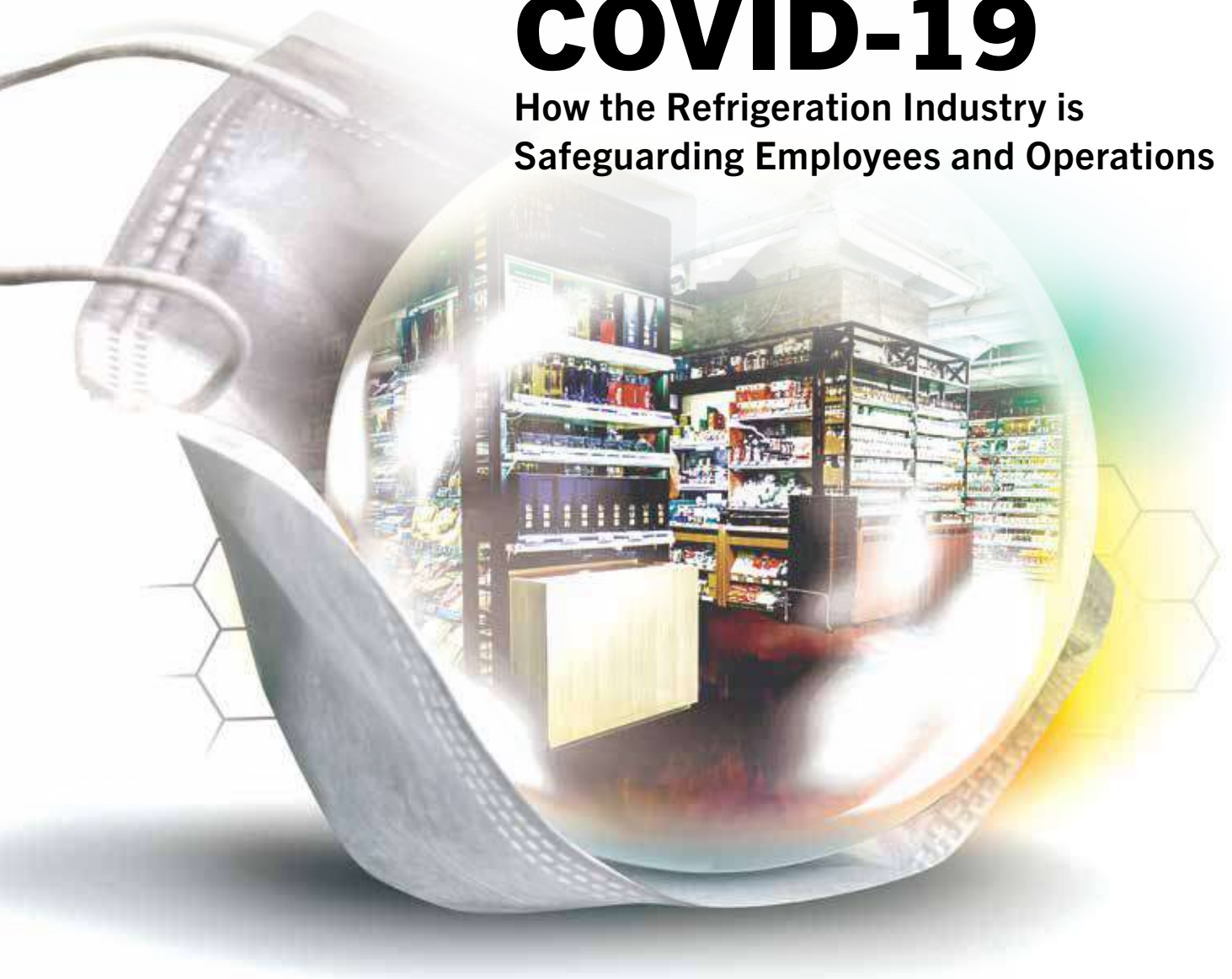


CONDENSER

COPING WITH **COVID-19**

How the Refrigeration Industry is
Safeguarding Employees and Operations



ELIMINATES HAZARDS & FACILITATES COMPLIANCE



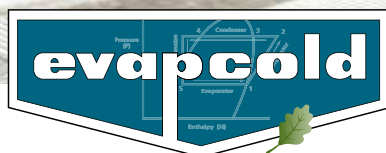
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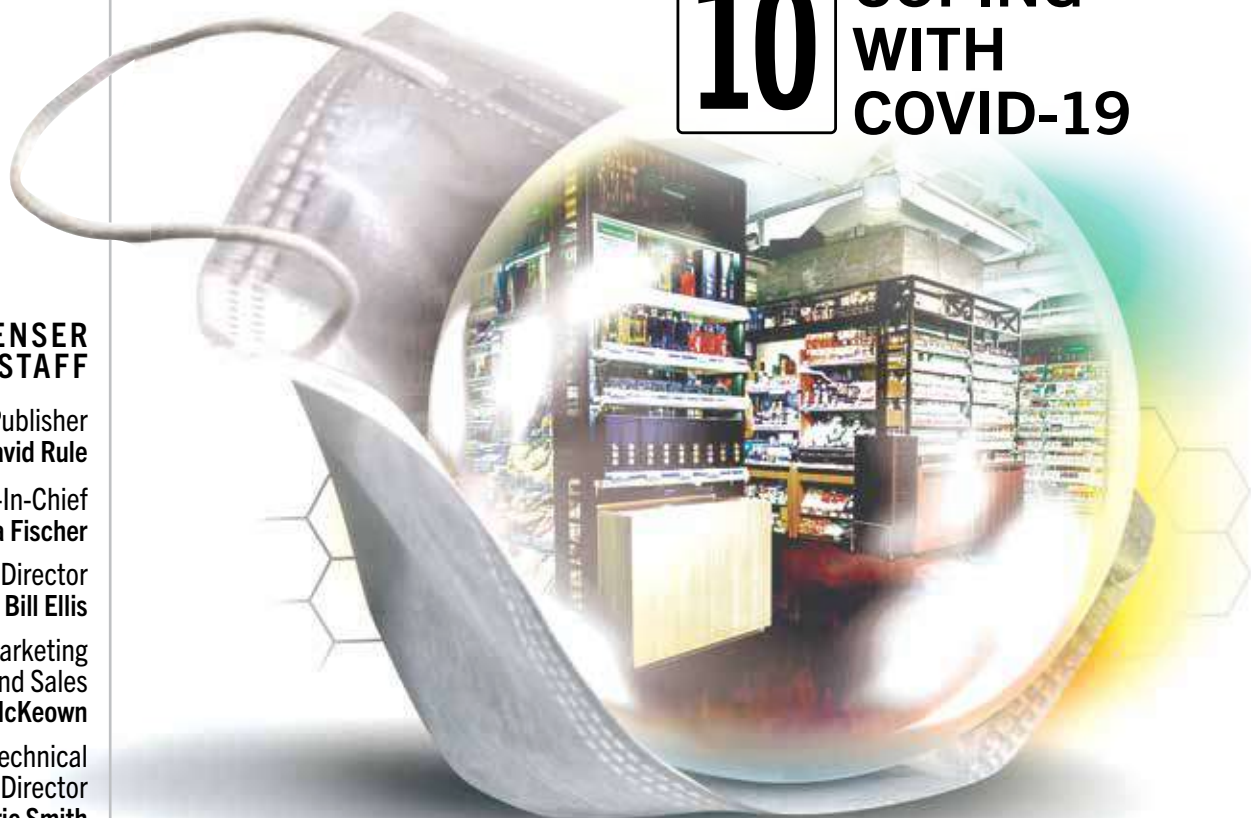


MAY 2020

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president's

BY GARY SCHRIFT

MESSAGE

Country Boy Moves to Washington DC

Imagine the headline: “After a thirty-two-year career in industrial refrigeration, man returns to industrial refrigeration, starting his new position on April Fool’s day, while working at home during a once in a lifetime pandemic with a major event canceled, which has, in turn, cut the organization’s revenue stream by almost 50%” . . . No, these are not headline stories from your LinkedIn Daily Rundown! They are the major events in my professional life since January of this year. And I could not be more blessed and excited to take on the challenge.

When I left my past position, my next career goal was to do something different. Many of you may know that I have a background in electrical engineering, and controls and automation. And over the past 32 years working in the industrial refrigeration industry, my position has changed dramatically from being the “controls guy” or Sparky to some, into executive management of a company and personnel that provided many industrial refrigeration services and products. Therefore, I am returning to the industry with a broad knowledge of industrial refrigeration and the interaction between consulting/engineering organizations, contractors, manufacturers, and end users. But is this something different? Something that can “make a difference”? I think so. First IIAR is a non-profit 501C (6) organization, quite a change from a publicly owned, for-profit, operation. Secondly, IIAR supports and promotes the safe and best practices of using natural refrigerants for the world’s cooling and refrigeration needs. Switching as many people and organizations to use chemicals for

their refrigeration needs that are more energy efficient, have the lowest global warming and ozone depletion potential, are inexpensive to manufacture, and are low cost for sustainable long term use seems like an excellent mission. And educating users, governmental agencies, and emergency responders on the best design and installation practices, and the safe use and emergency response preparation for these environmentally friendly refrigerant systems provides a compelling and inspiring objective for all of us.

Third, I began my new career at IIAR on January 20th, 2020, during the staff’s busy and final preparations for IIAR’s annual conference in Orlando, Fl. However, I officially became President of IIAR, on April 1, 2020, as part of the transition plan for Dave Rule’s impending and well-earned retirement on June 30, 2020. On that day in April, our entire staff was working remotely because of the COVID-19 executive orders from the governors in Virginia, Maryland, and Pennsylvania. So although it would have been wonderful to have an all-employee meeting in our conference room to discuss the changes and further solidify our relationships, we have been conducting online conferences with all the background noises of dogs, others in our home, and with technical issues of power failures or bad connections. But this exercise has proven the well-established tools and software that our staff had created over the years to make the operation very efficient and to allow us all access to everything remotely. I believe we have not missed providing any of the services our members need and expect during these past months. In fact, we have been able to create the vir-

tual conference in May-June providing a vehicle to distribute all of the excellent technical content previously developed for the Orlando conference, and a new vehicle to consider for enhancing our future in-person conferences to come.

Lastly, the financial impact of our canceled Orlando conference is significant. However with your strong support of IIAR through your continued membership, IIAR’s continued delivery of needed resources and the revenue generated from them, and the prudent use of reserves that were wisely established by the past IIAR staff and Board of Directors, IIAR will continue to provide all of the support and resources that our membership expects, and we hope to add to the already growing list of publications, training classes and advocacy for our industry. This crisis, of which all our membership is experiencing, has provided me with an opportunity to learn all the operational finances of our great organization quickly and thoroughly. Therefore, I am blessed with the opportunity of a fast transition by doing versus simply reading.

So, let me say again, hello, to all my past associates and friends in our great industry. And greetings to those of whom I hope to meet in this new role. The past three months have been interesting, to say the least, but I can see all the positives gained from these unforeseen trials. I know why I accepted this challenge and a new position. And in the coming months, I would like to hear from all of you as to why you are an IIAR member, or what is important to you to retain your membership? Call me, send me a personal email, or come visit this country boy in Alexandria and we can explore together!

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chairman's

BY DAVE SCHAEFER

MESSAGE

Nothing is More Constant Than Change

To me, our conference has been almost like a large family reunion. It was with a heavy heart that the conference had to be canceled by the Executive committee. The final factor in the decision to cancel

Nelson our chairman moving on to Chair the Research Foundation this year.

Our organization has been very fortunate to have had very strong leadership over the years. I would like to recognize two such leaders, Bruce Nelson, and Dave Rule. I would have

cess of building the IIAR Academy of Natural Refrigerants and the financial health of our organization. All of these initiatives require strong leadership and confirm that we're moving forward as an organization.

Mr. Dave Rule will be retiring from the IIAR this June. Dave joined the IIAR in 2013 as just the 3rd President in our organization's history. We have all benefited from his belief in and passion for the mission of IIAR, competent management of our finances, and solid leadership and management of the IIAR staff. His combination of technical background, knowledge of the industry, and great people skills are unique and have served him and us very well. Dave has led with intelligence, resolve, good humor, and most important — humility.

Before coming to work at IIAR, Dave was employed by Evapco as Vice President of Refrigeration Sales and Marketing and before that as International Vice President responsible for overseas manufacturing and sales operations.

During Dave's tenure as President, the organization has seen a 30% increase in the general membership. His stewardship of the organization's finances, in accordance with our Bylaws and Investment Policy, has us in an improved and secure financial position. Dave has managed our headquarters staff very well and has always done an exceptional job "herding the cats" — that is, all of us on the Board of Directors and Executive Committee. He has also presented a professional and well-informed presence and corporate image on our behalf to a wide range of government agencies and regulators. Dave will be a hard act to follow.

A few of the milestones reached under Dave's leadership include:

Mr. Bruce Nelson, as our Chair, established the Energy & Sustainability Committee, was instrumental in initiating the development of our new Hydrocarbon Safety Standard, played a key role with the piping handbook update, including several new products and services being developed by our committees and staff, continued the process of building the IIAR Academy of Natural Refrigerants and the financial health of our organization.

was when the World Health Organization declared that there was a worldwide pandemic caused by COVID-19.

There is an old saying that there is nothing that is more constant than change. Our world sure has seen a lot of change lately with the onset of this global pandemic.

IIAR has also experienced very significant change with canceled conference due to the pandemic, our organization's President Dave Rule retiring, and Bruce

hoped we could have talked about their long list of accomplishments in person at Orlando.

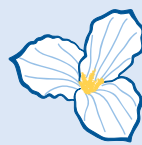
Mr. Bruce Nelson, as our Chair, established the Energy & Sustainability Committee, was instrumental in initiating the development of our new Hydrocarbon Safety Standard, played a key role with the piping handbook update, including several new products and services being developed by our committees and staff, continued the pro-



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- Transition of focus and emphasis of IAR to all-natural refrigerants.
- Significant increases in International presence, activities, and membership, most dramatically in Mexico, Central, and South America.
- Development and publishing of several new Standards and Publications.

improvements in productivity.

- Many office IT infrastructure and systems replaced, improved, or eliminated to improve efficiency and productivity.

Please join me in offering Bruce and Dave our thanks for their hard work and leadership.

Mr. Dave Rule will be retiring from the IAR this June. Dave joined the IAR in 2013 as just the 3rd President in our organization's history. We have all benefited from his belief in and passion for the mission of IAR, competent management of our finances, and solid leadership and management of the IAR staff. His combination of technical background, knowledge of the industry, and great people skills are unique and have served him and us very well. Dave has led with intelligence, resolve, good humor, and most important — humility.

- Creation and launch of the Academy of Natural Refrigerants.
- Committee activities well supported and strong leadership developed.
- Government relations expanded through more mutual interaction with regulators, training of inspectors, and increased access for officials and regulators to IAR standards and safety materials.
- Expansion of member services and programs including an updated website, Spanish language translation of standards and publications, as well as the introduction of monthly webinars in both English and Spanish.
- Staff and Administration organization and systems have seen significant

The importance of our annual conference cannot be underestimated or understated. Our process of publishing non-commercial peer-reviewed technical papers is one of the things that distinguishes us from other meetings and draws interest and attendance from around the world.

As a result of significant challenges and change that the canceled conference has brought about, Gary Schrifft our new President and our staff have worked to continue to create value for our members. We are excited to be able to offer a concurrent virtual equipment exposition and technical sessions. This will be an important and appreciated venue for displaying and learning industry-relevant technical information and offer

information on the latest technologies available in the market.

This combination of finding purely technical information as well as information on new technologies has served us and our industry well and is something we will continue to do virtually. We believe that the virtual conference will be especially important as all of our members are now even more challenged to receive the continuing technical education so necessary to stay current. While at the same time our vendors also need to get critical information out to their customers in our industry. Both of these efforts are a challenge and continue to be a challenge in light of the difficulty to get this accomplished in person which makes this virtual conference so very important at this time.

Our conference locations and deposits for the conference's activities are made years and months in advance of the conference. A significant portion of our organization's operating revenue comes from our conference. Initially, we were not receiving favorable indications that the IAR was going to get many of our deposit dollars back. Gary, Dave, and the Staff also have been working hard negotiating with our suppliers for the improved resolution and clarity to our financial situation. Thank you very much for the understanding you have shown and accepting our refund policies for the good of our industry and the organization.

Based on Gary and the staff's response to this "trial by fire" so to speak, I can say with confidence that the IAR is in very capable hands with Gary as our new President.

Finally, I would like to thank all of our members that provide essential services, equipment, and technologies that keep our food supplies safe.

In Palm Springs, CA next March I look forward to seeing you in person so that we can celebrate the IAR's 50th anniversary. The last 50 year has brought about many fantastic changes for our organization and we are confident that IAR will continue to meet the challenges of the next 50 years. Thank you for your patience in these challenging times.

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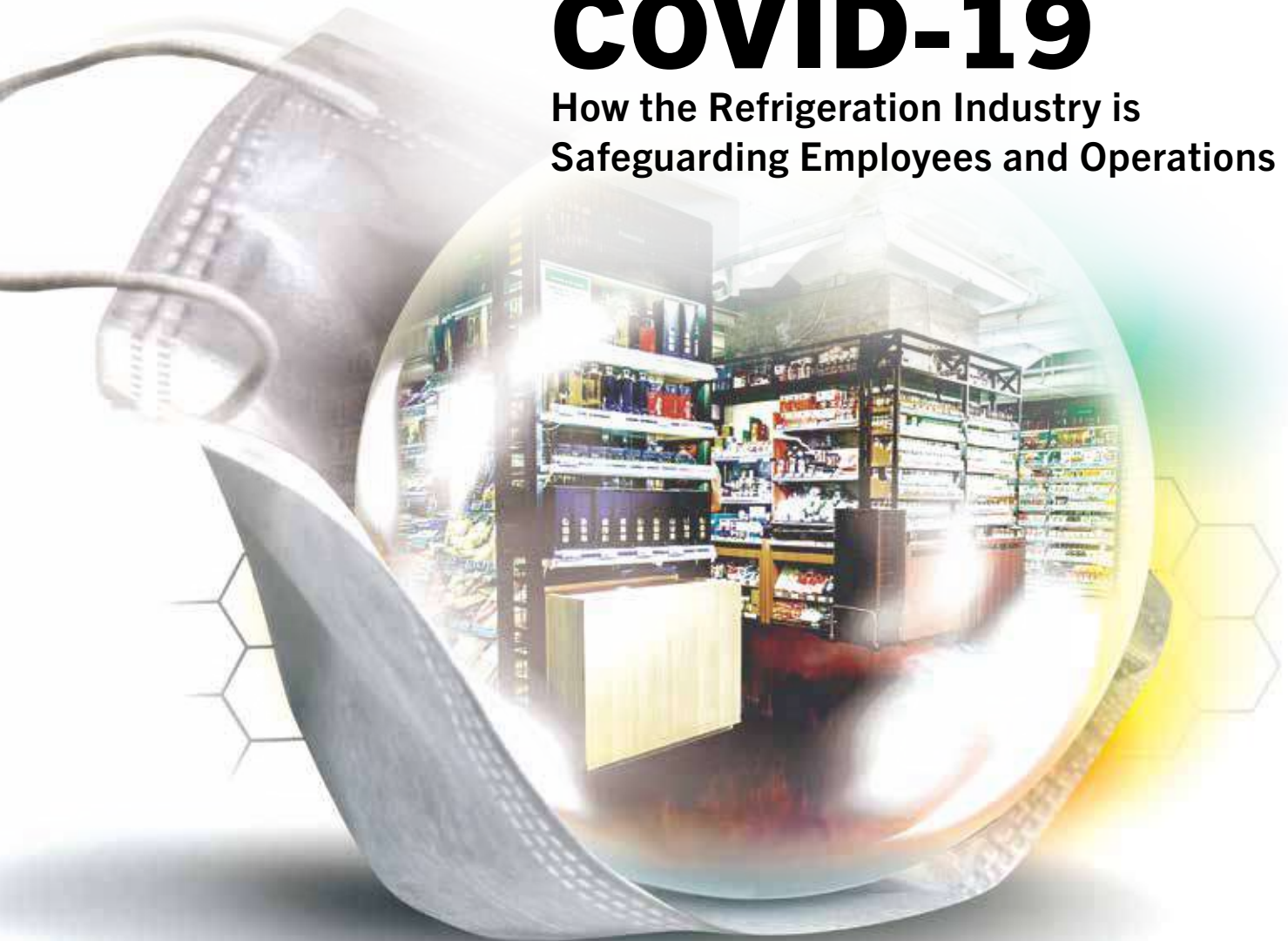
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COPING WITH COVID-19

How the Refrigeration Industry is Safeguarding Employees and Operations



The COVID-19 pandemic has created a global crisis and disrupted communities worldwide. Those in the refrigeration industry have also felt the effects as they work to keep essential operations running, ensure employee and facility safety, and meet the needs of their customers.

“Most of the companies in our industry are still working. They are considered essential,” said Gary Schrift, president of the International Institute of Ammonia Refrigeration. “They have

exceptions or exclusions from their state and local governments.”

ENSURING OPERATIONS CAN CONTINUE

Lowell Randel, director of government relations at IAR and vice president, government and legal affairs at the Global Cold Chain Alliance, said that as the pandemic took hold, the No. 1 need was for the food and refrigeration industry to be recognized broadly as part of the critical infrastructure, due to crucial role the refrigeration industry plays in the food industry and the supply chain.

“We worked with others in the food industry and government to ensure these are designated critical infrastructure activities and essential businesses, and they need to be able to operate,” Randel said. “It has been really good to see the federal government come forward and recognize our industry is essential to keeping the food supply moving.”

IAR joined with several manufacturers, distributors, and supplychain partners in signing a letter to President Donald Trump, governors, mayors, and other local elected officials asking them to come together with uniform defini-



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tions of critical infrastructure. The letter asked elected officials to make clear which manufacturers must continue to operate, as well as to take seriously the need to transport those products and have the workforce available to keep operations running.

“As you consider national, statewide or local measures to contain the spread of COVID-19, we respectfully request that our industries be consistently designated essential and permitted to maintain operations throughout this challenging time, using the DHS [Department of Homeland Security] definition as a minimum guide to the fullest extent practicable,” the letter stated. “Our member companies are proud to support the ongoing national response to COVID-19. We will continue to act responsibly and limit the spread of the virus at our facilities. We ask that those facilities, workforces, and their supply chains continue to operate uninterrupted so that we may provide the strongest possible response for the American public.”

Additionally, in March the American Society of Heating, Refrigerating and Air Conditioning Engineers and nine other trade associations joined together to request that federal, state, and local authorities grant “essential business” status to the technicians and engineers who are tasked with keeping the American people productive, healthy, and comfortable during the crisis.

The next step was to ensure those in the industry could operate safely and efficiently, Randel said. “That means getting access to cleaning supplies, hand sanitizer, and personal protective equipment so we can operate safely and keep those critical workers safe and on the job,” he explained. “We’ve identified some private sector partnerships, such as working with the Distiller’s Council as many distilleries have diverted production from alcohol to hand sanitizer.”

KEEPING FOOD FLOWING

Panic buying, restaurant closures, and increased at-home dining prompted by the COVID-19 pandemic disrupted the food supply chain and forced companies to react quickly to adjust their operations.

“We have an emergency/disaster preparedness plan that included the ability for administrative employees to work from remote locations, but never

imagined a COVID-19 type scenario,” said Michael Winburn, vice president of operations for Shetakis Wholesalers, a foodservice distributor in North Las Vegas, Nevada. “In the past 20 years, we have worked through a handful of economic and social challenges, including September 11th and other dips in the economy, but none compare to the challenges presented by COVID-19.”

As the uncertainty of COVID-19 grew, Shetakis Wholesalers reviewed every aspect of its business. Shetakis Wholesalers primarily services hotels, casinos, restaurants, independent grocery stores, schools, senior facilities, and prisons. It also operates a 3PL logistics service, Cold Storage Solution, that primarily focuses on refrigerated and frozen goods, with some dry goods.

“On March 17th, the governor of Nevada announced the ‘Stay Home for Nevada’ initiative, which mandated the closure of non-essential businesses including hotels, casinos, and restaurants. These businesses represent about 80% of our food service business,” Winburn said. “Under the mandate, being a part of the food supply chain, we are deemed as an essential business and continue to operate. Some aspects of our business are related to retail grocery, which has seen a spike but not enough to offset the loss in our hospitality-related business.”

As a foodservice distributor, prior to COVID-19, all but a very small portion of Shetakis Wholesalers’ business was food service items delivered to customers. “In the wake of consumer buying causing traditional supply chains running out of items, we have opened our product offering up to consumers,” Winburn said. He noted that the pack sizes it sells are generally not family-friendly, but can be shared among groups such as families, friends, and neighbors. “Previously, our ‘will call’ business historically accounted for less than five orders per day. Post COVID-19, that business has soared to well over 100 orders in a single day.”

Eric Johnston, director of PSM for American Foods Group, Green Bay, Wisconsin, said American Foods has also experienced changes to its operations. “We’re seeing a shift from where we would supply more to food services, such as schools and restaurants, to more product going to grocery stores and for more personal use,” he said, adding that

there has been an uptick in demand for beef. “One of our plants will normally operate between five and six days a week, and they are running seven days a week right now,” he said in mid-April.

Johnston said a lot of meat producers have had COVID-19 issues and had to shut down plants. “I don’t know how it is going to affect the industry,” he said. “You have all of that live cattle sitting there, and it isn’t moving. It is going to be interesting.”

Johnston said American Foods has disaster plans in place, but the COVID-19 crisis is different. “This is a tough one to have been prepared for,” he said.

H-E-B, a grocery chain in Texas, first implemented an emergency preparedness plan in 2009 in light of the H1N1 crisis. “On February 2nd, we dusted it off and compared the plan we had versus what we were seeing in China, and started working on Step One pretty heavily,” said Justen Noakes, director of emergency preparedness for H-E-B, in an interview with Texas Monthly.

On March 7th, the grocery chain rolled out its plan to limit purchases of certain items. “We understand our customers want to prepare by stocking up on the essentials. Texans must continue to prepare, but panic does not promote progress. In order to help ensure all can secure the products they need, when they need them, we’ve implemented limits on certain items because we know limits will help protect the supply chain in Texas,” H-E-B said in a statement.

H-E-B also increased its efforts to clean its stores. “We’ll be sanitizing our stores and hard surfaces at a higher frequency, and customers can find hand sanitizer available throughout our stores, as well as basket wipes at every entrance. We’re also conducting training for our partners to reinforce our enhanced hygiene and personal wellness measures,” the grocery chain said.

MANAGING STAFF

The novel coronavirus has changed how Americans work, with many companies ordering employees to work from home and others having to lay off workers.

Randel said layoffs have depended on the market segment. “Retail has been in high demand, but there has been a shift away from foodservice,” he said.

However, unless a facility is going to be closed, employees are still needed



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to maintain the refrigeration system. “I’m not aware of there being systems that are being shut down,” Randel said. “Demand for refrigeration and refrigeration support has been pretty high.”

Johnston said American Foods hasn’t had to adjust staffing, and that growing unemployment could create opportunities for the company. “We’ve had calls with our HR and have been working back channels saying, ‘Look, there is

staff, another scenario that I never imagined,” Winburn said.

During this period of cutbacks, Winburn created incentives to keep employees close so he can fulfill his goal, which is to bring them all back when the COVID-19 crisis ends. “We are using this as an opportunity to tune processes and train some employees on the next phase of our Warehouse Management System,” he said.

Because Shetakis Wholesalers’ business involves the physical movement of products, not all employees can work remotely. “Prior to the COVID-19 mandate, we had 90 employees that worked out of our facility. Today we are down to about 25 that report to the facility with frequencies similar to before the mandate. We have implemented social distancing guide lines and PPE for all employees, including administrative staff, another scenario that I never imagined,” Winburn said.

a good possibility that there is going to be a lot of good talent that hits the market because of this’,” he said. “We don’t have a lot of open positions, but our HR manager said if we have good people hit the market, maybe we need to overstaff a little bit. We’re thinking of how we can take advantage of it and find really good people.”

Because Shetakis Wholesalers’ business involves the physical movement of products, not all employees can work remotely. “Prior to the COVID-19 mandate, we had 90 employees that worked out of our facility. Today we are down to about 25 that report to the facility with frequencies similar to before the mandate. We have implemented social distancing guidelines and PPE for all employees, including administrative

As part of the federal CARES Act, there has been some financial support for businesses, including the Payroll Protection Program that offers loans to small businesses that will help them continue to make payroll. “That is probably one of the biggest programs to help support members. There are also some employee-retention tax credits available,” Randel said.

ENSURING COMPLIANCE

Ric Hartung, general manager of Process & Safety Solutions LLC, based in Pearland, Texas, said that despite recent disruptions, those in the refrigeration industry cannot take a break from Process Safety Management. “In fact, the last thing any of us need right now is a catastrophic event that results in major

injuries, or worst yet, fatalities,” he said.

Hartung said that the Environmental Protection Agency and Occupational Safety and Health Administration have been conducting limited enforcement during the COVID-19 crisis, but that doesn’t mean that facilities should limit their activities related to Process Safety Management or the Risk Management Plan rule.

“With the added distractions, we should be even more vigilant now than ever before since these distractions can take our focus away from doing those things that mitigate risks to ourselves and to those around us,” Hartung said.

Hartung recommended that facilities increase employee engagement to ensure they are focusing on the task while also making sure that employees’ personal needs are met, by spending time with them virtually or on the phone asking the questions and lending support to address issues as they arise.

Hartung noted that any time a regulatory requirement date is not met, a company could be subject to citations and fines, regardless if there is a legitimate reason or not, especially when nothing was done to address the underlying risks and other mitigation measures taken. “Therefore, any postponement of critical process safety tasks must be carefully evaluated,” he said.

American Foods’ Johnston said that when it comes to needed inspections of items such as footings or underground plumbing, states or state inspectors have allowed American Foods to take and submit photos. “They’re asking us to do something, so they know it isn’t an old picture,” Johnston said. “We use contractors that the inspectors know and are very familiar with, so they are pretty open to it.”

Johnston added that all travel to plants stopped unless it was absolutely necessary. “We have a lot of projects going on, and we’re not there to manage our projects, or our projects are shut down because our contractors can’t get there,” he said. “We’re watching work pile up.”

Winburn of Shetakis Wholesalers said he has had to look at all aspects of the business and make adjustments accordingly. “Because our facility is refrigerated with anhydrous ammonia, we must continue to perform daily system checks and all maintenance as outlined in our

PSM and Nevada CAPP programs,” he said. “Much of our business is related to refrigerated and frozen food, so temperature control remains essential.”

As a result, Winburn said he has extended load-shedding periods to reduce the demand on the refrigeration system and related energy consumption. “With our reduced business, we have less product being received into and shipped from the facility, which is helping in that regard for sure,” he said, adding that he is grateful that the disruption hit during what those in Las Vegas refer to as the “cooler months,” which will shift here soon.

“Our freezer is fairly full. That thermal mass, along with the integrity of our facility and robust refrigeration system, allows us to currently load-shed for just over 16 hours per day,” Winburn said. “While in load-shed, the freezer air temperature increases about 10 degrees with no to very little change in product temperature.”

When the load-shed period is over, the freezer temperature drops to -9 F and satisfies within a few hours. “Unfortunately, load shedding is not a viable option for

the coolers and the temperature-sensitive items within them. As we approach the warm Las Vegas summer, the freezer temperature will need to be monitored closely and control adjusted accordingly,” Winburn said.

Other refrigeration-related strategies are shifting medium-temperature/cooler loads from the medium temperature compressors to the low-temperature compressors. “While this is not a very efficient way of handling loads, it is more efficient than our smallest medium temperature compressor running mostly unloaded 24 hours a day,” Winburn said.

Winburn previously looked at the return on investment for installing a variable frequency drive on at least one of the compressors. “Based on our then normal loads, the ROI just did not pencil out. This is certainly something to consider for the future,” he said.

PROFESSIONALS TESTING CONCERNS

The National Council of Examiners for Engineering and Surveying canceled its April exam, which affected approxi-


mately 16,000 examinees, the council said. Exams usually offered once a year during the April administration will be offered in October. Johnston said he is unsure of how the cancellation will affect the industry workforce.

Winburn said RETA operator and technician certification exams are administered through proctored testing centers, which are currently closed due to COVID-19. “I feel, like other businesses, they will reopen and adjust to our changing future,” he said.

MOVING TOWARDS RECOVERY

Despite the challenges, Winburn said he thinks things will eventually return to normal. “I do not expect to return to normal to be like a light switch that can be flipped, but believe that as a company, we will emerge stronger,” Winburn said.

IIAR’s Randel said he believes the industry has done a nice job of keeping things going during the time of crisis. “That has been really good to see,” he said.



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HFC Phase Out Continues Amid Uncertainty Over Regulations

Refrigeration industry end users are continuing to phase out ozone-depleting and high-global-warming-potential refrigerants to comply with regulatory requirements and proactively address environmental needs, but a lack of concrete direction from the federal government has resulted in uncertainty as well as a patchwork of state-by-state efforts.

“There is no consistent approach or timeframe for retailers preparing for the hydrofluorocarbon (HFC) phaseout, due in large part to the fact that there has been a lack of regulatory consistency at the Federal level,” said Danielle Wright, executive director of the North American Sustainable Refrigeration Council.

What’s more, the current administration has made several changes from the previous administration, and the U.S. did not ratify the Kigali amendment, which establishes multiple legally binding schedules for participating countries to cap and phase down the use of HFCs in favor of alternatives with lower global warming potential, said Tristram Coffin, president of Livingstone Consulting and the former director of sustainability and facilities for Whole Foods.

“I think everyone is trying to navigate what seems to be quite the mixup of different regulatory environments globally, nationally and at the state level,” Coffin said.

If the Kigali amendment is ratified, Coffin said there would be a quick move toward the need for low GWP solutions. “A number of countries have already signed onto the Kigali amendment. In the U.S. it is administration-driven. If we see another four years with the current administration, I’m not sure, based on past precedent, it will happen,” Coffin said.

Although there hasn’t been any commitment or rejection of Kigali federally, Caleb Nelson, vice president for Azane Inc., said refrigerant regulation continues to be the primary focus in efforts to curb greenhouse gas emissions globally.

COURT ACTION

In April, a federal appeals court restored a federal prohibition on switching to HFCs from ozone-depleting substances in large refrigeration systems, such as those in supermarkets and industrial process.

“The U.S. EPA SNAP [Significant New Alternatives Policy] rules that banned high-GWP HFCs as replacements for Ozone Depleting Substances in supermarkets were initially vacated by the D.C. Circuit Court of Appeals decision, and now just recently were partially restored again,” Wright said. “While most retailers have been moving away from the high-GWP HFCs anyways, this inconsistency from the Federal government causes uncertainty for retailers.”

According to the court ruling, the Environmental Protection Agency acted illegally in 2018 when the agency suspended limits on the uses of HFCs, following a 2017 ruling by the same court.

As part of its earlier 2017 ruling, the court said that EPA’s 2015 Rule 20 prohibiting the use of high-GWP HFCs in certain applications could not be applied to systems that had already switched to HFCs. The court allowed the EPA to continue prohibiting end users still using ozone depleting substances, notably R22, from moving to HFCs. However, the EPA later issued guidance abandoning any prohibition on HFCs.

Peter DeMarco, an attorney for the Natural Resources Defense Council, said the decision was an important victory for the climate. “The court’s decision restores common-sense restrictions on HFC use that EPA had illegally removed. EPA must ensure that as companies complete their transition away from ozone-depleting substances, they switch to alternatives safer than climate-polluting HFCs,” he said.

Since the EPA issued its guidance abandoning HFC regulations in 2018, several U.S. states have adopted SNAP Rules 20 and 21.

STATE-BY-STATE INITIATIVES

“Approximately a dozen states are pursuing HFC legislation, and they all

seem to be following California’s lead,” Nelson said. “In many cases, the targets that are being set will require more than marginal steps in GHG reduction from one type of HFC to another. They will require some use of natural refrigerants to meet their aggressive goals,” Nelson said.

The U.S. Climate Alliance states have been working to backstop the vacated SNAP rules, but this also creates slight variations in timing that make it challenging for national chain retailers to implement a consistent approach, NASRC’s Wright said.

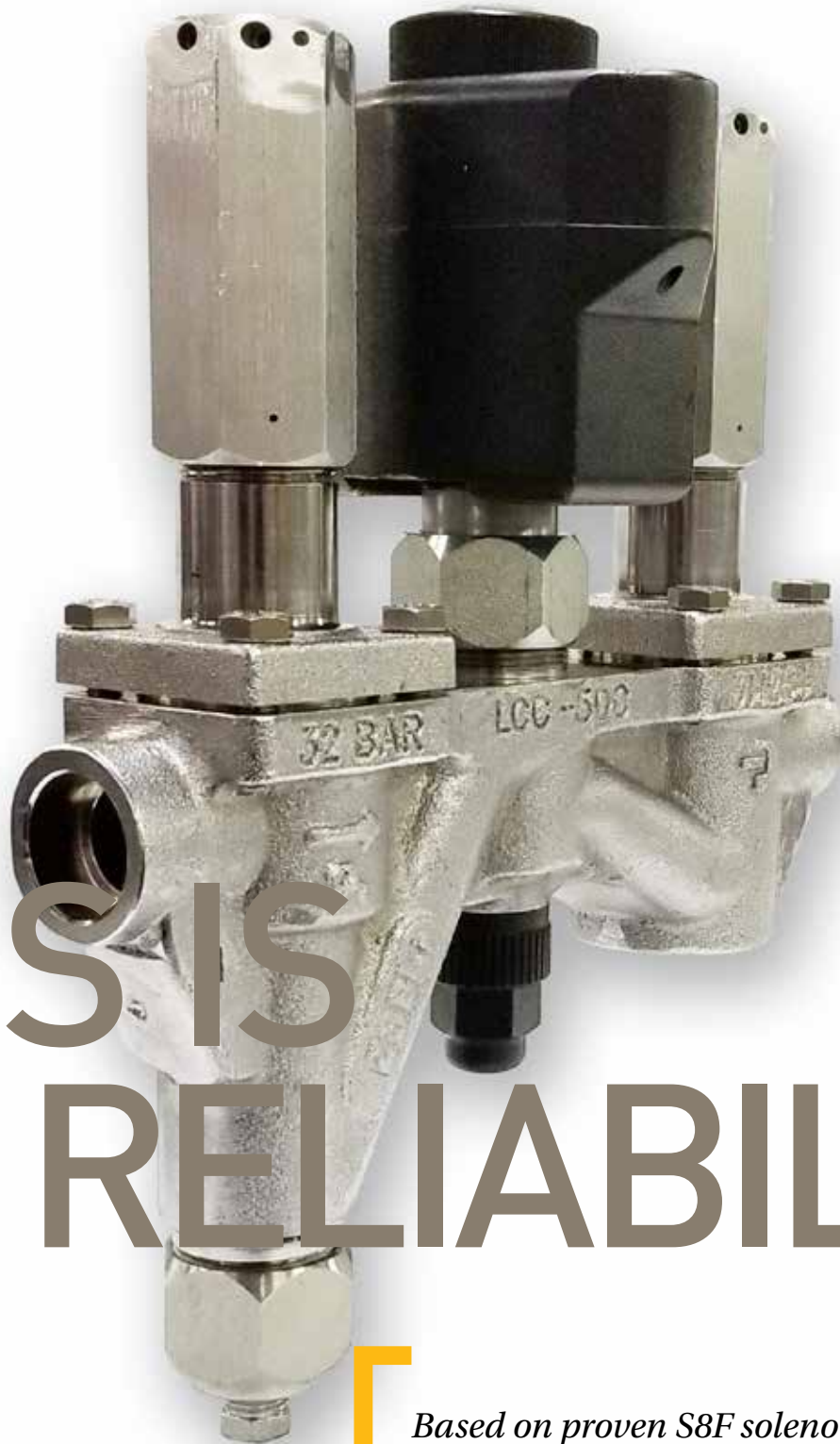
THE R-22 PHASEOUT

The industry has gained experience through the phaseout of R22. “As of Jan. 1, 2020, the production and import of R22 have been halted in the U.S.,” Wright said, adding that the price per pound has increased by at least 300 percent in the last decade and will only increase further as the supply decreases. “The challenge is the shortage of service workforce and the limited time window in the year to complete the retrofit.”

Several companies approached the R-22 phaseout proactively, Coffin said. “I think that is because there was more clarity at the point it went into effect.”

Many companies went from R-22 to another synthetic refrigerant, such as 407A. “People weren’t necessarily thinking of the next phase of what might be coming,” Coffin said. “We got away from R-22 because of the ozone-depleting potential, but not thinking about the high global warming potential of alternatives. I think in a lot of ways, the industry did itself a disservice.”

Glenn Barrett, an engineering manager at D.C. Engineering, said the industry responded early and effectively to prepare for the elimination of R-22 and all HCFCs. New synthetic refrigerant options were developed for new applications to replace R-22 along with “retrofit” options for existing systems. “R-22 uses a different type of oil than the vast majority of synthetic ‘drop-in’ replacement refrigerants. This caused some trouble early, as retrofit specifications and best practices were still being



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developed,” he said, adding that the HCFC phaseout did somewhat prepare the commercial refrigeration industry to be able to retrofit high-GWP refrigerants to lower-GWP options.

As for the R-22 phaseout, Barrett said most commercial refrigeration end users acted early with designing new systems with synthetics or retrofitted most of their R-22 systems to a better option. “As for HFCs, without the pressure that would come from something similar to the yet-to-be-ratified Kigali amendment, it is generally understood that the industry will be relatively slow to react. The current time frames for action typically coincide with the EPA and state level codes and restrictions for use of HFCs and the associated compliance and reporting requirements,” Barrett said.

However, Nelson said there are still several users in need of conversion from R-22. “These systems are all basically near their end of life, and so owners are taking advantage of a full system replacement scope to consider ammonia and carbon dioxide as a future-proof solution,” Nelson said.

Coffin added that those that didn’t rush to get out of R-22 might be in a better position today to just gut the whole asset and move to a natural refrigerant. “If you managed to properly maintain your system, which is the most important part of refrigerant management, you can continue to utilize an asset that may be near its end life, then replace in full rather than retrofit,” he said.

For many retailers, the R-22 phaseout has been a long, painful and costly process. Some retailers transitioned from R-22 to high-GWP HFC refrigerants, “This has put them in a vulnerable position as future bans on high-GWP HFCs would force them to yet again retrofit to a lower GWP refrigerant,” Wright said. “The prospect of a continued cycle of refrigerant phaseouts is one reason some are turning to natural refrigerants as the ‘future-proof’ solution for regulatory compliance.”

Anyone still using R-22 is trying to get out of it as fast as possible, commented Wright.

SYNTHETIC VS. NATURAL REFRIGERANTS

End users are turning to synthetics as well as to natural refrigerants as they phase out HFCs. “The lion’s share of the refrigerant that needs to be

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dealt with is in existing systems. The challenges with existing systems and naturals is that naturals aren't a drop-in substitute for synthetics," Coffin said.

"When we look at the next phase-down, people are looking at a phase-out proof or regulatory-proof solution. They don't want to continue going through this challenge every five years

many other industrial refrigeration applications, Nelson said.

"HFOs tend to have a very low volumetric capacity that requires very large compressors, and the systems often run in a vacuum when serving low-temperature loads. This can be problematic as the HFO oils also tend to be very hygroscopic — meaning they

lower GWP HFC options, Barrett said. He added that a lot of companies are using smaller charged systems with synthetic refrigerants or natural refrigerants such as propane with lower GWP ratings.

Coffin said he has been advocating for an all-of-the-above approach for existing facilities, including charge reduction and partial system replacements, going to naturals, if possible. "The future-proof solution is more of a complete overhaul, which is more costly and a bit more extraneous due to the effort to execute it, but it can be done modularly and/or in phases," he said.

Natural refrigerants are gaining ground quickly, Barrett said. "The two most popular choices for natural refrigerants in commercial applications are CO₂ (R-744) and propane (R-290) with CO₂ providing great design options for larger, or central, refrigeration systems and propane filling the 'micro' and self-contained refrigeration system market quite nicely," Barrett said.

The commercial refrigeration industry has moved past the discovery phase for natural refrigerant use and is now entering the deployment phase, Barrett said. There are many viable and attractive CO₂ and propane refrigerant solutions, and the advent of smaller ammonia and CO₂ condensing units to the U.S. market will provide an additional option for remodels or retrofits where only a portion of the refrigeration system will be addressed, he explained.

"We have designed and provided 'apples to apples' type comparisons of natural refrigeration systems to typical HFC systems and found that the natural solutions can have a lower first cost and operational cost than what would be typically considered a standard HFC rack design," Barrett said.

There are several benefits to a natural refrigerant system. "We're finding that the cost of installing a CO₂ system can be the same cost as a synthetic HFC or lower, and CO₂ if done right can be more energy-efficient than HFCs," Barrett said. "Also, the cost of the refrigerant itself in dollars per pound can be less with CO₂ and other natural refrigerants."

What's more, natural refrigerants are future-proof. "You don't have to worry that you'll ever have to change it out," Barrett said.

Companies also approach HFCs differently depending on whether it is a new or existing location, Barrett said. Approaches can range from 'wait and see' to the more proactive approach of retrofitting higher GWP refrigerants to lower GWP drop-in replacement refrigerants with their existing stores and remodels. "To go from synthetic refrigerants to natural refrigerants takes a different solution, different design and different considerations," Barrett said.

or so," Coffin said. "Natural refrigerants are a phaseout-proof solution. In new stores, I think it is almost a no-brainer to be moving to naturals at this time."

Wright of NASRC said the use of synthetics or natural refrigerants depends on the company's long-term strategy and the location of the store. "For instance, in states like California, we are seeing many retailers choose natural refrigerants for new-store applications. For existing stores, the most common and cost-effective option is to retrofit to a hydrofluoroolefins (HFO) blend, such as R-448a or R-449a," she said.

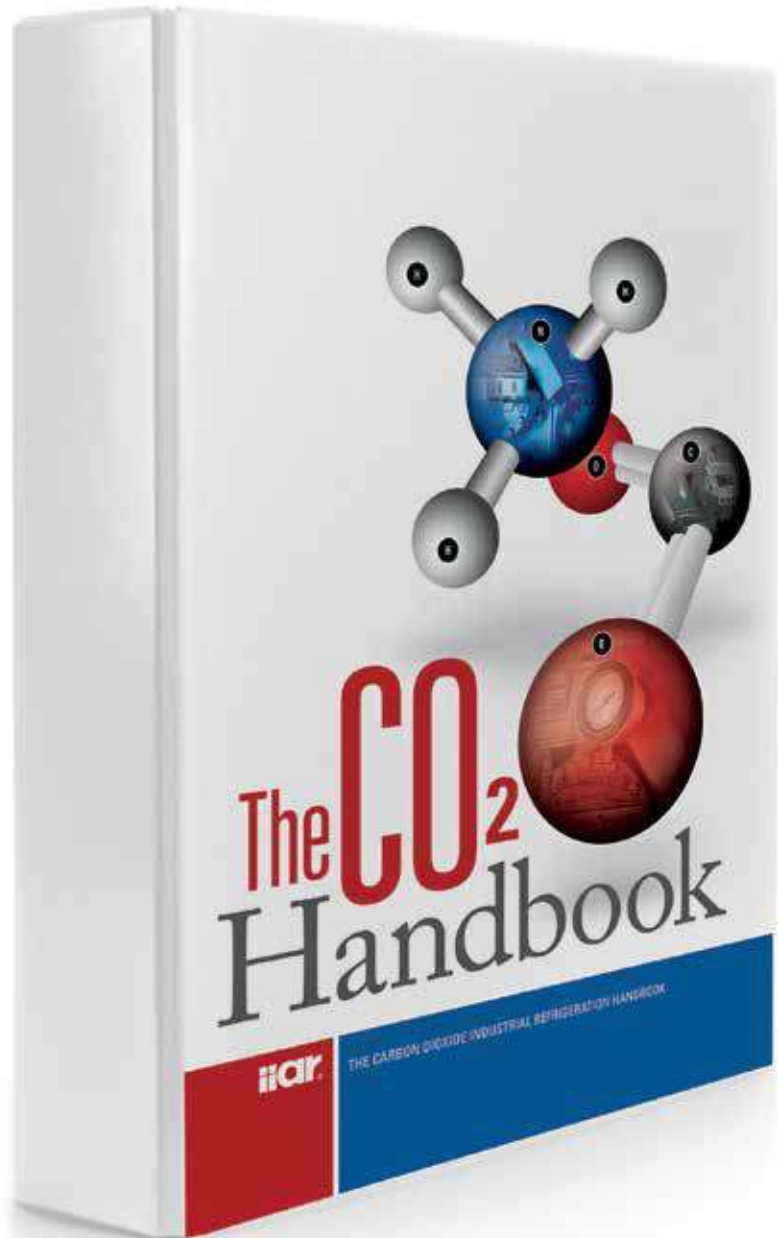
However, pure HFOs are not well suited for all applications, especially low-temperature applications which are common in frozen warehouses and

will absorb moisture from any air that gets into the system, which does not bode well for the reliability of the semi-hermetic compressor and its motor," Nelson explained.

Companies also approach HFCs differently depending on whether it is a new or existing location, Barrett said. Approaches can range from 'wait and see' to the more proactive approach of retrofitting higher GWP refrigerants to lower GWP drop-in replacement refrigerants with their existing stores and remodels. "To go from synthetic refrigerants to natural refrigerants takes a different solution, different design and different considerations," Barrett said.

Many new stores are moving toward lower refrigerant charge system designs, natural refrigerant systems and/or using

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IIAR's Virtual Conference to Deliver Technical Papers, Workshops and Panels

With COVID-19 limiting travel and causing people to stay home, the International Institute of Ammonia Refrigeration transitioned its popular in-person annual conference, originally scheduled for March in Orlando, to a virtual conference that will provide online learning, beginning May 18.

said Eileen McKeown, vice president of marketing and sales for IIAR. "This will be a unique experience for the IIAR as we were given the opportunity to create a new way of presenting content and engaging industry professionals."

The virtual conference will take place over a three-week period, giving people the ability to spread out the time commitments, Schrift said. Technical papers

There will also be a virtual booth and exhibition and e-commerce opportunities, so attendees can interact with industry suppliers. Schrift said IIAR is seeking input from sponsors on how to provide a high level of recognition, visibility and support during this conference and especially for the next year. "We're asking sponsors to give us ideas on what would be most helpful for them."

"We will still present the technical panels and the Secondary Coolant Systems workshop program we had planned for Orlando, although the workshop program will not be presented on Sunday. All technical sessions will be broadcast on weekdays," Schrift said. "We plan to have all technical session presenters available during the online event for Q&A sessions. We want presenters to be able to talk to everyone in the audience, and for the audience to provide feedback and ask questions via a chat box, from which the presenters will read and answer."

McKeown said engaging and educating the refrigeration industry in support of the safe and sustainable use of natural refrigerants is IIAR's primary goal.

Lowell Randel, director of government relations at IIAR and vice president, government and legal affairs at the Global Cold Chain Alliance, has been working to coordinate panelists for the online sessions, and said the goal is to keep content the same as originally planned. Randel said either he or an agency representative will cover the Environmental Protection Agency's Risk Management Plan and final rule. "We will make sure members are up to speed on the final rule that came out on the risk management program, which basically removed some of what we viewed as objectionable provisions in the Obama administration's risk management proposal," he explained.

Randel said he will dig into the U.S. Chemical Safety and Hazard Investigation Board's new regulation that requires chemical releases to be reported to the

The virtual conference will take place over a three-week period, giving people the ability to spread out the time commitments, Schrift said. Technical papers and the workshop will be broadcast twice during the three weeks, each followed by live question-and-answer sessions with the speakers, providing the live audience an extensive list of opportunities for education.

"The topics, workshops and technical papers we would have presented in March are still relevant and already complete," said Gary Schrift, president of IIAR. "It isn't about creating completely new content. It is about distributing it differently."

What's more, the change from an in-person conference to an online platform has opened up the opportunity for a more diverse audience. "We have, once again, opened up registration for the 2020 event and hope to attract attendees who would not traditionally be able to attend the in-person IIAR conference, due to travel restrictions or budget limitations,"

and the workshop will be broadcast twice during the three weeks, each followed by live question-and-answer sessions with the speakers, providing the live audience an extensive list of opportunities for education.

Unlike IIAR's in-person conferences that sometimes require attendees to choose between competing programs in the same time slot, no online sessions will be held simultaneously. In addition, replays of content will be available on-demand at the conclusion of the three-week online conference, which will be accessible to 2020 conference registrants until March 2021.

National Response Center as well as the Chemical Safety Board. “I’ll share details on the Chemical Safety Board’s provisions and what our members need to know,” he said.

IIAR will also add new information regarding regulatory and guidance changes brought on by the COVID-19 crisis. “There was an EPA enforcement guidance document put forward during the pandemic that provides some flexibility for regulated facilities and a recognition that there may be things you’re unable to do because of the pandemic,” Randel said. He added that he will offer an update depending on where things stand at the time of the conference. “By the time we do that, I anticipate we will have something from OSHA related to how they are looking at enforcement guidance during the pandemic as well,” referring to the Occupational Health and Safety Administration.

Jeffrey Shapiro, IIAR’s code consultant, will provide his overview on what the 2021 model codes will have to say about ammonia when they are published later this year and will provide a brief update on the happenings within ASHRAE 15 affecting flammable refrigerants and the deletion of ammonia from ASHRAE 15, in favor of referencing IIAR 2.

Model codes operate on a three-year publication schedule, and formal code development activities to update new editions occur during two of those three years. During the third year, informal work is done by various committees and task groups to discuss ideas and develop proposals.

“2020 is one of those informal preparation years, and fortunately, the COVID-19 ‘stay-safe-at-home’ restrictions have not significantly affected these preparations,” Shapiro said. “In lieu of having in-person

committee and task group meetings, work has continued using Web conferencing and conference calls, and it appears that code development for the next [2024] code editions will stay on schedule.”

IIAR members who have registered for the event will be able to access sessions with their IIAR sign-in information through IIAR’s website. Non-member conference registrants will receive an email with instructions on how to login to the conference.

Educational credits will be offered for anyone attending sessions. To receive educational certificates, attendees will submit a code that appears at the end of the session.

Schrift said IIAR looks forward to seeing everyone for IIAR’s 50-year anniversary celebration at the 2021 Conference, which will be held in Palm Springs, California, and will also include a heavy equipment show.

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IIAR's Virtual Conference Sunday Session Will Focus on Secondary Coolants

Among the sessions set for the IIAR's Virtual Conference is a special educational session covering the use of secondary coolants for industrial ammonia refrigeration systems. Originally intended to be the Sunday Education Session at IIAR's 2020 annual conference in Orlando, Fla., the presentation will take place at the IIAR Virtual Conference, which is being held from May 18 to June 5. The secondary coolant session is scheduled for Friday, June 5 from 10 a.m. to 3 p.m.

The session will focus on the application and design of secondary coolant systems. As end users seek alternatives to replace their HFC-based systems or to reduce the charge of their ammonia-based systems, the trend for using reduced-charge ammonia and propane as a "high side" refrigerants in combination with secondary systems is becoming more widespread.

"The use of secondary coolants in refrigeration systems is becoming more popular in both commercial and industrial refrigeration," said Eric Smith, IIAR's vice president and technical director and one of the session's organizers. "This permits the refrigerant charge and equipment to be concentrated in a machinery room, much like common commercial a/c chiller systems."

The June 5 presentation is intended to familiarize end users and designers with the range and properties of secondary coolants available and their applications. The seminar will also cover pumping and piping system design techniques that can minimize energy costs. Additionally, the use of carbon dioxide as a "volatile brine" will be covered. Instructors will demonstrate engineering calculations, and case study examples of successful applications will be provided.

The lead-off speaker, Dave Malinauskas, president of the session's sponsor, Cimco Refrigeration, said it is increasingly important for industry professionals to start discussing these new, hybrid systems which conflate smaller, low-charge ammonia refrigeration systems with other types of refrigerants.

"When we look at both [the commercial and industrial refrigeration] markets, the industrial side is dominated by ammonia, and the commercial side is dominated by synthetic refrigerants," Malinauskas said. "Each has its own challenges."

Both markets are currently under increasing pressures. On the commercial side, regulatory agencies are enacting increasingly strident guidelines on synthetic refrigerants known to be detrimental to the environment. The result is that refrigerant manufacturers are developing blended solutions that adhere to the guidelines but are less effective – meaning higher costs for end users, Malinauskas said. This is prompting the commercial industry to look more at natural refrigerants, such as ammonia.

On the industrial side, regulatory agencies are more concerned with the safety of these systems. "A lot of the pressures we see today are in terms of charge reduction – how can we reduce the amount of ammonia in this system," Malinauskas said. "Both of these markets are converging on a solution that would involve low-charge ammonia systems that utilize a secondary coolant."

This convergence, Malinauskas said, is "not a matter of if, but when." That is why he feels it's important that IIAR offer such educational sessions, of which he hopes membership will take full advantage.

That sentiment was echoed by Andy Pearson, group managing director at Star Refrigeration. "This is a chance to

hear speakers from all over the world with decades of experience in the specialist topics they are addressing, and you don't even have to leave home," he said. "The original Sunday afternoon session would have been a good way to start your IIAR meeting, but there's still a chance to gain the technical benefit through the webinar presentations."

The schedule of the educational session is as follows:

- The business case for using secondary refrigerants
Dave Malinauskas
Cimco Refrigeration
- Secondary refrigerant properties and their ranges of application
Roger Rosander
Temper Technology AB
- Variable speed "smart" pumps applied to secondary refrigerants
Peter Korzeniewski
Grunfos
- CO₂ as a secondary coolant:
Case studies
Andy Pearson
Star Refrigeration

Finally, once the presentations conclude, there will be ample time for an in-depth question and answer session from the audience.

"Industrial refrigeration has been squeezed by two opposing forces over the last thirty years," Pearson concluded. "The intelligent design of secondary systems is a good way to overcome those challenges and satisfy both sides."

To learn more about the session or to register for the 2020 IIAR Online Conference & Virtual Expo, visit www.iiar.org.

Technical Papers and Workshops at a Glance

Each of the 15 technical papers that will be presented at IIAR's virtual conference is full of specific, actionable information about the refrigeration industry. Each paper will be presented twice. Here is a full list of the available papers as well as the presenters.

Transcritical CO₂ and Ammonia: Energy Efficiency and Basic Capital Cost Comparison for Industrial Refrigeration Systems; by Giacomo Pisano, Dorin SpA

Tuesday, May 19, 11:00 am | Friday, May 29, 10:00 am

CFD Simulation of NH₃ Release and Detection in Refrigerated Spaces (Results of the IIAR/ARF Research Project); by William Greulich, Kensington Consulting

Tuesday, May 19, 2:00 pm | Thursday, May 28, 12:00 pm

Methods for Saving Energy in Cold Storage Warehouses; by Caleb Nelson, Azane Inc.

Tuesday, May 19, 3:00 pm | Friday, May 22, 3:00 pm

Development of a Mechanical Insulation Installation Guideline for Refrigeration Applications (Results of the IIAR/ARF Research Project); by Gordon Hart, Artek Engineering LLC

Wednesday, May 20, 11:00 am | Thursday, May 28, 11:00 am

Review of Accidents in the Ammonia Refrigeration Industry; by Peter Jordan, MBD Risk Management Services Inc

Wednesday, May 20, 3:00 pm | Tuesday, June 2, 12:00 pm

Taking Your PSM Program to the Next Level — Establishing an Evaluation System; by Linda McDaniel, Americold

Thursday, May 21, 12:00 pm | Tuesday, June 2, 2:00 pm

Hot Gas vs. Electric Defrost for Standard Commercial Refrigeration Systems: An Energy Comparison; by Danny Halel, Nthalp

Tuesday, May 26, 11:00 am | Tuesday, June 2, 3:00 pm

Reducing Capital and Energy Costs Through Refrigeration Energy Modeling; by Andy Campbell, Leo A Daly

Tuesday, May 26, 12:00 pm | Tuesday, June 2, 4:00 pm

Compressor Lubricants for Natural Refrigeration Systems; by Glenn Short, BVA

Tuesday, May 26, 3:00 pm | Wednesday, June 3, 11:00 am

Permanent Refrigeration Plant Performance Optimization Using Continuous Real Time Analysis; by John Clark, Star Technical Solutions Ltd.

Tuesday, May 26, 4:00 pm | Wednesday, June 3, 12:00 pm

Low Head Pressure Operation of Commercial Systems; by Dustin Lilya, DC Engineering

Wednesday, May 27, 11:00 am | Wednesday, June 3, 2:00 pm

Energy Study of Package Chiller Systems — Comparison of Natural (NH₃ and CO₂) and HFC Refrigerants; by John Collins, Zero Zone

Wednesday, May 27, 12:00 pm | Thursday, June 4, 12:00 pm

Technical and Technological Barriers for Ammonia Refrigeration Thermal Districts in Colombia / Barreras técnicas y tecnológicas para los distritos térmicos de refrigeración con amoníaco en Colombia; by Bolivar Monroy, ACAIRE

Wednesday, May 27, 2:00 pm | Wednesday, June 3, 3:00 pm

Technical Papers and Workshops at a Glance

Comparación de costos operativos entre CO₂ transcrito y sistemas de recirculación de amoníaco en un almacén de almacenamiento en frío; by Mario Mora Carli, FrigoConsult

Thursday, May 28, 3:00 pm | Thursday, June 4, 11:00 am

Application of IIAR 2 and IIAR 6 Standards and National Regulations for a Refrigeration System of a Bovine Slaughter Plant in Colombia / Aplicación de las normas IIAR 2 y IIAR 6 y regulaciones nacionales para un sistema de refrigeración de una planta de sacrificio; by Bolivar Monroy, ACAIRE

Thursday, May 28, 4:00 pm | Thursday, June 4, 10:00 am

Here is the full list of workshops with presenters:

Management of Change as a Key PSM Element; By Bill Lape, SCS Engineers

Tuesday, May 19, 12:00 pm | Monday, June 1, 11:00 am

OSHA 1910.146: Keeping CSE Safe; by Mark Heuchert, Draeger Inc.

Wednesday, May 20, 2:00 pm | Monday, June 1, 12:00 pm

Lessons Learned in Ammonia Refrigeration: Making Our Industry Safer; by Bent Wiencke and Doug Reindl

Part 1: Thursday, May 21, 2:00 pm | Part 2: Thursday, May 21, 3:00 pm

Global Market Trends in Refrigeration; by Marc Chasserot, Shecco

Tuesday, May 26, 10:00 am

Monday, June 1, 10:00 am

Pipe Size Program Tutorial Resulting from Recent ARF Research; by Bent Wiencke, Gordon Struder and Robert Sterling

Wednesday, May 27, 10:00am

Tuesday, June 2, 10:00 am

Carrying out Critical Life Safety Plans for Ammonia Refrigeration; by Gary Smith, ASTI

Part 1: Wednesday, May 27, 3:00 pm

Part 2: Wednesday, May 27, 4:00 pm

Penthouse Evaporator Use with In-Rack Freezing Systems; by Dan Tippmann, Tippmann Innovation

Thursday, May 28, 10:00 am

Monday, June 1, 4:00 pm

Transcritical CO₂ Applications in the Latin-American Industrial Refrigeration Market / Aplicaciones transcriticals de CO₂ en el mercado latinoamericano de refrigeración industrial; by Mauricio Baena, Hill Phoenix South America

Thursday, May 28, 2:00 pm

Wednesday, June 3, 4:00 pm

How to Perform a HAZOP PHA; by Jet Stiffler, JS Compliance LLC

Friday, May 29, 11:00 am

Wednesday, June 3, 10:00 am

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IIAR Energy Efficiency Committee Focuses on Sustainability

Despite the cancellation of the International Institute of Ammonia Refrigeration 2020 national conference, IIAR's newest committee, the Energy Efficiency, and Sustainability Committee, is moving forward with its mission. The panel's inaugural meeting was to have been at the Orlando conference.

The new committee's role is to take a broad look at exactly how efficient current ammonia refrigeration facilities are, and what can be done to make them more sustainable in the future.

"I'm really gratified personally," about the committee's formation, said Bruce Nelson, who was instrumental in establishing the committee. "This is something I felt strongly about, and others felt strongly about over quite a long period of time — that we should be more active in this area at IIAR."

During Nelson's tenure as chair of IIAR, he commissioned a task force, spearheaded by Mike Lynch, Vice President of Engineering at United States Cold Storage, to gauge the interest of IIAR's membership in these issues. "He came back with a significantly high level of interest [in energy and sustainability issues.]" Nelson said. He noted that Lynch's company is an end user in the refrigerated warehouse industry with a keen interest in these topics. The initial response generated by the task force was enough for Nelson to move forward with the formation of the committee, he said. As the committee establishes itself, Lynch said it will be important to start with a benchmarking effort to see where the industry stands in terms of efficiency. Ultimately, he said he sees the committee releasing a standard or guidance document for end users on best practices to drive energy efficiency and more sustainable practices in their facilities. Stefan Jensen, managing director of Scantec and chairman of the new committee, agreed that would be the best

place to start. By documenting power consumption in a multitude of existing facilities across the globe, a pattern would be likely to emerge – a pattern that has not yet been identified, he said.

"A goal of the committee will be to determine what causes the variability [in power consumption,]" Jensen said. "Maybe it's door openings, maybe it's the lighting, maybe it's the orientation of the facility – but the job of the committee will be to analyze which factors have the biggest impact on energy efficiency. When we know that, we'll be able to advise all interested partners what they should be pursuing and what they should be avoiding."

While the committee is charged with addressing issues related to energy and sustainability, Nelson said they are two distinct issues that deserve separate consideration. Energy, obviously, is about the consumption of power. This can take a number of forms and has to do with the design of the facilities themselves, he said. Sustainability, on the other hand, has more to do with environmental issues, such as water treatment, water usage, sewerage, and other problems. Nelson said he hopes the committee will address both equally.

One area of focus Nelson is particularly interested in – and one he hopes the committee will address – is the use of heat and the prioritization of its use in cold-storage facilities. He said he has for a long time advocated for the wider adoption of heat pumps to reduce facilities' carbon footprints.

"The heating load in a food processing plant is most of the time significantly bigger than the refrigeration load. Most of that has to do with water. You're heating water for cooking or clean up or sanitizing or all of the above," Nelson said. "Most of the time, you're just burning natural gas in a boiler to make hot water or steam. With an ammonia heat pump, you can make water that is hot enough to do all of those things."



More simply put, an ammonia refrigeration system when configured correctly could also be a heating system, significantly reducing not only cost, but also environmental impact. "We should stop thinking about the cooling load exclusively," Nelson said. "We should start thinking about the heating load as well." Jensen said that might be one of the biggest hurdles to the committee's work – the idea that 'this is how we've always done it.'

"There are deeply ingrained design practices that have been around for more than a generation," he said. "We use certain types of compressors in [Australia] and we control them in a certain way. This is achieving the results that we're seeing. There's already some resistance to change. These are problems we'll have to overcome."

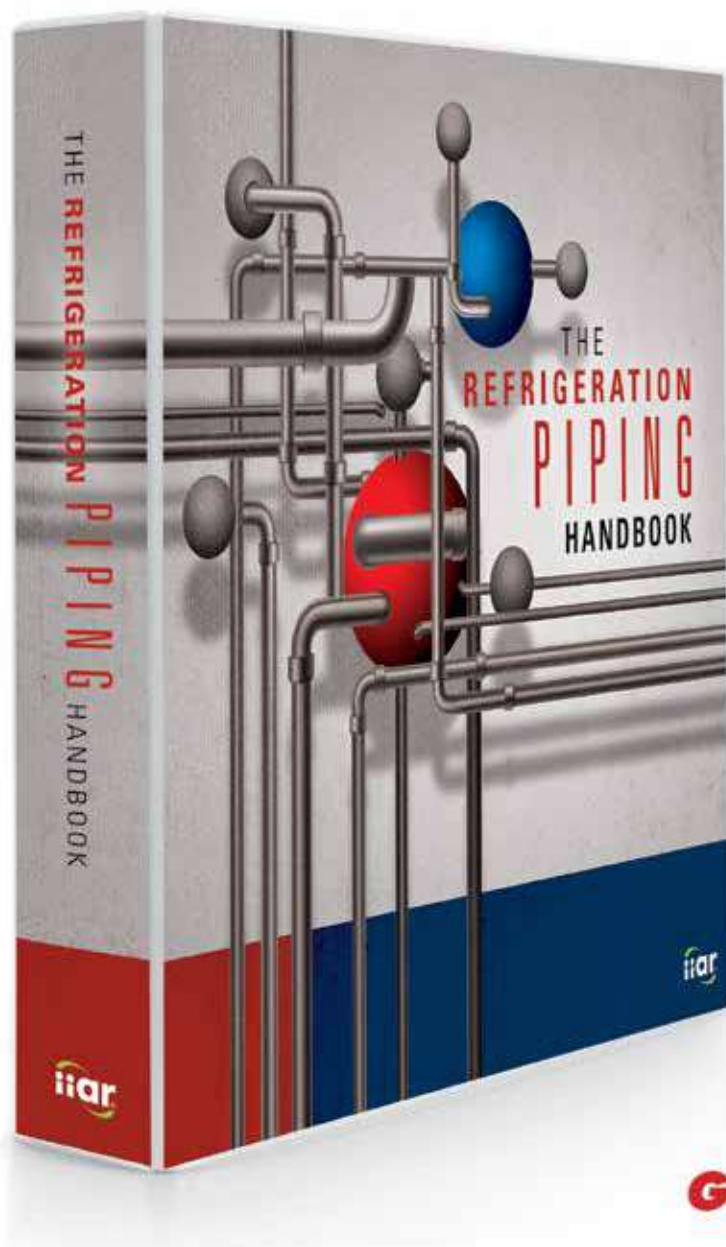
Speaking to the importance of such a committee, Lynch says the time is right to start considering energy and sustainability topics in earnest. "When you look at the industry, and you look at the type of equipment that our industry uses, we're very heavy users of electricity," Lynch said. "Anything we can do to help [end users] reduce their energy use would: a) help reduce their cost; and b) help reduce their carbon footprint, ultimately having a positive impact on the environment."

Jensen agreed, and added that if the ammonia refrigeration industry is to position itself as more environmentally friendly than its competitors, these are discussions that need to take place. "Just because we use ammonia as a natural refrigerant, that's no guarantee that the plant is energy efficient," he says. "If we're really about sustainability, we cannot fail to discuss energy efficiency. That is what this is about."

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Foundation Celebrates Successful Fundraising Year

The Ammonia Refrigeration Foundation's 2019 fundraising program was extremely successful, raising more than one million dollars, according to Joe Mandato, ARF's Trustee Chair who spearheaded the effort, which specifically focused on trustee-level pledges of \$50,000 or more. "This was a significant result for the fundraising program," he said.

The funds were generated by the renewed pledges of several trustees, including one in particular for \$250,000, Mandato said, "It's certainly inspiring to know there are companies and individuals out there who have identified the Foundation and what the Foundation does as having such an impact that they're willing to make such a commitment," he said.

For the current fiscal year – which started July 1, 2019, and will end June 30, 2020 -- fundraising efforts look promising, Mandato said. He set a goal of \$500,000, and by the time of publication, he had secured \$245,000 in pledges. There have been four trustee-level pledges, two of which were renewed from last year, and two of which are brand new, with one of them being an end user – United States Cold Storage.

"I'd like to specifically thank Mike Lynch for his efforts in educating the management of U.S. Cold Storage on the value of the Foundation and getting their commitment to join the trustees," Mandato said, adding he also thanked the Kahlert Foundation for another generous donation.

Despite the global health crisis and the cancellation of the International Institute of Ammonia Refrigeration annual conference in Orlando, Mandato said fundraising efforts are moving along better than expected. Despite the situation, he said he's confident that more trustee-level donors will make pledges before the summer deadline.

"One thing that's struck me as being inspirational as I'm out doing this fundraising, is that one-third of the current trustees of the Foundation are organizations, companies or individuals who have provided more than one trustee-level pledge," Mandato said. "To me, that is a clear indication that

FOUNDATION THANKS 2020 SPONSORS

Although the 5th Annual William E. Kahlert Memorial Golf Tournament was canceled due to the COVID-19 outbreak, the Ammonia Refrigeration Foundation would like to thank the following individuals who are still honoring their contributions. The proceeds of the golf tournament go directly to fund the activities of ARF.

- Mike Wilkinson of SWR Sales
- Max Lindsay of Maxpsm LLC
- Joe Fazzari of Colmac Coil
- Mark Hampel of Fraiser Valley Refrigeration
- Jason Mueske of CTI
- Brian Eudaly of CTI
- Andy Neptune of CTI
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- Dwight Clark of Jamison Door
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- Chris Newman of Midatlantic Refrigeration LLC
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these companies and individuals have identified the importance of ARF's work in terms of research, education, and community outreach programs, all of which benefit the industry... they want to see these efforts continue and expand in the future."

Mike Lynch, ARF's outgoing chair, echoed Mandato's sentiments. "The Foundation itself and the individuals that work very diligently on the committees to help not only fundraise but also put together the research projects – it was pretty inspiring to see."

During his tenure, Lynch said he hoped to see more end user trustee level donations, and to lead by example, made the first. To keep the momentum going, he worked with the ARF staff and board to put together tools for end users to take to decision-makers in their organizations to make more trustee-level donations. He said he hoped this push will continue.

Bruce Nelson, the incoming chair, said it will. "We're continuing to build the assets of the Foundation to allow us to grow the number of scholarships we can offer and the number of research projects we can fund," Nelson said. "Today, with the help of some key individuals, Joe [Mandato] and I are looking for new trustee-level donors. The work continues."

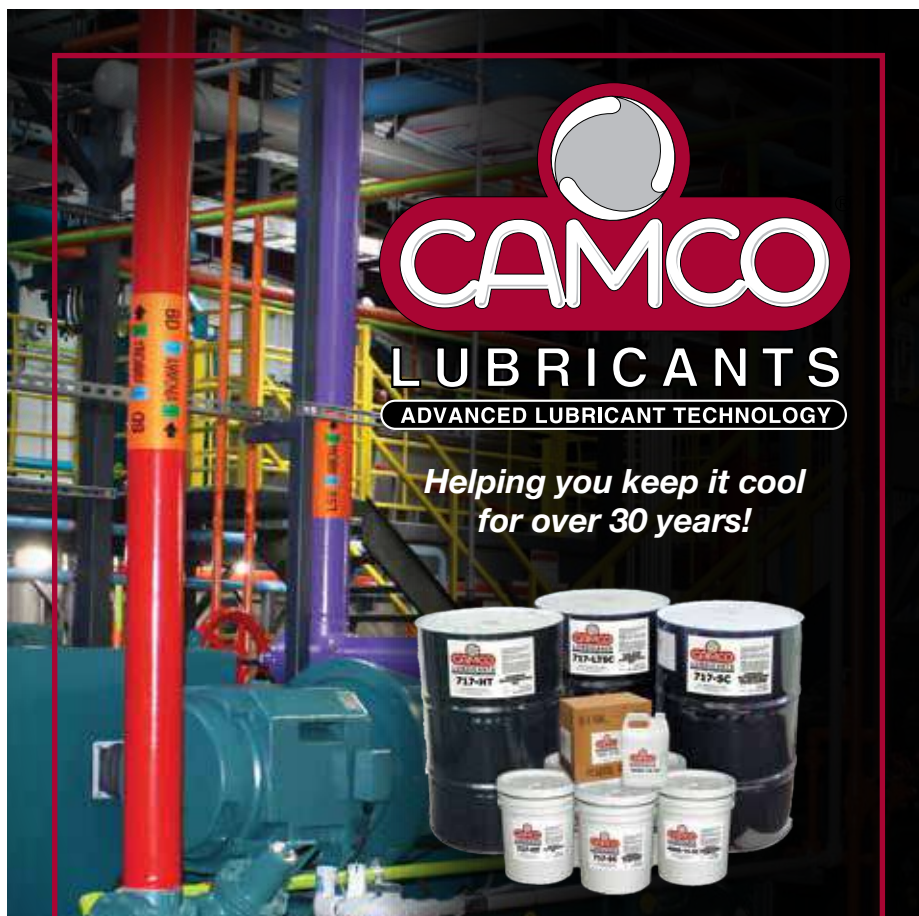
Nelson said he particularly sees value in expanding the scholarship program – a program he feels is vital to the sustainability of the industry. There are currently nine university students, both national and international, involved in the program, many of which are already involved in internships with IAR member companies. This is a partnership between the Foundation and the industry he hopes to expand during his tenure.

"We're looking for companies to take on these scholarship students as summer interns," Nelson said. "That's something I definitely want to solicit."

And the Foundation's research program will continue to be prioritized. Nelson described research as "near and dear to my heart," and he said he is especially pleased with the release of the revised ammonia piping handbook – the product of three different ARF research projects.

"I'm really happy to step into this role as the chair of ARF with all this momentum – we have tremendous momentum thanks to our past chairs," Nelson said.

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It's a New World

Early in March, I was at a training meeting for Search & Rescue in my county. One of the first topics discussed was the upcoming training. In early March there were only 2 people who had tested positive for COVID-19 in the county. Still, I felt we should be proactive, and postpone training for March and April, just in case things changed. There was also an Assistant Professor from a local medical college in the meeting that strongly supported my suggestion. Wow! Have things changed.

The world seemed to transform in days, with growing concern about some virus in China, to denial that this was anything other than the flu, to escalating into a worldwide pandemic. Planned events started being canceled, including one we were all looking forward to, the IIAR conference in Florida. Plane trips I had planned, were canceled as processing facilities struggled to figure out what to do to limit exposure and possible spread of COVID-19. Also, all training events I was going to be part of were canceled.

As time has gone on, my family has really put texting to work. Recent reports on cellphone usage show a massive increase as people everywhere try to remain “connected”. One brief text from a daughter really hit home, it read “Congratulations you successfully made it to April! Welcome to Level 4 of Jumanji!”.

In this world that now seems like Jumanji, what are we doing? What can we learn?

One of my other daughters has a blog focused on hiking and climbing, and she recently had a quote that I think is very applicable to what everyone is experiencing and how individuals might react. The quote read, “When the winds of change blow, some people build walls and others build windmills.”

As my, and most everyone’s normal travel has been greatly cut back or postponed, I along with many others have been looking at ways to continue contacting people, doing work, and learning. The internet has been a live saver, and using the internet has the potential to be a great help, as long as the internet can handle it. As you can imagine the usage of the internet has

LESSON LEARNED?



gone way beyond expectations. Internet providers do expect yearly growth, but we have far exceeded those projections. So far, the system has been able to handle the expanded use, with only a little slowdown, and sometimes that isn’t even noticeable. Hopefully, it stays that way.

One useful means to continue learning is to attend webinars. What is a webinar? The word is actually made up of two words, “web” meaning the internet, and “seminar”, shortened to “inar”. Thus, webinar, is a web-based seminar.

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Since 2014, IAR has used webinars to provide helpful information and learning to its members. Plans are in works to provide a means to get what we all missed at the canceled March conference, through webinars. You have likely noticed the large increase in other organizations, groups, schools, etc. that are now offering webinars and online classes. How all of these online events will work out I am sure will be a learning experience for everyone, as we all figure out what works and what doesn't. All of IAR's existing webinar's work well. As a member of IAR, you can access webinars back to 2014.

I considered providing an online means for doing ammonia refresher classes. I had all of the learning modules, PowerPoint, and videos, which I could use to instruct classes through some platform without actually physically being there. Then I started thinking, if I was someone attending one of these types of classes, what might it be like? Well, for an 8-hour refresher class, it would be like trying to sit through an 8-hour, low-quality movie. That's not happening. Online presentations would have to be broken into lengths that people could stand to absorb, which might be not much more than 1 hour in length, like the IAR webinars. You can usually get continuing education credit for webinars viewed.

ASHRAE and RETA both offer online courses on various topics. Most of these have a fee, but you can get PDH or other continuing education credits once you fulfill the course requirements. Many manufacturers and equipment suppliers are now offering webinars or links to access YouTube videos that can also be great ways to continue our education.

Another possibility would be learning at your own pace, coming back when you're ready for more. You can find many webinar presentations that are "at your own pace". A few I recently took were on the FEMA Independent Training website at <https://training.fema.gov/is/>. The FEMA independent courses are free of charge.

One of the challenges with distance learning is the interaction between the instructor and students, as well as between students. Most webinars will let you submit questions, which may be answered at the end of the webinar, or in follow-up communication. Very few, if any webinars offer a live connection between the presenter and the student. The challenge is that as the viewing audience increases in number, so does the interference (background noise) for everyone viewing the webinar, but I am guessing this hurdle will

be quickly overcome as more and more schools move to online classes. Maybe that's what "mute" is for?

Webinars offer a great means to continue learning, especially during this time of limited interaction with other people, which you get with face-to-face meetings and conferences. Some of the lack of direct face-to-face interaction at classes and/or meetings can be overcome.

Several platforms allow group meetings, even very large groups. I would guess that most of us have at least participated in online meetings. Although, as I just recently learned, some people have never participated in online meetings. Through a group meeting, documents (Word, PDF, etc.), PowerPoint, and videos can be shared and viewed by the entire group. One person acts as the "host" of the meeting, and everyone can view what is on the host's

computer. A switch can also be made to another host for viewing additional information.

Due to my recent, self-imposed "stay at home" exile from the world (this must be what it feels like for an astronaut living on the International Space Station) I connected with three different companies Chief Refrigeration engineers, none of whom had ever participated in an online group meeting. Even for these people who hadn't done this before the process was nearly trouble-free.

Are you taking advantage of online meetings, or can you expand the use of such meetings? Are you continuing your education and learning by participating in the many available webinars? Hopefully, you answer "Yes" to these questions, even in this Jumanji world, and make windmills, not walls.

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IIAR, ASTI, Developing Emergency Safety Guidance

After an ammonia incident occurred in 2012 that resulted in the loss of life, the California Occupational Safety and Health Administration took steps to enforce procedures employees must follow when performing rescue or medical duties.

Following up on that action, the International Institute of Ammonia Refrigeration has partnered with the Ammonia Safety Training Institute and the National Institute of Occupational Safety and Health to develop a guideline addressing the use of protective equipment to help fulfill requirements for government agency emergency action plan policies that require planning for rescue and mitigation, said Eric Smith, IIAR's vice president and technical director.

The guidance is intended to assist employers, governmental regulators and public-safety emergency responders to set policy on emergency procedures to both avoid and address ammonia incidents by preparing for high-risk ammonia system maintenance and critical plant operations associated with an emergency action plan. The guidance can also be used to aid in developing operations for emergency response plans.

The policy guidance provided in the document is designed to provide a higher degree of engagement on critical life-safety tasks, Smith said. The recommended respiratory protection, training criteria, and emergency action plan will assure a higher level of life safety for operators, responders, employees, contractors, visitors, and community members. According to the document, in the 1990s the hazmat response culture was centered on a team of technician-level trained responders using fully encapsulated entry suits to enter emergency sites that are immediately dangerous to life or health. The time to respond, setup, and enter a simple ammonia leak could take hours.

The Industry began to rely on public-safety hazmat response rather than

comply with the then-new regulatory push associated with an Emergency Response Plan. Many employers who had organized their plant hazmat team found that the cost and work-hours to maintain the team was too costly. Some facilities which could respond to ammonia incidents demobilized their hazmat teams and joined the others who relied on public safety services to handle a hazmat emergency.

Previously, model codes, IIAR guidelines and American Society of Heating, Refrigeration, and Air-Conditioning Engineers Standard 15 required employers to maintain two self-contained breathing apparatuses located within or near the machinery room. However, the move to de-mobilize hazmat teams played a part in the removal of the SCBA requirement in the model codes. The concern was if SCBAs were on-site, untrained persons would use them and potentially cause additional injury.

No significant life-safety substitutes replaced the two SCBA requirements, and there have not been any new federal Occupational Safety and Health Administration requirements that would require advances in personal protective equipment for high-risk critical-task performance for those who chose the Emergency Action Plan approach.

Many employers chose to notify 911, evacuate employees, and then count on public-safety responders and/or contractors to handle all emergency response challenges, including medical and rescue responsibilities. The lack of a response team and implementation of an EAP was termed within the industry as "non-responding." Recent incidents at ammonia facilities that implement an EAP have resulted in serious injury and life loss, prompting Cal-OSHA to enforce the presence of SCBAs or a suitable substitute, to ensure rescue operations are possible.

Cal-OSHA has determined the industry adoption of a "non-response" policy has inappropriately allowed sites to defer rescue and medical duties to the public emergency responders. In practice, most public response teams



cannot respond quickly enough to rescue a person that might be incapacitated as a result of an ammonia release.

The administration's current position requires employers to assure that ammonia system operators, responders, and employees have the equipment, procedures, and training needed to assure compliance with the life-safety elements listed in the EAP. The life-safety elements include the ability to perform rescue or provide self-rescue options and facilitate decontamination and first aid.

After examining the situations leading to recent deaths of workers in ammonia plants, Cal-OSHA announced that they would instruct their inspectors to enforce the two-SCBA requirement. The decision was announced during a Chemical Safety Day presentation in Turlock, Calif., in November 2018. Attendees were notified that a serious violation would be cited for each of the two SCBAs not in place and in good service.

The citations would result in a large fine for each missing or inoperative SCBA. For those employers who did not want to use SCBAs, Cal-OSHA offered an alternative to the two-SCBA rule. In lieu of the two mandated SCBAs, the employer may provide at least two respirators that are approved by the National Institute for Occupational Safety and Health for immediately-dangerous-to-life-or-health situations.

Cal-OSHA offered the option of two emergency escape breathing apparatuses with 10-minute air bottles within the ammonia system mechanical room. The administration also indicated that including "procedures for rescue" within the EAP could be deemed suf-

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ficient to meet the “rescue” requirement established in the EAP.

Today the fire service is working towards a new “Standard of Care/Response” that will encourage an update for hazmat response to more accurately reflect current response issues, scenarios, and related challenges.

There is agreement that the ammonia refrigeration industry needs to develop clear and well-considered guidance on how to accomplish a deeper level of engagement of the elements of the EAP. Evidence shows that the non-engagement, “push a button and run” EAP logic has resulted in unacceptable loss of life, off-site consequences, and property damage.

The organizations that developed the guidance document believe that it will help reduce the risk to workers and improve productivity. For example, facility downtime can be avoided by handling incidental releases and providing more control over the work environment without fearing enforcement and fines. Additionally, a higher level of ability for facility and public safety first responders to be equipped and trained to engage life safety and system shut-down or control during discovery, and the initial response is a vital part of best practices described in the guidance.

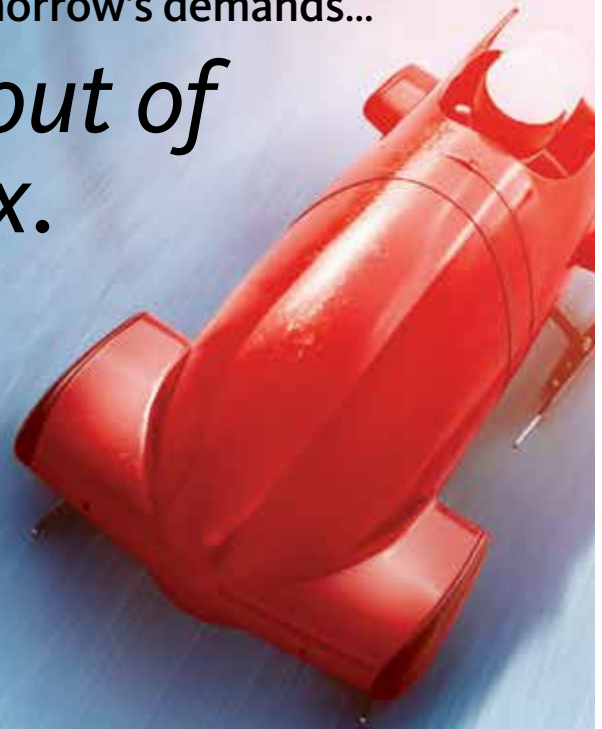
The document is divided into three major parts: recommendations for pre-event and operational readiness, respirators and personal protective equipment, and training for pre-event readiness and emergency action. Smith says that while the guidance is nearly complete, it has not yet been completely finalized.

That said, the organizations endorsing the policies recommended in the document agree that industry, government, and public safety officials should work together to support a risk-based approach for informing critical life safety choices that occur during the discovery phase of an incidental or emergency event. Those trained and equipped in accordance with the guidance should be empowered to engage in critical life-safety measures after performing incidental control or while escaping an emergency event that may be developing into an IDLH situation.



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IIAR's Academy of Natural Refrigerants Certificate Program

JOE FAZZARI, P.E., SENIOR VICE PRESIDENT, COLMAC COIL MANUFACTURING, INC.

As a recent graduate of an IIAR Academy of Natural Refrigerants (ANR) certificate course, I'd like to share some details of my experience with you. Overall, it was a great experience and I hope that after you read this article you will also be motivated to register for an ANR certificate course.

I started the process by browsing the "Education" tab on the IIAR website (www.iiar.org). This page gives a brief overview of the educational program and it also lists the current certificate course offerings. There are currently six courses, including:

- ANSI/IIAR 2
- ANSI/IIAR 4/5/8
- Process Safety Management & Risk Management Program Guidelines
- Planning and Performing an Effective Process Hazard Analysis (PHA) Program
- ANSI/IIAR 6
- Ammonia Refrigeration Management Program (ARM)

I decided to register for the ANSI/IIAR 2 course, and I did so by clicking the ENROLL NOW button, which took me to a page that showed the member and non-member pricing for the certificate course. There are two options for signing up: "Individual Enrollment" and "Institutional Enrollment". After choosing individual enrollment, I was directed to a page where I submitted my contact information. A short time later, IIAR contacted me via email with an invoice for the course, with an option to pay online or via check. Once IIAR received my payment, I received an email with instructions for participating in the certificate course. The link provided in the email took me into IIAR's online Learning Management System, where I had access to the eight modules for the IIAR 2 certificate course. Within twelve months from that day, I had to view each

course module video, successfully complete each Quick Check quiz, and register to take the final course assessment.

Each module can be viewed online whenever I wanted, which made this extremely convenient for me. I could watch the modules from the office, home, or while traveling. Each module is a voice-over PowerPoint that lasts anywhere from 40 to 60 minutes where the presenter goes through a series of slides and teaches you the content. After viewing each module, there is a five-question multiple-choice quick check quiz where your answers are submitted online to IIAR. The results of your quick check quiz are emailed to you normally within 3 business days, which gives you an indication of the questions you answered correctly. You must answer correctly to at least 80% of the questions in order to have passed the quiz. Retaking the quiz is allowed. Over the course of several months, I viewed all eight of the IIAR 2 modules and I successfully passed all eight of the quick check quizzes. At this point, I was qualified to register for the final examination, which I did so by emailing IIAR (education@iiar.org) and setting up an appointment to take the test online.

The evening before the final exam, I read the IIAR 2 standard cover to cover, reviewed the eight quick check quizzes, and then got a good night's sleep. The 120-minute-long exam is administered via the Survey Monkey online platform. For the exam, you are permitted to have a paper copy of the standard that includes your handwritten notes, but additional notes may not be used. The exam consisted of 60 questions and I had 120 minutes to complete the exam. Those who successfully answer at least 80% of the questions (48/60 correct answers) will qualify for the Certificate of Completion. Scores are normally communicated to you within two business days of completing the exam.

You may be asking: "how difficult was it to pass the quizzes and final exam"? In my opinion, the quizzes and final exam were extremely well written in that the degree of difficulty is just right. What I mean by this is that someone without an engineering degree is just as capable of passing the course as someone with an engineering degree. The only skill set required is that you are able to retain the basic information

that is taught to you in the modules and have a general idea on where and how to find information in the standard. You do not have to memorize anything or do any complex problem-solving. You simply need to learn how to navigate the standard and the quiz/exam questions do a good job of making someone prove that they understand how to use the standard. I believe that anyone with a basic working knowledge of refrigeration systems can obtain the Certificate of Completion.

Now that you have the basics for how the certificate program works, you might be wondering why you should even do this in the first place. IIAR's Academy of Natural Refrigerants is a long-term education program that was created to address the need for competent professionals who understand the design, safety, and maintenance of natural refrigeration systems. Companies such as food processors, design-build contractors, equipment manufacturers, and consulting engineers can use this program to demonstrate their competency in natural refrigeration systems. The IIAR Certificate Courses are based on ASTM standards, which allow us to show that we have received documented and standardized instruction regarding the current regulatory environment and/or design and operation of refrigeration systems utilizing natural refrigerants. Professional Development Hour (PDH) credits are available for all courses through IIAR's continuing education provider, RCEP. All courses are accepted by the regulating agencies in all fifty states. Having a certificate of completion for an IIAR ANR course is a very good way to demonstrate you are a competent professional in the refrigeration industry. The IIAR website is updated monthly to show the names of the certificate holders for each certificate course. You can also contact IIAR to have an official copy of your certificate in paper or electronic form.

The IIAR ANR certificates are already becoming widely recognized and highly valued in our industry. Any applicant for a position with my company will have their resume at the top of the stack if I see they have completed a course with IIAR's Academy of Natural Refrigerants.



Regulatory Impacts of the COVID-19 Pandemic

iiar government

RELATIONS

BY LOWELL RANDEL, IIAR GOVERNMENT RELATIONS DIRECTOR

The current COVID-19 pandemic is having significant impacts on individuals and businesses across the globe. While many businesses continue to be closed, or their operations changed or restricted, companies designated as part of the critical infrastructure have maintained operations throughout the crisis.

During the pandemic, EPA has stated that it expects to focus its resources largely on situations that may create an acute risk or imminent threat to public health or the environment, to ensure protection against such risks or threats. It is important to note that nothing in this temporary policy relieves any facility from the responsibility to prevent, respond to, or report accidental releases of hazardous chemicals, as required by federal law.

The U.S. Department of Homeland Security has designated essential businesses and workers needed to continue working to support the nation’s critical infrastructure. Most IIAR members qualify as under the critical infrastructure designation to support the food supply chain. With many companies associated with the industrial refrigeration industry maintaining operations during the pandemic, it is important to understand how government agencies are approaching enforcement.

EPA ENFORCEMENT DISCRETION

On March 26, 2020, the U.S. Environmental Protection Agency published a memo entitled: “COVID-19 Implications for EPA’s Enforcement and Compliance Assurance Program”. The memo sets forth a temporary policy that authorizes discretion in enforcing regulatory requirements where compliance is impacted by COVID-19.

The memo makes it clear that EPA expects all regulated entities to continue to manage and operate their facilities in a manner that is safe and that protects the public and the environment. Facilities should make every effort to comply with their environmental compliance obligations. However, if compliance is not reasonably practicable, facilities with environmental compliance obligations should:

- a. Act responsibly under the circumstances in order to minimize the

effects and duration of any noncompliance caused by COVID-19;

- b. Identify the specific nature and dates of the noncompliance;
- c. Identify how COVID-19 was the cause of the noncompliance, and the decisions and actions taken in response, including best efforts to comply and steps taken to come into compliance at the earliest opportunity;
- d. Return to compliance as soon as possible; and
- e. Document the information, action, or condition specified in a. through d.

During the pandemic, EPA has stated that it expects to focus its resources largely on situations that may create an acute risk or imminent threat to public health or the environment, to ensure protection against such risks or threats. It is important to note that nothing in this temporary policy relieves any facility from the responsibility to prevent, respond to, or report accidental releases of hazardous chemicals, as required by federal law. The memo is not an indication that EPA intends to exercise enforcement discretion in the wake of such a release.

The EPA policy applies retroactively beginning on March 13, 2020, and will remain in effect until further notice. EPA will assess the continued need for and scope of this temporary policy on a regular basis and will update it if the EPA determines modifications are necessary. EPA will publish a notification at least seven days prior to terminating this temporary policy.

OSHA ENFORCEMENT DISCRETION

On April 16, 2020, the Occupational Safety and Health Administration published a memo entitled: “Discretion in Enforcement when Considering an Employer’s Good Faith Efforts During the Coronavirus Disease 2019

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(COVID-19) Pandemic.” The memo states that OSHA understands that some employers may face difficulties complying with OSHA standards due to the ongoing COVID-19 health emergency. Widespread business closures, restrictions on travel, limitations on group sizes, facility visitor prohibitions, and stay-at-home or shelter-in-place requirements may limit the availability of employees, consultants, or contractors who normally provide training, auditing, equipment inspections, testing, and other essential safety and industrial hygiene services. Business closures and other restrictions and limitations may also preclude employee participation in training even when trainers are available. The OSHA enforcement discretion policy took effect immediately on April 16, 2020, and will remain in effect until further notice.

In exercising enforcement discretion, OSHA will assess an employer’s efforts to comply with standards that require annual or recurring audits, reviews, training, or assessments. Inspectors will evaluate whether the employer made good faith efforts to comply with applicable OSHA standards and, in situations where compliance was not possible, to ensure that employees were not exposed to hazards from tasks, processes, or equipment for which they were not prepared or trained. As part of assessing whether an employer engaged in good faith compliance efforts, inspectors will evaluate whether the employer thoroughly explored all options to comply with the applicable standard. Inspectors will also consider any interim alternative protections implemented or provided to protect employees, such as engineering or administrative controls, and whether the employer took steps to reschedule the required annual activity as soon as possible.

In instances where an employer is unable to comply with OSHA-mandated training, audit, assessment, inspection, or testing requirements because local authorities required the workplace to close, the employer should demonstrate a good faith attempt to meet the applicable requirements as soon as possible following the re-opening of the workplace.

Where the employer cannot demonstrate any efforts to comply, a citation

may be issued as appropriate under the existing enforcement policy. However, where an employer has made attempts to comply in good faith, OSHA will take such efforts into strong consideration in determining whether to cite a violation. Where enforcement discretion is warranted, will ensure that sufficient documentation (e.g., notes on the efforts the employer made to comply, letters or other documentation showing that providers had closed) is provided in the case file to support the decision.

The OSHA memo includes an Annex with examples where enforcement discretion may apply. Below is an example pertaining to annual Process Safety Management requirements such as Process Hazard Analysis (PHA) Revalidation, Review of Operating Procedures, and Refresher Training:

PSM EXAMPLE

An employer contracts with a consultant to conduct process hazard analysis (PHA) revalidations. A PHA revalidation for the employer’s ammonia refrigeration process was due to be completed by April 1, 2020, but because of travel restrictions and shelter-in-place orders, the consultant was unable to fly to the employer’s location. OSHA will not cite the employer for failing to meet the three-year requirement for conducting a PHA revalidation, provided the employer considered alternative options for compliance, implemented interim alternative protective measures, where possible, and shows a good faith effort to reschedule the PHA revalidation as soon as the travel restrictions and shelter-in-place orders are lifted.

IIAR members are strongly encouraged to review both the EPA and OSHA temporary enforcement discretion policies. While both agencies have recognized the potential challenges to compliance during the pandemic and have issued temporary policies to allow for enforcement discretion, IIAR members should continue to make good faith efforts to maintain compliance and carefully document any circumstances with compliance is not possible due to the pandemic. IIAR will alert members to any changes or updates to these policies.



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International Activities Continue Remotely, Despite Pandemic

Due to the COVID-19 outbreak, the International Institute of Ammonia Refrigeration has post-poned its international activities, with conferences scheduled in Peru, Colombia, and Ecuador all moved to the winter and spring of 2021.

But Yesinia Rector, chair of the International Committee, said that doesn't mean efforts to engage with the international community have ground to a halt. The International Committee is still very active and working to make IAR a more global association.

Starting on April 20, the Academy of Natural Refrigerants, offered through IAR's new learning management system, is now offering a course on the IAR-2 standard, the safe design of ammonia refrigeration systems, taught entirely in Spanish. Upon completion, students will be prepared to become certified in IAR-2.

The program was developed in part with IAR's Costa Rican MOU [memorandum of understanding] partner, CIEMI [Colegio de Ingenieros Electricistas, Mecánicos e Industriales], as well as the Costa Rican IAR

chapter, Rector said. Originally, the program was supposed to be live and hosted Costa Rica. That became impossible with the pandemic, so the decision was made to move it to the virtual Academy of Natural Refrigerants, opening it up to even more international students. Now there are approximately 30 students enrolled in the course, hailing not only from Costa Rica but also Honduras, Nicaragua, Columbia, and others, Rector said. The virtual nature of the Academy of Natural Refrigerants was not in response to the pandemic, Rector said, but its availability couldn't have come at a better time. As travel was restricted and shelter-in-place orders went into effect, online training quickly became the only option. "Thankfully, we got the platform up and running in the international market just when we needed it the most, when it was the most useful," Rector said. "It worked out very nicely."

Rector said that is a step in the right direction for IAR's push to begin offering more of its resources to Spanish-speaking countries. There is momentum to translate other offerings from the Academy of Natural Refrigerants, and the association's newest standard – IAR-9 – which provides the

minimum safety requirements for existing closed-circuit ammonia refrigeration systems and provides a method to determine compliance, has already been translated into Spanish. That version, she said, will be available in the next few months. Additionally, some of IAR's monthly webinars are being translated for the Spanish speaking community. It's a developing process, Rector said, but prioritizing inclusiveness is an important goal. The six-part Spanish series will focus on safety, inspection of systems, mechanical integrity, process hazard analysis, documentation review, and other topics, Rector said.

Outside the U.S., the international committee is working with its Colombian partners to adopt IAR standards into their national norms dictating the safe design and use of ammonia refrigeration systems. The process is slow-moving because unlike in Costa Rica, the Colombian regulatory bodies aren't adopting the standards wholesale. Instead, they are incorporating IAR's standards into their existing framework. Although it's a heavier lift, the process is "moving along nicely," Rector said.

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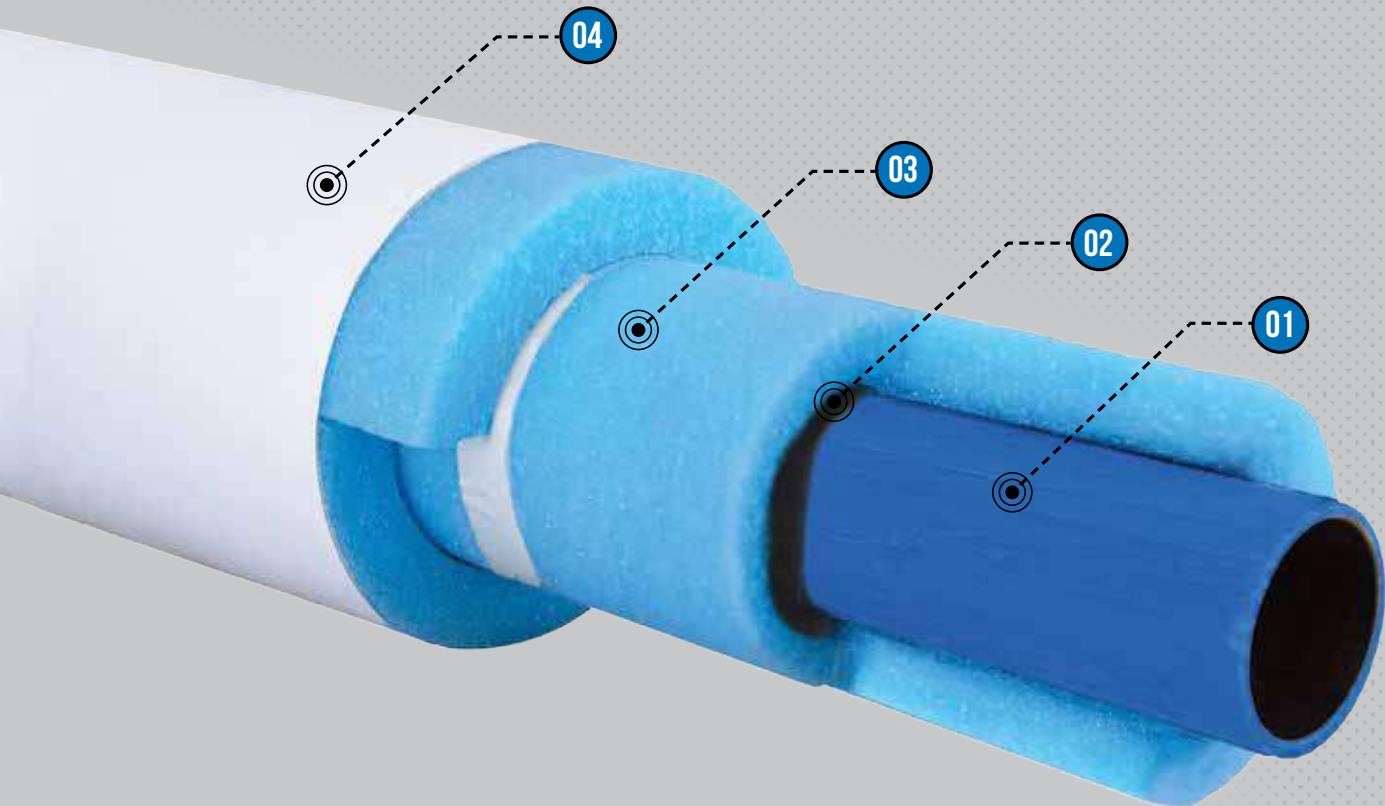
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