



# RETA BREEZE

Refrigerating Engineers & Technicians Association

2012 Issue #5 (Sept/Oct)

## THE PEOPLE MACHINE!

By Vern M. Sanderson, Wagner Meinert, LLC.

*This article was based on Ammonia Refrigeration Management: PM'ing the People Machine presented at the RETA 2010 annual Conference. It is the second in an ongoing series.*

Isn't it amazing we will spend hundreds of thousands, sometimes millions, of dollars to install a refrigeration system and sometimes not spend the time or money necessary to assure that those running the system, get the same care and consideration we expect our equipment to receive!

**In this second article,** we'll explore some stories of people: people who have learned valuable lessons about dealing with people. Hopefully, we can learn from their experiences.

The Maintenance Mechanic is a vital player on the facility team. His role is vital to the welfare of the company. Any improvement in the Maintenance Mechanic's attitude or efficiency can make a huge difference.

### **The tackle and nose guard play on the same team.**

All facility employees are on the same team. Even though employees may be loyal to their departments, they still must be reminded that the whole company has a common goal. Anything you can do to improve maintenance, improve production or increase customer satisfaction is a win, regardless of your position within the company.

Sometimes even members of the same department only interact on an

infrequent basis. They are still members of the same team. Such is the case with John and Cliff. John was a third shift maintenance mechanic with three years of experience in the department. He worked around the refrigeration system more than he worked on the refrigeration system. He performed rounds (checking temperatures, pressures and levels). The majority of his time was spent changing filters and working on the processing equipment.

Cliff was the ammonia guru at the facility. He had been lead ammonia mechanic for years. He would rebuild compressors, change oil filters, pull oil samples, fine-tune evaporators and perform other maintenance on the ammonia equipment.

John normally finished his shift just as Cliff would arrive. They acknowledged each other but that was about it. It was doubtful that they had spoken for more than 60 seconds at a time, the entire time they worked together.

John thought of Cliff as a cranky old man who was afraid to let anyone do anything because he was afraid of being shown up by a young guy.

Cliff thought of John as a young filter changer, earning a paycheck to pay for whatever kids spent their money on these days, probably sleeping through most of his shift. Cliff and John's relationship changed one night. Cliff was making a repair on a transfer vessel. He had been working for 20 hours at the

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time of the accident. Cliff was working by himself as usual and refused to allow anyone else to finish the job. He didn't believe John could finish the job. In fact, he hadn't even considered asking John, instead he decided to work overtime.

While starting the vessel up, a pipe nipple failed. Cliff fell to the floor, overcome by the high ammonia concentrations. Cliff managed to get to his feet and stagger from the engine room. His eyes were closed and he was in incredible pain.

While John had never been allowed to work on the refrigeration system with Cliff, he had certainly paid attention in

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# President's Message

Robert Ellison, President

Well, summer is over. All that rest and relaxation we all built up has to carry us through ... the annual Conference!

Yes, it's that time of year already; time to get ready to head to San Antonio to enjoy four days of educational opportunities, events and activities and the recharging that comes from reuniting the RETA family. I promise you that after four days with members from around the world you will be RETA-fied, and, no, I don't mean RETA-fried. Even though I really enjoy The Zac Brown Band.

It's a great experience; complete with more education, hands-on workshops and

technical information than you can hope to absorb. Now, that's not to say that the only way to get RETA-fied is to come to Conference. Our annual meeting is just our immersion technique.

There are plenty of RETA-fied members out there who are participating in and conducting activities that support our educational mission. We have 40 Chapters across the country holding monthly meetings at which a technical presentation is offered. We have at-large members acting as speakers at these Chapter meetings and safety days who represent companies throughout the industrial refrigeration industry.

For more than 100 years, we have been at the forefront of keeping our industry abreast of current trends and changes. How do we do that ... we have great members who share their talent and expertise. For that, we are incredibly fortunate.

Since we can't celebrate them all, individually, we host our RETA family reunion every year, AKA the annual Conference, to celebrate with them. That's what getting RETA-fied is all about.

Come join us, get your reunion t-shirt and say howdy!

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# Executive Director's Memo

Don Tragethon, Executive Director

The Board of Directors are preparing for the annual meeting that will be held November 5 in San Antonio, TX. RETA board meetings are open to the membership. We welcome interested members who care to observe the process of governance. Members who wish to bring a concern to the board may do so. It is appropriate to approach the President or the Executive Director to inform them of your desire to be heard and the nature of your issue. This fall we will be discussing our accreditation application to the American National Standards Institute (ANSI) that we will file in the latter part of November.

In addition to the ANSI certification discussion we will be discussing the translating of Industrial Refrigeration

Course 1 (IR-1) and Industrial Refrigeration Course 2 (IR-2) into Spanish. We intend to have both of these books translated and available in early 2013. There will be a need for volunteers to review the first drafts for accuracy and context. If you are bi-lingual and would like to participate please let me know by email, don@reta.com.

In March of 2010 the re-write team began meeting to review IR-2 and discuss the book and what could be done to improve it. The work continued regularly through the next 130 weeks. I had the privilege and pleasure of being the team leader and scribe. We have built great friendships with one another and have shared concerns as life happened to the group over the time period of the project. There were surgeries, natural disasters, vacations, home-comings of children in the service, and other personal events that we shared throughout the project. We looked forward to the weekly meetings and missed each other when some folks weren't available. When you engage in a RETA book project you run the risk of finding life-long friends as a consequence of being involved. This is true for all the different aspects of RETA life where you serve as a volunteer. Take a chance, volunteer – you'll love it.

Speaking of IR-2, I want to personally thank Donna and Gene Dumas, Marv Tryon, Leon Breun, Kevin Koster and John Sherrill for working with me throughout the entire term of the project. In the first year of the work, we also had Grant Golding, Vic Sianato, Michael Schreck, Randy Fisher and Ken Brasswell as team members. It was in those months that the book was re-configured and structured to its new form. Their work on the project helped bring a lot of value to the expanded

*Continued on page 9*

## This is How it Goes

**Do you think you have an emergency action plan?**

*By Roygene Harmon*

Please read the following OSHA violation from a recent NEP inspection. Notice, it is not describing a fully trained HAZWOPER team, but just an emergency response plan, something all ammonia facilities must have in place.

“1910.119(n): The employer's emergency action plan did not include procedures for handling small releases:

At the establishment, the written emergency planning and response did not include specific in-plant procedures for identifying and handling small releases of ammonia from refrigeration system to be followed by all refrigeration, maintenance employees, and hazardous chemical release responders who are designated to remain behind during evacuation to care for critical plant operations to ensure safe occupancy in buildings during the release of ammonia.

The action plan did not include:

how to determine when it is safe to enter the engine room,

what is the safe limit for entry, and what personal protective equipment is needed before entry to isolate and purge leaking equipment.

This violation was marked as – Serious, with a Gravity rating of 10 (highest). It carries the highest penalty initially (\$7,000) and if not dealt with a repeat (\$35,000).

Please review your plan!



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# Certification Honor Roll

Congratulations to our newly RETA Certified Operators. These are folks who passed the exam(s) between May 1 and June 30, 2012.

For information about the examination process and preparation to take the RETA exam, please go to the RETA website: [www.reta.com](http://www.reta.com).

## CIRO CERTIFIED INDUSTRIAL REFRIGERATION OPERATOR

- Don Andersen
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- Larry Bleshoy
- Kevin Boes
- Rusty Boles
- Michael Bopp
- Harold Bowling
- Gordon Brandt
- Harold Brown
- Jerry Buist
- Sam Campbell
- Andrew Clark
- David Clifford
- Matt Crocker
- Paul Davis
- Clifford Elliott
- Bradley Fligg
- Randy Garner
- Ashley Gill
- Rex Hanna
- Tim Heinrichs
- Paul Hendershot
- Robert Hickman
- Eric Hinerman
- John Jamieson
- Jeff Legeune
- Herb Lewis
- Bryan Luster
- Tom Madison
- Keith Moerbe
- Tim Osorio
- Giuseppe Pennisi
- Orville Ridinger
- Michael Ritchart
- Rosendo Romero
- Vern Scharping
- Bruce Stansbury
- Kevin Warfel
- Thad Weaver
- Jeffrey Wilmore
- Marty Wray

# THE PEOPLE MACHINE!

*Continued from page 1*

class. He grabbed Cliff and pulled him under an emergency shower. He helped flush cliff's eyes. He left Cliff under the shower long enough to press the emergency shutdown button, before returning to hold Cliff under the shower until the ambulance arrived.

Cliff eventually healed from his injuries. Thankfully, there was no permanent damage. The facility was back in production within a few days. Cliff had learned a lot about John. Everything worked out, Cliff survived, the facility returned to production and the HAZMAT team got some practice. But wait, look at the wasted opportunities. Not during the accident, but in the three years prior. The event may not have occurred if they had worked together.

Teammates must interact. It's beneficial to the facility and beneficial to the teammates. Facilities must utilize any available opportunities to help develop working relationships. Employees should coordinate their efforts to assure the safety of themselves, their teammates, co-workers and the community.

Avoid the pitfall of spending thousands on get acquainted sessions. Use existing opportunities to develop teams. Shared experience is the key to team building. Sometimes two guys rebuilding a compressor together will become lifelong friends.

### Warfare in the Workplace

Encouraging employees to interact can be beneficial. Avoid forcing employees together who do not like each other. Forcing employees who aren't on good terms to perform critical functions during highly stressful situations can be very dangerous, as in the case of Jim and Tommy.

Tommy was a 13-year maintenance employee who had been held over from a previous plant owner. Tommy had trained almost everyone in the maintenance department personally. The department worked together and drank together.

Jim was a production supervisor, who had a particularly poor view of the maintenance department. Jim considered any downtime as proof that the maintenance department didn't

do its job. His opinion, "Production makes money, the maintenance department wastes it!"

Jim and Tommy had been on the response team for several years. They avoided each other. This was noticed, but never resolved. No one realized exactly how much they disliked each other, until an ammonia release. As soon as the release occurred, the Emergency Response Team was activated. The facility was evacuated and a role call was conducted. After assuring that all team members were safely evacuated, the Incident Commander picked a team to enter and begin repairs. He picked Tommy and Jim.

Tommy and Jim were briefed on the situation and given instructions on what the attempted repair should be.

Tommy and Jim entered the ammonia cloud. Tommy had a flashlight and ammonia detector, while Jim followed with an escape rope and radio.

Jim decided to exit because he was not comfortable. He took the rope and radio and left the area. Unfortunately he forgot to tell Tommy he was leaving. Tommy continued to the leak point, oblivious to Jim's departure. When Tommy got to the leak, he couldn't find Jim. Tommy was concerned that Jim was lost in the ammonia cloud. Not having a radio, Tommy could not communicate with Jim or the Incident Commander. Tommy's search continued until his low air alarm bell began to ring. Tommy proceeded to the decontamination area.

Imagine his surprise when he saw Jim sitting in a chair sipping water when he got to the decontamination station. The Incident Commander had assumed Tommy was down and sent the backup team in to find him. Per policy, the leak was ignored until the lost responder was found.

Tommy continued through the decontamination line. As soon as his air pack was removed, Tommy attacked Jim. Several members of the production team attempted to pull Tommy off of Jim. Several of Tommy's

*Continued on page 14*

# Certification Honor Roll

## CARO

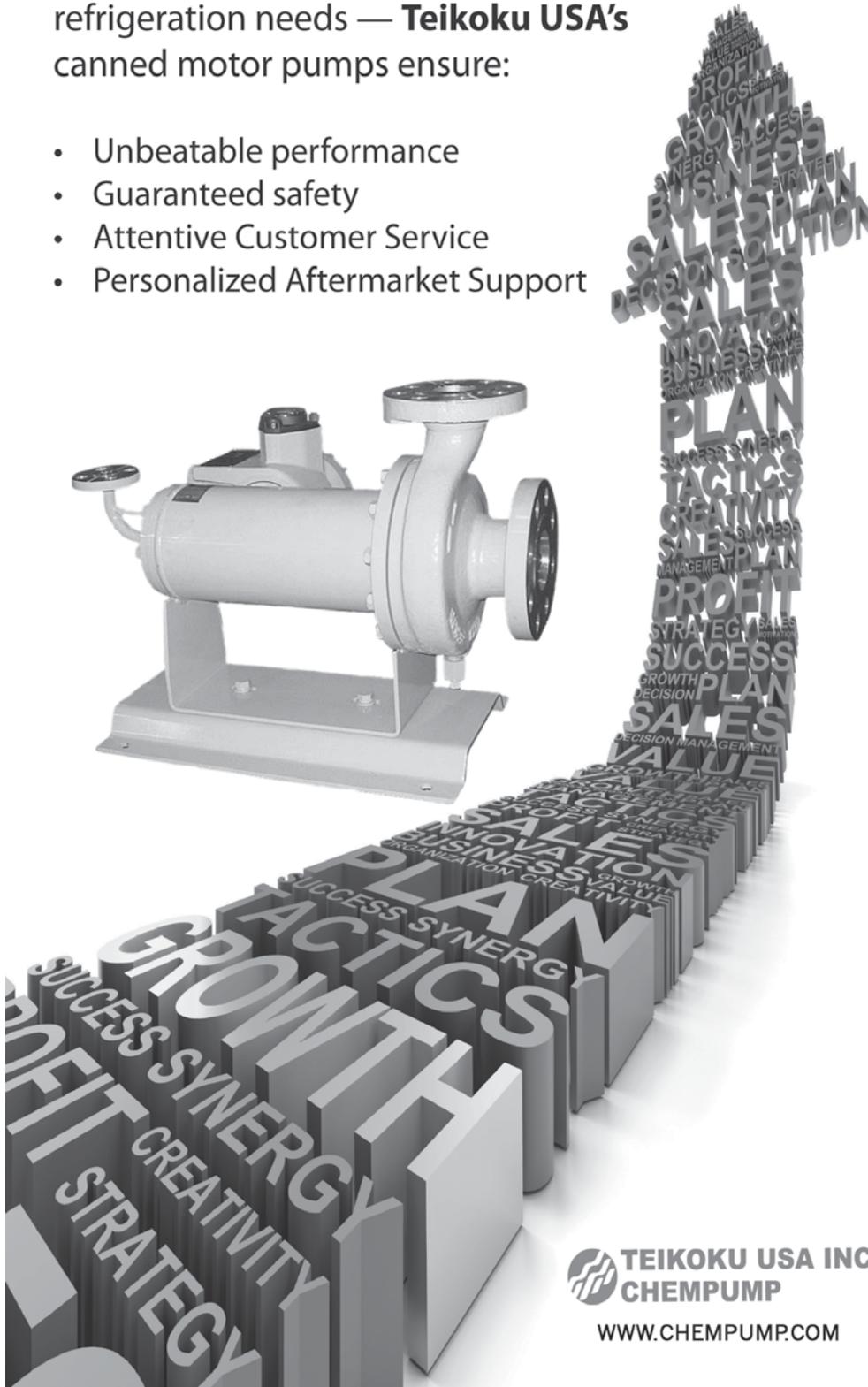
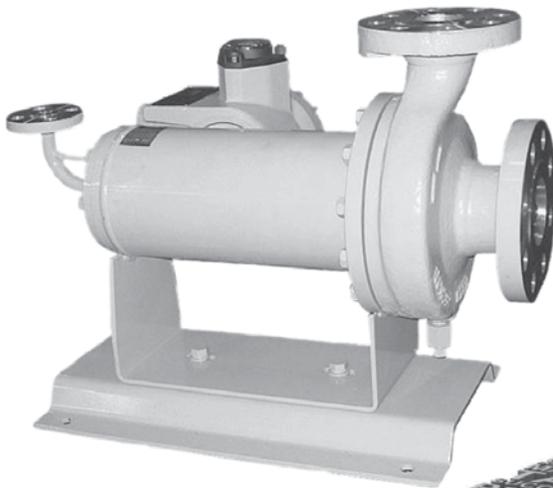
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| Rodger Baker       | Miguel Hernandez   |
| Jose Bautista      | Bert Heyman        |
| Jackson Blevins    | Wayne Hillestad    |
| Michael Borer      | Brad Hopgood       |
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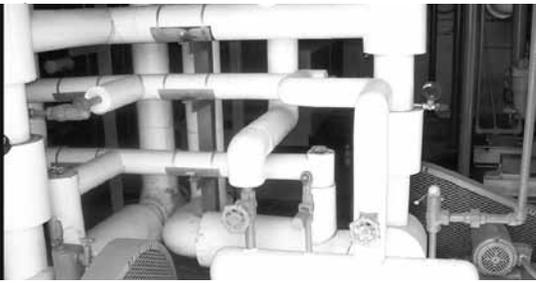
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## INSULATION SYSTEM RELIABILITY SHOULD BE A PRIMARY CONCERN

*By Ron King, Consultant, National Insulation Association*

Refrigeration systems cover a broad spectrum of application temperatures and environments, but they all face the same issues relating to both condensation control and moisture. Since moisture is a good thermal conductor, its presence in an insulation system is highly detrimental. Unlike hot systems, where marginal insulation may result in increased energy use (and added cost), refrigeration systems face condensation, which often leads to complete system failure. Even with today's high energy costs, the design thickness in most refrigeration applications is dictated by what is needed to prevent condensation, rather than by economic payback.

Refrigeration systems typically operate in the range of 20 F to as low as -50 F. All of these applications share common concerns regarding condensation control and long-term reliability, but they also have particular issues with installation, required thickness and the environmental conditions in which they operate.

Reliability should be the primary concern when considering the design and installation for any application. Design must consider factors including the application temperature, environmental considerations, consequences if a failure occurs and expectations of the job by the owners (longevity of the system, aesthetics, etc.).

Below-ambient refrigerant lines are installed primarily to accomplish the following:

- Minimize heat gain to the internal fluids
- Control surface condensation
- Prevent ice accumulation

Operation is generally continuous, so the vapor drive is unidirectional. Water vapor that condenses on the pipe surface or in the insulation remains there. The vapor retarder must be continuous and effective 100 percent of the time to limit the amount of vapor entering the system. The following are some important features of the insulation in various refrigeration applications:

- Thermal conductivity, or k-value
- Water vapor transmission (WVT) properties
- Water absorption properties
- Coefficient of thermal expansion
- Moisture wicking
- Fire and smoke performance to meet building codes

In all cases, the entire system (seams, butt joints and termination points) must be completely sealed to protect against air intrusion into the system, which would carry moisture and result in condensation between the cold pipe and the insulation and even in the insulation itself.

The refrigeration market covers a broad spectrum of applications, each with unique requirements but all with a common goal: prevention of moisture intrusion and condensation to maintain

*Continued on page 7*

## INSULATION SYSTEM RELIABILITY SHOULD BE A PRIMARY CONCERN

Continued from page 6

long-term system reliability. Installation techniques are just as critical as material selection. The consequences of system failure can include degraded thermal performance of the insulation, higher system operating cost, inadequate cooling capacity, mold and mildew, ice formation, ruined ceilings, slippery floors, equipment downtime and corroded pipes.

In below-ambient systems like refrigeration applications (including chilled water and cryogenic systems), it's important to select the right insulation product for the application. Customer expectations must be matched to product performance and

cost. Refrigeration applications are demanding and require careful consideration in material selection and installation to obtain optimum performance for the end user. (Portions of this column, appeared in the November 2006 issue of NIA's *Insulation Outlook Magazine* in an article by Roger Schmidt entitled, *Types of Insulation for Refrigeration Applications*.)

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*This article is provided by the National Insulation Association (NIA) as a RETA member service. Please visit [www.insulation.org](http://www.insulation.org) for more information related to all aspects of mechanical insulation.*



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## EPA'S INCENTIVE FOR SELF POLICING

By Lee Pyle and Jeanna Emmons, SCS Tracer Environmental

# RETA Chapter Meeting Schedule

### ARIZONA

PHOENIX  
4<sup>th</sup> Thursday; 6 pm  
SOUTHWEST  
2<sup>nd</sup> Wednesday; 6 pm

### ARKANSAS

NORTHWEST ARKANSAS  
2<sup>nd</sup> Thursday; 6 pm

### CALIFORNIA

BAY AREA  
3<sup>rd</sup> Wednesday; bi-monthly;  
6:30 pm  
CALIFORNIA CHAPTER #2  
3<sup>rd</sup> Wednesday; 6 pm  
No meeting in December  
CENTRAL VALLEY  
3<sup>rd</sup> Thursday; 6:30 pm  
INLAND EMPIRE  
3<sup>rd</sup> Tuesday; 6 pm  
KERN  
Last Wednesday; 7 pm  
MONTEREY BAY  
3<sup>rd</sup> Wednesday; 6 pm  
SAN JOAQUIN  
2<sup>nd</sup> Tuesday; 6 pm  
SANTA MARIA  
Not scheduled

### DELAWARE

DELMARVA  
3<sup>rd</sup> Tuesday; 6:30 pm

### FLORIDA

CENTRAL FLORIDA  
3<sup>rd</sup> Thursday; 6:30 pm  
NORTH FLORIDA  
2<sup>nd</sup> Thursday; 6:30 pm  
No meeting in July or October  
SOUTH FLORIDA  
2<sup>nd</sup> Thursday

### GEORGIA

ATLANTA  
2<sup>nd</sup> Thursday; 6:30 pm  
No meeting in June or July

### IDAHO

TREASURE VALLEY  
3<sup>rd</sup> Tuesday

### ILLINOIS

CHICAGO  
2<sup>nd</sup> Wednesday; 5:30 pm

### INDIANA

FT. WAYNE  
2<sup>nd</sup> Thursday; 5:30 pm

### KANSAS

GOLDEN PLAINS  
To be determined

### MINNESOTA

NORTHERN PLAINS  
3<sup>rd</sup> Thursday; 6 pm

**Really?** Yes, really. The United States Environmental Protection Agency adheres to an Audit Policy formally titled “Incentives for Self-Policing: Discovery, Disclosure, Correction and Prevention of Violations” and written in the Federal Register on April 11, 2000 (Volume 65, Number 70, FRL-6576-3). This version is actually an update to the original Self-Policing policy prepared on December 22, 1995.

The purpose of this policy is to improve protection of the environment (and human health) by encouraging industry to discover and correct issues within their own facility.

The incentives for Self-Policing include:

- waiving or reducing gravity-based civil penalties;
- declining to recommend criminal prosecution for regulated entities that self-police; and
- refraining from routine request for audits.

#### *Gravity Based Civil Penalties*

When EPA makes a citation, they will include an economic benefit component as well as a gravity-based component to calculate the total fee. The Economic Benefit is the perceived advantage gained by not complying over a facility’s competitors who have complied. The gravity-based component is the portion of the citation that reflects the openly negligent behavior of the facility owner/operator. Gravity-based penalties will be waived as long as the discovery meets the criteria of Systematic Discovery.

#### *75 percent Reduction of Gravity Based Civil Penalties*

Where the disclosure fails to meet the criteria for Systematic Discovery, EPA will grant a 75 percent reduction of the gravity-based penalty.

Nine elements must be satisfied for EPA to consider your request:

#### **Systematic Discovery**

In order to be considered Self-Policing, the violation must be discovered by means of an Environmental Audit or through a compliance management system that “reflects due diligence in preventing, detecting, and correcting violations.”

#### **Voluntary Discovery**

Voluntary discovery means that you realize the violation by means other than some type of monitoring, sampling, or auditing procedure that is required by a regulation.

#### **Prompt Disclosure**

Plain and simple – you must disclose the violation in writing to EPA within 21 calendar days after discovery.

#### **Independent Discovery/Disclosure**

The owner/operator must identify the violation prior to EPA or other regulatory agency discovering the violation.

#### **Corrections**

You will be required to correct the deficiency within 60 calendar days from the date of discovery.

#### **Prevent Recurrence**

Again, plain and simple – it can’t happen again.

#### **Repeat Violations are Ineligible**

Closely related violations at the same facility within three (3) years or at multiple facilities of the same owner/operator within five (5) years are ineligible.

#### **Type of Violation**

Violations that caused real harm to the environment or could have caused serious harm to public health or the environment will be excluded.

# Executive Director's Memo

Continued from page 3

content. On behalf of the membership, thank you all.

There are new chapters in IR-2. Chapter 1 explains heat transfer. Chapter 2 explains using the Mollier diagram as a tool to understand the system based on the temperature and pressure at different locations in the cycle. By understanding the system based on the Mollier diagram, one can troubleshoot and analyze the performance at any given time. Plotting system characteristics regularly provides a histogram of the system that is useful for discovering shifts and deviations in your system. Chapter 3 introduces the affect of water vapor in the air. Colmac Coil Company gave us permission to include a technical report that describes the function of the property lines found on the psychometric chart. Three real world examples of water vapor's effect on heat transfer follow the introduction to the chart. The most expanded chapter is the liquid recirculation one. You will find a reference table that discusses 21 ways to have a cavitation problem with a refrigeration pump. Each cause has a corresponding result and a suggested corrective action. You will find many other practical points in the new IR-2. This edition of the book is 33 percent larger than the 2007 edition. Even though the cost of the book is going to be higher, we are going to hold its price consistent with IR-1. Customers that purchased IR-2 between March 1, 2012 and July 31, 2012 may order the new release for \$24 which includes the shipping to you. If you purchased IR-2 between November 1, 2011 and February 29, 2012 you may order the 2012 release at \$55, shipping included. This offer will continue through November 2012.

Basic Electricity 1 has been going through a significant update this year, too. When it is ready to release there will be a similar offer for purchasing updates.

The Conference this year takes place in the first week of November. Tuesday of that week is Election Day. Exercise your right to choose your representation by voting. Since I will be far away from my voting district, I will be using the absentee ballot system to vote. Be sure that you apply for an absentee ballot early enough to qualify to fulfill your duty. See you in San Antonio.

## Meeting with RSES

I was traveling for RETA at the end of July this year. I joined our incoming president, Harold Streicher, and one of our board members, Vern Sanderson, in Chicago to meet with Executive Vice President Mark Lowry of the Refrigeration Service Engineers Society (RSES) along with RSES board members Roger Hensley and Rich Hoke. Our discussion centered on the emerging technology of low charge ammonia/carbon dioxide refrigeration system installations at supermarkets in the United States. We see the distinct possibility that service personnel who maintain the supermarket refrigeration systems will not be informed about the hazards and practices that need to be followed that are not particularly so for traditional supermarket refrigeration systems.

It is common to use copper piping and brass components in a traditional HCFC/HFC refrigeration system. Use of non-ferrous components and fittings on the ammonia portion of a cascade system would lead to releases and possible

# RETA Chapter Meeting Schedule

## N/S CAROLINA

CAROLINAS (NC)  
2<sup>nd</sup> Thursday; time varies  
No meeting in June, July or August  
GREATER RALEIGH (NC)  
2<sup>nd</sup> Wednesday; time varies  
No meeting in June, July or August

## NEBRASKA

OMAHA  
Not Scheduled

## NEVADA

SOUTHERN NEVADA  
2<sup>nd</sup> Monday; 5 pm

## NEW YORK

WESTERN NEW YORK  
3<sup>rd</sup> Tuesday; 6 pm

## OREGON

WILL H. KNOX  
2<sup>nd</sup> Tuesday

## OKLAHOMA

TULSA  
2<sup>nd</sup> Tuesday; 6:30 pm

## PENNSYLVANIA

NORTHEASTERN (NEPA)  
4<sup>th</sup> Thursday; 6 pm  
SOUTHEASTERN (SEPA)  
2<sup>nd</sup> Tuesday; 6:30 pm  
No meeting in June, July or August  
PHILADELPHIA  
3<sup>rd</sup> Thursday; 6 pm  
No meeting in June, July or August

## TEXAS

HIGH PLAINS  
3<sup>rd</sup> Tuesday; 7 pm  
DALLAS/FT. WORTH  
3<sup>rd</sup> Thursday; 7 pm  
HOUSTON  
4<sup>th</sup> Thursday; 6:30 pm  
No meeting in July, November or December

## VIRGINIA

OLD DOMINION  
2<sup>nd</sup> Thursday; 6:30 pm

## WASHINGTON

TRI CITIES  
2<sup>nd</sup> Thursday; 6 pm  
PUGET SOUND  
2<sup>nd</sup> Wednesday; 6 pm

## WISCONSIN

MADISON  
2<sup>nd</sup> Tuesday; 6 pm  
No meeting in June, July or August  
MILWAUKEE  
2<sup>nd</sup> Thursday; 5 pm  
No meeting in June, July or August  
WESTERN WISCONSIN  
Not Scheduled

Continued on page 16

## Conference Countdown

### Not-to-be-missed Highlights!

#### Hands-on Experience

- Five special programs designed to walk attendees through actual procedures/situations using SOPs and equipment
- Valve showcase sessions that provide an opportunity to explore products and get questions answered
- Manufacturer-specific compressor and pump teardown workshops
- Compressor rebuild class

#### Manager's Special

A series of technical sessions for those who oversee operators and technicians

#### RETA Certification Exam

Available on-site. Preregistration and prepayment is required.

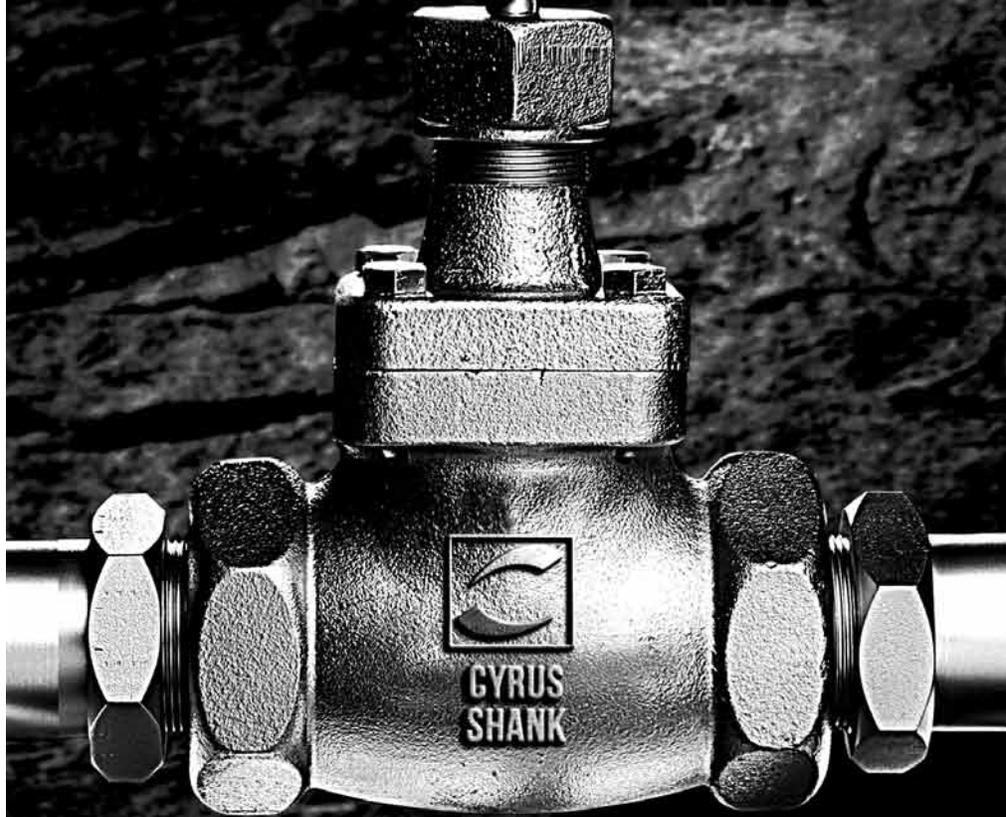
#### Awards Banquet

RETA's annual gathering honoring our outstanding RETA family members. Reservations required.

#### Grand Finale Fiesta!

Celebrate the close of Conference the San Antonio way! Reservations required.

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Flexibility is a key benefit since the entire line of SVL valve inserts, offering five different functions, can be mounted into a single common housing.

## Five

### options

available for one common housing platform (angled or straight), SVL inserts perform the common functions of stop, hand expansion, check, stop/check, or filter.

## One

### specification

for the entire valve platform makes selecting the right valve for your application easier. Approved for temperatures of -76°F to +302°F and pressures up to 754 psi. Suitable for all refrigerants, including CO<sub>2</sub>.



## In Memoriam

It is with great sadness we note the passing of one of our members:

**James Kenneth Fink**

**1920 to 2012**

Member of the Northern Plains Chapter; lubricant consultant and manufacturer's representative with CAMCO Lubricants; survived by his wife, three children and many grandchildren, great grandchildren and great great grandchildren.

He will be missed.



# Member News

RETA member recognized by the Global Cold Chain Alliance

By Alexandra Walsh

Reprinted with permission from Cold Facts, a magazine of the Global Cold Chain Alliance.

Innovation always drives progress in business, and the cold chain is no exception. Recently, the Global Cold Chain Alliance recognized five cold chain innovators in their July-August 2012 edition of COLD FACTS magazine.

Peter Lepschat, a member of Refrigerating Engineers & Technicians Association, was recognized for his efforts in helping Henningsen Cold Storage become a SHARP certified facility. Below is an excerpt from that article.

Peter Lepschat, Manager of Engineering Services for Henningsen Cold Storage, coordinated Henningsen's efforts to become a SHARP (Safety & Health Achievement Recognition Program) certified facility, exempt from programmed Occupational Safety and Health Administration (OSHA) inspections. Chairman and President Mike Henningsen recognizes Lepschat's contribution but adds, "As a company, we do what we feel is right for our associates, shareholders and the communities in which we operate our warehouses.

## EPA'S INCENTIVE FOR SELF POLICING

Continued from page 8

### Cooperation

If you decide to journey down this path, you will be expected to fully cooperate with EPA's requests for information.

How does this relate to the Risk Management Program (RMP) regulations? Under the RMP, you must have management system and employee participation. Through this management system you can implement periodic reviews and/or inspections associated with implementation of the RMP (outside of the required three-year compliance audit), and hence, this self discovery can meet the criteria of Systematic and Voluntary. The key to making this work towards your advantage is prompt disclosure and knowing that

you will be required to correct the deficiency within 60 calendar days from the date of discovery.

It should be noted that this program does exempt you from fines imposed by EPA as they can and most likely will still assess Economic Advantage penalties. This program with respect to the RMP could be used to your advantage. It is suggested that EPA's Audit Policy be vetted by your company's attorney and a policy be prepared to make this work to your advantage. For more information, please go to EPA's website:

<http://www.epa.gov/oecaerth/incentives/auditing/auditpolicy.html>

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# Member News

Continued from page 12

When programs like these come along, it takes a team to make them happen and we are fortunate that all associates are eager to participate.”

SHARP recognizes employees who operate an exemplary safety and health management system, which is why they are exempt from programmed OSHA inspections. The SHARP program helps a company look at all its safety practices and procedures to see where it may be falling short, and allows the company to correct something before it becomes a bigger issue. Receiving SHARP status is not an easy task. In order to become SHARP certified, a facility must request a consultation visit that involves a complete hazard identification survey, correct all hazards identified by the consultant and the facility must implement and maintain a safety and health management system that, at a minimum, addresses OSHA’s 1989 Safety and Health Program Management Guidelines. “Henningsen Cold Storage, under Pete’s coordination, decided to participate in SHARP because it reinforces our commitment to being an excellent and safe business partner and employer of choice in the communities we serve,” says Mike Henningsen. “We feel it is innovative because you don’t see a lot of companies

# CUI

## RETA people aren’t the only ones concerned with CUI on refrigeration systems!



Similar levels of concern about corrosion are shown by major oil companies who operate above the Arctic Circle. Here a leak can cause safety and environmental concerns, and international headlines as well. Both major oil producers and major food and beverage processors are turning to Polyguard® RG-2400® for previously unsolved corrosion problems. The “RG” stands for “ReactiveGel”.

Polyguard’s unique reactive gels, covered by 13 U.S. and international patents, are not just protective coatings. When you spread or spray these gels onto a steel surface, elements in the gel react with elements in the steel surface, and a thin glasslike mineral layer is formed. This mineral layer leaves nothing on the steel to corrode.

To learn more, visit [www.ReactiveGel.com/maj](http://www.ReactiveGel.com/maj)

For CUI applications, we recommend that insulation be weatherproofed with a Polyguard® weather barrier such as Insulrap™, ZeroPerm®, or Alumaguard®. These barriers will greatly reduce the amount of moisture reaching the steel surface.

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Continued on page 15

# Industry News

## Industrial Consultants Training Program Update

*Editor's note: In the May/June issue of the Breeze, Industrial Consultants announced they had received a US Labor Department grant for technical skills training to help American workers fill jobs in high-growth fields. Industrial Consultants will not be implementing that grant program.*

Ever feel like you've come up with a great idea, asked some of the best people to help you, only to find that what you want to do will not come to pass when coming head-to-head with the US government?

The call came out that our veterans were coming back from protecting us and were not able to find work. We gathered a group of friends and business partners to help us train our heroes, but found it was not possible to do what we wanted to do under the terms of the grant.

Industrial Consultants and our partners: Nh3 Jobs, Dual Temp, RETA, NEEA, Hansen, Marking Services, Evapco, Isotherm, Cornell, Frick, Danfoss, Pipefitters Local 597, Calibration Technologies, Evapco, Corco, ASI Doors, Steiner Electrics, Tyson, Dot Foods, Bama Companies & Rocky Mountain Mechanical are still committed to training our veterans for not just a job but a career in the ammonia refrigeration field.

Again, we want to thank all of our business partners who worked so hard to try to help make training for our veterans a reality and we will continue to look for ways to make this come true for those who give of themselves every day.

# THE PEOPLE MACHINE!

*Continued from page 4*

maintenance teammates came to Tommy's aid and a full scale brawl erupted.

The focus of the team, as well as outside responders, was to break up the fight. Time was wasted as ammonia continued to pour from the leak. Ultimately the incident led to the evacuation of several surrounding homes. The offsite responders were forced to proceed without the assistance of the facility personnel.

The facility relied on Jim and Tommy to perform their duties at all times. This was especially important during emergency situations. Their teammates and their neighbors relied on the facility (including Jim and Tommy) to handle situations. Jim and Tommy failed. But are they the only ones at fault? Teams need to train together. This doesn't mean that all members must be at every training session. It only means that members should interact on a somewhat

regular basis. With the right culture, teams will bond quickly.

Supervisors, emergency response personnel, the Incident Commander and even the local bartender knew there were issues between Jim and Tommy. Steps should have been taken to solve these issues or they should have been removed from the team, possibly from the facility entirely. It is very difficult for the facility to have a cohesive team when there is such division between leaders.

Personality conflicts should be resolved as soon as possible. There is no need to babysit your employees, give them some time (a very short time) to work out their differences. If they refuse or the situation escalates, you must eliminate the issues. A facility cannot let personality conflicts destroy the wellbeing of the company. We don't need to be friends with all of our teammates, but we must not be enemies.

Until next time!



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**Member News**

*Continued from page 13*

**The HCR Door results are in: 80% efficient in blocking air infiltration**

HCR pioneered the air door market 37 years ago and now has over 4000 worldwide installations. Until recently there was no authoritative, independent third-party test lab data that documented the efficiency of the unique HCR air door. A three-month evaluation was recently completed, and those results are now available to the marketplace.

Creative Thermal Solutions (CTS) is a leading test lab for products in the HVAC and refrigeration industries. They test products that claim to offer increased energy efficiency, reduced energy consumption, and environmental sustainability. CTS labs recently conducted an extensive thermal performance analysis on HCR air doors. ***The results verified that the HCR Model AC (Single Air Door) is 80% energy efficient\* when stopping air infiltration and energy transfer between rooms with different temperatures.***



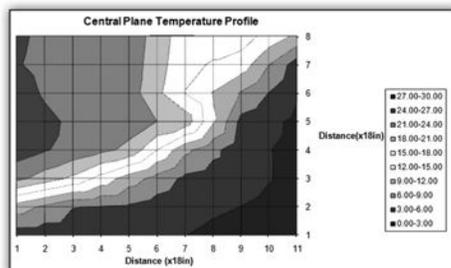
*The HCR calorimetric environmental test chamber at CTS Labs in Urbana, IL*

**HCR Air Doors – Remove All Obstacles**

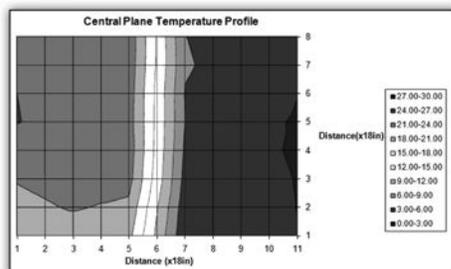
HCR demonstrates the greatest energy efficiency for doorways with over 10% DOT (door-open time), and can represent considerable and even dramatic energy savings in the right application. In addition



to energy savings, HCR significantly reduces moisture from entering the cold room, and prevents icing and condensation on floors, walls, and products. Reduced frosting of the refrigeration cooling coils will result in fewer defrost cycles.



*Temp profile: air door off*



*Temp profile: air door on*

For more details about the CTS test results, visit [www.hcrairdoors.com](http://www.hcrairdoors.com)

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\*For details and the lab performance report visit [www.hcrairdoors.com](http://www.hcrairdoors.com), contact your Jamison or HCR representative, or call 800-326-7700. Request the White Paper on the Evaluation of Horizontal Recirculatory Air Curtain Efficiencies – Cooler to Conditioned Space, D. Rhyner, HCR, Inc.

calling OSHA to visit their operations and look at how safety is managed. For Henningsen, it is a way for OSHA to work with us on their expectations, and in return we are compliant with OSHA rules and regulations. We know we are providing the safest workplace possible for our associates.”

*Alexandra Walsh (awalsh@associationvision.com) is Vice President of Association Vision and a contributor to COLD FACTS. To learn more about COLD FACTS or obtain a copy of the full article, please contact Tori Miller Liu at [tliu@gcca.org](mailto:tliu@gcca.org).*

## Executive Director's Memo

*Continued from page 9*

### Classifieds

#### **Manager of Regulator Compliance and Safety – United States Cold Storage - Voorhees, NJ**

*Ensure federal and state environmental, food, health and safety regulatory compliance for the entire company including all its warehouse facilities.*

*Manage company-wide federal and state environmental, health, food and safety compliance and training programs*

*Post secondary education required*

*8-10 years progressive EHS experience*

*Domestic travel required*

**Send resume to [mlynch@uscold.com](mailto:mlynch@uscold.com)**

*Continued on page 17*

injury. In order to address this threat, RETA and RSES are discussing a jointly produced information bulletin to provide essential ammonia safety information and carbon dioxide safety information. The publication will include a section that calls out the difference in practices when handling refrigerants and oil as well. Manufacturer information will be included where appropriate. The first system of this type was recently put into operation at a Supervalu® supermarket in California.

With the transition to the use of natural refrigerants, it will be commonplace to have small ammonia systems in the suburbs. The amount of refrigerant in these systems is very low – however a little ammonia goes a long way when it comes to being nose detected. Even though the levels of potential exposure would be low, when one facility has an ammonia leak, we all have an ammonia leak (by association). When it comes to publicity and public concern, it is best that ammonia leaks are prevented. We look forward to the development of this essential publication and the good it will bring to the members of RETA and RSES in the future. Watch for opportunities to receive training on these natural refrigerant systems. The folks at Garden City Ammonia Program have expanded their training center to install some of these systems to support this training message. I expect to see other training centers expanding their hands-on facilities as well before long.

RSES will be exhibiting at the Conference in San Antonio this November. RETA will be exhibiting at the RSES conference in South Carolina two weeks after our Conference. I am looking forward to developing a long-lasting relationship that mutually benefits the membership of our associations while advancing the safe use of refrigeration technology.

Immediately following the meetings in Chicago, I went to Washington, DC to deliver a presentation to the Global Cold Chain Alliance, Congress of Committees and to participate in an industry/agency dialogue at the Federal OSHA offices. The RETA Board of Directors met the night before this meeting. We committed to joining the GCCA/OSHA Alliance that formed two years ago. The purpose of the Alliance is to develop a channel for communication between industry and agency in order to improve safety within the industry and to provide feedback regarding the regulations/policies in effect and their affect in practice. Gene Dumas is representing RETA in this effort; he will be joining RETA past-president Jim Marrella and PSM manager Michael Chapman of Tyson Foods, Inc., who have been on the team since its beginning. I look for good things to come through this work.

The visit to the OSHA office was a very rewarding experience. We met with Jim Lay, Director of the PSM Division. We also met with Todd Briggs, our Alliance Liaison to the Agency. We discussed the chasm between the member companies that belong to RETA and GCCA/IIAR and those who do not. The question is: How do we get those companies engaged so they can improve their practices as well as their business? The agency asks the same question. The only way I know is for us to demonstrate to those companies that belonging to RETA does enhance the bottom line – as their personnel become more knowledgeable in the trade and apply that knowledge at the plant.

Watch for information about the activities of the Alliance in future Breeze articles.



# LOCATION OF RELIEF VENT LINE ATMOSPHERIC DISCHARGE OPENING REVISITED

By John (Jack) D. Piho, Piho Engineering

## What About?

### Where does my atmospheric relief vent pipe need to be located?

This has been popping up more and more in audits and citations. Some of the citations and audits coming out of Relief Vent Line Discharge point are as follows:

- The OSHA or EPA inspector is citing me for not having my relief vent pipe opening at least 15 feet above the roof.
- The OSHA citation was for relief discharge not being at least 15 feet above the work surface.
- The judge and OSHA contend that the 15 foot rule is actually a sphere that extends 15 feet around the discharge point. No access is allowed within this sphere.
- My internal Mechanical Integrity audit says my relief vent pipe opening needs to be 15 feet above the roof.
- My internal Mechanical Integrity audit says my relief vent pipe opening needs to be 15 feet above the highest roof.
- How should I locate the relief vent opening for protection of personnel?

Several of the more interesting ones that have been brought to my attention are as follows:

- The citation was for relief discharge not being at least 15 feet above the work surface. The discharge header runs by a condenser which has a platform and handrails at the top for access to the HSD piping and relief valves which OSHA argued was a work surface. A maintenance person did have to use the top for access to a leaking RV at one point so OSHA argued the relief pipe should be extended 15 feet above the top of the condenser platform.
- The judge and OSHA contend that the 15 feet rule above roof is actually a sphere that extends 15 feet around the discharge point. No access is allowed within this sphere.
- OSHA citation was for relief vent discharge not being 15 feet above the highest plant roof surface.
- Will I be required to pipe my relief vent pipe 15 feet above my milk silo to meet the 15 feet rule above roof?

What do I do as a plant owner or designer?

## How to Address

Be prepared with the code information in effect for your jurisdiction. Have a copy of the code and be prepared to justify what you have installed by code language.

Let's look at the code and review what they say. I have excerpted the 2009 International Mechanical Code (IMC), ANSI/ASHRAE Standard 15-2010 Safety Standard for Refrigeration Systems, and ANSI/IIAR 2-2008, Equipment, Design, and Installation of Closed-Circuit Ammonia Mechanical Refrigerating Systems.

The International Mechanical Code 2009 which the majority of us design to simply says not less than 15 feet above the adjoining grade level.

ASHRAE 15 which is referenced in the IMC goes a little further that you must prevent both the discharged refrigerant from being sprayed directly on personnel in the vicinity and foreign material or debris from entering the discharge piping.

California Mechanical Code 2010 says not less than 15 feet above the adjoining grade level and be fitted with an approved diffuser directed to prevent spray of discharged refrigerant on personnel or entry of foreign material or water into the discharge piping.

IIAR 2 takes it a step further that the opening shall be not less than 15 feet [4.8 m] above the adjacent grade or roof level or as specified by the jurisdictional authority and shall be arranged to avoid spraying of refrigerant on persons in the vicinity.

So what do I tell the inspector or MI auditor? Tell them we have designed our system to meet the IMC and ASHRAE 15. What if your company is required to also meet IIAR 2? Then you will need to extend your relief vent piping to 15 feet above roof. My position on the roof is it will be where the relief pipe penetrates, not the high point of your building. Our Canadian

*Continued on page 19*

## Classifieds

*Continued from page 16*

### Refrigeration Tech II - HEB Grocery, Houston, Corpus Christi and Temple, TX

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*Continued on page 18*

# Member News

## Classifieds

Continued from page 17

**Boiler/Refrigeration Operators & Mechanics - J. R. Simplot Co., Othello, WA and Nampa, ID**

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If you're interested in becoming an RAI, contact Scott Henderson at RETA HQ, (831)455-8783.

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# LOCATION OF RELIEF VENT LINE ATMOSPHERIC DISCHARGE OPENING REVISITED

Continued from page 17

friends in B52 have the same wording as ASHRAE 15.

Last. Where or how do I locate the relief vent opening? We have answered that above in that ASHRAE and IIAR call that out. IMC does not. The concern with installing the opening overhead is, if there is release and it is in an aerosol form, it will fall back down to the roof level. Locate the relief vent away from normally travelled walkways so that they cannot be sprayed with refrigerant.

## 2009 International Mechanic Code

### 1105.7 Termination of relief devices.

Pressure relief devices, fusible plugs and purge systems located within the machinery room shall terminate outside of the structure at a location not less than 15 feet (4572 mm) above the adjoining grade level and not less than 20 feet (6096 mm) from any window, ventilation opening or exit.

## ASHRAE STANDARD 15-2010

9.7.8 For systems in which one or more of the following conditions apply, pressure-relief devices and fusible plugs shall discharge to the atmosphere at a location not less than 15 feet (4.57 m) above the adjoining ground level and not less than 20 feet (6.1 m) from any window, ventilation opening, or exit in any building.

- a. Any system containing a Group A3 or B3 refrigerant.
- b. Any system containing more than 6.6 lb (3 kg) of a Group A2, B1, or B2 refrigerant.
- c. Any system containing more than 110 lb (50 kg) of a Group A1 refrigerant.
- d. Any system for which a machinery room is required by the provisions of Section 7.4.

The discharge shall be terminated in a manner that will prevent both the discharged refrigerant from being sprayed directly on personnel in the vicinity and foreign material or debris from entering the discharge piping. Discharge piping connected to the discharge side of a fusible plug or rupture member shall have provisions to prevent plugging the pipe in the event the fusible plug or rupture member functions.

Exception: When R-718 (water) is the only refrigerant, discharge to a floor drain is also acceptable if all of the following three conditions are met:

1. the pressure relief device set pressure does not exceed 15 psig,
2. the floor drain is sized to handle no less than the flow rate from a single broken tube in any refrigerant-containing heat exchanger, and
3. either:
  - a. the AHJ finds it acceptable that the working fluid, corrosion inhibitor, and other additives used in this type of refrigeration system may infrequently be discharged to the sewer system, or
  - b. a catch tank, sized to handle the expected discharge, is installed and equipped with a normally closed drain valve and an overflow line to drain.

## IIAR 2-2008, Equipment, Design, and Installation of Closed-Circuit Ammonia Mechanical Refrigeration Systems

11.3.6.3 The extremity of the pressure relief device(s) discharge piping relieved to atmosphere shall be 20 feet [6.1 m] or more from any window, ventilation intake, or personnel exit, or as specified by the jurisdictional authority. The preferred direction of discharge is vertically upwards.

11.3.6.4 The discharge from pressure relief devices to the atmosphere shall be not less than 15 feet [4.8 m] above the adjacent grade or roof level or as specified by the jurisdictional authority and shall be arranged to avoid spraying of refrigerant on persons in the vicinity.

## California Mechanical Code Chapter 11 Refrigeration 2010

1117.8 Discharge Location. Pressure relief devices shall discharge to the atmosphere unless prohibited by this chapter at a location at least fifteen (15) feet (4,572 mm) above the adjoining grade level and at least (20) feet (6,096 mm) from an opening into a building. The discharge termination shall be fitted with an approved diffuser directed to prevent spray of discharged refrigerant on personnel or entry of foreign material or water into the discharge piping.

# RETA BREEZE

The *RETA Breeze* is the official publication of the Refrigerating Engineers & Technicians Association (RETA). RETA is an international not-for-profit association whose mission is to enhance the professional development of industrial refrigeration operating and technical engineers.

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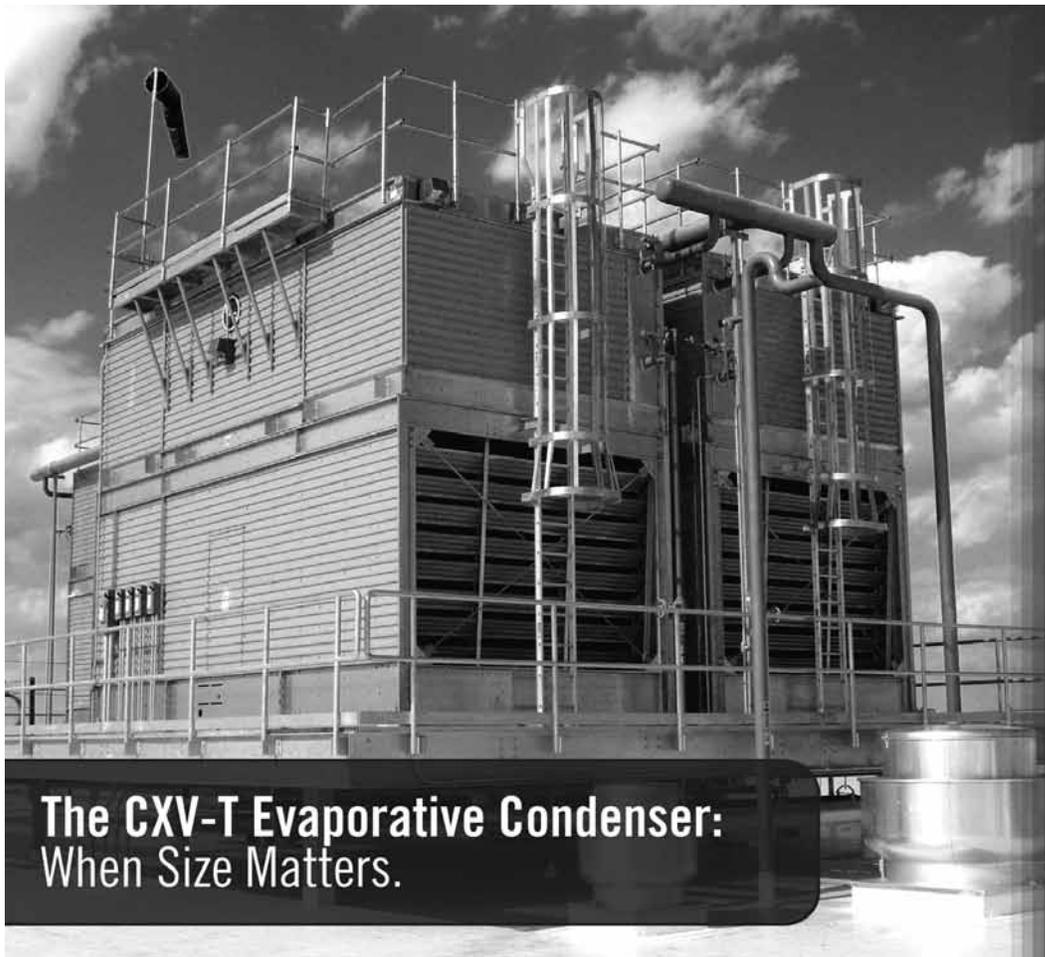
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