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Summit Week

2020



ALSO IN THIS ISSUE:

2020 Residential Market
Forecast Calls for
A Rebound and Resurgence

Are You Venting Your
Frustrations or Frustrating
Your Venting?

How To Avoid These Five
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TODAY'S WORD

By Mike Weil

Recognizing Performance-Based Contracting™ Excellence

Until now, the High-Performance HVAC Industry hasn't had its own recognition award for project excellence. We've decided to remedy this with our new **High-Performance HVAC Project Award** competition. This new award recognizes contractors who test, measure, diagnose, and resolve residential customer comfort and efficiency issues using the Performance-Based Contracting™ tenets as taught by National Comfort Institute (NCI).

One of our goals is to recognize the importance and value of the air delivery system as a key component of a well-designed, well-built HVAC system. The idea here is to showcase projects that result in safe, healthy, comfortable, and energy efficient homes that meet all the homeowners' requirements. We feel that winning projects will set the standard for excellence in the HVAC Performance-Based Contracting™ Industry.

So who is eligible to enter? We are looking for entries from NCI-trained HVAC contracting firms. Said companies should have personnel who've been trained and certified in at least two of the following disciplines:

- Residential System Performance & Air Balancing
- Duct System Optimization
- Combustion Performance and CO Safety.

Why is this important? In order to deliver high-performance to customers, contractors must know and use proper testing, measuring, and diagnostic techniques – things taught by NCI.

What are the contest criteria? There are a number of key components to this contest that you should address on your entries.

For example, we want to understand what the **homeowners' problems** were and how you went about discovering solutions. Did they have hot and cold rooms? Were they tired of outra-

geously high utility costs? Did they have family members suffering with allergies or other "illnesses?" How did you approach their problems and how did your team approach solutions?

WHAT DID THE NUMBERS SAY?

If you don't measure, you're just guessing, right? So we are interested in your **BEFORE and AFTER measurements** of the system you renovated or replaced. Furthermore, we'd like you to share how you helped your customers understand those measurements and what they now say about the operation of their systems.

Numbers are great, but if you don't know how to interpret them and communicate them to your customers, you may not be able to close the sale. So we'd like you to explain how you **interpreted those measurements** and what conclusions you drew from them. Then after all the work is completed, share how you commissioned the new or renovated HVAC and air delivery system (tested, adjusted, and balanced).

In addition, we are interested in the **homeowners' perspectives and opinions** of how well their projects work. We'd love to hear how, from their perspective, you resolved their issues.

How do you enter? We've tried to make entering this contest as easy as possible. In fact, it is all online. Just go to our online entry form at ncilink.com/awardsubmission and it will walk you through everything.

What do you get if you win? Winners and runners up will be recognized during NCI's Annual Summit event. Plus the winning stories will be featured on the pages of this magazine. Those are some serious bragging rights!

The deadline to enter is March 16, 2020. We look forward to seeing your entries!

Good luck to all of you who enter.



Mike Weil is editor-in-chief and director of communications and publications at National Comfort Institute, Inc. Email him at MikeW@ncihvac.com

Written By HVAC Professionals for HVAC Professionals

CLEARWAVE WATER CONDITIONER/SCALE REMOVAL

What percentage of homes have a water heater? What percentage of homes have water heaters with scale buildup? One would assume that it would be close to 100%. It does not matter if it is gas or electric, scale is a problem for everyone.

Scale causes a loss of hot water recovery and can be a considerable inconvenience. It causes a loss of efficiency and excess wear. It also affects electric elements, anode rods, strainers, and leaks at the faucet washers.

Those who sell or have tankless water heaters realize this equipment requires a considerable amount of regular cleaning and flushing because of scale. Yet there is a simple, inexpensive solution to this. It is the **Clearwave Water Conditioner**

from **Field Controls**. Yet few know of it.

After more than 25 years of use in the field, the results of using it are amazing. In fact, the Clearwave guarantees to re-



move 100% of the scale or your money back. These devices must be purchased through a reliable distributor to qualify for that guarantee.

The ClearWave not only prevents new scale formation, over time it helps break down the existing scale, protecting the water heater, pipes, showerheads, and appliances.

Call it magic, or electronic wizardry, the Clearwave is a great investment and requires a knowledgeable contractor to introduce and install it. It is also a great way to add more income to your bottom line. Installation takes only 20 to 30 minutes. This is definitely a chance for you to work smarter versus harder.

It is maintenance-free, environmentally friendly, and uses less water than traditional water softeners. The ClearWave works on all types of pipes including copper, PVC, galvanized, and stainless steel.

For more information, visit the Field Controls-NCI Partner page at ncilink.com/Clearwave.

— by Jim Davis, NCI Senior Instructor

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Coaching Your Entire Team

Helping your entire team understand why you believe in Performance-Based contracting is a big challenge.

You may be asking yourself these questions :
 ● “Why doesn’t my team understand why this is important?”

● “Why can’t I get my salespeople to look at an HVAC system like me?”

● “Why can’t I get my technicians to consistently measure static pressure?”

If this sounds familiar, you’re not alone.

A big factor affecting these questions is the absence of a clearly defined vision. Everyone tends to do their own thing to get the job done but don’t consider **why** they’re doing it.

When you don’t know the “why,” neither will your employees and you’ll often see several team members moving in different directions. They end up frustrated and repeatedly achieve poor results. If a vision does exist, it may be poorly communicated or considered “just something we say and don’t really do.”

Hard Question: How can your team know what you stand for if it isn’t written down and practiced each day?

Harder Answer: They can’t.

This is where coaching comes into the picture. A good coach knows how to gather their team around a common goal. If you’ve ever been involved in team sports, the goal was to take first place or win a championship. Everyone on the team knew what they were playing for. Let’s look at how you can take this coaching concept and use it to help your team succeed.

THE COACH SETS THE TONE

A hard reality to accept as a coach is that you set the tone for the entire team. Your actions and beliefs are what team members judge you by. If they are good, others will tend to follow you.

Make sure you’re working towards being the best version of yourself before you begin to coach others in areas where they need to improve. Here are three qualities that great coaches possess:

1. A great coach is a leader – one who team members look up to for how to do a job the right way, every time. They are dependable and consistent in their actions. Lead by example.

2. A great coach is a teacher – one who understands the importance of the company vision and can mentor others to follow it. They are experienced and communicate well with the entire team. Take time to teach regularly.

3. A great coach is an encourager – one who inspires team members to do their best, even when it isn’t easy. Encouragers are understanding and elevate team members to help them achieve their best performance.

For these coaching qualities to have the most impact, you need to develop relationships with your team members. It’s hard to coach a team if you’re disconnected from them. For a team to trust and rely on you, they must know you first.

Review these three coaching traits and see how you’re doing. Are there qualities you need to work on so you’re the best for your team? If so, make a list and prioritize which trait(s) you will focus on improving.

DEFINE AND SHARE YOUR VISION

A coach needs a common goal for a team to rally around and motivate them. Have you defined and written down your company’s WHY? If you don’t have one, your WHY is your motivation and purpose for



doing what you do daily. It is what your company stands for.

Your WHY is also the filter through which all decisions pass to assure they're in line with the company's purpose. Let's say safety is an important motivator to your Performance-Based company.

How will it look if your technicians aren't equipped with personal low-level CO (carbon monoxide) monitors and they're inconsistent when it comes to measuring and documenting combustion safety on every service call? It would appear their actions don't align with your WHY.

If this isn't the case, you'll look like a hypocrite to team members. You say one thing, but another is being done. If you've ever driven a car that's out of alignment, you know it's a constant battle to keep the vehicle in the lane. Your company reacts the same way when your WHY and actions are inconsistent with each other.

A well-thought-out WHY that is

available for all to see also helps to weed out those who can't live up to your high standards. If your standards aren't in plain sight as a gauge for potential team members, anyone with industry experience looks great. This is especially important as a newer generation of workers comes on board – they want to make a difference. A company that has its values out there for the world to see is more attractive to the brightest talent.

So put your WHY where everyone can see it and hold the team accountable. Also, have your team members hold each other accountable. If the WHY is in front of everyone, it's obvious what you stand for. Everyone will understand your motivation to assure their actions align with that of the company.

FIVE COACHING STEPS

Once your WHY is defined and in plain sight, it's time to start coaching. You can summarize the coaching process in five steps that are repeatable

and provide a consistent format to use.

Step One: Show. In the first step, you show the team member how to do a task from start to finish. You provide the example and pattern they should follow. Make sure you perform the task like you want it repeated.

Let's say you're working with a younger technician who is learning to measure static pressure. In this step, you will walk them through each step from start to finish – from installing test ports to performing and recording the measurements.

Don't assume the team member's knowledge at this point – keep it simple for best success.

Step Two: Support. In the second step, you continue to perform the task and then guide the team member as they work with you. Explain why and how you're performing each step to help them understand it's importance.

Picking up from the previous example, you continue to work with your technician to measure static pressure. You begin to hand over test instruments and accessories to them so they can help you perform the measurements.

Let them work at their own pace to assure they understand why they're doing what they're doing. Patience is important. Don't throw a lot of material at them all at once and expect them to understand it from your experienced perspective.

Step Three: Supervise. In the third step, trade places with the team member and let them perform the task while you watch and assist with any needed corrections. Ask them to explain why they did something in their own words after they master the task. The goal is to get them to think and to build confidence.



As you continue working with your technician measuring static pressure, let them perform all the necessary tasks and measurements on their own. Be sure you ask them why they're doing it a certain way and look at it through their eyes. You might discover a better way to measure.

At this point, the team member begins to take personal ownership of the skills you're teaching them.

Step Four: Strengthen. In the fourth step, remove yourself from the task and let the team member go at it on their own, without any help.

It's important to encourage and stay with them until they are successful. Don't send them out on their own unless they're ready.

At this point, you can send your technician out on a maintenance call where they will measure static pressure alone. Make sure you're available for support since they're probably going to be scared to death. They should feel comfortable contacting you and not fearful you'll jump down their throat.

This step also includes long-term supervision to assure tasks are consistently completed the same way.

Track their results so they know how they're doing and you can identify patterns in their work.

Reinforce the new practice by regularly inquiring how the test has fit into their daily work. Accountability continues to build strength and habit.

Step Five: Sow. In the last step, it's the team members' turn to teach others in the company. This is when they multiply the skills you taught them and spread their knowledge and experience. It's important they teach the same pattern they learned for consistency.

See David Richardson at NCI Summit 2020



The High-Performance HVAC Summit takes place April 5-9 in Scottsdale, AZ. David Richardson is one of the presenters who will show attendees the best ways to coach their HVAC teams to success. His workshop will help you coach your entire team on your mission and vision as it relates to becoming a different kind of company – one that uses data from testing to deliver the best possible products and services to your customers. This coaching should be the first thing you do to get your entire team on the same page.

Join us at the **We-Ko-Pa Conference Center and Resort** (ncilink.com/Summit2020Hotel) and network with your peers this April. To find out more, please visit GoToSummit.com. Don't wait to register – space is filling up fast.

If you have questions, just call our Customer Care line at 800-633-7058. We look forward to seeing you in Scottsdale.



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Your maintenance technician now has a month's worth of static pressure measurements under their belt and you've asked them to help an apprentice technician who is coming on-board. This is the best part of coaching – seeing someone take what you've taught them and then help others. This is called sowing the seeds.

Sowing lets you multiply the results of the work you put in during steps one through four. Remember, it takes nurturing, time, patience, and consistency for seeds to grow once they are sown.

ONE STEP AT A TIME

Is it easy to define your WHY or perform all the coaching steps we covered? No. If it was, everyone would do it. It takes disciplined commitment to



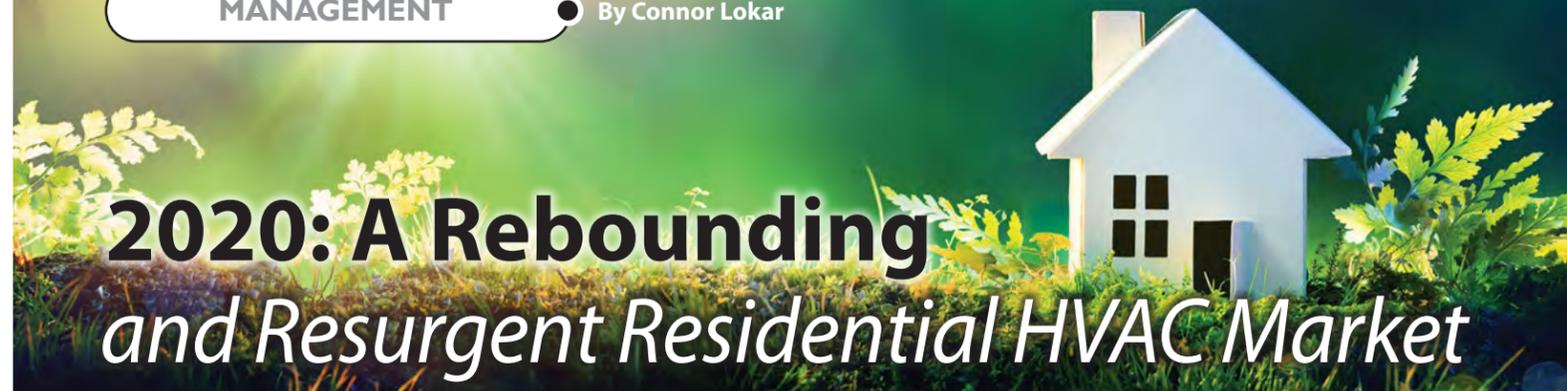
put what you know into practice. Assess your team and put a plan together. Give the process time and don't try to do everything at once. Change takes time, so set realistic goals and deadlines.

Identify skills you want to coach and then put a game plan in place to teach them. It's a good idea to have assistant coaches to help in areas where you're not as strong. Good

coaches are coachable, but not perfect. Let team members know you're still learning too. They'll appreciate your honesty and willingness to move the company forward.

Each team member will know their coach cares about them and has their best interest at heart. They will walk through a brick wall for them. Be the kind of coach your entire team needs, and you deserve. **NCI**

2020: A Rebounding and Resurgent Residential HVAC Market



At the outset of the new year, the U.S. economy is slowing down. The slowing growth trend has been underway since the second half of 2018 and is consistent with our forecast and what our leading indicators have been calling for quite some time. Our analysis indicates that we are on track for further deceleration, well into the first half of this year.

However, we anticipate that the economy will find firmer footing and accelerate during the second half of 2020, avoiding an outright recession. In fact, the U.S. housing market – currently emitting a bullish signal – is one of the leading indicators that excites us the most. Anyone operating in the residential HVAC marketplace should look forward to a rebound year for the housing industry, which struggled in 2019.

OFF TO THE RACES

As we wade into the early stages of the new year, residential building activity is gaining steam. This is a welcome shift in the industry after rising mortgage rates, tight inventory levels, and headwinds to builder confidence delivered a lackluster 2019.

Annual U.S. Single-Unit Housing Starts spent the majority of 2019 below the respective 2018 level, and contractors who install equipment into new construction likely took notice.

However, housing starts transitioned to recovery in late 2019, setting the stage for a 2020 bounce-back. Starts during the most recent three months totaled 224.2 thousand units, up 7.6% from the same period in late 2018. This marks the fastest quarterly growth rate since mid-2018.

A pullback in mortgage rates is playing a key role in 2020's reversal of fortune for the housing market. Mortgage rates were in a rising pat-

tern for most of 2017 and 2018, with average **30-Year Mortgage Rates** topping out at 4.87% in November 2018. Buyers' recoil from the rising interest expense contributed to 2019's down year.

Even so, 2019's decelerating economy came with a silver lining: it coincided with declining interest rates. Thirty-Year Mortgage Rates retreated all the way back to averaging a low 3.61% in September 2019 before rising mildly in recent months.

Buyers are responding to the decline of more than 100 basis points; this translates to rising builder confidence, rapid acceleration in **Housing Permit Issuances**, and rising **New and Existing Home Sales**. Any contractors serving the new or replacement market should be optimistic about their growth prospects in 2020.

THE ECONOMIC TRAIN

At ITR Economics, we use the U.S. housing market as a leading indicator. In other words, we look at the trend lines in the industry as a preview of where the overall U.S. economy is going.

As I explained last month in my 2020 Commercial Market Forecast (ncilink.com/2020Com-FCast), I often compare the overall U.S. economy to a train, with each of the economy's various sectors serving as different cars.

This illustrates how different sectors experience economic shifts and headwinds at different times. Some sectors are closer to the front of the train, hitting the bends, slopes, and tunnels first, while others are toward the caboose, blissfully unaware of the shifts occurring toward the front.

The metaphor is especially apt when we examine the U.S. construction space. The residential market is nestled close to the locomotive. It is often the first sector into the turbulence of an economic storm but also one of the first out. We see

CONTRACTORS IN THE RESIDENTIAL HVAC SPACE NEED TO ATTACK 2020 WITH OPTIMISM AND AN AGGRESSIVE STRATEGIC PLAN.

its shifts through the business cycle as a likely path for the overall economy as measured by GDP.

We saw this play out during the last year, as the U.S. new housing market was faltering in late 2018 while the overall economy was still near its business cycle peak. The housing market continued to slow and eventually contracted at points during 2019, and the U.S. economy followed just behind, posting diminishing growth rates as the year went on.

Now, we see encouraging signals that the U.S. new housing market is rounding the corner in early 2020, in front of the improvement in the overall economy that we anticipate during the second half of the year.

POLICY VERSUS POLITICS: WHAT MATTERS?

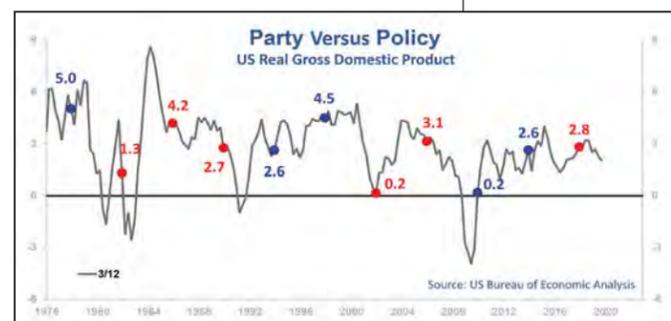
Complicating everything, we have officially entered a presidential election year. That and the fact that the U.S. economy is slowing down make for two converging trends likely to yield grotesquely irresponsible economic reporting and high uncertainty over the next year.

At ITR Economics, we do not favor either political party when it comes to our economic analysis. Policy can matter, but history has shown that whichever party is in the White House does not.

The chart illustrates one of the reasons why. The quarterly growth rate for the U.S. GDP (adjusted for inflation) is presented. The blue dots mark the end of the first year of a Democrat's term in the Oval Office; the red dots depict the same for a Republican. From our perspective, it is not possible to statistically demonstrate that superior growth, or the lack thereof, can be laid at the feet

of one party or the other.

From 1976 to the present, the average GDP rate-of-change during Republican administrations was 2.81%; for Democratic administrations, the average was 2.85%. All of this leads us to the point we strive to make in our presentations and conversations: its policies and what ultimately becomes law or rule or executive order that can



(at times) matter, not the party.

At ITR we will keep an eye on any proposed policies that gain ground as the election cycle heats up and provide commentary on whatever business implication they may have. Your job is to keep your head above the political noise this year and focus on running the business.

FINDING AND KEEPING GOOD PEOPLE

Despite the macroeconomic slowdown underway, finding and keeping talent will remain an issue. **U.S. Employment of Building Equipment Contractors**, which includes electrical and wiring installation contractors; plumbing, heating, and air condi-

tioning contractors; and other building equipment contractors, averaged an all-time high of 2.26 million individuals during the most recent 12 months.

Hiring is showing tentative signs of slowing, but **Employment** is still up 4.0% from the same period a year ago. Expect overall hiring to slow nationally into 2020, but the trend will stop well short of the rising unemployment typically observed during macroeconomic downturns.

This is not that kind of cycle.

HVAC contractors should leverage the slower hiring in 2020 to pick up additional talent.

Contractors in the residential HVAC space need to attack 2020 with optimism and an aggressive strategic plan. Yes, the overall economy will be slowing through the early stages of 2020, and the noise emanating from the media surrounding the election will be deafening.

Remember that your market – the U.S. housing industry – is a leading sector and already taking flight as we advance through the first quarter of 2020.

Identify where your bottlenecks were during the last business cycle peak in 2018 and where they may again become an issue as things accelerate during 2020. Take steps to improve them. You do not have to wait until things get busier. Don't react to the business cycle; think ahead of it. **NCI**



Connor Lokar is a Program Economist at ITR Economics, a 72-year-old economic research and consulting firm. Lokar specializes in the construction industry and provides economic consulting services for businesses, HVAC trade associations, and Fortune 500 companies. He is a graduate of the economics department at the University of Michigan. His economic insight and forecasting experience play a key role in ITR Economics' 94.7% forecast accuracy. To learn more about ITR Economics, visit www.itreconomics.com. Follow Lokar on LinkedIn ([ncilink.com/ConnorLokar](https://www.linkedin.com/company/nci)).

17TH ANNUAL
Summit Week

2020

Coach Your Team to High Performance



ABC: ALWAYS BE COACHING

Performance-Based Contractors from across North America will converge in Scottsdale, Arizona to learn, share, build relationships and explore new opportunities, products and services. This is the only event of its kind completely focused on High-Performance HVAC.



Summit is open to all HVAC professionals. It's become the gathering place for like-minded people to learn from and share knowledge with fellow High-Performance professionals.

Coach Your Team To Success

This year the conference focuses on coaching your entire team to High Performance. From the opening session through every workshop, you will learn how to coach your team members on specific topics that will help bring your team together as you integrate performance into your company.

And You Won't Miss A Beat!

Summit's unique format is designed to make sure you are able to take in every single session without missing anything.



Register today at GoToSummit.com or call 800.633.7058

Special Events

WELCOME RECEPTION: Be sure to attend this gala event where old relationships are renewed and new relationships are formed. The Welcome Reception is sure to be a valuable networking event with fantastic food and beverages, great music, and a lot of fun! — *Sponsored by Goodman Mfg.*



SUMMIT ORIENTATION & NEW MEMBER MEETING: Whether you are an NCI Member or not, this brief overview will be a helpful introduction to NCI, the Summit conference, and our membership program.

OPENING SESSION with NCI's exclusive **Reach For The Summit Gameshow – Coaching Edition.** This fun and educational event includes audience participation in a fast-moving quiz show where two contestants compete for the win and some great prizes.

IDEA MEETING: All contractor attendees are invited to this 2-part event where each participant can propose one or more ideas in the areas of lead generation and sales. Don't forget to bring your ideas and \$20 entrance fee. The best ideas split the pot for great cash prizes!



NCI PARTNERS RECEPTION AND TRADESHOW: Our Partners help make this conference possible. Show your appreciation by attending the trade show events. Who knows? You might find that next great product or idea!

KEYNOTE SPEAKER: This year's keynote speaker, Ryan Kohler of Hire Dimensions, will focus on a subject that is near and dear to us all: Attracting and keeping good employees. This is more important than ever as our industry's aging workforce is dwindling and it's becoming harder than ever to attract enough new talent to our industry.

AWARDS BANQUET: This long-standing tradition is one of the highlights of every Summit. Join us in honoring the best of the best Performance-Based HVAC contractors. You might just be one of them!



Breakout Sessions



1. Coaching Your Entire Team

What is High-Performance Contracting™ and why are we doing it?



Workshop Leader: David Richardson, National Comfort Institute

Learn how to coach your entire team on your mission and vision as it relates to becoming a different kind of company – one who uses data from performance testing to deliver the best possible products and services to your customers. This coaching should be your first step to get your entire team on the same page. The session will cover:

- What is Performance and how does it impact our customer?
- How do we measure Performance?
- What do we do with the data we collect?
- Why delivering High-Performing systems is important to our company.

2. Coaching Your Managers

How we will implement high performance into our business



Workshop Leader: Dave DeRose, Masterworks Mechanical

Once you've got everyone on your team introduced and "on board", it's time to get a little further into the details of implementing the High-Performance approach company-wide. This coaching session is designed to help you coach your management team on some of the subtle, and not-so-subtle changes you will be making to integrate higher performance into

your organization. The session will cover:

- How we plan to integrate the performance-based approach into our company
- What we will do differently in the office and shop
- What our managers will do differently: Service, Sales, and Installation
- Why we need to "Always Be Coaching"

3. Coaching Your Technical Team

How we will integrate performance into service and install



Workshop Leader: Casey Contreras National Comfort Institute

Now it's time to drill down with both your Service and Installation teams on how you plan to integrate High-Performance in their daily work in the field. This workshop covers how you will communicate the training, tools, and support you plan to give them to help them make the transition. High-Performance starts with testing on service and maintenance calls, talking to customers about findings, and recommending next steps. Once a project is sold, your installation team also needs to understand what is expected of them, and what they will be doing differently. The session will cover:

- What our service and maintenance techs will do to identify opportunities
- How will we educate customers about their HVAC systems
- What we will do differently on our installations, including testing out
- What will change with our refrigerant-side testing



4. Coaching Your Sales Team

How we will integrate the High-Performance sales approach with our business

Workshop Leader: David Holt, National Comfort Institute



As your technical team gets on the same page, it's important to work with both your inside and outside sales team on the specifics of adding air upgrades and renovations to their equipment replacement proposals, as well as selling stand-alone renovations. It's also important that they understand when they should be able to price the work themselves, and when to bring in higher technical expertise. The session will cover:

- How we plan to sell it – High-Performance Sales versus High-Pressure Sales
- How we plan to market performance and identify opportunities for system upgrades and renovations.
- How we will price Air Upgrades and more comprehensive renovations
- How we plan to communicate and hand-off jobs to installation



5. Special Hands-on Workshop

High-Performance Town 2020: Hands-on testing and diagnostics labs

Your Instructors: Rob Falke, Jeff Sturgeon, and Justin Bright



NCI's High-Performance Town returns to Summit! In this breakout session, you'll participate in three hands-on labs where you will experience advanced tests and calculations to diagnose and offer highly profitable system upgrades, just as your teams do in the

field. You will receive new detailed NCI procedures and quick reports to integrate into your leadership team's coaching following Summit.

Hands-on labs will increase your ability to lead and coach your company as you experience first-hand the success of field testing and diagnostics.

- Estimate and measure a single room's airflow, with your customer's participation, in less than 3 minutes during a sales call
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Pre-Conference Events/Training

MONDAY, APRIL 6

Increase Closing Rates and Profits with Perfect Pitch – This all-day training program is perfect for HVAC Professionals already using Goodman's Perfect Pitch sales process and software, as well as High-Performance Contractors who want to make block load calculations a part of their sales process. — *Sponsored by Goodman Mfg.*



Step Up to High-Performance HVAC! – Learn how to take your company to the next level of service and performance in this full day workshop focused on the key elements of delivered performance. — *Sponsored by R.E. Michel*



Women in HVACR Western Regional Meeting – Both men and women are invited to participate in this great event which will feature engaging topics and speakers focused on women's contributions and impact on the development and growth of our industry.

Nothing But Air! Advanced Airflow Diagnostics Recertification Class – This intensive hands-on day of training features advanced air diagnostics reports and procedures from NCI's extensive library coupled with the best of our new simple diagnostic tips.

Refrigerant-Side Performance Class with Certification – What if everything you thought you knew about diagnosing and solving refrigeration-side performance problems may not be totally

correct? Learn about the better way to solve comfort issues in this 2-day course (Day 2 is Thursday, April 9th). Qualifies for recertification.



Post-Conference Training



THURSDAY, APRIL 9

Take Your Combustion Diagnostics Skills to the Next Level: Advanced Carbon Monoxide & Combustion Recertification – NCI's Combustion Performance and Carbon Monoxide Safety Certification class is well-known throughout the HVAC world. Certified CO/Combustion Analysts can take this special advanced post-conference training to renew their certification. *Prerequisite: NCI CO/Combustion Analyst Certification*

Refrigerant-Side Performance Class with Certification (Day Two) – Day One is April 6th

This National Comfort Institute two-day advanced certification class provides you with real-world lessons and hands-on training. It's based on proven techniques on how to best approach refrigeration-side issues. Qualifies for recertification.



Reserve Your Seat Today!
Visit GoToSummit.com to register, or call 800-633-7058

Pre-Summit Golf Outing

SUNDAY, APRIL 5

NCI's Summit 2020 Golf Tournament – Join our members for some sun and fun on the award-winning Saguaro course at the We-Ko-Pa Golf Club in Scottsdale, AZ. This will be a Foursome Scramble – we will pair up golfers if not on a 4-person team. Lunch is included with our Awards luncheon at the clubhouse.

Club rentals are available. Please call 480-836-9000 to reserve rental clubs early before they run out.

Bonus: Members can apply NCI Bucks to the outing!

Event & Lodging

We-Ko-Pa Resort & Conference Center

Summit 2020 will be held at the We-Ko-Pa Resort located 20 minutes from the Phoenix International Airport. Discover the beauty, tranquility, and culture of Arizona's captivating Sonoran Desert at the AAA Four Diamond We-Ko-Pa Resort & Conference Center!

The We-Ko-Pa offers a lushly landscaped oasis with spectacular views of Arizona's majestic Four Peaks and iconic Red Mountains alongside the free-flowing Verde River. The perfect resort for both work and play, the property is managed by and maintains close cultural ties to the Fort McDowell Yavapai Nation. In this native language, the name "We-Ko-Pa" means "Four Peaks" and allows us to honor these regal lands while paying tribute to the diverse and vibrant heritage of the Yavapai Tribe.

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<http://ncilink.com/Summit2020Hotel>



Schedule of Events

SUNDAY, APRIL 5

7:30 am - 2:00 pm Golf Outing with Lunch

MONDAY, APRIL 6

Optional Pre-Conference Events and Training:

9:00 am - 4:00 pm Increase Closing Rates and Profits with Perfect Pitch
 9:00 am - 4:00 pm Step Up to High-Performance HVAC!
 9:00 am - 1:00 pm Women in HVACR Western Regional Meeting
 8:00 am - 4:00 pm Advanced Air Diagnostics Recertification Class
 8:00 am - 4:00 pm Refrigerant-Side Performance Class (Part 1)
 4:15 pm - 5:00 pm Summit and Membership Orientation Meeting - All Welcome!
 6:00 pm - 8:00 pm Summit Week Welcome Reception - *Sponsored by Goodman*

TUESDAY, APRIL 7

7:00 am - 9:00 am Breakfast and Special Interactive Opening Session
 9:15 am - 10:45 am Breakout Session 1 - Workshops
 11:00 am - 12:30 pm Breakout Session 2 - Workshops
 12:30 pm - 1:30 pm Luncheon and General Session
 1:30 pm - 3:00 pm Breakout Session 3 - Workshops
 3:30 pm - 4:30 pm Idea Meetings: Lead Generation and Sales
 4:30 pm - 5:30 pm Panel Discussion
 6:30 pm - 8:00 pm NCI Partners Trade Show and Reception

WEDNESDAY, APRIL 8

7:00 am - 9:45 am Breakfast & General Session
 8:00 am - 9:00 am State of NCI and the High Performance Industry with NCI CEO, Dominick Guarino
 9:00 am - 9:45 am Keynote Speaker: Ryan Kohler, Hire Dimensions
 10:00 am - 11:30 am Breakout Session 4 - Workshops
 11:30 am - 1:30 pm NCI Partners Tradeshow and Luncheon
 1:30 am - 3:00 pm Breakout Session 5 - Workshops
 3:30 pm - 4:30 pm General Session with Idea Session Winners and Prize Drawings
 4:30 pm - 5:00 pm Closing Remarks with NCI President, Rob Falke
 6:00 pm - 7:00 pm Member Appreciation Cocktail Reception
 7:00 pm - 9:00 pm Awards Banquet and Presentation Ceremony

THURSDAY, APRIL 9

Optional Post-Conference Training:

8:00 am - 4:00 pm Refrigerant-Side Performance Class (Part 2)
 8:00 am - 4:00 pm Advanced Combustion/CO Diagnostics Recertification

Register today at [GoToSummit.com](https://www.gotosummit.com)
 or call 800.633.7058

5 TAB Instrument Mistakes You Should Avoid

Our industry thrives on the integrity of technicians taking accurate measurements. But when technicians don't understand the instruments, or if they use them improperly, that can lead to collecting incorrect data. Bad data leads to HVAC systems that do not operate correctly.

When I'm teaching new air balancers at [Aira-digm Solutions](#), I make sure they understand the measurements they are obtaining, and I teach them to ask the question, "does this measured value make sense?"

Below is a list of some of the most common air-side mistakes made by new technicians, and the recommendations I give our techs.

INSTRUMENT MISTAKE 1: Using Capture Hood to Measure Sidewall Grilles

I had a technician measure six sidewall grilles in the corridor of a school entrance. He chose to use a capture hood and reported reading 3500 cfm. This was well over the 2000 cfm design.

The measurement didn't make any sense. The unit was located on the roof, two floors above the grilles. It seemed unlikely the engineer miscalculated the ductwork that much. Additionally, we were finding most of the other systems on this project had low airflow performance.

I instructed the technician to traverse the unit right before the grilles, and he measured 1950 cfm. This measurement made much more sense. We learned instrument mistake #1: capture hoods read higher on sidewall grilles.

The capture hood is an amazing instrument, and I believe the TAB industry would not be in such demand if these hoods were not accurate and easy to use.

But in the case of sidewall grilles, it failed to give the technician the right measurement. Why?

The capture hood typically uses a 16-point velocity grid to measure air velocity. The grid does not take 16 individual readings like you do with a traverse. Instead, the velocity grid has 16 holes that feeds into a top (high) side chamber, and 16 holes that feed into a bottom (low) side chamber.

The air blends together to give one high side reading and one low side reading. By mixing the air in the chamber, it does not capture a true average velocity.

A sidewall grille blows air out horizontally and tends to hit the velocity grid higher in some sections than others. For example, some sections could get zero or negative flows. The grid equalizes the pressure but doesn't average it. This gives it higher, false velocity readings.



A technician uses a capture hood on a sidewall grille. This method is not the most accurate way of measuring velocity from a sidewall grille.

To properly read sidewall grilles, techs should traverse one sidewall grille and obtain a field derived Ak factor (ncilink.com/AKfactor). Once they have the Ak, they use a rotating



An Airadigm Solutions technician uses an RVA to measure a sidewall grille. Using an RVA on this type of grille will give you the most accurate reading.

vane anemometer (RVA) to determine the airflow per grille.

INSTRUMENT MISTAKE 2:
Using Capture Hoods to Measure Return and Exhaust Grilles

I had two new techs with me on a job gathering return and exhaust readings. At lunch we looked at the readings and realized every fan was 10% to 20% low.

One tech suggested the mechanical contractor hadn't sealed the return or exhaust duct properly and we were dealing with leaky ductwork. It was a good assumption, and one I'd made early in my career. But I suggested we look further.

I instructed them to traverse the fan for total airflow, then compare it to the capture hood readings. We eventually

traversed individual inlets and discovered the capture hood read 7% to 15% lower than the traverse. This varied by grille type and quantity but was consistently low.

We learned instrument mistake #2: Capture hoods read lower airflow on exhaust and return inlets. Why?

Most capture hoods are designed for supply airflow to travel about 36" before it hits the velocity grid. This allows the airflow to even out before the grid, giving an accurate measurement. But exhaust and return airflow has a shorter distance from the hood base before the air hits the velocity grid.

To overcome the low airflow readings on our exhaust system, we took traverses of the different types of exhaust grilles and came up with a field derived Ak. This Ak was multiplied with the hood readings to give an accurate measurement.

Not only did we get correct data for the job, but demonstrated that some problems are not always the mechanical contractor's fault.

INSTRUMENT MISTAKE 3:
Properly Recording Negative Velocity Readings in a Traverse

I teach new technicians to traverse by looking for a straight run of duct, located three quarters of the way downstream of the last transition. But in the field, technicians often find these conditions are not always available. Sometimes you have to take the traverse in a less-than-ideal location.

Traverse points will mostly give you positive readings, but negative readings do occur. These readings typically do not indicate negative airflow, but a circular air motion pattern in the duct, similar to an eddy in a river or stream.

The flow is circulating and not truly moving in a negative direction. It is common practice to record these readings as zero, not a negative number. When set on pitot tube mode, several meters will record these negative readings as zero. This gives an accurate average velocity.

But as every new technician learns, by using the wrong instrument on a traverse, they can run into trouble.

For example, I was once onsite with a tech who was having trouble finding a straight run of duct for a traverse. We found a workable section, and he drilled the holes. Then he took readings with an airfoil, thinking it would be the same as his pitot tube. Instead, he learned instrument mistake #3.

With his meter connected to an airfoil, the negative readings were not stored as zero fpm. Instead, the meter records and uses the negative reading as part of averaging velocity. This calculates a lower airflow than the fan is actually moving.

To correct this, remove the negative velocity readings from the average and replace them with zero when using an airfoil over the pitot tube. This provides an accurate reading, despite not having the best run of duct for a traverse.

INSTRUMENT MISTAKE 4:
Using Thermal Hot Wire Anemometer for Traverse Without Accounting for Negative Readings

On another occasion, I was out with one of our veteran technicians who was having trouble finding a straight run of duct for a traverse. He drilled holes in the best location possible and gathered his readings using a thermal hot wire.

Knowing there would be negative

readings, I asked him how he would account for those in his final measurement. He said there were no negative readings, and I introduced him to instrument mistake #4.

He was correct that his instrument doesn't show negative readings. But that doesn't mean there are no negative readings. The hot wire anemometer does not measure directionally. The numbers displayed, whether positive or negative, are displayed and averaged as positive. This will calculate a higher cfm than what your fan is actually moving.

The hot wire anemometer is another instrument used to perform a traverse. The probe expands and retracts to fit in a small carrying case, which is ideal to travel with. However it is best

to avoid using this unless you have a measurement location in a straight run of duct that is 7.5 duct diameters downstream and three duct diameters upstream from turns or transitions.

INSTRUMENT MISTAKE 5:
Coil Face Velocity Measurements vs Traverse Airflow

Sometimes there just isn't a way to take a duct traverse, but you still need to determine total airflow on an air handling unit. What do you do?

I was onsite at a manufacturing plant in Dallas with several units where a duct traverse location was not available. I instructed my trainee to take a velocity measurement at the coil inlet inside the unit to determine total cfm. We discovered that airflow



An Airadigm Solutions technician uses a hot wire to take a traverse in a mechanical room. This tool does not read negative numbers which could make your reading inaccurate.

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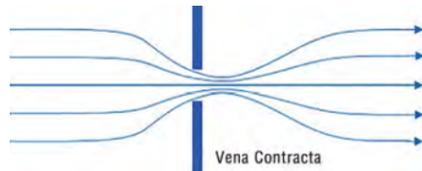
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across the coil face was consistently 16% higher than the air-handling units we traversed.

We did not know if this was a project-specific issue or something common to all units. So, we compared coil face and traverse readings on a variety of projects with a wide range of units.

This is where we discovered instrument mistake #5: coil face velocity measurements read 16% higher than the traversed airflow. I believe the reason for this is **Vena Contracta** (ncilink.com/VenaContracta), an effect that causes airflow to speed up right before the area reduces.

Here's how this works: Air velocity speeds up just as it enters the fins of the coil (the point of maximum velocity at the smallest area). By reducing



Vena contracta is an effect that causes airflow to speed up directly before the duct area reduces.

the area abruptly, the velocity grid picks up a higher velocity in fpm and thus gives higher velocity measurements.

After looking at months of data, I discovered the 16% higher readings we saw at the manufacturing plant were the same across nearly all our projects. The best way to correct for this is to multiply your results by the remaining 84%. That will give you read-

ings that are closer if you were able to traverse.

A word of caution: if your velocity falls below 300 fpm, or your measurement is taken on the leaving side of a coil, don't use the 84% multiplier. The vena contracta effect is no longer a factor, and your readings without the multiplier should be accurate.



Brian Sharkey is the chief training officer for Airadigm Solutions, headquartered in Auburn, NH. His primary focus is on the technical on-boarding and development of Airadigm Solutions' TAB Technicians nationwide. He has worked in the field of Test and Balance and Commissioning for more than 25 years. Sharkey is NEBB Certified, LEED Certified, and NBC certified.

Venting Your Frustrations

or Frustrating Your Venting?



If you do all the right things that are recommended by the industry, are you still endangering your customers? The answer is a definite maybe and that is not good enough.

Many years ago, I got involved in a lawsuit where a couple bought a new boiler for their home and wound up becoming injured due to venting issues that led to carbon monoxide poisoning. This is a frustrating story, but one that can be resolved without lawyers if contractors keep their field teams trained and educated on the combustion process.

In this scenario, a couple was happy to purchase and have installed into their home a new higher efficiency boiler. Their HVAC contractor was careful to follow all the manufacturer's instructions. They followed procedures and obtained the appropriate permit and the job was inspected when it was finished.

All is good. Not quite!

COSTLY CALL-BACK

Just a few days after the boiler was installed, the homeowner found water running down the flue and across the basement floor and laundry room. Guess what? That customer was not happy! They called the contractor back. He did additional research and was told he should have used a flue liner because the chimney had a tile lining and the flue gases couldn't heat it up.

So now this contractor, at his own cost, installs

a flue liner. Guess what? That solved the water-on-the-floor problem.

Several months later, the contractor gets another call from the homeowners. They tell him something on the boiler smells like it's burning and the boiler is no longer working. The contractor returns to the home and finds the wiring melted because the flames had been rolling out. Upon further inspection he finds the flue liner was totally corroded and collapsed. He was certainly lucky that was all that happened.

GETTING HELP

The contractor consulted with the boiler supplier as well as the manufacturer. They recommended venting the boiler out of the basement window with a power venter because they felt the flue was just bad.

THE MOST IMPORTANT THING IS TO GET TO THE TRUTH OF THE CAUSE AND EFFECT, THEN CORRECT THAT SITUATION.

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So the contractor installed a power venter per everyone's instructions, vented the boiler through the window, and felt he had done the best he could.

Many of us who try to do the right things often feel that by following experts' instructions, we're off the hook as far as liability is concerned.

Well, if someone tells you to do a backflip off a diving board, isn't it your responsibility to check and make sure there is water in the pool?

The difference is that when you take instructions from a diving instructor, odds are the instructor has really done what he or she is asking you to do. What are the odds that the experts at the distributor have worked in the field as HVAC technicians?

Less than a week after the contractor re-installed the boiler and power vented it through the basement window, the lady of the house ended up in the hospital with CO poisoning.

Here comes the lawsuit. The contractor's defense is that he did everything he was told, and the boiler was at fault. The boiler manufacturer claims there is nothing wrong with the boiler.

TELLING THE TRUTH

If all the above isn't frustrating enough, now the contractor, homeowner, and manufacturer are embroiled in a legal action where the only winners are the lawyers. I became involved in this mess when the homeowner's lawyer was referred to me as a knowledgeable and experienced witness.

My main concern any time there is any incident of this nature, is to determine whether the actual problem was discovered and eliminated to prevent a future incident.

NO FINGER-POINTING!

To me, it isn't about who is or isn't guilty. The most important thing is to get to the truth of the cause and effect, then correct that situation. In that way, I can protect the victim. The manufacturer's lawyer was present and was surprised when I didn't blame the equipment.

Did the contractor do anything wrong? That depends on how you define wrong. Did he follow industry standards and manufacturers recommendations? Yes! However, there is one thing that is not an industry standard that should be, and that is to verify the equipment is operating safely.

There are, however, laws that state contractors are not allowed to endanger people. If found guilty of endangerment, that could put a contractor out of business. The contractor in this case settled out of court as most do in these types of cases.

THE PROBLEM(S) ...

In this scenario, the new copper-fin boiler with a draft hood was much more efficient than the original cast iron boiler and therefore had a much lower flue gas temperature.

Above the draft hood, after dilution air, the flue gas temperature was less than 220 degrees. By the time it made it to the flue cap, the gasses were below the dew point temperature and condensed.

I knew this because of previous experience with this type of boiler. This boiler would be a problem unless modifications were made. Adding a flue liner rarely stops equipment from condensing but it does prevent water from running across the floor. Think about it: in this case, it only

took two months for the acidic moisture that condensed out of the flue gases to destroy the aluminized steel liner causing it to collapse. Frankly, it was lucky some wires melted and shut off the boiler.

Next comes the addition of a power venter. What could go wrong?

A draft hood isolates equipment from the flue. It allows the draft in the flue to draw dilution air from the room instead of the equipment. By definition, a draft hood only works safely if the dilution air is a maximum of 50%. Adding a power venter above a draft hood increases dilution air up to 80%. The flue can only hold 50% dilution air and 50% flue gas. If there is 80% dilution air, there is only room for 20% flue gas. That means around 30% of flue gas goes into the house.

Bad things happen when vent fans are installed on top of draft hood equipment. If the draft hood is left open, someone will be injured, or the equipment will be destroyed. When I worked for a supplier of draft fans, I made sure my customers understood how to properly install them and where.

Although it didn't involve a court case, one of the Field Experiences in the NCI CO/Combustion Class discusses a water heater with a fan in the flue. For the record I have found 100% of these installations unsafe. Scary!! 



Jim Davis is a 49-year veteran of the HVAC industry. In 1978 he became involved in distributing digital combustion analyzers and found a giant lack of education on how to interpret and apply the information they collected. He's spent thousands of hours addressing the real issues and problems occurring in the field.



"Find the Gas Valve"

— Eric Kent, Same Day Heating and Air, Salt Lake City, UT

In this game of hide-and-seek, a technician is dispatched to a home having an air conditioning issue and found the customer's furnace in this condition. The funny thing is, the customer is an engineer!!

Service Manager Eric Kent from Same Day Heating and Air of Salt Lake City, UT is the February 2020 winner of our Photo-of-the-Month contest, in the What-The-Heck category, as voted on by the subscribers to the [High-Performance HVAC Today](http://hvactoday.com) magazine (hvactoday.com) and visitors to the website. He will receive a \$50 gift card.

You can too – submissions are always welcome. If you'd like to submit a photo for consideration in our Photo-of-the-Month contest, go to ncilink.com/POMSubmit and fill out the information as requested.

THE MARCH 2020 CONTEST OPENS ON FEBRUARY 10, 2020.
That gives you plenty of time to submit something in any of our three categories: **The Good, The Bad, WTH (What the heck).**



Ladies and gentlemen, the National Comfort Institute (NCI) 2020 High-Performance Summit is less than two months away. If you haven't already done so, now is the time to register and book your rooms at the fabulous We-Ko-Pa Hotel in Scottsdale, AZ. The event takes place from April 5th to 9th.

For complete details on what is planned for this year's event, please check out the Summit brochure on page 13 of this issue.

In a nutshell, Summit will focus on how you, as a company and team leader, should always be coaching for success. Summit is open to all HVAC professionals. It is **THE** gathering place for like-minded people to learn from and share knowledge with fellow High-Performance professionals.

This year Summit consists of four days of special events that include workshops led by 9 speakers, a trade show with 25 vendors, our popular 'Idea Session', the Partner's Reception and Trade Show, and our Annual Awards Banquet.

Plus, Summit 2020 will see the return of the golf outing at the world-famous We-Ko-Pa Resort golf course.

USE YOUR NCI BUCKS

Besides being able to use your banked NCI Bucks to cover the cost of your regis-

trations, you can also use them to cover some other fees.

For example, NCI members can cover their golf fees with NCI Bucks. The cost is \$260 per golfer which includes fees, lunch, and your cart. If you plan on renting clubs, you should call early to reserve them while they last.

You can also use your Bucks to help pay for both pre- and post-convention NCI classes (**Go to ncilink.com/Summit-2020Pre-Post for more information**). However, classes being held by Goodman and R.E. Michel are not covered by Bucks.

The other special class hosted by Women in HVACR is free to all attendees.

So what are you waiting for? Register today at ncilink.com/Summit2020Reg.

Power Up with the February Power Pack

Your February 2020 PowerPack is now online exclusively for NCI Members.



Every month we hand-pick several digital tools especially for High-Performance contractors like you to help you on your journey towards success.

So get ready and power up with this month's downloads:

- ♥ **Value and Comfort Pre-Season Performance Air Conditioning Tune-Up Flyer** (Download)
- ♥ **Fundamentals of Fan Airflow** (Online Training)
- ♥ **Cooling Test-in Report** (Download)
- ♥ **Static Pressure Test Diagram** (Download).

Be sure to share the February Power Pack with your entire team! Get started today: ncilink.com/PwrPak.

NCI's Newest Partner: Hire Dimensions

National Comfort Institute is pleased to announce the latest addition to our TIPP (Training Incentive Partner Program) offerings for members. Please join



us in welcoming **Hire Dimensions** – an online soup-to-nuts recruiting engine.

Hire Dimensions has more than 25 years of industry experience mostly working with and helping HVAC contractors manage their onboarding, hiring, and screening challenges.

By using Hire Dimensions through the NCI website, you can earn NCI bucks which can be used to help pay for any NCI training, including things like registration for the annual NCI High-Performance HVAC Summit each year.

If you have any questions about Hire Dimensions or how to use the TIPP benefits, be sure to call (800) 633-7058 and talk to your customer care representative.

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Email us at contactus@hvactoday.com with your comments and questions.

Interested in NCI Membership?
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NCI Summit Might Just Be Your Best Investment in 2020



Dominick Guarino is publisher of *High-Performance HVAC Today* magazine and CEO of National Comfort Institute, Inc. He can be reached at domg@ncihvac.com

One of the toughest hurdles to building a performance-based culture in your business is getting your entire team on board. Summit 2020 is focused on helping you do this. Four of the breakout sessions will be “Coach-the-Coach” workshops with tools and materials to help you coach your team to success!

Here are 10 more reasons to come to Summit Week this year, and bring with you as many of your team members as possible:

1. Networking and Camaraderie with High-Performance Peers. You’ll have numerous opportunities to compare notes and enjoy some one-on-one time with new and old friends, starting with Monday evening’s Welcome Reception hosted by Goodman/Amana. You’ll get plenty of networking time in with other great Summit events, including meals, receptions, and Sunday’s Golf Tournament for all levels of golfers.

2. Reach For The Summit – Coaching Edition kicks off our conference at Tuesday morning’s opening Session. This HVAC knowledge game show was a big hit last year! Two contestants will battle for the win and bragging rights in this fun and educational event.

3. Partner Trade Show. NCI’s partners’ products and services are focused on helping you manage and grow your business. Be sure to visit with them during the tradeshow reception, as well as breakfasts, lunches, and breaks.

4. Timely Keynote Topic. Our 2020 keynote speaker, Ryan Kohler, will share his secrets on how you can overcome one of the biggest challenges you will face in 2020 and for the next several years: Finding and hiring high-quality personnel in the ever-tightening HVAC labor market.

5. PerformanceTown™ is back! By popular demand we have brought back our completely renewed and redesigned interactive hands-on stations, each manned by an NCI Technical Coach. Be sure to bring your key field staff and participate yourself as you learn what your techs and installers will encounter in the field.

6. Sales and Marketing Idea Meeting. Another

Summit long-time favorite is our Idea session where attendees each share one or more lead generation or sales ideas. Hear dozens of great new ideas from your peers and get a chance to win cash if your idea is voted one of the best.

7. Informative Panel Discussion. This year’s panelists are successful High-Performance contractors who will share their experiences coaching and communicating to employees why they are on this mission and discuss their implementation approach.

8. Recognizing High-Performance Leaders. A long-standing tradition since Summit first started 15 years ago is our Awards Banquet where we close the event by recognizing some of the best High-Performance professionals in our industry. Who knows? You just may be on stage!

9. Get the most out of Summit Week with pre- and post-conference events. You can choose from five pre-conference events including Goodman’s Perfect Pitch Sales seminar and R.E. Michel’s workshop on stepping up to High-Performance HVAC.

Other pre-con choices include Women in HVACR’s half-day Western Regional Meeting and NCI classes: an Advanced Air Diagnostics Recertification class, Day 1 of our new Refrigerant-Side Performance Certification class on Monday with Day 2 on Thursday. Also on Thursday is our Advanced CO and Combustion Recertification class.

10. Perhaps the most important reason to not miss Summit 2020 is that it’s the **only event in the industry completely focused on High-Performance HVAC.** You will be surrounded by peers with the same mission, who are willing to share their experiences and knowledge.

Be sure to register before March 7 to take advantage of Early-Bird savings!

To receive a Pre-Summit Preparation kit which includes a special evaluation guide, email the words “Prep Kit Please” to Summit@ncihvac.com. 



Cutting-edge Training from the Industry leader in Performance-Based Contracting™

Think you know airflow? Think you know carbon monoxide safety? Think you know how to solve your customer’s comfort issues? Be sure. Don’t guess. Find the training and expertise you need from the National Comfort Institute (NCI). Only at NCI will you find certification courses like Duct System Optimization and Combustion & Carbon Monoxide Safety, taught by leaders and innovators in the HVAC industry. Find out why NCI says “If You Don’t Measure, You’re Just Guessing!”™ Visit the link below or call 800-633-7058 to find classes near you.

Upcoming 2020 NCI Training Schedule

Airflow Testing & Diagnostics and Refrigerant-Side Performance Bundle

Mar 3-5: Tulare, CA*
Mar 24-26: Los Alamitos, CA*

Airflow Testing & Diagnostics

Mar 3: Tulare, CA*
Mar 24: Los Alamitos, CA*

Refrigerant-Side Performance with Certification

Mar 4-5: Tulare, CA*
Mar 25-26: Los Alamitos, CA*

Residential HVAC System Performance & Air Balancing Certification Program

Feb 18-20: Cleveland/Sheffield Lake, OH
Feb 25-27: Salt Lake City/Sandy, UT
Mar 3-5: Los Alamitos, CA*
Mar 3-5: Dallas/Carrollton, TX
Mar 10-12: Newark/Whippany, NJ
Mar 17-19: Atlanta/Union City, GA
Mar 24-26: Cincinnati, OH/Florence, KY
Mar 24-26: Tampa, FL
Apr 14-16: Milwaukee/West Allis, WI

Combustion Performance & Carbon Monoxide Safety Certification Program

Feb 11-13: Charlotte, NC
Feb 11-13: St. Louis/Earth City, MO
Feb 18-20: Los Alamitos, CA*
Feb 18-20: Richmond, VA
Feb 25-27: Detroit/New Hudson, MI
Mar 10-12: Philadelphia/King of Prussia, PA
Mar 17-19: Minneapolis/Golden Valley, MN

Duct System Optimization & Residential Air Balancing Certification Program

Feb 11-13: Los Alamitos, CA*
Feb 11-13: Baltimore/Glen Burnie, MD
Feb 18-20: Boston/Somerville, MA
Apr 14-16: Mobile, AL
Apr 21-23: Sacramento, CA
Apr 21-23: Denver/Centennial, CO

Commercial Air Balancing Certification Program

Feb 25-27: Milwaukee/West Allis, WI
Feb 25-27: Washington DC/Landover, MD
Mar 31-Apr 2: Newark/South Plainfield, NJ
Mar 31-Apr 2: Detroit/New Hudson, MI
Apr 21-23: Richmond, VA

Commercial HVAC System Performance Certification Program

Mar 31- Apr 1: Baltimore/Halethorpe, MD
Apr 14-15: Los Alamitos, CA*

Performance-Based Selling Bootcamp

Feb 11-13: Austin, TX
Apr 21-23: Los Alamitos, CA*

Optimize Economizer Performance with Certification

Apr 16: Los Alamitos, CA*

Introduction to Hydronic Testing, Adjusting, & Balancing

Apr 14-15: Cleveland/Sheffield Lake, OH

National Balancing Council Commercial Balancing with Certification

Mar 23-27: Cleveland/Sheffield Lake, OH

* NCI training subsidized by Southern California Edison



Visit NCIlink.com/ClassSchedule to view the latest schedule of NCI Training events



Coach Your Team to High Performance!

Summit Week

2020

Throughout Summit Week, you will learn how to coach your team members on specific topics that will help bring your team together as you integrate performance into your company.

APRIL

5-9, 2020

Scottsdale,
AZ

ABC: ALWAYS BE COACHING

COACHING SESSIONS:

Coaching Your Entire Team -
What Is High-Performance Contracting and Why Are We Doing It?

Coaching Your Managers -
How We Will Implement High Performance into Our Business

Coaching Your Technical Team -
How We Will Integrate Performance Testing into Service and Installation

Coaching Your Sales Team -
How We Will Market and Sell High Performance

High-Performance Town 2020 -
Hands-on Testing & Diagnostics Lab

SPECIAL EVENTS:

- Summit Week Welcome Reception
- Interactive Opening Session
- NCI Partners Reception and Tradeshow
- Keynote Speaker
- Idea Meeting
- Awards Banquet
- Pre- and Post-Conference Training & Education Sessions
- And More!!!



SAVE Hundreds!

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