

TECHNICIAN CERTIFICATION FOR THE HVACR INDUSTRY | AUG. 2022

# NATE

M A G A Z I N E

## VIRTUAL TRAINING IN HVACR

LOW-GWP  
REFRIGERANT  
TRAINING

PUTTING TECHS  
ON THE  
PATHWAY  
TO LEARNING

NATE'S NEW  
WEBSITE



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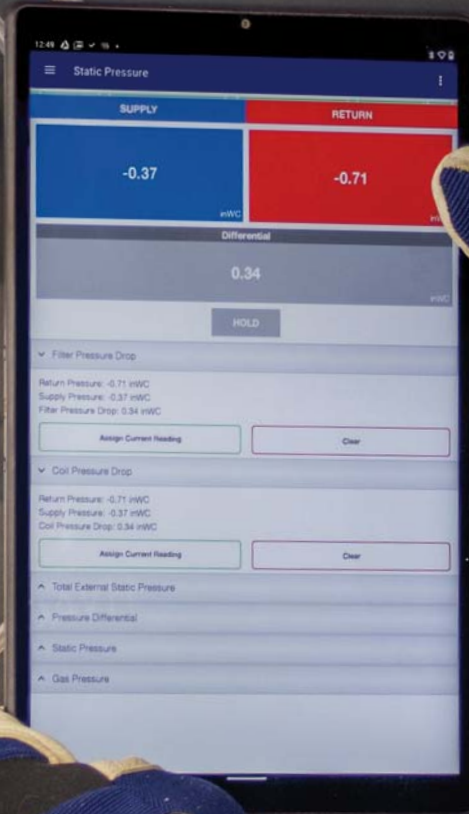
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# NATE and Its Partners Work Together to Expand and Innovate

## LOOKING FOR WAYS TO BETTER SUPPORT TECHNICIANS.

The HVACR industry is always looking for ways to better support technicians, and many times the most memorable and impactful moments of growth occur when partners across the industry work together to expand and innovate. In fact, NATE was founded 25 years ago when industry leaders came together to find new ways to support and elevate technician excellence. Since NATE's inception, our close relationships to manufacturers, distributors, contractors, and training providers have been invaluable to the trajectory and speed of our growth. Given the added complexity of today's HVACR equipment, these partnerships are critical to ensure that we have knowledgeable and competent technicians making installations and repairs.

Recently, NATE started providing our community with more accessible and robust online training and testing opportunities for HVACR technicians. This past winter we launched NATE Training Academy, our online training platform, and we have been busy adding new content and courses every month. In our ongoing conversations with our industry partners, we quickly realized we were not the only ones exploring this space. With the new ways online platforms can offer interactive and dynamic content including virtual reality training, it makes sense that others are exploring options in this exciting growth area.

In our feature article (page 8), you can read more about these conversations, how Carrier and Lennox are expanding their online technician training options, and how they are incorporating NATE Training Academy into their growing platforms. When we learned we were working towards similar goals, we immediately began to discuss ways we could support each other. When it comes to technician training and development, our industry partners recognize that we are stronger together.

This past year, we introduced a new low-global warming potential (GWP) refrigerant certification exam. The exam is designed to validate a technician's knowledge of the low-GWP refrigerants becoming common in the HVACR industry due to new industry regulations. We designed the exam to ensure that HVACR technicians have the necessary skills and job knowledge to handle refrigerants of all types and placed a strong emphasis on the safe handling and use of these new refrigerants. We also created an accompanying study guide to help technicians prepare for the exam, which is available in the NATE online store.

And now, as part of our efforts to create more online options for technicians, we are preparing to launch a new course on NATE Training Academy for our Low-GWP Refrigerant certification. Available this fall, the NATE Training Academy low-GWP refrigerant course will cover the exam's knowledge areas of expertise, and technicians can feel confident that the courses will prepare them for success. In this issue, you can find our conversation with Xudong Wang, vice president of Research at AHRI, about the importance of low-GWP refrigerants in our industry, as well as our conversation with Doug Donovan, president and CEO of Interplay Learning, about why we are adding low-GWP Refrigerant courses to NATE Training Academy and what the new courses will be like.

I am excited about our next steps forward with NATE Training Academy and our work with industry partners to provide more options and flexibility to today's technicians. At NATE, we are focused on being the industry leader in developing and recognizing professional HVACR technicians. And we are confident that the best way to do that is with the support of everyone in our industry.



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# BADGE OF HONOR.

BEING THE BEST ISN'T JUST A TITLE—IT'S A RESPONSIBILITY. AND SO TO ALL OF OUR DEALERS WHO SHARE OUR UNENDING PURSUIT OF EXCELLENCE: THANK YOU. WE'RE STRONGER TOGETHER BECAUSE WE RUN TOGETHER.



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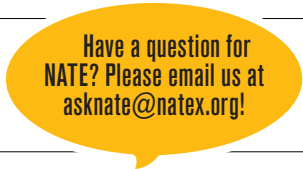
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# You Asked, We Answered

QUESTIONS ASKED BY NATE-CERTIFIED TECHNICIANS, ANSWERED BY THE NATE TEAM AND SHARED WITH YOU.



## ARE ANY OF THE PRACTICE QUESTIONS FROM THE NATE STUDY GUIDES ON THE ACTUAL EXAM?

Our Certified HVAC Professional (CHP-5), Core Exam, and Specialty Exam study guides all have practice questions at the end of each chapter. However, the NATE study guides are meant to be training resources for NATE exams. The practice questions and answers were developed to help technicians affirm their knowledge of the relevant course material. While the study guide questions are different from the questions you will see on the exam, they are designed to help build your familiarity and confidence while taking the NATE exams.

## A CANDIDATE AT MY TEST SESSION DOES NOT HAVE A NATE ID. WHAT SHOULD I DO?

If candidates are new to NATE and taking their first exam, they may not have a NATE ID. When administering a paper exam, please leave the NATE ID number field blank. When setting up an online test session, please leave the NATE ID number blank and enter the candidate's email address.

## HOW DO I CHECK HOW MANY CONTINUING EDUCATION CREDITS I HAVE?

Technicians should log in to their myNATE account to view continuing education hours (CEHs) history. If you are unsure of your username or password, you can reset your information by emailing us at asknate@natex.org. If you have CEHs you would like to add to your profile, you can add these to the Pending Credits tab of your myNATE account.

## HOW DO I SHARE MY NATE CERTIFICATION WITH OTHERS ONCE I EARN MY CERTIFICATION?

Once you've become NATE certified, you'll receive a digital badge that you can share on social media, your email signature, or website. Your digital badge is verification that you've passed NATE certification exams. We will create a badge for each certification you've earned and email it to you directly from Badgecert. You can find more information about how to share your Badgecert credentials at www.NATEX.org, or contact Badgecert directly at support@badgecert.com.

## Word Search

1. Expertise	F S Y C L C U Y W O T Q S X C
2. Pathway	I C X D A R L P A I N T Z O T
3. Hydronics	L I Q B B E H B U W N L M J D
4. Refrigerants	T N P E O D V T R A H F I U N
5. Ammonia	E O D O L E A E R S O T C N S
6. Credentials	R R U E G N N E V R H T A A E
7. Comfort	O D A H C T G T T U F T R P T
8. Thermostat	W Y C C R I A M M O N I A N E
9. Service	Z H D A R A V A W I A K H H G
10. Global	V G P F L L L R A C A D E M Y
11. Partner	B U E O O S K V E M G L C R P
12. Academy	Q R S Z X X Q D B S R Y A B F
13. Online	N E S I T R E P X E W G N E D
14. Filter	T A T S O M R E H T W J B K C
15. Duct	L V R N H T T M G J R U Z W K



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## DAIKIN *ATMOSPHERA* – OPENING DOORS TO NEW OPPORTUNITIES



Discover our next generation of single zone ductless products with low Global Warming Potential (GWP) R-32 refrigerant. Daikin *ATMOSPHERA* is available in four sizes from 9,000 to 24,000 BTU and is the first product from Daikin to use R-32 refrigerant in North America. Daikin *ATMOSPHERA* reduces the Global Warming Potential impact on the environment by up to 80% compared to similar R-410A systems. And R-32 has been shown in Daikin's labs to increase efficiency by up to 12% over R-410A with comparable products, lowering electricity consumption and indirect emissions. A noteworthy new feature includes a new hybrid cooling technology that dehumidifies even in low cooling loads and continues to maintain dehumidification once a set-point temperature is reached. The indoor unit also includes built-in Wi-Fi for connectivity to the Daikin Comfort Control App. In addition to the included wireless I/R controller, Daikin *ATMOSPHERA* is compatible with several other Daikin controllers, including the Daikin *One+* smart thermostat.

### ADDITIONAL INFORMATION

Before purchasing this appliance, read important information about its estimated annual energy consumption, yearly operating cost, or energy efficiency rating that is available from your retailer.



**R32**

Up to 27.4 SEER  
Up to 13.8 HSPF  
Up to 16.3 EER





# NATE News

## TECHNICIANS: ENTER THE SERVICE TITAN HVAC NATIONAL CHAMPIONSHIP

ServiceTitan has launched a new HVAC National Championship that will give away \$115,000 in cash prizes to the best HVACR professionals and apprentices in the nation. The competition series is meant to honor and showcase the abilities of HVACR professionals and apprentices from across the country. Through a competition based on skills, ServiceTitan hopes to inspire excitement for young, hopeful tradespeople pursuing their careers.

The first round is an online multiple-choice quiz with questions provided by NATE. Those who pass will advance to a practical skill set round. The top 15 apprentices and the top 15 professionals will be invited to compete live in the semi-finals at the Tampa Convention Center on November 2, 2022. The first round closed on Sunday, July 31, 2022.

All qualifying round winners who advance to the semi-finals will receive a custom VIP prize package from ServiceTitan HVAC National Championship sponsors and an all-expenses-paid trip to Tampa, Florida, to compete in the 2022 program. For more information, visit: [HVACNationals.com](http://HVACNationals.com)



### UPCOMING EVENTS:

PHCC Connect	October 5-7	Charlotte, North Carolina
Women in HVACR	November 2-4	Phoenix, Arizona
IHACI	November 16-18	Pasadena, California

## NATE AT SKILLSUSA CONFERENCE 2022

NATE continues its ongoing tradition of providing assessments for the SkillsUSA HVACR competition, which attracts new talent to the event every year. Geared toward high school and college students, the contest includes a series of testing stations designed to assess skills identified by industry HVACR standards. Industry equipment used during the workstations portion of the contest may include but is not limited to: ice machines, refrigerated display cases, small package HVAC units, furnaces, and split-system air conditioning and/or heat pump units and geothermal units.

In the High School Division, Cole T. Kelley of Billerica, Massachusetts, won Gold; Nathaniel Brown of Oklahoma City, Oklahoma, won Silver; and Daniel Keeton of Piketon, Ohio, won Bronze. In the College Division, Joe Guza of Salisbury, North Carolina, won Gold; Nathan Wiese of East Peoria, Illinois, won Silver; and Jaxson Burns of Muskogee, Oklahoma, won Bronze. You can find more information about the competition as well as this year's gold, silver, and bronze medalists at [SkillsUSA.org](http://SkillsUSA.org).

## NOMINATE A TECHNICIAN FOR NATE #TECHNICIANTUESDAY

NATE is interviewing new technicians every Tuesday about their work and what NATE means to them in a new #TechnicianTuesday series. The series celebrates NATE-certified technicians and highlights one technician and his/her work each week. You can nominate technicians you know for a future #TechnicianTuesday by emailing NATE's marketing manager, Daisy Weill, at [dweill@natex.org](mailto:dweill@natex.org). To see past interviews, visit NATE's Facebook page, [www.Facebook.com/NATETechnicians](http://www.Facebook.com/NATETechnicians), or Instagram account, @NATETechnicians.

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\*Faster than similar installation, cleaning and service performed on standard ductless wall-mounted units.

# Partners in Education

THE NATE TRAINING ACADEMY, LAUNCHED IN JANUARY 2022, MARRIES THE TECHNICAL EXPERTISE OF HVACR MANUFACTURERS WITH A POWERFUL ONLINE TRAINING PLATFORM.



**N**orth American Technician Excellence (NATE) has been synonymous with quality education and training in the HVACR industry. It has again evolved, partnering with various industry manufacturers to take advantage of online education benefits: flexibility, self-paced learning, accessibility, and time management.

“The HVACR industry is always looking for ways to better support our technicians,” explains John Lanier, chief operating officer, NATE and the Air-Conditioning, Heating and Refrigeration Institute. “With the growth of online training, especially the new ways online platforms can create interactive and dynamic content such as virtual reality (VR) training, this is an exciting space to move into—and it makes sense that our partners are all exploring similar options.

“When it comes to technician training and development,” he continues, “our industry partners recognize that we are stronger together. In our ongoing conversations with our industry partners, when we realized we were working toward similar goals of adding accessible online training, our next question was immediate: ‘How can we better support each other in this new effort?’”

HVACR manufacturers have supported the organization since its inception, Lanier adds, by investing in contractors and technicians and emphasizing quality technician training and NATE certification.

“There is no question that the NATE-certified technician requirements of many manufacturers’ authorized dealer programs have helped dramatically increase the number of NATE-certified technicians in the field,” Lanier notes. “And with the added complexity of today’s HVACR equipment, these types of partnerships are critical to ensure that we have knowledgeable and competent technicians making installations and repairs.”

For HVACR manufacturers, partnering with NATE—the “gold standard” of HVACR training—ensures that technicians installing their equipment will be highly trained.

“NATE provides a consistent set of testing across the industry to establish a baseline skill-and-certification level for all technicians across the country,” says Lindsay Bull, senior manager of residential education/technical literature, Carrier Corp. “By requiring our Factory Authorized Dealers to employ NATE-certified technicians, we are enhancing the consumer experience and offering a service quality guarantee.”

She explains that Carrier Factory Authorized Dealers earn Carrier/Bryant endorsement by participating in extensive annual training, maintaining current industry licenses and insurance, employing NATE-certified technicians





Hands-on experience is one of the best ways to learn for most people. Technicians studying through NATE Learning Academy via Interplay Learning can use 3D and virtual reality simulations for similar experiences. Photo credit: Lennox International

(Red Seal in Canada), and receiving exemplary customer-service scores.

“Lennox partners with the best-of-the-best dealers, and NATE certification is the gold standard for technicians, so the partnership makes perfect sense,” says Joseph Jones, director of Lennox Learning Solutions, Lennox International. “We encourage all Lennox dealers to be NATE-certified and to market that back to their customers. NATE is an important third-party accreditation that adds tremendous validity to your diagnosis.”

More than 130 students have taken the NATE Exam Preparation course offered through Lennox field technical consultants in the past year and a half, he adds: “It is a certification that is well-respected in the indus-

try and carries a lot of weight for the technician.”

The manufacturer encourages technicians to become NATE-certified, and it covers the cost of two NATE exams for its premier dealers. For more advanced courses, NATE is a prerequisite for taking the class. When classes are not in session, Lennox offers online e-proctoring for individuals who want to take their NATE exam.

“We see the value in having our elite dealers pass and promote their NATE certification,” Jones explains. “Homeowners crave trust in the contractors they hire to make their homes comfortable. The two components of trust are integrity and competency. When you proudly wear your NATE certification badge and promote your

commitment to excellence through a third-party, proctored authority, you accelerate the speed of trust with your customers. It’s a point of distinction and a signal to homeowners that a dealer is committed to excellence.”

## TAKING IT ONLINE

NATE partnered with Interplay Learning to bring this project to fruition, and NATE Training Academy launched in January 2022.

“Manufacturers and HVACR technicians have several benefits for using an online platform,” explains Doug Donovan, chief executive officer and co-founder of Interplay Learning. “The NATE Training Academy is designed to provide technicians with a convenient way to train for NATE certification exams online at their own pace. These technicians can build skills and ramp up credentials faster than traditional pathways have allowed.”

Advanced 3D technology can accelerate HVACR technicians’ field knowledge.

“Using hands-on 3D and VR simulations, they can practice hundreds of scenarios that might take years to see in the field, making training more valuable and efficient,” says Donovan. “In a business where companies grow revenue one qualified technician at a time, this accelerated skill development can translate into faster company growth rates.”

Donovan notes that more than 50 customers use NATE Training Academy at Interplay; most are HVACR service providers, with manufacturers and dealers mixed in. Eight of the top 10 manufacturers use Interplay’s full SkillMill subscription.

“Carrier’s Learning Management System, My Learning Center, offers a one-year subscription to Interplay Learning, and we promote NATE Training Academy as part of that subscription,” Bull says. “My Learning Center also offers NATE CEU credits through

an extensive catalog of online, virtual, and classroom courses. Technicians access NATE Academy courses online at [MLCtraining.com](http://MLCtraining.com) via a subscription to [InterplayLearning.com](http://InterplayLearning.com).”

Jones notes: “For those students who attend a Lennox technical training course, we provide access to NATE Training Academy so they can study and prepare for future NATE exams. We also offer the NATE study guides and materials to supplement the course curriculum. This gives the student a variety of materials to help prepare for NATE exams and increases their passing percentage.

“And our approach works,” continues Jones. “Students who complete our BuildATech program more than double their passing rate compared to technicians that have not taken it.”

Donovan explains that NATE Training Academy is available in every Interplay user’s subscription to SkillMill. It is structured into five paths, and each covers one area of the Certified HVAC Professional (CHP-5) program: HVAC fundamentals, electrical and controls, comfort and airflow, installation, and service.

“The courses in each path are ordered based on our subject matter experts’ input so that learners have a scaffolded, streamlined learning experience where topics build on each other through each course,” Donovan says. “Each pathway includes videos, simulations, and quiz questions, and takes anywhere from eight to 20 hours to complete. At the end of each path, learners are directed to the myNATE portal to sign up and take an exam.”

Beyond CHP-5 prep courses, Interplay Learning’s SkillMill catalog can help prepare technicians who want to follow NATE’s traditional Core and Specialty exam pathways, Donovan notes. Interplay also plans additional courses with NATE to help technicians prepare for other certification exams, such as NATE’s Low-GWP Refrigerant

“THE DEVELOPMENT OF THE NEW NATE TRAINING ACADEMY IS A CRITICAL INITIATIVE THAT WILL ACTIVELY ADDRESS THE SHORTAGE OF SKILLED LABOR AND HELP CLOSE THE SKILLS GAP IN THE HVACR INDUSTRY.”

— Doug Donovan, Interplay Learning



ant Certification. Many courses also count toward NATE recertification requirements.

“NATE has been focused on incorporating our new certification pathway, the CHP-5, into our online training platform,” Lanier says. “With the launch this fall of our low-GWP refrigerants courses to prepare technicians for our certification exam, we are continuing our effort to find new ways to collaborate with our industry partners.”

### INVESTING IN THE FUTURE

Professional development is essential for HVACR technicians to advance in their chosen career paths. Additional certifications lead to more specialized skills, job satisfaction, and higher wages.

“The development of the new NATE Training Academy is a critical initiative that will actively address the shortage of skilled labor and help close the skills gap in the HVACR industry,” Donovan notes.

And, manufacturers play a crucial role in technician education and development.

“HVACR manufacturers recognize that an investment in NATE certification is important because it leads to higher quality installation and repairs, which means higher customer satisfaction, lower warranty costs, and a better bottom line,” Lanier notes.

“We appreciate how manufacturers emphasize this to their contractors and encourage them to support their technicians’ development.”

Proper training is critical for accurate HVACR equipment installation — protecting the homeowner and the brand.

“Technicians who train regularly provide additional peace of mind to their customers,” Carrier’s Bull says. “Homeowners can feel confident that they’re working with technicians who have a solid understanding of the latest best practices, techniques, and product/industry standards.

“And, as the industry continues to evolve, training technicians on the newest innovative product solutions and technology is necessary to ensure proper installation and maintenance of products for optimal home comfort and product life longevity.”

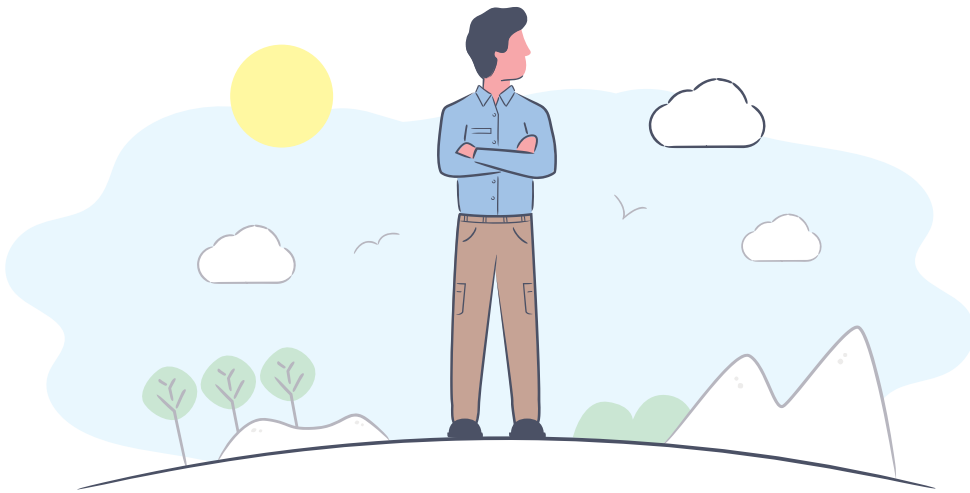
Jones adds: “Perfect Air is our brand, but we cannot deliver on that promise without our dealers. We owe it to our dealer partners to provide training that has value and helps in their success.

“We have such a short time to shape the first impression,” he explains, “and having NATE-certified technicians and factory training from the manufacturer is a fast track to building trust with your customers.” ●

Kelly Faloon is a contributor to the *NATE Magazine*.

Opteon™ XL41 (R-454B)

# The Clear Future of HVAC Refrigerants.



## The Truly Sustainable Refrigerant

Looking for an alternative to R-410A? With a 78% reduction in global warming potential (GWP), Opteon™ XL41 (R-454B) is the optimal solution to meet the long-term HFC phase downs of the future. XL41 matches the performance of R-410A with the lowest GWP (AR4: 466) of the leading R-410A alternatives. Additionally, transitioning your system from XL41 to R-410A requires minimum component design changes, so service technicians won't need to learn a new system. Designed with the future in mind, Opteon™ XL41 is the truly sustainable refrigerant.

Visit [Opteon.com/GoBeyond](https://www.opteon.com) for more information on the benefits of Opteon™ XL41.



**Opteon™** The Performance Today Demands. The Future Tomorrow Deserves.



# NATE Unveils Enriched Website

CHANGES TO THE REVAMPED NATE WEBSITE INCLUDE A CLEAN LOOK, USER-BASED NAVIGATION, AND EASIER ACCESS TO THE DEPTH AND BREADTH OF THE ORGANIZATION'S DATA.

As business professionals, we understand the need for a website that showcases our business in the best light. The development of it can be overwhelming, so we hire technical professionals to ensure it can be comprehensive and easy to navigate.

The same is true when you need to update and revamp the site—or rebuild it.

NATE undertook this project recently, hiring business and technology firm ImagineX Consulting, Atlanta, Georgia, to take charge of the development of its new site ([www.natex.org](http://www.natex.org)). The biggest challenge? The large amount of data.

“This site holds a lot of necessary data; previously, it was difficult to navigate the site,” notes Yaron Ben Shabat, senior consultant, ImagineX.

“We created unique filters and search capabilities to make it easier for users to find the information they are looking for.”

Not only was the data an issue, but also the website’s user types.

“The two challenges that stand out to me were the breadth of user types and the sheer amount of content,” explains Ashley Williams, ImagineX’s delivery director. “The users represent many, quite different roles. Our challenge was to provide clear paths for each type of user, giving each the best paths to the information relevant to them without confusing the other user types.

“For the content,” she continues, “we went through the site page by page to organize and consolidate where possible. We also made sure that each

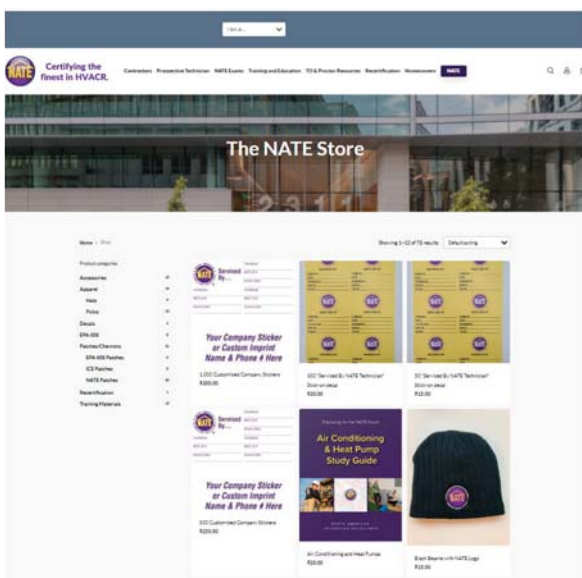
piece of content was mapped back to all relevant user groups in a logical way.”

Additionally, NATE ensured that the new website would be mobile friendly. “Over 40 percent of our site traffic is from visitors using a mobile device,” says Gurminder Sidhu, senior director of business operations for NATE. “Our old site was difficult to navigate on a cell phone, and we wanted the new design to accommodate visitors using any type of device.”

Williams adds that the people who worked on the NATE site brought operational, technical, and hands-on expertise to the project:

- Account Lead Adam Auerbach owns the overall relationship with NATE.
- Software Engineering Practice Director Nael Alismail provided technical architecture expertise.
- Anji Baray was the delivery lead until she went on leave; Williams took over this role. Baray wrote all the user stories, which were the requirements for the website redesign, and scheduled when they would be worked. She managed the ImagineX team, served as the primary interface with the NATE team, and carried out traditional project management activities.
- Meg Snider created the outlines for the new site and the user experience design, working closely with the NATE team to refine the look and feel of the experience, align and streamline content, and bring user experience expertise to the team.
- Shabat did all of the WordPress work and trained the NATE team to manage content on the site in the future.
- Shabat and Software Engineer Bobby Finley built the site, including the new NATE store, made updates based on NATE feedback, and ensured the website was secure.

An organizational structure was developed to keep track of everyone



NATE's new, enhanced online store homepage. The website was developed and built by ImagineX Consulting, Atlanta, Georgia.

working on different pieces of the website.

“We used the concept of user stories to document the requirements for the application,” Williams explains. “A user story is a way to break the requirements into manageable pieces of work for an engineer. It’s a way of saying, ‘When I do this on the website, I should get these results.’ We track these user stories in a tool called JIRA, which everyone on the team can access, and you know what someone is working on at any time.

“We had wireframes to show what the new site should look like and how it should behave from a user experience perspective,” she says. “The user stories then became the basis of how we tested the site before launch.”

She adds that the NATE team was a critical part of the project.

“Gurminder Sidhu and Daisy Weill worked with us practically daily to make sure the requirements were complete, and they approved the designs for us,” Williams says. “They were glad to answer questions any time or connect us with the right people when we needed them for additional information. They also tirelessly tested the new website before it launched and provided feedback for us. They were a real pleasure to work with.”

The ImagineX and NATE teams met three days weekly to discuss ongoing work and questions. Every two weeks, ImagineX presented demos of the work it had completed, and the two teams had regular status meetings to keep focused on the project and its continuing progress. Email communication worked for quick questions and responses.

The NATE team was awesome to work with on this project, according to Shabat. “They were passionate about creating a seamless user experience for their website visitors and ensured our success by allowing the ImagineX and NATE teams to work closely together.”

## NEW AND IMPROVED FEATURES

“The new website gave us the opportunity to share unique content for audiences that we didn’t speak to before,” Daisy Weill says. “We now have information for people who are considering entering the industry, so they can learn more about the HVACR trade and how NATE can help them.”

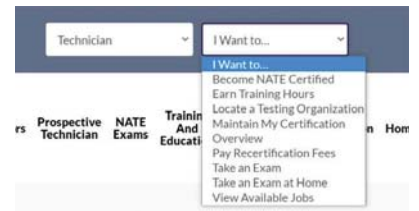
Anthony Spagnoli, director of NATE Testing and Education, adds that the site now features a Document Library where users can find all the documents and forms they need to provide NATE exams and training. “This is something proctors and Recognized Training Providers have been asking for over the years, and it was important to us to incorporate their feedback when we were building the new site.”

“I’d have to say I’m most excited about the unique ‘I Am, I Want’ dropdown navigation [at the top of the page] and the free search additions to the site,” Shabat, the project’s lead engineer and developer, says.

The “I Am” dropdown allows users to select the type of audience they would like to search as: contractor, homeowner, prospective technician, veteran, etc. Once a user type is selected, the “I Want” dropdown appears and offers navigational options personalized for their audience type: getting started, technician exams, locating a testing organization, managing certification, etc.

“Traditional search bars will let you find information based on keyword searches,” Shabat explains. “In this case, where there is a lot of information, you only access the relevant content based on who you are and what you’re looking for. It saves time and takes out any guessing you might be doing when entering search phrases.”

Williams adds: “Asking users who they are and specifically what they need or want to do is a friendly, conversational approach that adds something very positive to the NATE website ex-



The “I Am” dropdown allows visitors to select their user type. Once a user type is selected, the “I Want” dropdown appears and offers navigational options.

perience. The I Am, I Want dropdown navigation helps return more results quickly by pre-filtering the results to be more relevant.

“For example,” Williams continues, “if I’m a homeowner, I don’t need to see information about taking a NATE exam, which could happen in a traditional search-box search. Instead, I’m taken directly to what I care about the most, and I’m taken there in fewer clicks.”

The site’s clean design is a plus, but what will users notice and appreciate the most?

“I think users will appreciate the easier access to the content they are looking for,” Shabat explains. “The previous site was content-heavy, which made it difficult for technicians and other website visitors to be efficient when coming to the site. We wanted to save them time and frustration when finding their way to the information they need.” He says making the site mobile-friendly was fairly simple, yet the team needed to customize some of the content to fit the screen requirements for various mobile devices.

Finally, the ImagineX team built the new site to make it easy for site administrators to make changes to the design.

“It is important to us at ImagineX that the client is set up for success and able to work independently once our time with them is done,” Shabat notes. “The admin will be able to use the templates in place for quick and easy updates/changes and creating new content.” ●

Kelly Faloon is a contributor to the *NATE Magazine*.

# Low-GWP Refrigerant Course Coming this Fall to NATE Training Academy

RELATED STUDY GUIDE AND EXAM WILL HIGHLIGHT SAFE REFRIGERANT PRACTICES TO KEEP TECHNICIANS OUT OF HARM'S WAY.

As the HVACR industry transitions to new low-global-warming-potential (GWP) refrigerants, NATE is staying one or two steps ahead. It has prepared a study guide on the topic, which is available at NATE's online store (<https://store.natex.org/low-gwp-refrigerants>).

NATE is creating a new online course with Interplay Learning on the topic that will be released this fall. The course will be added to the NATE Training Academy (<https://natex.org/contractor/nate-training-academy>). Industry experts who developed the study guide also are creating NATE's new certification exam covering low-GWP refrigerants.

Research on the low-GWP refrigerants started about a decade ago when the industry, regulatory bodies and others wanted to transition to using environmentally friendly refrigerants that would have a much lower GWP. Xudong Wang, vice president of research, Air Conditioning, Heating & Re-





frigeration Institute (AHRI), says, “We started our low-GWP alternative refrigerants evaluation program and worked with AHRI members including equipment and component manufacturers and chemical producers.”

AHRI is one of the largest trade associations in the U.S., representing more than 300 heating, water heating, ventilation, air conditioning, commercial refrigeration, and water heater manufacturers within the global HVACR and water heating industry.

“We also worked with national laboratories and universities to collectively evaluate many low-GWP refrigerant candidates. This effort continued for five years; in the end, we concluded that low-GWP refrigerants do exist, but that many of them should be classified as flammable. That’s why we started another research effort to look into how we can safely implement the flammable refrigerant application into practical use,” Wang explains.

Five years ago, AHRI launched a research program to generate publicly available technical data to support revisions and updates of relevant standards and codes related to the use of flammable refrigerants. Several prestigious organizations jointly funded the \$6 million+ research program including AHRI, American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE), U.S. Department of Energy (DOE), and the California Air Resources Board (CARB). It should be noted that as the standards and codes are updated, these environmentally friendly refrigerants can be deployed to the field in a timely and cost-effective manner.

Wang notes, “Our research projects show the potential flammability risks and the means to mitigate

“OUR RESEARCH PROJECTS SHOW THE POTENTIAL FLAMMABILITY RISKS AND THE MEANS TO MITIGATE THEM. THESE LESSONS LEARNED HAVE HELPED OUR INDUSTRY AND THE SAFETY STANDARD BODIES TO SET THE PROPER REQUIREMENTS TO PREVENT UNSAFE INCIDENTS FROM HAPPENING IN THE FIRST PLACE.”

— Xudong Wang, vice president of research, Air Conditioning, Heating & Refrigeration Institute (AHRI)



them. These lessons learned have helped our industry and the safety standard bodies to set the proper requirements to prevent unsafe incidents from happening in the first place.”

Moving forward, the revised codes and standards will require that equipment using flammable refrigerants have additional features such as the use of refrigerant sensors to detect refrigerant leaks and to mitigate the potential flammability risk using air circulation or safety shut-off valves.

Low-GWP refrigerants such as R-32, R454B and R1234yf (an A2L refrigerant) are more efficient and better for the environment. However, these products also are more advanced and complicated for HVACR technicians to work with.

That is why NATE is offering a low-GWP refrigeration exam in the future because of this technology advance, says Gurminder Sidhu, senior director, Business Operations, NATE. “It is a new challenge for technicians, and ensuring that they have the job knowledge and skills is important to the industry,” says Sidhu.

She adds that it is important for HVACR technicians to demonstrate proficiency and knowledge in the low-GWP refrigerant subject area. “We absolutely want to make sure those HVACR technicians that are servicing and installing the low-GWP refrigerants have the skills and knowledge to do so safely. This will prevent accidents that can be avoided.”

### THE NEED FOR NATE CERTIFICATION

Manufacturers such as Daikin say there’s a need for a NATE certification program for low-GWP refrigerants. “The low-GWP/A2L refrigerants are a different flammability rating (mildly flammable) than R-410A; therefore, technicians using them need training and awareness to ensure safe handling,” says Kelly Hearnberger, vice president, Advanced Product Marketing, Daikin. The company is one of the world’s leading air conditioning manufacturers.

According to Hearnberger, HVACR technicians need to demonstrate proficiency in this area. “It is imperative,” he says, “that our

HVACR technicians demonstrate and practice safe refrigerant handling. The integrity of our industry depends on this practice. At Daikin, safety means both following defined protocols and procedures—and also verifying and auditing to confirm we’ve followed them. It means no incidents of harm to individuals and the environment. Our industry calculations for Life Cycle Climate Performance (LCCP) are dependent on safe handling.”

Hearnsberger cites one of the key characteristics of online training and NATE Training Academy for technicians as they work to earn their NATE certification: “The online courses are extremely important, as they offer a popular mode of learning. We also must note that the skills assessment must be transmitted to real-world apprenticeship and hours in the field.”

Hearnsberger offers the following specific guidance for NATE’s certification initiative covering low-GWP refrigerants: “It’s important to ensure that instruction and the materials for A2L refrigerants are included in the base certification moving forward. As a result, after re-certifications for about two to three years are completed in parallel with the low-GWP/A2L training in the ACCA base certifications, we can expect a properly certified workforce moving forward.”

It makes sense for NATE to offer a low-GWP refrigerant certification exam, says Jeff Warther, HVACR training/business development manager, The Chemours Company. Chemours produces thermal management and specialized solutions including Opteon and Freon refrigerants.

Warther explains that NATE’s low-GWP refrigerant certification offering certainly makes sense for the industry. “The low-GWP

refrigerant certification,” he says, “provides a great opportunity to get everyone back to the basics. Many of the changes associated with the new low-GWP refrigerants are things that the HVACR industry has considered best practices. These include activities such as purging with nitrogen while brazing and pressure-testing the system. As we transition to the low-GWP refrigerants, they will be required as part of the installation or servicing processes.”

Warther believes NATE’s low-GWP refrigerant certification initiative is beneficial in two ways: “It makes sure the instructor is properly covering the most important topics. I use the term ‘properly covering’ to discuss the second reason for the exam—if the technician isn’t able to retain the information and pass the exam, the instructor needs to modify the training material in such a way that the technician retains the information, passes the exam, and more importantly is able to apply the training to real-world conditions.”

Warther notes that without a certification exam, the quality of the training could be negatively impacted. “I believe an exam keeps the training consistent and valuable.”

### PREPARING FOR CHANGING JOB DUTIES

AHRI’s refrigerants research is matching technological advances stride for stride, according to Doug Donovan, CEO, Interplay Learning: “As the HVACR industry transitions to low-GWP refrigerants due to environmental concerns and regulatory requirements, AHRI wants to support having relevant safety standards and code adoption processes that keep pace with regulations that are advancing quickly.”

NATE has partnered exclusively with Interplay Learning to launch



“IT IS IMPERATIVE THAT OUR HVACR TECHNICIANS DEMONSTRATE AND PRACTICE SAFE REFRIGERANT HANDLING. THE INTEGRITY OF OUR INDUSTRY DEPENDS ON THIS PRACTICE. AT DAIKIN, SAFETY MEANS BOTH FOLLOWING DEFINED PROTOCOLS AND PROCEDURES—AND ALSO VERIFYING AND AUDITING TO CONFIRM WE’VE FOLLOWED THEM. IT MEANS NO INCIDENTS OF HARM TO INDIVIDUALS AND THE ENVIRONMENT. OUR INDUSTRY CALCULATIONS FOR LIFE CYCLE CLIMATE PERFORMANCE (LCCP) ARE DEPENDENT ON SAFE HANDLING.”

— Kelly Hearnsberger, vice president, Advanced Product Marketing, Daikin

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a new online training platform for HVACR technicians, NATE Training Academy. Donovan says the partnership will help ensure HVACR technicians are prepared for their changing job duties and responsibilities as refrigerant technology evolves.

“NATE’s and Interplay Learning’s training program and the NATE exam are an important part of making sure this knowledge is accessible to as many technicians as possible, and helps ensure that those techs are prepared to work safely in the field as low-GWP refrigerants are transitioned into the working environment,” says Donovan.

There is a whole new generation of refrigerants being introduced to comply with the EPA’s new standards regarding the GWP of refrigerants. Many of these refrigerants behave just like previous refrigerants. Donovan notes, however, that many are flammable, and that caution is always required when handling or working on systems containing this new generation of refrigerants. “Technicians,” he explains, “will need to become familiar with the applications of these new refrigerants as well as be aware of some of the safety risks associated with their use.”

The low-GWP courses to be offered through NATE Training Academy will be highly relevant to the subject matter. “These courses,” explains Donovan, “will cover the impact low-GWP refrigerants are having on the HVACR landscape. Learners will explore the history of refrigerants, their chemical composition, and safety characteristics. They also will learn best practices for working with A2L refrigerants and the tools, safety, code, and regulations involved in working with these refrigerants.”

The low-GWP refrigerant courses will be comparable in concept

“THE LOW-GWP REFRIGERANT CERTIFICATION PROVIDES A GREAT OPPORTUNITY TO GET EVERYONE BACK TO THE BASICS. MANY OF THE CHANGES ASSOCIATED WITH THE NEW LOW-GWP REFRIGERANTS ARE THINGS THAT THE HVACR INDUSTRY HAS CONSIDERED BEST PRACTICES.”

– Jeff Warther, HVACR training/business development manager, The Chemours Company



and style to other NATE Training Academy courses. “The approach,” says Donovan, “will be similar to previous NATE Training Academy courses. At Interplay Learning, our unique approach to course content and design teaches apprentices to think through problems step-by-step in an optimized path by using deductive reasoning. Because we consult with subject matter experts and conduct in-depth analysis of how to best take on real-world scenarios, Interplay trains learners how to arrive at the most efficient path to identify and solve problems.”

Technicians enjoy a great deal of convenience through online training and NATE Training Academy as they work to earn their NATE certifications. Donovan says, “Online training offers a flexible training schedule, allowing the technician to continue to work in the field while acquiring the required essential skills. Technicians experience several benefit as they earn their NATE certification through online training. The online approach reduces learning time, covers more competencies, applies to all skill levels, and enhances learning retention.”

NATE Training Academy has been a useful, popular tool and resource for NATE certification candidates as they take courses through the academy for the CHP-5 exam. Since NATE Training Academy’s launch in February 2022, more than 350 candidates have engaged with the Training Academy, and 52 have completed at least one of the full training paths (each path is a 10- to 15-hour commitment).

“This is a real testament to the techs who are taking time out of their busy lives to educate themselves in these topic areas,” says Donovan. “We also hope this level of activity over the past few months is reflective of how engaging and targeted the content is in preparing people for the CHP-5 exam.” He adds that technician managers have told Interplay Learning how excited they are that they’ve passed multiple CHP-5 exams after going through NATE Training Academy. He notes that those technician managers are supporting their teams to do the same so they can all be NATE CHP-5-certified. ●

Michael Keating is a contributor to the *NATE Magazine*.

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# Ultimate Technical Academy Puts Technicians at the Forefront



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COMPANY TO PUT  
TECHNICIANS ON THE  
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At Ultimate Technical Academy (UTA), it's all about the wins. The Little Rock, Arkansas, HVACR training company aims to create wins for consumers of HVACR equipment and systems, who require competent service; technicians, who desire a way to increase their value to employers in a manner that doesn't take years and isn't financially burdensome; and owners, who want a way to expand their workforce with technically competent people and to maximize their profits.



This three-pronged approach is the mission statement of Mark and Pat Hardwick, who opened the facility in 2003 and still run it nearly 20 years later.

Ultimate Technical Academy's goal is to create an elite group of top-performing HVACR technicians through education and hands-on training. This is crucial because the previous on-the-job training style just wasn't working, according to Mark Hardwick.

He explains, "The challenge with on-the-job training is always the same, regardless of whether you're talking about air conditioning, plumbing, electrical, or any other skilled trade. Who are you learning from? Are colleagues doing their jobs correctly? Are they good trainers? Do they have time? If a new technician gets on board with a company and rides with another technician, that technician might be a great technician, but is he a good trainer? More likely not. Does he have time? No, he has a job to do."

That means technicians pick up how to do things along the way. However, there's a very good chance that it's not the right way to do things.

"Technicians acquire bad habits," Hardwick says. "Sometimes, we'll get them with two or three years of training, and they are moving along pretty well in their careers. We'll discover, though, that they have misinformation on topics or bad habits."

The Hardwicks created UTA to start training at the grassroots level and jump start the learning process the correct way.

"One thing we really want technicians to come out of here with is a good foundation," says Hardwick. "You can always build another floor on a building, but if you don't have a good foundation, that's where the trouble comes."

## TRAINING EXPERTS

Hardwick grew up in a family HVACR business and got into training in the early 1980s.

"The market was shifting toward a service maintenance and replacement business more so than new construction," he says. "The first thing we asked ourselves is where are the technicians going to come from to do this kind of work? They're not out there, and you can't just hire an experienced technician that has these qualities. You have to build them and train them. And so, we started training."

UTA currently offers the following five-day courses: Electrical for HVAC; Refrigeration AC/HP Technology; Heating Technology; Installation Technology; Advanced Service Diagnostics; Electricians Service and Maintenance; and Plumbing Service and Maintenance.

The classes are designed to train the spectrum of attendees: new technicians, technicians who are interested in moving up the ladder, frustrated technicians that struggle in various areas, and experienced technicians who want to improve their skills in diagnostics and system performance.



“Whatever level learners you are sending to us, we’re going to take them to that next notch up— or two notches up,” Hardwick says. “How many notches they can climb is up to them, but you’re going to get them back at a higher level.”

UTA conducts training in a 16,000-square-foot, state-of-the-art training facility that features classroom space as well as electrical, heating, air conditioning, and plumbing labs. The labs contain a variety of equipment, including old and new options so that technicians are comfortable with any age of unit they might be called upon to service.

Each course is a blend of classroom training that explains the theory of “how it works” and hands-on training that teaches the “how-to” procedures. Students spend approximately one-third of their time in the classroom and two-thirds in the labs learning applied processes. This two-pronged training approach allows each technician to progress at his or her own speed.

“We do have quite a few technicians that have different skill levels,” says Pat Hardwick. “When they get into the lab and start working, they move forward at their own level. As they learn something, they then move to another project. There are technicians that have more experience who are going to go through training a lot quicker than somebody newer to the trade.”

Mark Hardwick notes that the company’s eight trainers try to meet everyone at their own learning pace and their own learning style.

“As the old saying goes,” he says, “take what’s been given to you and make the best out of it. Some people have a ‘let-me-just-go-out-and-grab-it’ style while others are, ‘OK, I’ve got to understand this stuff first.’ We just try to work with technicians at their own level of experience, learning styles, and paces.”

Classes are held 8 a.m. to 5 p.m. Monday through Thurs-



“WHATEVER LEVEL LEARNERS YOU ARE SENDING TO US, WE’RE GOING TO TAKE THEM TO THAT NEXT NOTCH UP— OR TWO NOTCHES UP. HOW MANY NOTCHES THEY CAN CLIMB IS UP TO THEM, BUT YOU’RE GOING TO GET THEM BACK AT A HIGHER LEVEL.”

— Mark Hardwick





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day and 8 a.m. to 1 p.m. on Friday. UTA handles hotel reservations for technicians and transportation between the hotel and training facility each day to make it easier for attendees.

More than 2,000 students will go through Ultimate Technical Academy’s training this year.



“WE DECIDED WE WERE GOING TO DO OUR TRAINING PROGRAM THE WAY WE SAW FIT AND DISCOVERED THAT NATE WAS A REALLY GOOD MATCH FOR US. TRAINING TECHNICIANS IS OUR NO. 1 GOAL, AND THERE IS A COMPATIBILITY BETWEEN UTA AND NATE.”

– Mark Hardwick

**NATE TIE-IN**

UTA has had a relationship with NATE since the late 1990s, and Mark Hardwick has served on the group’s technical committee in a technical advisory and testing development role.

“We decided we were going to do our training program the way we saw fit and discovered that NATE was a really good match for us,” he notes. “Training technicians is our No. 1 goal, and there is a compatibility between UTA and NATE.”

Not all technicians that go through UTA’s training are ready for NATE certification, but Hardwick remarks it’s always an option that is presented to them. He explains that UTA trains technicians from all over the country. For the

students that want to pursue NATE certification, UTA sets up a schedule and a regimen for them to accomplish that.

According to Pat Hardwick, most technicians stay for two weeks, which helps them accomplish the NATE portion of the training.

“The electrical class always goes along really well with the NATE core because the core has a lot of electrical questions on it,” she says. “If technicians come for two weeks, they can get the core done the first week and another test, air conditioning, for example, the second week. Our heat pump class works with the NATE heat pump exam, and the same with the gas heating classes.”

Planting the seeds of NATE certification bears fruit even after technicians have left Little Rock and return to their companies, according to the Hardwicks.

“Some technicians might not have earned their NATE certification while they were here, but the backbone of what they’ve learned will help them understand what’s required on the NATE exams,” Pat Hardwick says. “We just say, ‘Look, these books are yours—mark them up, highlight them, make notes in them, take your study guide...stay on track. Keep studying and then follow up with NATE certification when you get back home.’ There are a lot of certifications that probably happened...but don’t have our name on it.”

One of the things Mark Hardwick likes best about NATE certification is that it’s not a one-time event.

“Once you pass the certification, you’re not done. You’ve got to stay in tune,” he says. “Go to that manufacturer’s training—the Lennox, Carrier, Goodman, Trane, and York schools that they offer. Go to all that you can. You’re not done just because you passed the certification the first time around. You’ve got to continue to learn. This is a pathway. This is a lifelong journey. And, you’ve got to keep training.” ●

Elaine Yetzer Simon is a contributor to the *NATE Magazine*.

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# FOLLOW THAT DREAM

HUSBAND-AND-WIFE TEAM'S COMPANY PERFORMS PRECISION COOLING OF IT EQUIPMENT IN DATA CENTERS.

**M**att Dill, co-owner of Emergency Services and Consulting Group Inc., Greenville, South Carolina, admits that he is a dreamer while his wife Rachel is the practical one. This combination of personalities resulted in the creation of their company two years ago.

“Rachel started this business mainly because she got tired of hearing me dreaming instead of turning the dream into a reality,” Matt Dill reflects. “Today, we are doing exactly that. I am the dreamer. She’s the one who

always says, ‘You can’t jump off a cliff and expect to fly. You’re going to have to build wings first.’ So, she started our company and put us to work building it.”

Emergency Services and Consulting Group is a service-based company that mainly performs precision cooling—managing the heat of IT equipment in data centers. Because cooling is required all year long, it takes a different type of specialty to keep things cool, even during winter. The company also does alternating current (AC) distribution, which is the power side.



“That’s the reason I became NATE-certified,” Dill says. “Vertiv is the equipment we use for cooling, and you have to be NATE-certified and have 10 years of experience to work on the equipment.”

The company makes this promise via its website: At Emergency Services and Consulting Group Inc., we offer installations and service for a variety of systems for residential and commercial customers. Before we try to sell a new system to our customers, we do our utmost to find every means possible to fix your current system. If your system reaches a point where it’s simply unable to function properly, we offer a range of quality systems to meet your needs.

## DRILLING DOWN

Dill offers these details on his company. “We are an engineering and design company that focuses on data centers and telecommunications central offices. The best way to describe the industry we focus on is to think of it as two separate industries that require similar services. The data and software industry (Facebook, Amazon, Google, and Microsoft) are the major industry leaders in data and software. The telecommunications industry (Charter Communications, Windstream, and WCTelco) are some of the major telecommunications leaders.

“We provide the ability to design, build, and engineer for both industries. Currently, our main customer base is on the telecommunications side. Emergency Services and Consulting Group runs the thermal heat removal engineering side as well as the direct current (DC) distribution side. We also partner with an electrical engineer who runs our electrical engineering side, which focuses on our emergency power and AC distribution. Our primary mission is to provide critical infrastructure from the ground up for the data and telecom industries.”

Emergency Services and Consulting Group’s customers include WCTelco, Balsam West Telco, Enersys/Charter Communications, and Drake Software. It is currently in the process of acquiring a contract to build a new data center for ERC Broadband. The company’s territory includes South Carolina, North Carolina, and part of Georgia. It has two technicians that run its service calls and several crews at its disposal for new builds.

Dill notes the main challenge posed by the telecommunications industry is budgetary. “The data industry understands the need for precision cooling equipment designed specifically for removing heat that machines produce,” he says. “However, the telecom industry focuses on its DC power fiber and typically does not have the budget for the proper equipment designed to remove the heat that their machines produce. At times, this can



“THAT’S THE REASON I BECAME NATE-CERTIFIED. VERTIV IS THE EQUIPMENT WE USE FOR COOLING, AND YOU HAVE TO BE NATE-CERTIFIED AND HAVE 10 YEARS OF EXPERIENCE TO WORK ON THE EQUIPMENT.”

– Matt Dill

be a tricky situation to navigate and requires a good bit of engineering and design.”

As for working in both the commercial and residential areas of the HVACR business, Dill does not see a big difference. “It is a misconception that somehow HVACR equipment works differently for commercial than it does for residential, or differently for machine heat removal versus comfort cooling. The equipment itself operates the same way no matter how we use it.

“We are changing the state of refrigeration,” he explains, “from a liquid to a gas using the heat from the space it is designed to cool. We then take that heat outside and remove it by condensing the gas back to a liquid. This process happens no matter if it’s an office building, a home, or a data center. The equipment itself at its foundation is basically performing the same process.

“A NATE-trained technician,” he continues, “will have the foundational skills to understand that principal even though he may be standing in front of a system he’s never seen before. He still has the training to know where to start and how to properly diagnose any system (commercial or residential) that is using refrigeration to remove heat or add heat.”

## STARTING OUT

Dill started in the HVACR industry, as he puts it, “crawling under houses at the age of 14.” He says he learned all the wrong lessons and ways of installing and servicing systems over the next few years. As he got older and worked with some really good companies, he started to actually understand the industry and how the equipment is supposed to be installed and serviced.

“I got out of the HVACR business for several years and went to work as the general manager for Turner Contracting,” he reflects. “Turner Contracting then got into the

telecom business of installing DC plants and emergency power. I guess that's when you could say my HVACR fire lit back up. I saw the need and niche for heat removal in these applications even back then."

Over the next six years, Dill took every class he could on DC power and computer programming and learned several programming languages, mainly C and C++. By the time he and Rachel started Emergency Services and Consulting Group, he had the equivalent of a master's degree in how to build, design, and install every aspect of a data center.

NATE certification has been a big part of Dill's personal and professional growth. He has an air-conditioning and heat pump installation certificate, and an air-conditioning and heat pump service certificate. "To get these certifications, you also have to pass the core exam. We have customers and vendors who require NATE certifications in service along with EPA certification," he says.

"In fact, Trane highly recommends NATE certifications. My main distributor, Vertiv, not only requires certifications but also requires that you have their own certifications to warranty service or start up their equipment. I also am Vertiv-certified in all of the thermal heat management systems they offer, ranging from small 5 kW systems that

include in-row cooling up to 105 kW perimeter systems." Dill currently is the only NATE-certified technician employed by Emergency Services and Consulting Group. However, Rachel is working on her certifications and will be taking the CHP-5 route.

Out of all available program trainings there are very few that actually offer a foundation for anyone wanting to become a skilled technician, according to Dill. "NATE has always been the leader. Now, with the new pathways, it can consistently produce competent technicians. When someone shows up with a NATE badge, the customer can trust that this person knows how refrigeration works, how electrical components work, and how to properly address a service call."

Regarding NATE's two pathways to certification—traditional exam and CHP-5 (multiple, shorter exams), Dill offers this perspective. "I think if you have 10+ years in the industry, the traditional path would be fine for you. If you are a new tech or installer, I think this new CHP-5 path is perfect for helping you build the foundation you need to understand how these complex machines operate. Learning the science behind how they operate takes the mystery out of all aspects of the systems. I think NATE does the best job at making sure that a tech has a great foundational understanding of these sciences."

## LOOKING AHEAD

In the area of training and certification, Dill sees an industry that is much better today than it was when he started in it. The reason: Companies are paying more and are requiring more training and certifications. Manufacturers also are requiring more training and certifications before selling. These trends are good for the HVACR industry. "The challenge is that the market is saturated with HVACR companies. That has been one of the hurdles we have had to overcome."

Dill is excited about the NATE Training Academy because it will train people to be competent technicians. "They will learn the right way to approach a system, the right tools to use. They will build the right mindset as they grow into becoming great technicians while finding it much easier to pass the NATE exams because they are better prepared."

Looking ahead, Dill sets a lofty goal for himself and Emergency Services and Consulting Group in the near future. "Our goal is to continue to provide a service in the telecom and data industry and to grow our comfort heating and cooling side. For me, I am in the process of getting an engineering certificate in fiber optics. I love fiber and am fascinated with the new technologies the industry is producing." ●

Neal Lorenzi is a contributor to the *NATE Magazine*.

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# Spotlight On NATE Technicians

There are many traits that describe great leaders. A great leader is ambitious, has vision, and is resourceful. Great leaders are well-educated and know that in order to be successful in a career, the learning process never ends.

In the HVACR industry, technicians continue the education process by gaining NATE certifications. The *NATE Magazine* would like to put the spotlight on the following NATE-certified technicians who are leaders in the HVACR industry.



## JESUS M FELICIANO

**1. TITLE/EMPLOYER:** Owner and senior technician for Innovative Technical Service

**2. LOCATION YOU SERVE:** The company is located in Davenport, Florida. Our sister company, NGEN Services, is located in Kissimmee, Florida. We cover central Florida coast-to-coast.

**3. WHAT DO YOU DO (AS A TECHNICIAN) ON A DAILY BASIS?** We have been in business for three years now. We service and install refrigeration and cooking equipment. Besides the

paperwork, invoicing, and quoting I do on a daily basis, I help the team with troubleshooting a range of commercial kitchen equipment—be it on the cold side or the hot side. Our versatility to work on all kinds of equipment is what sets us apart. Under NGEN Services, we work on all major brands of air conditioners. We specialize in AAON rooftop units. We are all NATE-certified techs and are working on everyone becoming NCI (National Comfort Institute)-certified, as well.

**4. HOW MANY YEARS HAVE YOU BEEN WORKING IN THE HVACR INDUSTRY?** I have been working on the hot side part of the industry for 14 years and six years on the HVACR side. Every day is a lesson to be learned, whether it's reinforcing knowledge or learning something new. This job requires the comprehension of translating behaviorism. Every piece of equipment has a unique way of expressing what is wrong with it. You just need to be observant enough to catch it, be it through measuring devices or skills.

**5. WHAT LED YOU TO A CAREER IN HVACR?** As a hot-side technician able to fix all sorts of complex equipment, I felt that I was ready to take up the HVACR challenge. After moving to Florida, I met technicians who knew so much about new technology. I wanted to learn more, so I went head-deep and

began doing preventive maintenance, later servicing, then installing, and lastly managing. I worked for two companies before I decided to start my own company and further my HVACR education.

**6. WHAT NATE CERTIFICATIONS DO YOU CURRENTLY HAVE? WHEN DID YOU GET THOSE CERTIFICATIONS?** I am certified for Heat Pump servicing and installation, also Air Conditioning servicing and installation by NATE. I was NATE-certified on July 24, 2021.

**7. WHAT VALUE DO YOU FEEL THAT THE NATE CERTIFICATIONS HAVE ON YOUR CAREER IN HVACR?** NATE classes really had an impact on me. They gave me an understanding of how a system—be it refrigeration or air conditioning—truly works. Theory can be so important to understanding the efficient behavior of a unit. Theory defines the actual purpose for which that unit was created. Today, under the mentoring of Cruz Institute, Kissimmee, Florida, we pay our technicians to become NATE-certified so they, too, can understand the purpose of a particular unit and the theory behind its creation.

**8. WHAT ADVICE WOULD YOU GIVE A NEWCOMER LOOKING TO BE SUCCESSFUL IN THE HVACR INDUSTRY?** NATE training will help them see and understand a new field of approaches and gain knowledge seldom seen in the field.

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But they have to be willing to change with the changes, without leaving the fundamentals that got them there in the first place.

**9. DO YOU HAVE ANY FUNNY/INTERESTING SERVICE CALL STORIES YOU'D LIKE TO SHARE?** I was training a new employee on an A/C call and asked him to do a visual on the roof top units at the back of the store. He screamed and ran away from the area. "Dude, a snake just jumped out and chased me." The snake had made its way to the access panel for the filters on a Carrier unit. The snake was only 7 inches long but very aggressive. We had a few good laughs about that afterward.



**KEN BILTON JR.**

**1. TITLE/EMPLOYER:** My employer is Carmichael Engineering. I've been with the company for about four months. I recently changed employers and went from doing primarily commercial HVACR work to more commercial/industrial work.

**2. LOCATION YOU SERVE:** We are located in Windsor, Ontario, Canada, but the company is nationwide.

**3. WHAT DO YOU DO (AS A TECHNICIAN) ON A DAILY BASIS?** I work on a variety of equipment including ductless split units, rooftop units, makeup air units and chillers.

**4. HOW MANY YEARS HAVE YOU BEEN WORKING IN THE HVACR INDUSTRY?** I graduated from a two-year HVACR college in May 2017 and have been working in the trade consistently since then.

**5. WHAT LED YOU TO A CAREER IN HVACR?** HVACR was a second career for me. I went back to school to study it at 28 years old. I was initially looking at plumbing until a friend mentioned he was looking into HVACR. I weighed the two options and decided HVACR was a better fit.

**6. WHAT NATE CERTIFICATIONS DO YOU CURRENTLY HAVE? WHEN DID YOU GET THOSE CERTIFICATIONS?** I earned the CHP-5 certification in 2020.

**7. WHAT VALUE DO YOU FEEL THAT THE NATE CERTIFICATIONS HAVE ON YOUR CAREER IN HVACR?** I got the NATE certification for two reasons: first, to show my employer that I was eager to continue learning and be the best I could be and, second, I have U.S. citizenship and felt having the NATE certification could help me with future employment opportunities in the U.S. should I choose to make a move. Showing my previous employer that I was dedicated to long-term learning by working to achieve the CHP-5 earned me a great relationship with my employer and gave me opportunities to work on more complex equipment. That, in turn, came with an increase in pay. I was able to demonstrate my willingness to learn and increase my knowledge during the interview process with my current employer by showing him my NATE certification.

**8. HOW DO NATE'S LATEST OFFERINGS (CHP-5, LIVE ONLINE PROCTORING, STUDY GUIDES) SPEAK TO NATE'S ABILITY TO ADAPT TO THE INDUSTRY'S CHANGING NEEDS?** Based on location, the option for e-learning is the only way I was able to complete this certification. It opens up a window of opportunity for many more people to take advantage of the knowledge NATE has to offer. Partnering with Interplay Learning was a really great choice. Their online learning platform continues to grow and get better.

**9. WHAT ADVICE WOULD YOU GIVE A NEWCOMER LOOKING TO BE SUCCESSFUL IN THE HVACR INDUSTRY?** You have to want to learn more than you get from schooling and on-the-job experience. That opportunity is available online through training and videos. If you want to be the best at what you do, use the time outside of your work shift to increase your knowledge. Take lots of pictures and ask lots of questions. If you get stumped on a service call, go home and use the tools available to figure out where you went wrong and learn from that experience.

**10. DO YOU HAVE ANY FUNNY/INTERESTING SERVICE CALL STORIES YOU'D LIKE TO SHARE?** Canadian Geese can be ruthless, as I recently learned. I was on a service call with a coworker on a mall roof and he was telling me about how a goose attacked him on that same roof a week before. When we got to that area, he gave me a 2x4 piece of wood and said, "You need to have my back." I laughed but he was serious! Sure enough, within two minutes a goose gave off a warning honk and swooped down on us. I made a warning swoop with the wood and that was enough to keep it away. The goose watched from a distance and honked at us until we left. ●



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