Chill

RC&E Solutions for Refrigeration Design, Construction, Installation, Service and Safety.

Articles in this issue:

EPA & OSHA to update RMP & PSM Rules

In August of 2013, President Obama issued "Executive Order #13650 -- Improving Chemical Facility Safety and Security" which directed the EPA and OSHA to modernize the RMP and PSM standards.

Both organizations have long wanted updates / revisions to their rules, and they immediately began providing proposals to work their way through the public rulemaking and review process.

This process is a long one and while it's possible we'll see the updated EPA rules at the end of the year, it's likely the finalized OSHA rules will take several more years.

We'll look at the proposed EPA changes on the next page. *(Continued Page 2)*

RC&E Announces PSM/RMP class for our clients!

The Four-Day class will cover all aspects of OSHA's PSM and the EPA's RMP program requirements that you've been tasked with implementing. We'll show you the WHY and the HOW of PSM/RMP compliance!

Attendees will receive:

- An overview of the PSM/RMP program followed by a point-by-point explanation of the unique requirements of the PSM/RMP laws; and
- Helpful templates and forms to assist you in documenting compliance;
- Real-world worked examples of *practical* compliance, not just theory;
- Examples from actual OSHA & EPA citations, fines and inspections;
- Q/A sessions throughout the class to explore specific facility issues;
- Daily lunches are provided as part of the class to network with implementers from other companies and facilities;
- A certificate documenting Professional Development Hours to maintain CARO/CIRO certifications;

This class is designed in such a way that the true beginner and the seasoned safety / refrigeration veteran can both get what they need out of it.

To guarantee your place in the class, enroll immediately through our webform. If you have questions, email Brian Chapin or call him at (570) 437-0660.

RCE designs massive Heat Pump facility!

Engineering, construction and commissioning is complete on the 2nd largest Heat Pump in the world and the only heat pump system approaching this size for a central refrigeration plant in the United States!

The aquifer supply ground source heat pump for this central ammonia refrigeration system project included drawing water from the aquifer at the 1,500 feet below ground level pumping through a heat exchanger to reject heat into the water system in the summer and extract heat from the ground water aquifer in the winter

Six different ground source piping systems were considered on this project prior to selecting the final system. Using the ground-water as both a heat-sink and heat-source on this scale is something of an experimental process. Our engineering analysis found ground source heat pump applications for this size project were unacceptable due to the amount of piping being placed underground: 72,000-92,000 feet!

Designs that we considered included piping under pavement, piping under ponds, and lakes, spring water on top of the ground for irrigation and cooling purposes. Unfortunately, the unpredictable characteristics of the soil which included conductivity, density, expansiveness and inclusions (such as rocks and boulders) was too great of a risk for the ground source heat pump soil supply.

The aquifer water temperature was estimated to be somewhere between 46 and 60 degrees F. *(Continued Page 4)*

A clean condenser can cut electricity costs!

Did you know that the cleanliness of your Evaporative Condenser can drastically affect your electrical usage?

A dirty condenser can cause your energy usage to skyrocket by up to 20% due to higher head pressure! To keep energy costs low:

- Ensure your water treatment program is operating effectively.
- Check your water conductivity to make sure the dissolved solids concentration is acceptable.
- Schedule regular cleanings of the condenser coils and sump.

Contact us if we can be of any assistance!

EPA & OSHA to update PSM & RMP Rules *(continued from Page 1)*

Some of the proposed EPA changes:

- Third Party Audits – This provision would require a facility that has an RMP reportable accident to use an independent third party to conduct its next scheduled audit.
- Incident Investigations and Root Cause Analysis – The facility would identify the root cause of (i.e., the fundamental reason for) the incident and submit a report.
- Local Coordination – The proposal would increase communication with Local Emergency Planning Committees by requiring annual coordination to clarify response needs, emergency plans, roles, and responsibilities. It would require responding facilities to conduct annual tabletop emergency response exercises with a field exercise every 5 years.

RC&E will keep our customers up-to-date as more information becomes available.

IIAR Standards changes may require a PHA update.

IIAR 2, the design standard for NH3 refrigeration systems was updated in 2015 but was given a 2014 "date' because that's when the update process started. This update is the largest, most comprehensive change to the IIAR 2 standard in history and includes many changes.

For those systems covered by PSM/RMP, the 1910.119(d)(3)(iii) provisions of the PSI element will require an evaluation of this changed RAGAGEP. This evaluation is usually done through the PHA process and can be done during the required 5yr PHA revalidation. Some questions to ask regarding IIAR 2 and other updated bulletins / standards:

- Is your ammonia detection labeled properly? Are the alarm / sirens / interlocks activating at the set levels outlined in the new IIAR 2?
- Is refrigeration machinery outside the machinery room compliant with the new section on "Refrigeration Equipment Located in Areas Other Than Machinery Rooms"?
- Have you provided the newly required Electrical Design documentation?
- Is your pipe labeling still compliant? Is your pipe color code compliant and prominently displayed? (IIAR Bulletin 114-2014)

For assistance with revalidation or your PHA, please email Brian Chapin or call him at (570) 437-0660.

Info: RCE welcomes new PSM Engineer.

Josh Latovich has joined RC&E as our PSM Engineer. He has been involved in the ammonia industry for nearly a decade. He studied as an Aerospace Engineer and graduated from Penn State University in 2008 – working his way through college in the dairy industry. Josh comes with hands-on experience: he started as a machinist and has worked in the refrigeration field as a technician, project manager, PSM/Utilities manager and consultant. Josh has also been an instructor, teaching from coast-to-coast on topics of refrigeration operation and compliance. Throughout his career, he has been a part of all types of ammonia refrigeration systems including: Dairy, Beverage Bottling, Beef, Pork, Chicken, Fertilizer, Bulk Powder and Cold Storage.

On joining RC&E, Josh said: *"I've always heard good things about RC&E, so I'm excited to be a part of this team. Being an instructor and consultant was a good experience for me since I was able to work with and help a lot of people. After being a part of refrigeration in a few plants, I was trying to get back into a position to help a much larger group so this is a great fit. I've had many good opportunities and good teachers, so I'm always happy to return the favor whenever possible."*

RCE designs massive Heat Pump facility! *(continued)*

We had to analyze and estimate the aquifer flow direction so that the injection wells would be placed downstream of the supply wells to avoid cross-contamination.

The four (two supply & two injection) wells were designed to provide approximately 1,300 gallons per minute of water, but an exact amount of flow could not be predicted without first installing the wells. As it turned out, each well produced 975gpm exceeding our needs. We utilized a double effect-heat exchanger due to the unknown corrosion properties of the aquifer and to make sure the refrigerant (ammonia) was not injected into the aquifer.

The system utilizes condensing and evaporating heat exchangers to satisfy the loads of the freezer, cooler, dock, and the following high rise food storage areas SRS, ASRS, SCP, and Dry Storage Dock.

Next Up: An even larger air-source heat pump for a central ammonia refrigeration system. For more information on this project, Contact Bill Ritzer at RC&E.

OSHA increases fines by 78%!

In November 2015, Congress enacted legislation requiring federal agencies to adjust their civil penalties to account for inflation. The Department of Labor is adjusting penalties for its agencies, including the Occupational Safety and Health Administration (OSHA).

OSHA's maximum penalties, which were last adjusted in 1990, will increase by 78%. Going forward, the agency will continue to adjust its penalties for inflation each year based on the Consumer Price Index.

The new penalties will take effect after August 1, 2016. Any citations issued by OSHA after that date will be subject to the new penalties if the related violations occurred after November 2, 2015. Serious violation penalties move to a maximum amount of $12,471 per violation and Willful violation penalties move to a maximum amount of $124,709 per violation!

Don't get caught by surprise - Consider a Compliance Audit or Gap Analysis of your program!

Who is RC&E?

Refrigeration Construction & Engineering has been providing solutions to the beverage & food and cold storage industries for nearly 20 years.

"Our mission is to give our customers the highest level of refrigeration design and construction services that are second to none and perform these services at a fair market value. To be a leader and innovator in the newest technologies giving the customer the most modern and efficient designs allowing them to build their business well into the future of their ever changing markets, ensuring the longevity of our company through customer satisfaction and repeat business. To guarantee quality, professionalism, integrity, and fairness to all."

Please contact us if we can be of any further assistance: 888-357-COOL

This newsletter Published August 2016 by RC&E on RCE-CHILL.com
Physical Address: 1350 Forum Way South, Fort Worth, TX 76140