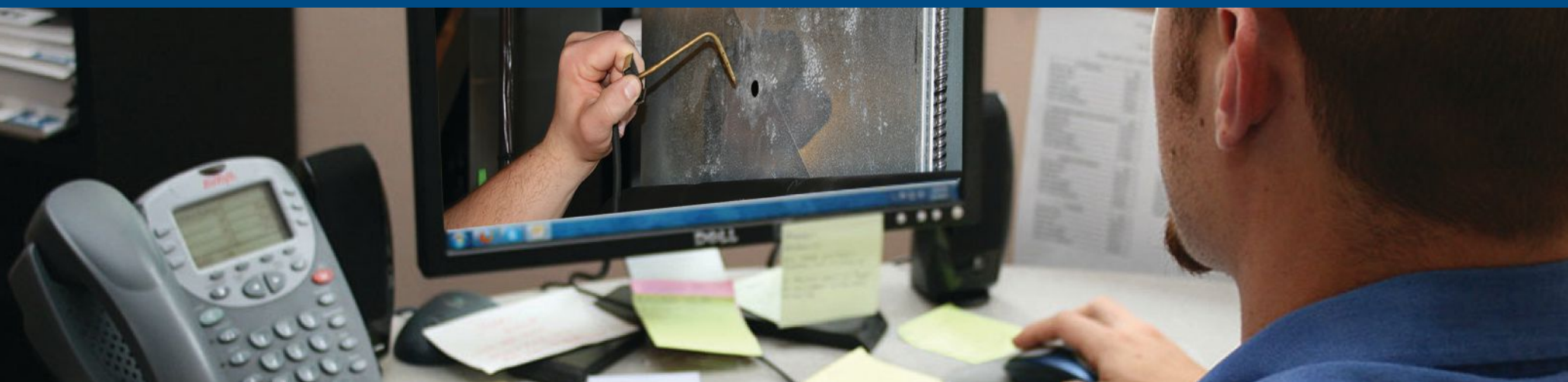
VAN NUYS, CA
818-781-3123

ALBUQUERQUE, NM
505-884-2660

LAS VEGAS, NV
702-733-7230

ADVERTISE IN
**INDOOR
COMFORT
NEWS**
CALL TODAY!
(818) 551-1555

California Utility Hosted Online Live Training for HVAC Professionals



NCI High-Performance HVAC training is now available to HVAC professionals throughout California. Southern California Edison and Pacific Gas and Electric have partnered with NCI to provide advanced training and certification through its online, live classes.

These NCI classes also qualify for NATE (North American Technician Excellence), and BPI (Building Performance Institute) Continuing Education Credits.

Here's how the training works:

Certification classes: These online, live classes are provided in 4-hour blocks. For example our Residential Duct System Optimization and Commercial System Performance classes each consist of four, 4-hour segments of training over a two week period. Students who participate in these classes will also qualify for online-proctored NCI certification exams after the training.

Recertification classes: NCI-certified professionals can recertify for two years by participating in these online classes taking place over two consecutive half-days. We currently offer recertification training towards NCI residential and commercial certifications.

In addition NCI is offering several technical and sales non-certification classes.

National Comfort Institute thanks the following Investor-Owned Utilities for hosting this training for HVAC professionals throughout California:



Upcoming California Training Calendar	
 SOUTHERN CALIFORNIA EDISON®	 Pacific Gas and Electric Company®
ncilink.com/sce	ncilink.com/pg&e
Commercial System Performance Certification** February 11-23, 18-19: 1pm -5pm Pacific 16-hour training program Regular Price: \$690 Student fee: Just \$100 per student	Explore HVAC Field Performance February 8: 5pm - 7pm Pacific 2-hour training program Regular Price: \$95 Student fee: Just \$15 per student
Combustion and Carbon Monoxide Recertification* February 25-26: 8am - 12pm Pacific 8-hour training program Regular Price: \$395 Student fee: Just \$50 per student	Airflow Testing & Diagnostics* February 16-17: 1pm - 5pm Pacific 8-hour training program Regular Price: \$395 Student fee: Just \$50 per student
Explore HVAC Field Performance March 1: 5pm - 7pm Pacific 2-hour training program Regular Price: \$95 Student fee: Just \$15 per student	Duct System Optimization Certification** March 16-17, 23-24: 8am - 12pm Pacific 16-hour training program Regular Price: \$690 Student fee: Just \$100 per student
Residential System Performance Certification** March 4-5, 11-12: 8am - 12pm Pacific 16-hour training program Regular Price: \$690 Student fee: Just \$100 per student	

* Qualifies for 8 recertification hours

** NCI Online Certification Exam included

Take an NCI Course Today! Call 800-633-7058 or visit ncilink.com/DistLearn

This program is funded by California utility customers and administered by SCE and PG&E under the auspices of the California Public Utilities Commission.



Proposed 2021 Legislation Would Increase Contractor License and Penalty Fees

By Ted Rieger
Northern Calif. Correspondent

At a teleconference meeting December 10, the Contractors State License Board (CSLB) discussed and approved proposals to address future budget stability based on a recent study's recommendations to increase statutory fee amounts for license renewals, applications and exams. The Board approved and discussed 2021 legislative proposals to increase penalty fees for contractor violations, require workers' compensation insurance for all contractors, and enhance enforcement operations. The Board also discussed and approved a recent study recommending an increase in the contractor bond amount.

Proposal to Increase Statutory Fee Amounts for License Renewals, Applications and Exams

As a state special fund agency, CSLB relies entirely on fees set by statute or regulation and collected from licensed contractors and applicants. CSLB's main revenue source is the license renewal fee that is nearly 70 percent of total revenue. CSLB is also required to fix fees to generate revenues sufficient to maintain a funding reserve of not more than six months of annual revenue.

CSLB's main expenses are personnel and operating costs that are nearly 90 percent of total expenses. These expenses have increased almost 20 percent in the last three fiscal years. CSLB's expenditures have slowly outgrown its revenue

over the past several years depleting CSLB's reserve fund balance and resulted in CSLB facing insolvency. CSLB began fiscal year (FY) 2020-21 with a fund balance of about \$3.8 million (less than one month reserve) and anticipates depleting the fund balance by June 30, 2021.

CSLB approved an emergency regulation that increased license renewal fees by \$50, effective February 1, 2020. The CSLB is also moving forward with an expenditure reduction plan to save \$7.1 million during FY 2020-21 to address reduced revenues and the anticipated budget shortfall.

In March 2020, CSLB contracted with a consultant to study and determine if fee levels are appropriate for the recovery of costs to meet mandated functions for the next five years. The consultant recommended CSLB maintain some fees, increase some fees, and add two new fees. Based on the consultant's recommendation, the CSLB has proposed 2021 legislation that would increase the statutory minimum and maximum ranges for fees in CSLB's fee statute by about 25 percent to allow greater flexibility to maintain financial solvency and restore funding reserves to about four or five months by FY 2025-26.

Under the proposal, active renewal fees would be higher for larger corporate licensees (that require more staff time to process) than for sole/individual owner licensees. The proposed renewal fee for an active license for an individual owner would be \$450 (same as

current fee) and may be increased to a statutory limit of \$563. The proposed renewal fee for an active license for a partnership, corporation, limited liability company, or joint venture would be \$700 (up from \$450) and may be increased to a statutory limit of \$875.

The proposed renewal fee for a Home Improvement Salesperson (HIS) registration would be \$200 (up from \$95) and may be increased to a statutory limit of \$250. The proposal would also increase application fees for original licenses, additional license classifications, and for examinations.

According to CSLB chief of legislation Michael Jamnetski, legislative approval of these fee increases could be through one of two methods: the traditional approach of finding a legislator to introduce and carry a policy bill with an effective date of January 1, 2022; or possibly as part of the state budget process as a budget trailer bill for FY 2021-22, in which case the fee increases could become effective in the summer of 2021.

Other 2021 Legislative Proposals

Workers' Comp Requirements for All Contractors. The CSLB will pursue legislation in 2021 that would initially require three license classifications that are likely to have employees – C-20 HVAC, C-8 Concrete, and C-49 Tree Service contractors – to have and maintain workers' compensation (WC) insurance beginning January 1, 2022. Subsequently, all active licensed contractor classifications would be required to have WC by 2025, and the CSLB would no longer accept WC exemptions. Reviews of licensing statistics consistently show

that more than half of all licensed contractors have a WC exemption on file certifying that they have no employees. However, studies by CSLB staff indicate that a significant number of these contractors have filed false exemptions.

Increase Civil Penalties for Specified Violations of the Contractors Law. This proposal would raise the statutory cap on civil penalties for specified violations from \$15,000 to \$30,000 and would raise the statutory cap on all other civil penalties from \$5,000 to \$8,000. Among violations for which the cap would be raised to \$30,000 would be a licensee filing a false certificate of exemption from workers' compensation.

Authorize Additional Minor Violations in a Letter of Admonishment. Existing law allows CSLB to issue a letter of admonishment (LOA) to a contractor for less egregious violations that do not pose health and safety risks or high sums of damage to consumers, but it limits LOAs to a single violation. This proposal would authorize CSLB to include additional minor violations in an LOA for the same contractor.

Contractor Bond Amount Increase Recommended

A recently completed consultant's study on the CSLB's contractor bond concluded that the current \$15,000 contractor bond amount is not sufficient and an increase is necessary. The Board approved the study for submission to the legislature January 1, 2021 under SB 610 (Glazer), signed

in 2019 as part of the most recent sunset review process (required for all Department of Consumer Affairs boards and commissions) that extended CSLB's sunset date until January 1, 2024. Submitting the bond study to the legislature would be the first step toward proposing legislation to address the issue.

The bond amount was last increased to \$15,000 effective January 1, 2016. The study showed that many contracts and home improvement projects today are commonly much higher than \$15,000. The study revealed that nearly half of consumer complaints filed with CSLB in recent years involve contracts over \$15,000. The study, and Board discussions, suggested that the bond be raised to at least \$25,000. There are concerns about underwriting requirements for higher amounts. Stakeholders interviewed for the study suggested that CSLB consider variable bond amounts based on license type.

Staffing, Operations Impacted by COVID and Budget Issues

With statewide COVID-19 shutdown restrictions effective again in December, CSLB public counters were once again closed and license testing centers were closed, resulting in postponed examinations for license applicants and a higher than normal testing backlog. Licensing staff expressed hopes to have the testing backlog back to normal levels by February 2021.

The overall CSLB budget was impacted in part by the inability to process licenses in as timely a manner in 2020 due to COVID restrictions. However, CSLB has moved more processing online for license applications and renewals. This includes the ability to take online signatures for renewals of licenses with only one qualifier, and online renewals for HIS registrations.

Under enforcement operations, CSLB has reduced arbitration costs and expenditures for legal assistance made to the Attorney General's Office and the Office of Administrative Hearings. Enforcement functions have been impacted by staff vacancies, reduced hours, and the redirection of some

Continued on Page 13



ComStar has the **LOWEST GWP**, non-flammable retrofit replacements for R-410A, R404A, and R507

ComStar International proudly announces RS-51 (R470B) and RS-53 (R470A) as the lowest GWP replacements for R404A, R507, and R410A in existing systems.

ComStar's RS-51 has a **GWP of 717**. This is less than 20% of the GWPs of R404A and R507.

ComStar's RS-53 is the world's only retrofit replacement for existing R410A systems. At 909, RS-53's GWP is effectively 56% over than R410A.

EPA, SNAP approved, and ASHRAE A-1 certified.

CALL 1-800-328-0142 NOW FOR SPECIAL PRICING PROGRAMS
Email: service@comstarproducts.com | www.lowgwpref.com
www.comstarproducts.com



Refrigerants and Green Technologies / Heating Products / Residential Ductless

ComStar International Inc.
RS-51, RS-53



ComStar International Inc., a New York corporation, is pleased to announce the introduction of two new ultra-low GWP, non-flammable retrofit replacement refrigerants for existing systems operating with R410a, R404a and R507. Our R410a replacement is RS-53 with an ASHRAE designation of R470A. Our R404a and R507 replacement is RS-51, ASHRAE designated as R470B. Both are A-1 certified as non-flammable and low-toxicity.

RS-53 (R470A) is a new HFO blend with an ultra-low Global Warming Potential (GWP) of 909 and is zero ozone depleting; R410a has a high GWP of 2088. It has similar energy efficiency and cooling capacity as R410A along with similar discharge pressure and flow rate. No systems component changes are necessary.

RS-51 (R470B) is a new HFO blend with an ultra-low Global Warming Potential (GWP) of 717 and is zero ozone depleting; R404a and R507 have a high GWP over 3,900. RS-51 has a 48% lower GWP than its two nearest competitive HFO blends. It has similar energy efficiency and cooling capacity requiring little to no component modifications.

ComStar's introduction of new low GWP retrofit refrigerants for existing systems will fill the void when various states and the Federal EPA phase out of high GWP HFC refrigerants.

ComStar International Inc. is a leader in the development, manufacturing and marketing of environmentally safe, industrial strength chemical products for the HVACR, indoor air quality, fuel oil and plumbing industries. The RS series of HFC & HCFC direct replacement refrigerants for

R410a, R22, 502, R404a, 507 and R12 are available worldwide.

More information: www.comstarproducts.com.

.....

Enertech Global LLC
The Advantage



The Advantage from **Enertech Global LLC** simplifies and makes radiant, in-floor heating, up to 100% of domestic hot water, and forced air heating and cooling functionality easily accessible for both HVAC contractors and end-users. It simplifies the process of sourcing components and finding a proper air-source heat pump, from design to installation, by incorporating all of the necessary pieces, factory-installed, within the indoor and outdoor module in a Monobloc design. Even at freezing (32°F), the Advantage can operate at a 4 COP.

More information: www.enertechgeo.com.

.....

Honeywell Solstice N15



Honeywell announced the launch of Solstice N15 (R-515B), a new, A1 nonflammable and low-global-warming potential (LGWP) refrigerant replacement for R-134a for use in chillers and heat pumps.

Solstice N15 has been adopted by compressor manufacturer Danfoss for use in its new Turbo-

cor® TGS490 compressor, which can be used in air or water-cooled chiller applications for air conditioning. The Turbocor TGS490 received the AHR Expo 2020 Innovation Award in the "Green Building" category.

"The nonflammability of Solstice N15, combined with the refrigerant's low global warming potential, made this solution a natural choice for our Turbocor TG Series compressors," said Frank Ford, director of product management at Danfoss Turbocor. "The new Turbocor TGS490 compressor has been fully optimized for both 1234ze and R-515B refrigerants, which means customers can benefit from improved system efficiency but also match the cooling capacity of R-134a thanks to lower pressure characteristics of the new compressor."

As a non-flammable R-134A replacement, Solstice N15 can be used immediately by chiller and heat pump manufacturers where safety standards and buildings codes limit the use of A2L and A3 refrigerants. Its similar product design to 1234ze will provide original equipment manufacturers (OEMs) with a long-term solution that is flexible for both A1 and A2L refrigerants.

"By innovating and bringing Solstice N15 to market together with component suppliers such as Danfoss, we are providing chiller and heat pump manufacturers with a long-term solution that can address any installation requirement with the same chiller design," said Chris LaPietra, vice president and general manager, Honeywell

Stationary Refrigerants. "Solstice N15 will ensure long-term compliance with EU regulations and directives like F-Gas, EcoDesign and EU's Energy Performance of Building Directives or EPBD. The refrigerant also helps in achieving U.S. building certifications, including LEED and BREEAM."

More information: www.honeywell.com.

.....

Lennox Industries
ML14XP1

Lennox Industries, a leading provider of high-performing home comfort solutions, brings advanced technology and even better reliability and durability to its family

Continued on Page 14

CSLB Update

Continued from Page 12

CSLB staff to serve as contact tracers for the state's COVID-19 efforts. To address the consumer complaint workload with a smaller enforcement staff, consumers are being referred to small claims court and the license bond for resolution in cases where the

estimated financial injury is less than \$10,000.

The CSLB reclassified 148 enforcement staff positions from "Enforcement Representative" to "Special Investigator" and "Investigator" series positions to better compete with other state agencies for qualified candidates for enforcement staff vacancies and to help retain quality personnel.



HERS Rating
Air & Hydronic Balancing
Permit Expediting & Retrieval



Certified by:



**COMPLIMENTARY ON-SITE
TEAM EDUCATION &
24/7 SELF-SERVE PORTAL!**

**OUR MISSION STATEMENT -
Providing unparalleled
customer service and
rapid care to our valuable
customers is what drives
us at Rapid Duct Testing.**

SERVICING CALIFORNIA

**RATED 5.0 ★★★★★
ON GOOGLE REVIEWS**

CONTACT:
Tel. 855.NEED.HERS
info@rapidducttesting.com

FOLLOW US @RapidDuctTesting



www.RapidDuctTesting.com

Refrigerants and Green Technologies / Heating Products / Residential Ductless

Continued from Page 13



of residential heat pumps with the debut of its new Merit brand ML14XP1 Single-Stage Heat Pump, and Elite brand EL15XP1 High Efficient Single-Stage Heat Pump.

Lennox’s proprietary Quantum Coil design, which makes them even longer-lasting, higher-performing, and more dealer-friendly than previous models. Later this year, Lennox will introduce two additional new high-efficiency heat pump products to its line-up: The Elite EL16XP1 and the Merit ML16XP1, which also will feature Quantum Coil. Some of the primary advantages of Lennox’s Quantum Coil include:

- Energy Savings – The Quantum Coil is designed for smart energy use, and is designed with all-aluminum alloy to stand the test of time.
- Longer Lasting – This exclusive Lennox coil utilizes proprietary

aluminum alloy tube and fins for superior corrosion resistance, including corrosion caused by outdoor environmental forces such as salt air, and indoor corrosive agents, such as volatile organic compounds (VOCs).

- Dealer Friendly – The design makes units lighter than similar copper coil units, so they’re easier and safer to handle during transport and installation.

Lennox’s Merit ML14XP1 Single-Stage Heat Pump boasts a cooling efficiency of up to 14 SEER (Seasonal Energy Efficiency Ratio), and a Heating Seasonal Performance Factor (HSPF) rating of 9.00, while Lennox’s Elite EL15XP1 Single-Stage Heat Pump offers up to 16

SEER and an HSPF rating of 9.00.

EL15XP1 Key Features and Benefits:

- Designed for Durability – Exclusive Lennox Quantum Coil design defends against corrosion in harsh environments for years of trouble-free cooling.
- Dealer-Friendly – Units weigh less, making installations quicker and safer for dealers.
- Comfortably Quiet – The precision-engineered scroll compressor, with its sound-dampening system, provides low noise levels and durability for homeowners.

More information: www.lennox.com.

.....

Nortek Global HVAC SD Series



Nortek Global HVAC, a leading manufacturer of indoor air comfort products, has added the premium SD Series, a 95-percent AFUE, ultra-low NOx residential furnace that offers the industry’s easiest installation/service features.

The single-stage, upflow/horizontal, natural gas-fired furnaces are available from Nortek Global HVAC’s Frigidaire® (FG8SD) and Maytag® (MGC3SD) brands. Both models meet all U.S. ultra-low NOx 14-nanograms/joule emission standards including the South Coast Air Quality Management District (SCAQMD) and San Joaquin Valley Air Pollution Control District (SJVAPCD) certifications under California Rule 1111 and Rule 4905, respectively.

Each brand’s two models range in thermal input from 50,000 to 100,000-Btuh and feature a solid 22-ga., high finish cabinet with a low-boy 35-inch height, 28-inch depth and widths of 14 and 21-inches that fit most retrofit and new construction furnace spaces. A 70,000-Btuh model will follow the initial launch.

All models are tested to ASHRAE Standard 193 for “Airtightness of HVAC Equipment.” They’re also Energy Star-approved with nine-speed, constant torque EC motor blowers, cabinet leakage compliance at well under 2.0-percent, and the 95-percent AFUE.

Each unit is 100-percent fired and checked with more than 100 manufacturing line test procedures.

The FG8SD and MGC3SD both feature an easily replaceable printed circuit board (PCB) that’s accessible after removing only the cabinet’s front cover. Ease-of-service additions are a color-coded wire harness with quick-connect fittings and the cabinet’s captured screws that can’t get lost.

Installation ease includes gas pipe connections that are



Education for Your Future
Energy Efficiency Starts Here



Pacific Gas and Electric Company is pleased to offer the following HVAC/R training courses specifically designed to advance the skills of HVAC/R professionals.

FEBRUARY



Webinar

NATE HVAC/R New Hire Module

Instructors: Mitch Bailey / TBA
Wed., February 17 – Part 1
Thurs., February 18 – Part 2
Wed., February 24 – Part 3
Thurs., February 25 – Part 4

MARCH



Webinar

NATE HVAC/R Support Training

Instructors: Mike Griffin / John Dalton
Wed., March 3 – Part 1
Thurs., March 4 – Part 2
Wed., March 10 – Part 3
Thurs., March 11 – Part 4

APRIL



Webinar

Electrical Module

Instructors: Mitch Bailey / TBA
Wed., April 21 – Part 1
Thurs., April 22 – Part 2
Wed., April 28 – Part 3
Thurs., April 29 – Part 4

Webinars are FREE of charge and online registration is required.

You can register online by visiting: pge.com/hvactraining

Attendees must register for each night separately and registration is on a first-come, first-served basis.

“PG&E” refers to Pacific Gas and Electric Company, a subsidiary of PG&E Corporation. ©2017 Pacific Gas and Electric Company. All rights reserved. These offerings are funded by California utility customers and administered by PG&E under the auspices of the California Public Utilities Commission.

Refrigerants and Green Technologies / Heating Products / Residential Ductless

accessible from both right and left sides; and a side-discharge capable flue connection.

Other benefits of the FG8SD and MGC3SD are:

- UL Listed;
- Industry-leading packaging design with robust corner posts that prevents cabinet dents during shipping;
- Integrated PCB includes easy connections for auxiliary components, such as an electronic air cleaner and humidifier;
- High R-value, insulated cabinet decreases thermal losses and facilitates quiet low dB operation;
- Low-boy height allows ample space for a cooling coil addition.
- Eligible for an Energy Star appliance rebate.

More information: www.nortekhvac.com.

• • • • •

Panasonic ClimaPure XE Series



Panasonic announced that its ClimaPure XE Series ductless mini-split system that includes built-in, patented nanoe X air purification technology has received Zero Ozone Verification by Intertek. With this verification, Panasonic has demonstrated that the ClimaPure XE Series meets ozone emission concentration limits of .005 ppm or below.

“Air pollution impacts the air we breathe in both outdoor and indoor environments,” said Michael Hudon, Intertek senior product engineer and program lead for Zero Ozone Verification. “We’re seeing a greater focus on indoor air quality today than ever before. With our Zero Ozone Verification program, we are working with manufacturers like Panasonic to educate consumers on the importance of ozone emissions and overall product safety within the indoor environment. Panasonic’s ClimaPure XE Series with built-in nanoe X air purification technology has demonstrated it exceeds the industry standards, with measured ozone emissions

meeting the requirements of our program.”

“Intertek is a trusted quality assurance provider recognized worldwide, and we are thrilled to have received its Zero Ozone Verification – one of the most stringent ozone emissions standards in North America,” said Kevin Smith, general manager Life and Device Solu-

tions, Panasonic Canada. “Not only does this verification exemplify the safety and quality of our ClimaPure XE Series with beneficial nanoe X air purification technology, but it also gives us an opportunity to further educate consumers about how ozone impacts health and wellbeing.”

More information: <https://na.panasonic.com/us/>.

• • • • •

YORK Residential Package Equipment

YORK’s comprehensive a/c and heat pump range is offered in both 14 SEER and Energy Star® certified 16 SEER efficiencies with electric or gas heating. This next generation of equipment drives greater



Continued on Page 23

FLEXX

THE NEW CENTRAL AIR BY GREE

Flexible

Side discharge, small footprint, **24VAC** compatible

Comfortable

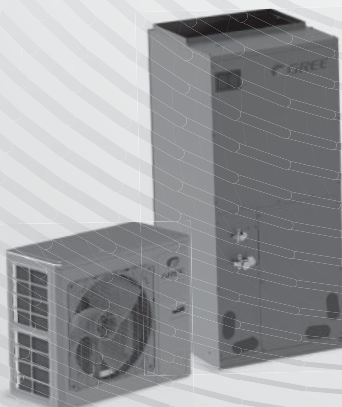
Quiet operation, optimal performance from **-22°F to 129°F**

Efficient

Up to **20 SEER/10.5 HSPF**

Adjustable

2/3 and 4/5 ton outdoor unit options



GREE

greecomfort.com



Troubleshooting

A Heat Pump with a Faulty Coil

By Jim Johnson
Contributing Editor

Your troubleshooting situation this month involves a complaint from a customer about their heat pump that's "not working". When you arrive, you find the thermostat set at 70°F, while the indoor temperature is only at 64°. The customer says that the unit has been running constantly for several hours without shutting off.

When you check the outdoor unit, you find the coil completely frosted, and the compressor and outdoor fan motor running. These observations lead you to perform a voltage check across the terminals of the DFT (Defrost Termination Thermostat) shown in the bottom right-hand corner of the pictorial diagram in **Figure One**.

When this check determines that the DFT is closed and not the problem, you use a jumper at the "Speed Up" pins to manually initiate a defrost mode, and note that the reversing valve functions properly, but the OFM (Outdoor Fan Motor) continues to operate.

This leads you to check at the OF1 and OF2 terminals of the DR (Defrost Relay), which indicates that the contacts are closed.

Your troubleshooting question: *What is the next step you need to take to get this unit operating properly?*

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 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."

Solution to Last Month's Problem

To get this unit back on line, we need to replace the furnace control. A voltage check at terminals 2 and 4 of the S2 segment of the board proved that 120-VAC was not leaving the board to power the hot surface igniter.

The winner of last month's Troubleshooting is:
Cherise Rader
Orange County, Calif.

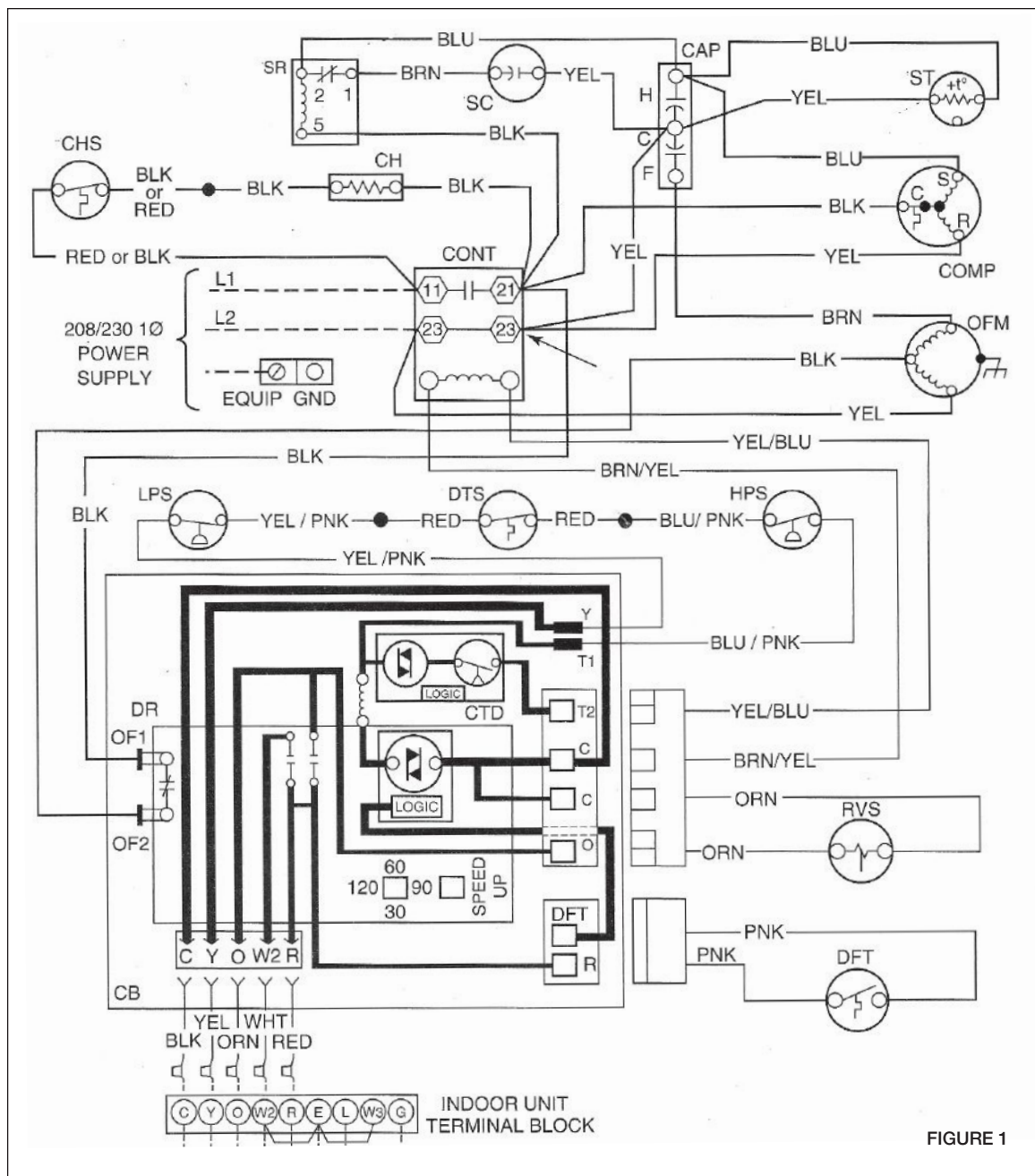


FIGURE 1



**ADVERTISE IN
INDOOR
COMFORT
NEWS
CALL TODAY!
(818) 551-1555**

WANT TO SAVE ON CRANE COST?

PRO-LIFT

**LIGHTWEIGHT
AIRCRAFT
ALUMINUM**

**PATENT
PENDING**

**EASY TO OPERATE
BATTERY
OPERATED**



CALL TODAY (972) 939-3231 • WWW.PRO-LIFT.COM

COVID-19 Update

KAI Engineers Recommend HVAC Upgrades to Help Combat COVID-19 Inside Commercial Buildings

As more businesses across the country begin to reopen following the pandemic shutdown, facility owners and managers are forced to rethink the indoor air quality of their commercial buildings to minimize the spread of airborne infectious diseases, such as COVID-19. The experts at KAI Engineering say making simple HVAC modifications, combined with other prevention strategies, will go a long way toward minimizing the virus' spread and protecting a building's occupants.

"Currently, there isn't a single strategy recommendation, but there are various control strategies available that can be combined to fight an airborne infectious disease," said KAI Director of Mechanical Engineering Aleksandar Milenkov, PE, LEED AP.

The Centers for Disease Control and Prevention (CDC) and The American Society of Heating,



KAI engineers at a job site.

Refrigerating and Air-Conditioning Engineers (ASHRAE) have made several recommendations for improving air quality and eradicating potential airborne viruses within building environments. Milenkov says there are several simple upgrades that building owners can make to their HVAC systems to accommodate these safety recommendations.

Improve Ventilation
Increasing outside air and

improving ventilation throughout a building will help reduce the infection rate. KAI recommends the following HVAC modifications:

- Increase the ventilation rate for the restroom exhaust fans.
- Increase outside air by 100% to isolation rooms.
- Increase outside air by adding Dedicated Outdoor Air Units (DOAS). This is the most expensive option, especially for retrofitting existing facilities. The DOAS will decrease the infection rate, improve air quality in the space and provide better control of the temperature and humidity. However, the downside to this is increased energy consumption.
- Modify the unoccupied operation mode for outside air units to run two hours before occupied times and two hours after occupied times at 100% capacity.

Continued on Page 19

Features

Nortek Saves Charity's Holiday Season by Designing a Visiting Booth with COVID-19 Safe HVAC

Continued from Page 1

members during the holiday season, so losing that visitation would be earthshattering," said Nellie Tayloe Sanders, chief philanthropy officer, CFL, a 40-year-old direct-care facility.

Kevin Flynn, NAS' group vice president of engineering and a CFL Board of Directors member, envisioned an HVAC solution after watching a TV network news story on a Florida nursing home's residents that were forced to visit family members through makeshift shower curtain barriers as a COVID-19 precaution. "I thought there must be a better and safer way, so I challenged four of our engineers and we started brainstorming a solution," recalled Flynn.

After five weeks of design, two weeks of parts fabrication, one week of testing, assembly and OSDH approval, the temporary visiting booth was assembled in CFL's auditorium and donated on November 25, just in time for Thanksgiving visitors.

The booth features three recommendations by the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) for COVID-19 mitigation;

Mitsubishi Electric Donates to Veterans Organization

S. G. Torrice Company supplied equipment to outfit Homes For Our Troops' control/equipment room in its Taunton, Massachusetts office. The new equipment replaces a malfunctioning eight-year-old system. The donated Mitsubishi Electric equipment included an A/C outdoor unit, a wall-mounted indoor unit, a low ambient wind baffle (WB-PA4), and a wall-mounted remote controller.

"Homes For Our Troops does incredible work for injured veterans by building specially adapted homes so they can rebuild their lives," said Stephen Torrice, president, S. G. Torrice Company. "We're honored to support an organization whose focus is to support those who have sacrificed

100-percent outdoor air, enhanced particulate filtration and ultraviolet germicidal irradiation (UVGI) equipment. The latter was donated by NAS' manufacturer representative, Tom Barrow Co., Atlanta, Ga. and UV manufacturer, Lualier, Memphis, Tenn.

The 6 (w) x 8 (l) x 9 (h)-booth is solidly constructed of wood and 1/4-inch-thick, transparent polycarbonate plastic. Structurally, the booth is penta post-framed and tightly sealed with the same steel Integrated Thermal Break Frame (ITF) support used for NAS custom air handlers, which recently received a Notice of Acceptance as the HVAC industry's strongest screwed frame (135-PSF/230-mph) cabinet by Miami-Dade County

hurricane building codes.

The 100-percent outdoor air is supplied by a two-fan array of NAS' FANWALL Technology mobilized with wheels for easy positioning near an exterior doorway. An 8-inch-diameter, 25-foot-long flexible duct connects the fans to the booth's CLEANSUITE ceiling plenum, which is typically used for air purification in mission critical hospital operating rooms and clean rooms. The booth is positive pressured with 400-CFMs of air distributed through the plenum's 12-inch-thick high efficiency particulate arrestance (HEPA) filters and then expelled through a manual adjustable damper.

The booth uses a duct-mounted UVC light kit to disinfect the sup-

ply air of any viruses, bacteria, mold and other biological contaminants. The booth's exterior wall-mounted upper air UV kit disinfects the area where visitors congregate. UVC was proven in several third-party studies last October to kill SARS CoV-2 at 99.9-percent within two seconds.

The booth also incorporates dimmable interior LED light fixtures, a two-way, volume-adjustable microphone/speaker audio system to accommodate sound or light-sensitive residents. The natural acoustics inside the booth lend a quiet 20dB sound level.

The booth is part of an ongoing partnership that includes "Nortek Gives" employee community service days; and most recently a redesign, re-tooling, renovation and expan-

sion of CFL's 20,000-square-foot Filters For Life manufacturing facility where residents fabricate custom media filters for Oklahoma state building HVAC systems. "The CFL partnership has also changed our lives at NAS," said Buddy Doll, NAS' president. Giving back to such a worthy cause, has left a lifetime impression on our employees."

"Enabling family visitation is one of the most beautiful Christmas gifts Nortek can give our residents during the holiday season and beyond," added Sanders. "Plus, our residents are true believers, so providing a safe environment that now allows them to tell Santa Claus what they want for Christmas is a big event for them."

Chill out with these virtual classes

Our training webinars can help you get ahead



D&R International - Commercial Refrigeration

4-Part Series

February 2, 4, 9, 11 - 5:30pm-7pm

IHACI - HVAC/R New Hire Module

4-Part Series

February 3, 4, 10, 11 - 6pm-8pm

National Comfort Institute - Grow Profitable with Airflow Upgrade

February 8 - 8am-10am

National Comfort Institute - Duct System Optimization

4-Part Series

February 16, 17, 23, 24 - 8am-12pm

D&R International - Introduction to Unitary Air Conditioning

4-Part Series

February 16, 18, 23, 25 - 5:30pm-7pm

D&R International - Air Handling System Efficiency HYBRID

2-Part Series

February 11 & 18 - 8am-9:30am

▶ Reserve your seat today or check out other classes at seminars.sdge.com.

Some programs are funded by California utility customers and administered by San Diego Gas & Electric® under the auspices of the California Public Utilities Commission.

© 2021 San Diego Gas & Electric Company. All copyright and trademark rights reserved. S2170003 0121



Continued on Page 18

Technical Training

Growing Green Technicians Part 136: Discharge Pressures in Refrigeration Equipment

By Jim Johnson
Contributing Editor

Technicians who work on comfort cooling and heating systems need to be green. And, technicians who work on commercial equipment need to take a green approach to their work too. After all, being green isn't just about not wasting energy and saving home and business owners money when it comes to their air conditioning systems and utility bills. Being green is also being committed to making sure everything we work on is performing properly, and one aspect of the restaurant/convenience store/supermarket industry is the proper operation of the walk-in equipment that is used to keep product fresh and safe for consumption. And, one aspect of evaluating the performance of walk-in equipment

is knowing what the operating pressures are supposed to be, and then finding out if they are correct. There are many processes related to this, and, in this segment we'll be discussing only one specific topic; that of determining what a discharge pressure is supposed to be. As an example, we'll consider a walk-in cooler that, when we check the low side operating pressure, we find it to be just a slight over 18 PSIG. The system uses R-134a, and, that being the case, we consult a pressure/temperature chart (See **Figure One**), and we determine that our suction pressure converts to 20 F temperature. With this step accomplished, along with measuring the dry bulb temperature of the air entering the condenser (in our example, we call it to be 76 F), we now need to consider the classification of this particular equipment.

Condenser Temperature Rise (TR) °F			
Condenser Temp Rise (TR) °F	Evaporator Temperature		
	Low Temp	Medium Temp	High Temp
20	-25	0	—
23	-20	5	25
26	-15	10	30
29	-10	15	35
32	-5	20	40
35	0	25	45

FIGURE 2

In the world of restaurant, convenience store, and grocery store equipment, most systems are considered to be in one of three categories: Low Temperature, Medium Temperature, or High Temperature. One way to categorize these systems is by box temperature, while another way is by their evaporating temperature. When considered from an evaporating temperature perspective, there can be some

crossover in their temperature listings. However, they are often fundamentally identified through the following evaporating temperature ranges:

- Low Temperature.....Evaporating temperature between: -40 F and +10 F.
- Medium Temperature.....Evaporating temperature between: -10 F and +30 F
- High Temperature.....Evaporating temperature between: +20 F and +55 F

The reason we're considering our equipment from this perspective is that we need to apply the information to a typical table that would be used in the high side pressure calculating process through this method, shown in **Figure Two**. This table will allow us to calculate condenser temperature rise once we plug in the information for our equipment. First, according to the temperature ranges listed above, we'll consider our system to be Medium Temp. We also know our evaporating temperature is 20 F. Which means that when we look under the Medium Temp column, then read to the left under the Condenser Temp Rise column, we find that the number we want is 32 F.

Pressure Temperature Chart						
PRESSURE/TEMPERATURE CHART						
Temperature (F)	R22	R134a	R404A	AR408A	AR409A	AR410A
-50	6.2	18.7	0.6	1.6	17.2	5.3
-45	2.7	16.9	2.7	1.1	15.2	8.0
-40	0.5	14.8	5.0	3.3	13.1	11.0
-35	2.6	12.5	7.6	5.6	10.7	14.2
-30	4.9	9.8	10.4	8.2	8.1	17.8
-25	7.4	6.9	13.4	11.0	5.1	21.8
-20	10.1	3.7	16.8	14.1	1.9	26.1
-15	13.2	0.1	20.5	17.5	0.8	30.8
-10	16.5	1.9	24.5	21.2	2.8	35.9
-5	20.0	4.1	28.8	25.2	4.9	41.5
0	23.9	6.5	33.5	29.5	7.2	47.5
5	28.2	9.1	38.6	34.2	9.7	54.1
10	32.8	11.9	44.0	39.3	12.5	61.2
15	37.7	15.0	49.9	44.8	15.4	68.8
20	43.0	18.4	56.2	50.7	18.7	77.1
25	48.7	22.1	63.0	57.0	22.2	86.0
30	54.9	26.0	70.3	63.7	26.0	95.5
35	61.5	30.3	78.1	71.0	30.1	105.7
40	68.5	35.0	86.4	78.7	34.5	116.6
45	76.0	40.0	95.2	87.0	39.2	128.3
50	84.0	45.4	104.7	95.8	44.3	140.8
55	92.5	51.1	114.7	105.1	49.6	154.1
60	101.6	57.3	125.3	115.1	55.1	168.2
65	111.2	63.9	136.6	125.6	61.8	183.2
70	121.4	71.1	148.6	136.8	69.5	199.3
75	131.2	78.6	161.2	148.7	77.7	216.1
80	143.6	86.6	174.6	161.2	86.4	234.0
85	155.7	95.1	188.8	174.4	95.5	253.0
90	168.4	104.2	203.7	188.4	105.2	273.0
95	181.8	113.8	219.4	203.1	115.3	294.1
100	195.9	124.1	235.9	218.7	125.6	316.1
105	210.7	134.9	253.4	235.0	137.2	339.9
110	226.3	146.3	271.7	252.1	149.0	364.6
115	242.7	158.4	290.9	270.2	161.4	390.5
120	259.9	171.1	311.1	289.1	174.4	417.7
125	277.9	184.5	332.3	308.9	188.0	446.3
130	296.8	198.7	354.5	329.7	202.3	476.3
135	316.5	213.6	377.8	351.5	217.2	507.6


FIGURE 1

With that information calculated and added to our condenser air entering temperature, we do the arithmetic:

76 F + 32 F = 108 F





Which brings us back to our pressure/temperature chart in Figure One, where we find that 108 F, when considering an R-134a system, translates to a high side operating pressure within a shade of 143 PSIG.

And, we're there. We know that the high side operating pressure should be 143 PSIG, and if we find it to be at that number, we'll know that this system is....a green one.... not operating with an overcharge, wasting energy via a higher compressor current draw, or because it's undercharged and operating with excessive compressor run times.



Chevrolet Commercial Vehicles


Your One Stop Shop for Light & Medium Trucks and Vans



If We Don't Have It... We'll Build It for You

Just ask for Commercial Trucks
877.278.0333 or 626.932.5652

Sierra Truck Center | www.SierraTruckCenter.com
1621 South Magnolia Ave. Monrovia, CA 91016



Mitsubishi Donates
Continued from Page 17

their previous way of life for our country.”

Since 2004, Homes For Our Troops has been building and donating custom homes nationwide for injured post-9/11 veterans so they can rebuild their lives. These specially adapted custom homes enable veterans to focus on their recovery in a safe environment, and regain their freedom and independence.



Mitsubishi Electric HVAC units were donated to Home For Our Troops organization.

Indoor People



KIM MIRAMONTES

Goettl Air Conditioning and Plumbing has promoted its chief financial officer **Kim Miramontes** to chief operations officer.

“Kim’s skills far outweigh those of seasoned executives I’ve have worked with in the past,” said Ken Goodrich, CEO of Goettl Air Conditioning and Plumbing. “She understands operations, sales, and customer service in a way that few executives hope to and has a proven track record of maximizing the growth poten-

tial of a range of business. She’s leading an already successful team at the perfect time to spearhead operational expansion.”

Miramontes is responsible for growing efforts to care about customer experience and fostering a team of salespeople. In this role, she will continue to define the Goettl point of difference and improve upon existing customer engagement systems.

Miramontes joined the Goettl executive leadership team in May of 2019. Since then, Miramontes financially supervised several expansion opportunities for Goettl, including acquisitions in Simi Valley, California, and San Antonio, Texas.

Miramontes has experience in financial and operational leadership with gaming and resort brands including Wyndham, MGM Grand, and SHFL Entertainment.

“Goettl has grown with

remarkable trajectory under Kim’s financial guidance,” said Goodrich. “She is a great fit for our team as she continues to evolve and elevate our methodologies and services. I look forward to collaborating with Kim in her new role as she continues to push our team to do things the right way, not the easy.”

Miramontes earned her MBA from the University of Nevada Las Vegas as well as Bachelor of Science degrees in Business Administration and Finance from UNLV. In addition, Miramontes is an Associate Certified Coach from the International Coach Federation and a Certified Professional Coach from the Institute for Professional Excellence in Coaching.

Miramontes continues to volunteer with the UNLV Alumni Association, Nevada Women’s Philanthropy group, and the National Association of Women Business Owners (NAWBO) in Southern Nevada.

• • • • •



STEVE FOUTCH

Comfort Supply announced that **Steve Foutch** has joined the company as executive vice president (EVP). Foutch has more than 29 years of experience in the HVAC industry, both residential and commercial.

As EVP, Foutch will oversee all seven Comfort Supply locations in Middle Tennessee as well as the company’s commercial department within the corporate office. His other responsibilities include developing plans and strategies for

business development, managing customer and vendor relationships, coordinating sales training programs, and overseeing branch managers.

“Steve is a seasoned professional and a strong leader with tremendous business acumen,” said Comfort Supply President Clay Blevins. “We are confident he will be an asset to our team and are thrilled to have him with us.”

Foutch previously worked at Lennox Industries. He joined Lennox in 2004 as a regional business manager and was promoted to district manager in 2006. He was named zone manager in 2009 and served in that position for 11 years, overseeing 12 of the company’s distribution locations. During his time at Lennox, he received several awards, including Zone Manager of the Year in 2010 and 2019 and the Lennox Top Gun Award in 2010

Continued on Page 23

Kai Engineering

Continued from Page 16

Increase Filtration

KAI recommends using as high a setting as possible for air filtration and ventilation of the restroom exhaust fans. The filter housing and racks should also be inspected regularly to ensure an appropriate filter fit and to minimize filter bypass.

Use highly efficient particle filtration in centralized HVAC systems to reduce airborne particles, as well as a filter with a MERV13 or higher rating, if the existing HVAC system can support it.

Install room-level filtration portable air cleaners equipped with HEPA filters, or portable units with MERV13 filtration, a carbon filter, UV lights and Bipolar Ionization. This will isolate airflow from the rest of the facility and help minimize the virus’ spread.

Improve Air Distribution Patterns

Controlling the airflow between zones in a building is a viable way to protect building occupants from airborne pathogens. This can be achieved by re-evaluating the positioning of supply and exhaust air diffusers and/or dampers and adjusting flow rates to establish measurable pressure differentials.

Improve Temperature and Humidity

Studies suggest that the most unfavorable environment for microorganisms to survive in is when the Relative Humidity (RH) is between 40-60%.

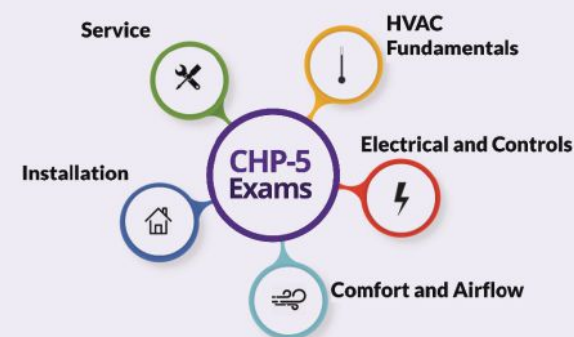
Decreasing the temperature and moisture in an environment creates a less hospitable environment for microorganisms to grow. The majority thrive in an RH of 60% or more.

Utilize Ultraviolet Germicidal Irradiation (UVGI) Light or Bipolar Ionization (BPI)

Using a UVGI light as a supplemental technique to inactivate potential airborne viruses in the upper-room air of common occupied spaces is recommended. The entire ultraviolet (UV) spectrum can kill or inactivate microorganisms, but UV-C energy from 200-280 nm provides the most germicidal effect, with 265 nm recommended as the optimum wavelength. The majority of modern UVGI lamps create UV-C energy at a near-optimum 254 nm wavelength. UVGI lights should be installed at the chilled water coils of rooftop units.

The CDC and ASHRAE currently do not take a position for or against the use of BPI due to a lack of sufficiently clear scientific data on these air cleaners. To a potential user who wants to examine data for BPI devices with recirculation, ASHRAE recommends consulting the AHAM Verified Program for an air cleaner’s CADR rating – the number of cubic feet of air an air purifier effectively removes each type of particle each minute. Several manufacturers provide third-party test results of their air cleaners, many of which claim to reduce over 99% of microorganisms, including viruses, over 15 to 45 minutes of time.

CERTIFIED HVAC PROFESSIONAL (CHP-5)



LEARN AT WORK

With the **Certified HVAC Professional (CHP-5)**, technicians can **earn their NATE certification** while training in the field. The CHP-5 certification pathway is a series of 5 short exams that NATE created to mesh **technician's on-the-job training** with their test preparation.

STUDY ONLINE

NATE has partnered with **HVACRedu.net** and **Interplay Learning** to provide technicians with online courses and virtual reality trainings that prepare technicians for each CHP-5 exam.

CERTIFY AT HOME

Technicians can choose to take their exams from home at a time that fits their schedule using NATE's remote **Live Online Proctored Exams**.

Register your technicians at:

www.NATEX.org

NATE is the leader in **developing** and **recognizing** professional HVACR technicians. North American Technician Excellence (NATE) is the largest non-profit certification organization for heating, ventilation, air conditioning and refrigeration technicians.

CUSTOMER SERVICE: 877-420-6283 | EMAIL: asknate@natex.org



2021 TRAINING

CALIFORNIA QUALITY INSTALLATION, QUALITY MAINTENANCE AND QUALITY SERVICE

SOCALGAS, DOWNEY

SOUTHERN CALIFORNIA EDISON, IRWINDALE

PACIFIC GAS AND ELECTRIC, PALMDALE

FEBRUARY

NATE HVAC/R Support Training

(Four-Night Class)

Instructors: Mike Griffin / John Dalton

Tues., Feb. 2 – Part 1

Tues., Feb. 9 – Part 2

Tues., Feb. 16 – Part 3

Tues., Feb. 23 – Part 4

MARCH

System Diagnostics Module

(Four-Night Class Cont. to April)

Instructors: Mike Griffin / John Dalton

Mon., March 29 – Part 1

Tues., March 30 – Part 2

APRIL

System Diagnostics Module

(Four-Night Class Cont. from March)

Instructors: Mike Griffin / John Dalton

Mon., April 5 – Part 3

Tues., April 6 – Part 4

MAY

System Performance Module

(Four-Night Class)

Instructors: Mike Griffin / John Dalton

Tues., May 4 – Part 1

Tues., May 11 – Part 2

Tues., May 18 – Part 3

Tues., May 25 – Part 4

JUNE

Air Distribution Module

(Four-Night Class)

Instructors: Mike Griffin / John Dalton

Tues., June 1 – Part 1

Tues., June 8 – Part 2

Tues., June 15 – Part 3

Tues., June 22 – Part 4

FEBRUARY

NATE HVAC/R New Hire Module

(Four-Night Class)

Instructors: Mitch Bailey / TBA

Wed., Feb. 3 – Part 1

Thurs., Feb. 4 – Part 2

Wed., Feb. 10 – Part 3

Thurs., Feb. 11 – Part 4

MARCH

NATE HVAC/R Support Training

(Four-Night Class)

Instructors: Mike Griffin / John Dalton

Wed., March 17 – Part 1

Thurs., March 18 – Part 2

Wed., March 24 – Part 3

Thurs., March 25 – Part 4

APRIL

Electrical Module

(Four-Night Class)

Instructors: Mike Griffin / John Dalton

Wed., April 21 – Part 1

Thurs., April 22 – Part 2

Wed., April 28 – Part 3

Thurs., April 29 – Part 4

MAY

NATE Core & Gas Heating Training

(Four-Night Class)

Instructors: Mike Griffin / John Dalton

Wed., May 19 – Part 1

Thurs., May 20 – Part 2

Wed., May 26 – Part 3

Thurs., May 27 – Part 4

JUNE

NATE AC/HP Refrigeration & Air Distribution Training

(Four-Night Class)

Instructors: Mike Griffin / John Dalton

Wed., June 16 – Part 1

Thurs., June 17 – Part 2

Wed., June 23 – Part 3

Thurs., June 24 – Part 4

FEBRUARY

NATE HVAC/R New Hire Module

(Four-Night Class)

Instructors: Mitch Bailey / TBA

Wed., Feb. 3 – Part 1

Thurs., Feb. 4 – Part 2

Wed., Feb. 10 – Part 3

Thurs., Feb. 11 – Part 4

MARCH

NATE HVAC/R Support Training

(Four-Night Class)

Instructors: Mike Griffin / John Dalton

Wed., March 17 – Part 1

Thurs., March 18 – Part 2

Wed., March 24 – Part 3

Thurs., March 25 – Part 4

APRIL

Electrical Module

(Four-Night Class)

Instructors: Mike Griffin / John Dalton

Wed., April 21 – Part 1

Thurs., April 22 – Part 2

Wed., April 28 – Part 3

Thurs., April 29 – Part 4

MAY

AC & HP Refrigeration

(Four-Night Class)

Instructors: Mike Griffin / John Dalton

Wed., May 19 – Part 1

Thurs., May 20 – Part 2

Wed., May 26 – Part 3

Thurs., May 27 – Part 4

JUNE

Air Distribution Training

(Four-Night Class)

Instructors: Mike Griffin / John Dalton

Wed., June 16 – Part 1

Thurs., June 17 – Part 2

Wed., June 23 – Part 3

Thurs., June 24 – Part 4

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.

All Classes Are Being Offered

Classes begin at 6:00 PM Pacific Time and end at 9:00 PM

Register at www.ihaci.org

IONING INDUSTRIES, INC.  PRESENTS

CLASS SCHEDULE

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

PACIFIC GAS & ELECTRIC COMPANY, STOCKTON

SOUTHERN CALIFORNIA EDISON, TULARE

SAN DIEGO GAS & ELECTRIC

JANUARY

New Hire Module

(Four-Night Class)

Instructors: Mitch Bailey / TBA

Wed., Jan. 17 – Part 1

Thurs., Jan. 18 – Part 2

Wed., Jan. 24 – Part 3

Thurs., Jan. 25 – Part 4

MARCH

Support Training

(Four-Night Class)

Instructors: Mike Griffin / John Dalton

Tues., March 3 – Part 1

Thurs., March 4 – Part 2

Tues., March 10 – Part 3

Thurs., March 11 – Part 4

APRIL

Support Training Module

(Four-Night Class)

Instructors: Mitch Bailey / TBA

Wed., April 21 – Part 1

Thurs., April 22 – Part 2

Wed., April 28 – Part 3

Thurs., April 29 – Part 4

MAY

Refrigeration Module

(Four-Night Class)

Instructors: Mitch Bailey / TBA

Wed., May 19 – Part 1

Thurs., May 20 – Part 2

Wed., May 26 – Part 3

Thurs., May 27 – Part 4

JUNE

Refrigeration Module

(Four-Night Class)

Instructors: Mitch Bailey / TBA

Wed., June 16 – Part 1

Thurs., June 17 – Part 2

Wed., June 23 – Part 3

Thurs., June 24 – Part 4

FEBRUARY

Air Distribution Module

(Four-Night Class)

Instructors: Mike Griffin / John Dalton

Wed., Feb. 17 – Part 1

Thurs., Feb. 18 – Part 2

Wed., Feb. 24 – Part 3

Thurs., Feb. 25 – Part 4

MARCH

System Diagnostics Module

(Four-Night Class)

Instructors: Mitch Bailey / TBA

Wed., March 3 – Part 1

Thurs., March 4 – Part 2

Wed., March 10 – Part 3

Thurs., March 11 – Part 4

APRIL

CAQI/QM/QS System Performance Module

(Four-Night Class)

Instructors: Mitch Bailey / TBA

Wed., April 7 – Part 1

Thurs., April 8 – Part 2

Wed., April 14 – Part 3

Thurs., April 15 – Part 4

MAY

Chiller Module

(Two-Night Class)

Instructors: Mitch Bailey / TBA

Wed., May 5 – Part 1

Thurs., May 6 – Part 2

Commercial Cooling Tower Module

(Two-Night Class)

Instructors: Mitch Bailey / TBA

Wed., May 12 – Part 1

Thurs., May 13 – Part 2

JUNE

Boiler Module

(Two-Night Class)

Instructors: Mitch Bailey / TBA

Wed., June 2 – Part 1

Thurs., June 3 – Part 2

Commercial Refrigeration Module

(Two-Night Class)

Instructors: Mitch Bailey / TBA

Wed., June 9 – Part 1

Thurs., June 10 – Part 2

FEBRUARY

NATE HVAC/R New Hire Module

(Four-Night Class)

Instructors: Mike Griffin / John Dalton

Wed., Feb. 3 – Part 1

Thurs., Feb. 4 – Part 2

Wed., Feb. 10 – Part 3

Thurs., Feb. 11 – Part 4

MARCH

NATE HVAC/R Support Training

(Four-Night Class)

Instructors: Mike Griffin / John Dalton

Tues., March 2 – Part 1

Tues., March 9 – Part 2

Tues., March 16 – Part 3

Tues., March 23 – Part 4

APRIL

Electrical Module

(Four-Night Class)

Instructors: Mike Griffin / John Dalton

Wed., April 7 – Part 1

Thurs., April 8 – Part 2

Wed., April 14 – Part 3

Thurs., April 15 – Part 4

MAY

AC & HP Refrigeration Module

(Four-Night Class)

Instructors: Mike Griffin / John Dalton

Wed., May 5 – Part 1

Thurs., May 6 – Part 2

Wed., May 12 – Part 3

Thurs., May 13 – Part 4

JUNE

Air Distribution Module

(Four-Night Class)

Instructors: Mike Griffin / John Dalton

Wed., June 2 – Part 1

Thurs., June 3 – Part 2

Wed., June 9 – Part 3

Thurs., June 10 – Part 4

JULY

System Diagnostics Module

(Four-Night Class)

Instructors: Mike Griffin / John Dalton

Wed., July 7 – Part 1

Thurs., July 8 – Part 2

Wed., July 14 – Part 3

Thurs., July 15 – Part 4

Offered as Webinars

and are subject to change

at www.ihaci.org (Training)

COSPONSORED BY

Institute of Heating and Air Conditioning Industries, Inc., Southern California Gas Company, San Diego Gas & Electric, Southern California Edison, and Pacific Gas and Electric Company



Help Wanted



Institute of Heating and Air Conditioning Industries, Inc. (IHACI)

Commercial HVAC Instructors Wanted

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
- Boilers
- Chillers

Help Wanted

- Water Towers
 - Refrigeration Systems
 - Water Source Heat Pumps
 - Fan Coils & Air Handlers
1. Instructors should have a minimum of twenty (20) years of actual field experience in the HVAC/R/SM industry.
 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

Help Wanted

resumes to the IHACI office for review and evaluation by IHACI's Education Committee. Please send resumes to: s.evans@ihaci.org or fax to 818-551-1115.

Hiring Outside Sales Professionals
AT OUR LOCATIONS IN CALIFORNIA

- Union City and San Jose**
- Responsibilities include:
- Calling on accounts
 - Developing and building strong customer relationships
- Minimum Qualifications:
- 3 years sales experience required
 - Knowledge or experience in HVACR required
 - Valid Driver's License and reliable vehicle is a must
 - Excellent people, communication and computer skills
- Benefits include:
- Competitive salary with an incentive program
 - Expense reimbursement
 - Medical, dental, disability, 401K, life, and more

Help Wanted



Company Overview

The R.E. Michel Company was founded in Baltimore, Maryland in 1935 as a supplier to the home heating oil burner industry. Still family owned and operated, we have grown to be one of our nation's leading wholesale distributors of HVACR equipment, parts and supplies and we have more than 250 locations nationwide.

For consideration and to apply online please visit our website at <https://www.remichel.com/WebServices/WebContent/start/jobs>
REMICHEL.COM

For Sale

Business for Sale

Heating, Air Conditioning and Ventilation company in Lake Tahoe, California and Nevada. 20 years established in area. Gross receipts \$265K Average. Asking \$165K. (530) 416-1864

Advertiser Index

ADVERTISER.....	ICN PAGE
Baker Distributing Company.....	6
ComStar International Inc.....	12
Ferguson HVAC / Ruud.....	2
Ferguson HVAC / Trane.....	3
Fieldpiece.....	8
Goodman.....	24
Gree Electric.....	15
IHACI Training Classes.....	20-21
Mitsubishi Electric.....	9
North American Technician Excellence (NATE).....	19
National Comfort Institute, Inc.....	11
Pacific Gas and Electric Company.....	14
Pro Source/Pro Lift.....	16
Rapid Duct Testing.....	13
R.E. Michel Company.....	10
San Diego Gas & Electric Company.....	17
Sierra Chevrolet.....	18
SoCalGas.....	7
TSI Incorporated.....	23
US Air Conditioning Distributors.....	5
Vent Cap Systems.....	4

The Institute of Heating and Air Conditioning Industries publishes
INDOOR COMFORT NEWS

IHACI OFFICERS

Mark Ramirez, President
Comfort Climate Control

Bob Wiseman, Chairman
Canoga Park Heating & Air Conditioning

Carlos Ruiz, Vice President
Southern California Gas Company

Dean Gilford, Secretary/Treasurer
Kilowatt Heating, A/C & Electric

Tyler Miner, Immediate Past President
Redlands/Henry Bush Plumbing, Heating and Air Conditioning

BOARD OF DIRECTORS

Steve Adams
Ferguson Heating & Cooling

Jim Batts
Los Angeles Department of Water and Power

Mike Carson
Brody Pennell Heating, Air Conditioning and Electrical Contractors

Steve Clinton
Southern California Edison

Eric Linares
Ingersoll Rand

Robert Scott
RASENT Solutions

Penny Yonan Padgett
US Airconditioning Distributors

INDOOR COMFORT NEWS

Gilbert Rivera
Editor

Susie Evans
Executive Vice President

Maria Jimenez
Lisa Marie De Roma
Advertising Sales Representatives

Ted Rieger
Northern California Correspondent

Jim Johnson
Contributing Editor

Rick Torres / Calavera Graphics
Pre-Press Consultant

Lourdes S. Marta
Program Coordinator

Ari ManSonHing
Accounting

INDOOR COMFORT NEWS is not responsible for unsolicited materials. Although every precaution is taken to ensure the accuracy of statements, IHACI assumes no responsibility.

Postmaster: Send address changes to
INDOOR COMFORT NEWS
454 W. Broadway, Glendale, CA 91204
Phone (818) 551-1555



Technical Training Associates
Skill Development Through Specialized Training

Service Management Excellence

This book is a no-nonsense approach to being an effective supervisor, manager, department head or small business owner. Whether you are already a service manager or aspiring to be one, you're sure to find something here that will give you the knowledge, practical skills, and tools you need to get your job done.

157 pages, including appendices that contain resources for various tools and resources referenced in the book.



\$59.95
plus Shipping & Handling

Order Your Copy Today!

techtrainassoc.com OR www.escogroup.org

Questions?
Contact Technical Training Associates at
(520) 625-6847

Indoor People

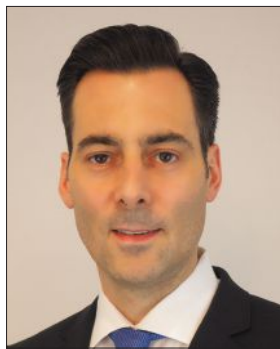
Continued from Page 19

through 2014 and 2018.

Prior to his time at Lennox, Fouch worked in Texas for a number of HVAC manufacturers and suppliers. He served as an area sales manager for Comfort Supply Incorporated (a division of Watsco), a regional sales manager for Lindab Incorporated and Krueger, and a district sales manager for Research Products Corporation.

Fouch earned his bachelor's degree in business administration, marketing from Texas Tech University in Lubbock, Texas.

• • • • •



THOMAS TROEGER

REHAU announced the promotion of **Thomas Troeger** from CMO to CEO of the Americas region. The regional executive board of REHAU Americas, with headquarters in Leesburg, Va., includes Dr. Thomas Troeger, chief executive officer (CEO); Theo Haast, chief financial officer (CFO); and Terry Barnaby, Head of Operations (COO).

Haast, who headed the region as president and CFO since January 2019, has

elected to refocus on his main and key responsibilities as CFO. "We thank Theo for leading the region to improved profitability during the last two years, an important step in preparing the foundation for growth in the Americas," said William Christensen, CEO REHAU Group.

During 14 years with REHAU, Troeger has developed through various positions with increasing responsibility, primarily in the areas of marketing and sales.

He became director of the

furniture solutions business division in North America in 2013 and then vice president of the division for the entire Americas region in 2015. Troeger joined the regional executive board in January 2019 as chief sales and marketing officer, with all the company's non-automotive business divisions reporting to him.

• • • • •

Uponor North America announced the appointment of **Brett Boyum** to the position of vice president of marketing & offerings and a member of

the company's senior management committee.

Boyum will focus on growing business by accelerating the innovation pipeline, managing the product portfolio, connecting the technical aspects of solutions to the needs of Uponor's customers, and building stronger connections between company strategies and customer experiences.

Boyum most recently served as senior vice president of marketing for Cambria. Previously, he worked more than 17 years at



BRETT BOYUM

Marvin Windows in marketing roles of increasing responsibility.

eXPand Your Indoor Air Quality Investigations

MEASURE MASS AND IAQ GASES WITH TSI'S NEWEST INSTRUMENT

Having a multi-parameter IAQ instrument that can be configured, customized and expanded to monitor and maintain optimal indoor air quality is important, and can save you a lot of time. With the new Q-Trak™ XP Indoor Air Quality Monitor, you can measure:

- + Up to 20 IAQ measurements simultaneously
- + Up to 6 different types of gases
- + PM2.5 and PM10 mass concentrations and particle counts
- + Temperature and relative humidity
- + Large data logging capacity

IDEAL FOR:

- + IAQ surveys and investigations
- + IAQ compliance testing in schools and commercial buildings
- + Evaluating thermal comfort

To learn more, visit
tsi.com/Q-Trak-ICN

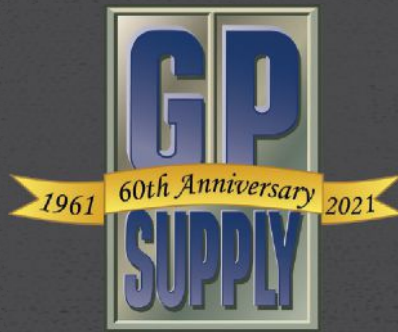


Editorial Focus

Continued from Page 15

efficiencies in residential and commercial markets. The line works alongside other Johnson Controls HVAC products and solutions. The redesigned blower was engineered to bring comfort and advanced air distribution to improve indoor air quality and enhance wellness. In addition, the advanced fan design and vibration-reducing technology minimize noise to provide quiet comfort year-round. These units are designed with individual access panels and front-facing connections, simplifying installation and maintenance.

More information: www.york.com.



CELEBRATING *Years* 60

C O N G R A T U L A T I O N S
to Geary Pacific Supply
on 60 years in business.

Harold Goodman made a great decision to have Geary Pacific Supply as a distributor almost 40 years ago. We are proud to have grown along side you.



www.goodmanmfg.com

www.amana-hac.com