The COMPRESSOR

AACP E-Newsletter

JANUARY 2024

Message From The Board

Happy New Year!

Climate Change. Energy Efficiency. Home Energy Savings. HOMES Rebates. EmPowerMD 2024-2026. And let's not forgot a national election year. 2024 will be an interesting year, to say the least.

The AACP Board of Directors along with their committees are feverishly working to prepare for the upcoming Maryland General Assembly, as well as work with the Maryland Energy Administration and the Virginia Department of Energy as they prepare the application process for training and other rebates included in IRA Inflation Reduction Act]. Working with our legislative advocates at The AnnDyl Group, AACP will remain on the forefront of involvement along with our sister chapter, HACC – Heating and Air Conditioning Contractors of Maryland. We will keep AACP members informed as we navigate through the federal and state process.

Americans are already bombarded with results of early primaries as the presidential election of 2024 is off and running. Energy and climate change, along with the economy, supply chain shortages, and workforce

Upcoming Events

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SAVE THE DATE
Baseball Networking Event
June 22, 2024 | 5:00 PM |
Bowie Baysox - 4101 NE Crain Hwy., Bowie, MD

SAVE THE DATE
Annual Golf Tournament 2024
September 13, 2024 |
8:00 AM |
Raspberry Falls Golf & Hunt Club - 41601 Raspberry Dr, Leesburg, VA

shortages will be major issues as voters go to the ballot box in November. Stay tuned as the race heats up.

In local news, be sure your employees are paid Minimum Wage. Some laws took effect on January 1, 2024. Specifically:

- **Maryland Statewide:** Increases from $13.25 to $14.00/hour
- **Montgomery County:** $15.00/hour – as increased on July 1, 2023
- **District of Columbia:** Remains $15.00/hour.
- **Virginia Statewide:** Remains at the Federal level of $7.25/hour.

As a reminder, the Member Section of our website includes the Minimum Wage chart through January 1, 2025, as well as Legislative, Regulatory, and Rebate reports published by The AnnDyl Group. Be sure to log into your account to access these documents.

On behalf of the AACP Board of Directors, we wish you, your team, and your family a happy and healthy New Year!

Best,
Peter

Peter Constantinou
Executive Director

Events

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Legislative Updates

AACP members receive exclusive access to legislative and regulatory updates and resources.

Maryland Regulatory Updates

- January 2024 Regulatory Update

DC General Assembly Updates

- [December 2023 Regulatory Update]

[View 2024 Updates]

- [December 2023 Legislative Update]

[View 2023 Updates]

AACP News

Mark your calendars for two of our biggest events!

On **Saturday, June 22,** spend a night at the ballpark with your HVAC/R colleagues & friends from Maryland, D.C. & Virginia! Apprenticeship graduation will honor our hardworking 2024 graduates and the game will follow.

On **Friday, September 13,** join HVAC contractors and distributors for 18 holes of golf, networking, and camaraderie at the Raspberry Falls golf course with vistas of the Catoctin Mountains in the background. Enjoy delicious food and beverages, along with multiple opportunities to win some great prizes!

Industry News

The Top Trends Set to Drive the HVACR Industry in 2024

Reprinted From [HVACR Business]

Several key trends are driving the HVACR industry as we head into 2024. Each trend provides HVACR professionals with several opportunities while addressing their own set of unique challenges as well. These include regulatory changes, advances in technology, and an ever-growing focus on sustainability and electrification.

Industry professionals must understand how to best take advantage of the opportunities each trend presents. Understanding the current state of HVACR and where the industry is heading, will empower continued success in the new year and beyond.

Electrification, Decarbonization & High-Efficiency Systems

The HVACR industry has faced notable regulatory changes in 2023, but it has also been a year of significant growth and innovation. Advancements in technology and a growing focus on sustainability have enabled the production of more efficient, digitally connected solutions for both residential and commercial spaces.

The push toward decarbonization and electrification continues to accelerate, driven largely by unstable energy costs, legislation, and climate change. As a result, we've seen an emphasis on renewable energy sources and demand for high-efficiency HVACR systems, including the adoption of heat pumps across all sectors.

Additionally, the integration of smart technology has become an undeniable expectation for both homeowners and building managers. Controls and thermostats enhanced by the Internet of Things (IoT), connectivity, and artificial intelligence (AI) have become a mainstay, providing increased insight into system performance, energy efficiency, and customized comfort.

Customers Expect More Than Comfort

How is the industry changing?

Both residential and commercial customers now expect more than comfort from their HVACR systems — they want healthy, energy-efficient homes and buildings that are aligned with environmentally responsible practices.

A shift in focus from simple comfort to IAQ and energy efficiency is driving an investment in systems and technologies that can enhance indoor air quality (IAQ) and optimize energy use. Options like zoning and smart controls are must-haves for homeowners and building managers who want to easily manage energy use and air quality improvements. Additionally, within the commercial sector, building managers are now being tasked with accessing the carbon footprint of the building and providing proof of progress toward net-zero goals. Advanced digital platforms can connect and digitally automate diverse data sets from multiple systems to optimize building performance, manage emissions, and analyze results.

Leverage Opportunities for HVACR in 2024

What opportunities lie ahead for HVACR in the coming year?

The HVACR industry operates within a complex regulatory landscape, with evolving codes and standards. Being able to understand and stay ahead of these changes while balancing consumer demands presents a huge opportunity to drive growth and industrywide sustainability.

As an industry, we can expect to see a continued emphasis on decarbonization, electrification, and renewable energy sources, which will also open up many opportunities for the HVACR industry in both product development and digitalization.

What challenges are expected for the HVACR industry?

The industry is facing back-to-back regulatory changes. DOE's 2023 energy efficiency regulations are now closely followed by the EPA transition to low-GWP refrigerants going into effect in 2025. Distributors and contractors that have developed solid phase-in/phase-out plans have an advantage. The phase-out of high-global warming potential (GWP) refrigerants poses a significant challenge for the HVACR industry. Adapting to new refrigerants and ensuring compliance with evolving regulations can require investment in research, development, and technician training.

Hybrid System Heat Pumps are 'Hot'

Which innovations have the potential to make the biggest impact?

With the industry's focus on electrification and decarbonization and its extensive investment in technology, heat pumps are solidly positioned to make a huge impact. Innovation in heat pump technology is unfolding rapidly and the space is incredibly dynamic. As a result, heat pumps are being leveraged to address an increasing share of heating loads.

However, it's important to note that most air-source heat pump systems need to include some form of backup or supplemental heat that is utilized when heating demands exceed capacity, such as when the outdoor temperatures are too cold for the heat pump to run efficiently. Hybrid systems provide a solution to maintain efficiency in very cold climates. In a hybrid system, a heat pump is connected to a high-efficiency gas furnace and can seamlessly adjust between heating sources depending on the heating demands. This will often result in lower operating costs and source emissions compared to electric resistance for space heating, but results will vary on a building-by-building basis.

Integrated Building Systems Get Smarter

Adding to the increased focus on IAQ and energy efficiency, it's also important to understand the revolutionary impact of data and digital technologies. There is a growing demand for smart building solutions from which the HVACR industry can benefit. Integration with other building systems, such as lighting and security, offers opportunities for improved energy management, occupant comfort, and overall building performance.

Digital technologies give building operators a comprehensive suite of apps to monitor and improve energy efficiency, tenant satisfaction, asset performance, maintenance operations, space performance, and, ultimately, the comfort of all occupants. Additionally, as climate disclosures become mandatory for many building managers, digital services leverage data collection to assess the carbon footprint of the building, track progress toward decarbonization goals, and provide clear reporting on emissions and building performance.

Regulatory Changes: R-410A & A2L

What does the regulatory landscape look like?

The American Innovation and Manufacturing (AIM) Act, which mandates an 85% reduction in hydrofluorocarbon (HFC) gases by 2036, has remained top-of-mind for contractors, dealers, and manufacturers alike. The initial phase of the policy had a negligible impact on refrigerant availability, but the next phase — taking effect in January 2024 — dictates the most significant step-down to date and will reduce HFC production by 30%.

This next phase is poised to create a significant impact on the availability of common HVACR refrigerants, including R-410A. However, contractors and dealers who prepare now can minimize disruptions and the risk of stranded equipment. All involved parties must understand the safe handling, storage, and transportation of mildly flammable (A2L) refrigerants and have a plan in place for R-410A recovery and reclamation.

Ensuring all levels of the industry are educated, informed, and empowered will help make the transition as successful and seamless as possible, but it remains a pressing issue for the industry at large.

How are organizations prioritizing sustainability?

As sustainability becomes a global corporate mandate, organizations are making bold commitments to decarbonize building operations and conserve resources. In a recent study[1] conducted in conjunction with Forrester Research, 2,348 business leaders were surveyed to better understand how organizations are prioritizing and investing in sustainability. The survey revealed that 80% of respondents cited implementing or maturing sustainability efforts as their top priority and, for most, 2024 was the target date for achieving these goals.

Are there other pressing issues facing HVACR right now?

Indoor air quality receives significant attention due to its impact on occupant health and well-being. Ensuring optimal IAQ requires advanced air filtration, ventilation, and air purification technologies, as well as regular maintenance and adherence to industry standards.

For many building professionals, simply enhancing or replacing the HVACR system may not be enough to bolster occupant confidence and satisfaction. Smart building technologies that utilize occupant-facing apps make building data transparently available and enable communication with facility personnel about building and room conditions such as temperature, lighting, and occupancy.

Preparing for a Successful Year

In 2024, regulatory changes, sustainability, and new technology will continue to influence the HVACR industry. HVACR professionals who understand and plan for changes while balancing consumer demands are best positioned for success. And, together, as an

industry, we can move closer to a world that is built on smart, healthy, and sustainable buildings.

Ageism in the Workplace: New Protections Coming?

Reprinted From The ACCA HVAC Blog

A recurring theme has emerged in employment legislation as federal lawmakers renew their commitment to fortifying anti-discrimination protections for older workers. This potential change introduces legal complexities, primarily through the lens of the Protecting Older Workers Against Discrimination Act (POWADA). As this proposed legislation takes center stage, legal experts recommend that companies, in addition to adapting to potential legal changes, can proactively strengthen their defenses through documentation.

POWADA

Unveiled on the legislative stage on December 4, 2024, POWADA represents

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a collaborative effort between Republicans and Democrats in the U.S. House of Representatives. Its primary mission is to introduce pivotal amendments to federal law, with a special emphasis on the introduction of the "mixed motive" test. This provision seeks to empower parties to demonstrate that age or any other protected characteristic served as a motivating factor in an unlawful employment practice. Advocates for POWADA reference a critical turning point in 2009, marked by a U.S. Supreme Court decision that imposed a stricter burden of proof for age discrimination claims. This historical context underscores the need for legislative intervention to restore a balance in the rights of older workers.

A comprehensive survey conducted by AARP in 2022 shined light on the extent of this issue, revealing that an alarming 64% of workers aged 40 and above reported either experiencing or witnessing age discrimination within their professional spheres. Further amplifying this sentiment are studies indicating that individuals aged 45 and above are systematically perceived as weaker job candidates, contributing to the perpetuation of age bias and the need for a legislative response.

What POWADA Could Mean for Employers

In the face of potential legal amendments, employers find themselves navigating uncharted territory, where strategic defenses become necessary. Keeping a detailed timeline of events that substantiates employment actions, such as disciplinary measures or terminations, emerges as a strategic defense mechanism. In instances of performance-based decisions, employers are advised to demonstrate transparency by providing

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comprehensive notice to employees and implementing performance improvement plans where applicable. This proactive stance is crucial as companies anticipate changes in legislation while simultaneously safeguarding their organizational interests.

Beyond the legislative battleground, age discrimination reveals itself as a multifaceted issue that transcends the confines of specific age groups. While the U.S. Age Discrimination in Employment Act safeguards individuals aged 40 and above, the cunning nature of age bias extends to younger workers as well. A general belief linking experience to maturity and competence further fuels age bias, creating a bias that impacts both older and younger employees.

As the demographic landscape undergoes a shift, HR professionals are grappling with challenges presented by what is termed the “silver tsunami.” Approximately ten thousand individuals are crossing the threshold into the age of 65 every day until 2030, underscoring the imminent retirement of the baby boomer generation. This demographic transition poses challenges for HR professionals tasked with bridging the talent gap left by retiring baby boomers. Addressing age bias becomes imperative for effective talent management, as biases against older workers impede the utilization of invaluable experience and knowledge.

Ageism’s Impact on Retirement

The traditional concept of retirement is changing, with financial considerations emerging as a central theme. The target retirement age for U.S. workers has surged to 66 in 2022, creating a landscape where retirement is no longer as easily attainable as in the past. Insufficient retirement savings further

compel older workers to prolong their careers, exposing them to ageism. Age discrimination, though illegal at every stage of employment, persists, casting a shadow over hiring processes, promotions, salary increases, and even layoffs.

As federal lawmakers reconfigure age discrimination protections through POWADA, the workplace finds itself at a crossroads, necessitating a comprehensive reevaluation of its approach to age bias. Beyond the realm of legal considerations, organizations are urged to proactively combat ageism, recognizing that fostering inclusivity across age groups contributes to a dynamic and thriving work environment. This exploration into the evolving dynamics of age discrimination underscores the need for a cultural shift, one that embraces the diverse skills and experiences individuals of all ages bring to the workplace. By addressing age bias at its roots, organizations can pave the way for innovation, resilience, and a workplace culture that thrives on the strengths of its multi-generational workforce.

Industry Articles

Can Residential Customers Help Boost Energy Reliability?

Reprinted from North American Clean Energy

On Christmas Eve 2022, a powerful winter storm in the United States delivered what were, in some places, the coldest temperatures in 40 years — in others, it was the coldest ever recorded. In the Midwest and North Atlantic, the footprint of the PJM grid operator serves 65 million people in 13 states and the District of Columbia. During the Christmas Eve storm, wind gusted to 65 mph, while heavy snow tore down power lines and cut off power to tens of thousands of customers. What's more, the demand for electricity so strained the grid that officials pleaded with customers to cut back usage: "*Please turn down your thermostats and refrain from using major appliances such as washing machines.*"

The potential for wide-scale rolling blackouts was happening not just in PJM's footprint, but in many regions of the country. The grid stayed online, thankfully. After the event, PJM's spokesperson noted, "We called for conservation, we asked residents—even though it was a holiday weekend and even though it was cold—to conserve some energy," and they did.

In fact, PJM credited both customers and their local utilities with conserving power, saying "They were super helpful." This was especially important given that some of the power plants that routinely generate grid electricity were offline in the frigid conditions (for a variety of reasons, from frozen natural gas pipes to jammed coal pulverizers). The success of PJM's efforts involved more than a bit of luck: PJM's operators had no idea how many customers would respond, or to what extent it would help. Fortunately, it worked.

Nationally, the U.S. Energy Information Administration suggests that power outages are occurring more frequently and lasting longer, with average outage durations doubling between 2013 and 2021. In August alone, the Electric Reliability Council of Texas (ERCOT) asked customers to voluntarily conserve energy for eight days in a two-week period to avoid rolling blackouts.

A grid strained by extraordinary weather and a corresponding industry response is nothing. In some places, commercial and industrial customers (including huge factories) have had standing contracts for years with their respective utilities to reduce their power draw ("load") during periods of peak/excessive demand. This correspondence is called "demand response." In return, these corporate customers are compensated, in some cases significantly, for helping support grid stability and reliability. However, while these programs have shown promise and results, they're typically based on fixed agreements and may not truly reflect the real-time value to the grid.

Many utilities have also been gradually expanding demand response programs on the residential side, often through the use of smart thermostats that can adjust temperature setpoints by a few degrees to reduce demand. These kinds of programs generally offer a $20-25 annual incentive for customers that participate in a minimum number of events, and have consistently proven to be a valuable resource for managing peak loads on the grid. It's unclear, however, if this approach can scale quickly enough to meet emerging reliability concerns, particularly since roughly 80 percent of customers don't currently have a smart thermostat installed.

To engage more customers and get deeper load reductions, a different approach may be needed. Instead of a fixed annual incentive for participation, one approach could be to explore dynamic incentives. Tied either to the real-time wholesale price of power or the estimated cost of power outages, this approach could provide larger total incentives and stronger economic signals. Higher incentive levels and a new approach that supports customer choice could make these kinds of programs more appealing to residential consumers, while opening the door to increased participation from low- and moderate-income customers and those in disadvantaged communities.

Supporting this kind of approach will require new and more dynamic frameworks from regulators and utilities, as well as better, near-real-time consumption data. Although new smart meters collect energy use data frequently, they often deliver it in bulk a day later to the utility, have delays in their communications networks that make real-time analysis difficult, and prioritize in-meter analysis over cloud-based approaches, limiting the sophistication of potential measurement and verification efforts for demand response. The good news is that some new technologies are now able to remotely access near-real-time data from existing meters — including both smart meters and older drive-by AMR systems — and share it with utilities and customers while supporting timely data analysis through a streamlined cloud-based approach. That's exactly what's needed to support a new demand response paradigm.

America's utilities can and should take advantage of the opportunity to improve grid reliability by providing better transparency and incentives to residential customers. The technology exists to support flexible, real-time load management, provide customer engagement and feedback, and compensate customers equitably. That's truly the utility of the future, available today.

Retro-Commissioning Our Way Into The Future

Reprinted from HVAC Informed

Nothing is immune to entropy. As buildings age, they suffer natural breakdowns in efficiency, performance, and useability, compromising occupant comfort and leading to higher energy bills. Luckily, they do not have to stay that way. Retro-commissioning brings existing structures up to speed so they can function their best.

What Is Commissioning?

Commissioning helps buildings operate as the owners intended and ensures staff maintains their equipment and systems. During new construction, commissioning teams may conduct a quality assurance process on a structure to ensure it will perform properly.

For example, making HVAC equipment more energy-efficient often requires advanced control strategies. It is ideal to implement these controls early in the construction process.

Recommissioning

Recommissioning occurs when a building undergoes an additional commissioning process. A change in ownership or building use may trigger the decision to recommission a structure. Operational problems or poor energy performance can also lead owners to recommission their properties.

Since the building has already been commissioned in the past, the commissioning team may have initially included a plan for future renovations. Following it simplifies the recommissioning process.

Retro-Commissioning

An existing building that has never been commissioned may be retro-commissioned to modernize it, improve occupant comfort and boost energy efficiency. It is common to retro-commission during a planned renovation or upgrade to the structure.

Retro-commissioning ensures a building's new features meet the owner's and occupants' needs, as well as government regulations. It can resolve problems that occurred during the design and construction phase and address new issues that arose as the structure aged.

The Importance of Retro-Commissioning

One of the most obvious benefits of retro-commissioning a building is the cost savings. According to the Environmental Protection Agency (EPA), the average retro-commissioning project leads to a 15% reduction in energy consumption and saves building owners 27 cents per square foot. Many utility companies also offer performance-based incentives to owners based on how many kilowatt-hours their retro-commissioning project saves.

Additionally, retro-commissioning can reduce maintenance costs in the long run and extend equipment life. Improving a building's heating, cooling, and humidity control can increase tenant comfort and retention.

Building sector

Retro-commissioning often boosts air quality by ensuring adequate air intake, improving HVAC filtration and reducing moisture. It may even increase a structure's property value.

The building sector—including construction, heating, lighting, and cooling for companies and homes—accounts for over 33% of worldwide energy consumption and emissions. Retro-commissioning makes structures more sustainable and helps companies comply with environmental laws, an increasingly important factor in modern business operations.

Which Parts of a Building Can Be Retro-Commissioned?

Retro-commissioning addresses many complex systems within a building, including:

1. HVAC: A commissioning authority or facilities team can retro-commission a structure's HVAC system, including inspecting air economizers and demand-controlled ventilation for proper function. They can also check for blocked air registers, broken exhaust fans and whether the HVAC equipment complies with building occupancy codes. This process may reveal broken machinery or inefficiencies that waste energy, reduce occupant comfort and harm indoor air quality.
2. Lighting and Lighting Controls: Old lightbulbs are often inefficient and require more frequent maintenance than newer types like LEDs. Retro-commissioning teams can look at a building's lighting to determine if the building would benefit from

different kinds of lights. Additionally, they can install smart lighting systems to automatically regulate energy use based on times of day or occupancy levels.

3. Humidity Control Systems: A building's humidity level plays a strong role in occupant comfort, mold growth, and heating and cooling efficiency. Retro-commissioning an HVAC system's dehumidifier and humidity sensors ensures the building stays dry, avoiding problems down the road.
4. Sprinkler Systems: A working sprinkler system is crucial to a building's fire safety installations. Retro-commissioning teams can look for broken sprinkler heads, leaking pipes and bad wiring connections that could pose a safety issue during an emergency.

Steps of Retro-Commissioning

Here is a breakdown of the retro-commissioning process:

1. Planning: In the planning phase, the commissioning team prescreens a building for energy use, HVAC problems and tenant comfort complaints. It then develops a plan for retro-commissioning the building.
2. Closer investigation: The commissioning team performs diagnostic testing and monitoring to closely examine a building's energy performance. It documents findings and reviews the results.
3. Implementation: The commissioning team performs necessary repairs and improvements to the building based on testing.
4. Confirmation: The team drafts a final report to confirm what was done in the building. It may give the owners a copy of the retro-commissioning plan.
5. Training: As a last step, training building occupants to use new controls or equipment the commissioning team installed is often necessary.

Revitalizing Existing Structures

Although it is common to commission buildings when they are first built, it is also possible to retro-commission structures that need an upgrade. Retro-commissioning helps owners meet performance and energy efficiency targets. It improves occupant comfort, reduces the need for expensive equipment repairs and can significantly lower energy bills.

As properties age and more companies seek to become sustainable, it is more important than ever to breathe new life—and fresher air—into existing buildings. Retro-commissioning is the easiest way to accomplish that.

Call for Articles

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