

A Word From the Founder

By PH Haroz, President

Conversion Technology Inc. (CTI) is celebrating its 30th year of business. For the last 30 years, CTI has been assisting our clients across the United States achieve environmental and safety compliance.



CTI began its existence as a firm that designed systems for the conversion of waste material to energy and other useful by-products. We completed the design and installation of a system that was fueled by cotton seed husks and was able to generate the energy required for the drying of raw cotton. This system converted the cotton waste to energy. This style of energy conversion was the origin of the name "Conversion Technology Inc."

It was during the design stages of these systems that we had to address environmental problems associated with the systems, primarily air pollution control. This all occurred during the mid-1980's when energy prices were falling sharply after the energy crisis in the 1970's (a similar period as we are in now, after the energy crisis of the last couple of years. Another example of how history repeats itself). With the introduction of new environmental regulations, demand for environmental and safety consulting increased dramatically.

PH Haroz, the founder of CTI, decided it was time to switch from a firm that provided design services of systems that converted waste to energy into a firm to assist clients on the conversion of environmental and safety problems into feasible and practical solutions that were easy on the bottom line and compliant with government regulations. This is what CTI has been doing ever since.

CTI has run into many exciting and complex milestones along the way. This is mostly due to the ever changing and evolving regulations put

on the industrial sector. Despite this, CTI has continued to support and help our clients in achieving and maintaining compliance.

One big milestone for CTI was when PH Haroz's son, Adam Haroz, joined the staff after completing his education as a Mechanical Engineer, making this a family company that spans multiple generations. Five years later, Adam is now the manager of CTI's Safety Department. Adam led the firm's rebrand this year with our IT manager, Howard Marlow, who has been with CTI for 20 years.

To celebrate the milestone of 30 great years, we've undergone a face-lift of sorts to modernize our corporate appearance and update our materials to align with the growing client base and service lines offered. While the outward appearance of CTI may have changed, our team is still as eager as ever to continue providing the best service. We are excited to continue delivering the same level of proficiency in environmental, safety, process safety, and combustible dust consulting.

We are honored to have worked with you, our outstanding clients and friends, over the years. We look forward to continue working with you; thank you for the opportunity.



Adam Haroz and PH Haroz

IIAR Publishes New Standard for Ammonia Refrigeration Systems

By Jeff Davis, PE

On December 3, 2015, the International Institute of Ammonia Refrigeration (IIAR) published the new ANSI/IIAR 2-2014: American National Standard for Safe Design of Closed-Circuit Ammonia Refrigeration Systems. This standard replaces the 2008 edition of the standard. This is IIAR's first comprehensive safety standard and was written specifically for adoption by code making bodies. This change sees the new standard written using enforceable language. Informative topics and guidance are now included in appendices. Historically, ANSI/IIAR 2 has served as the recognized and generally acceptable good engineering practices (RAGAGEP) for safe design and compliance for ammonia refrigeration facilities subject to the Occupational Safety and Health Administration's (OSHA) Process Safety Management (PSM) and the Environmental Protection Agency's (EPA) Risk Management Plan (RMP). This won't change with the new standard; however, we could see a more formal adoption of the standard by OSHA and EPA.

Notable changes in the standard include:

- Machinery rooms no longer have to be located on an outside wall with a direct outside means of egress; however, there are now requirements for a 1 hour fire rated separation between machine rooms and the rest of the facility.
- The standard now addresses refrigeration equipment located in areas other than machinery rooms, including outside ammonia system installations, and complete packaged systems. These topics were not addressed in previous editions, requiring affected facilities to look elsewhere for design standards and/or develop their own RAGAGEPs.
- Compressors now require a ¾ inch minimum relief connection.
- Pressure vessels now require a minimum of ¾ inch piping or ½ inch coupling for vessels that are more than 6 inches in diameter and 1 inch piping or ¾ inch coupling for vessels that are 10 ft³ or larger.
- Audible and visual alarms must trigger at 25 ppm ammonia concentration; however, this alarm can be automated to reset once the concentration drops below 25 ppm.
- Emergency ventilation must trigger at 150 ppm (previously 1,000 ppm).
- Automated shutdown must occur at 40,000 ppm or the upper limit of the detectors detection limit, whichever is lower (previously this was not required to be automated).

As with previous versions of the standard, ANSI/IIAR 2-2014 is not retroactive. This means new installations must conform to this standard before local agencies will issue the applicable operating permits and certificates of occupancy. Existing facilities are not expressly required to upgrade their facility to be in compliance with the new regulations, provided new equipment or processes are not being added and the RAGAGEP documentation in their



PSM/RMP program states the version of ANSI/IIAR 2 that the system was designed under. Under the PSM program, updates to RAGAGEPs for existing facilities are addressed in the Process Hazard Analysis (PHA) and the Management of Change (MOC) portions of the program.

As an example for existing facilities:

Let us assume the compressors utilize ½ inch piping for the pressure relief connection and is in compliance with the version of the IIAR 2 standard it was originally designed under. The facility is not required to change the relief piping under the RAGAGEP; however, this must be addressed in the PHA when it is revalidated. If the PHA shows the hazards are sufficiently controlled with the existing ½ inch piping, then it does not need to be changed per the PHA. Now let's assume the facility is planning to install a new compressor. This would trigger MOC procedures and the new compressor would have to be installed and designed according to ANSI/IIAR 2-2014, including using a minimum of ¾ inch piping for connection to the relief device.

Existing facilities must also consider any internal or corporate standards that may be more stringent than the OSHA and EPA programs. This could potentially require addressing these new and updated requirements that are not retroactive under the standard, but would be enforced by OSHA and EPA if the internal standards are part of their PSM and RMP programs.

CTI is a member of IIAR and has experience with OSHA's PSM and EPA's RMP programs, including program development, compliance audits, PHA revalidations, and training.

News You Can Use

- Missed either of our free webinars on Combustible Dust or Boiler MACT? Stream on-demand to find out that you missed. Check out the resources page on our website for more details.
- OSHA has extended the compliance deadline for those affected facilities previously considered exempted retail facilities under the PSM regulation.
- The EPA issued proposed updates to the hazardous waste regulations 40 CFR 260-263, 268, 270, AND 279

Look for more info for these stories on our news blog.

What to Expect From OSHA in 2016

By Adam Haroz, EIT

Now that 2015 has come to a close and 2016 is upon us, we will explore the ever evolving world of occupational health and safety and go through some of the upcoming regulation changes and emphasis priorities from OSHA in 2016.

2016 will bring some updated regulations, updated emphasis programs, and new methods for inspections and citations that are designed to allow for high value inspections of complex facilities and processes.

OSHA to Significantly Increase Fines

For the first time in over 25 years, OSHA is planning to increase the maximum penalty amounts for cited violations it poses on employers by as much as 80%. This is not a trivial increase. In dollars and cents, the increase will change a maximum penalty for serious or other-than-serious citation from \$7,000 to around \$12,000 per cited infraction, and a willful or repeat citation from \$70,000 to as high as \$127,000 per cited infraction. With this increase in max penalties, there will be increased financial risk and liability for each safety violation.

This fine increase is being labeled as a "one-time catch up" provision to reflect economic changes due to inflation since 1990, which was the last time the penalty amounts were increased. Even though this fine increase is being called a "one-time catch up," it can be expected that fines increase annually with inflation.

OSHA's New Inspection Protocol

According to OSHA Chief Dr. David Michaels, the former method of inspections penalized those Compliance Officers and Managers that visited larger and more complex facilities. Larger and more complex facilities (i.e. facilities being inspected for Process Safety Management) can take much more time and energy than smaller facilities, while the number of facilities each officer was required to visit stayed constant.

OSHA has announced a new method of enacting "Enforcement Units" that assigns greater value to complex inspections that may require more time and resources. The key to this new protocol is that the more complex inspections, like a chemical processing plant, will allocate more enforcement units to an inspector than a simpler review (i.e. reviewing the electrical wiring systems at a scrap yard).

It is expected that OSHA will increase its inspections at PSM facilities and chemical plants as well as conduct more inspections involving chemical handling in general. No matter what sector of industry your facility operates in, if an inspector does show up at your door, there is a good chance that the inspector will spend more time assessing your facility than they previously would have.

Hazard Communication Compliance

This should come to no surprise that compliance with the Hazard Communication standard, primarily the Globally Harmonized System (GHS), will be an emphasis for OSHA in 2016. The first deadline for conducting training on the new standard for all employees was December 1, 2013. The last deadline for complying with the GHS standard is coming up this June 1, 2016. By then, all employers must have met the training requirements and must have updated Hazard Communication Programs according to the updated standard. More information on the GHS compliance deadlines can be found on the CTI website (conversion-technology.com).

Since the last deadline for compliance with this standard is coming up, and fines are expected to increase (as mentioned above), it makes sense for employers to expect a focus on compliance with this standard. Based on data from past inspections and citations, it is very likely that OSHA will focus primarily on inadequacies in written programs, proper maintenance of Safety Data Sheets (SDS), proper labeling, and employee training on both the handling of hazardous chemicals as well as on the program itself.

Please make sure that your facility is following the guidelines set by the Hazard Communication regulations and that all of your employees, both permanent and temporary, are properly trained and comprehend OSHA's requirements and changes with this standards.

Electronic Injury Reporting and Recordkeeping

OSHA is proposing an update to its current electronic recordkeeping rule. The new electronic recordkeeping rule would add requirements for electronic submission of injury and illness reports, and some businesses could be required to submit reports as frequently as once per quarter. Stay tuned for updates while the proposed rule moves along the approval pipeline, as this can drastically effect your reporting requirements.

Be On the Lookout

The OSHA updates discussed above are only a small sample of the 2016 agenda for OSHA. We will keep you up-to-date on the priorities of OSHA. Based on what we have discussed in this article, now is a good time to be proactive about the safety culture at your facility, including written programs, employee training, and overall safety awareness and hazard recognition.

Feel free to contact CTI if you have any questions regarding the updated OSHA standards or if you would like to discuss how to get your facility into compliance with OSHA standards and beyond.





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ENVIRONMENTAL

- ♦ Air Quality Permitting
- ♦ Boiler MACT/Area Source
- ♦ Environmental Compliance Audit
- ♦ Environmental Management Systems
- ♦ ISO 14001 Consulting
- ♦ Phase I & II Env. Site Assessment
- ♦ RCRA Compliance
- ♦ SARA Title III - Tier II/Form R
- ♦ Spill Prevention (SPCC)
- ♦ Stormwater Permitting
- ♦ Wastewater Permitting

PROCESS SAFETY

- ♦ Emergency Preparedness & Planning
- ♦ Employee Training
- ♦ Management of Change
- ♦ Process Hazard Analysis
- ♦ PSM and RMP Audit
- ♦ PSM Program Development
- ♦ RMP Development & Submission

COMBUSTIBLE DUST

- ♦ Combustible Dust Hazard Analysis
- ♦ Dust Sampling and Analysis
- ♦ Explosion Protection Design
- ♦ Hazardous Location Determination
- ♦ NFPA & OSHA Compliance Review

OCCUPATIONAL HEALTH & SAFETY

- ♦ Confined Space Entry Procedures
- ♦ Job Hazard Analysis (JHA)
- ♦ Machine Guarding Risk Analysis
- ♦ Machine Specific Lockout/Tagout Procedures
- ♦ Noise Exposure Monitoring
- ♦ Occupational Air Exposure Monitoring
- ♦ OSHAS 18001 Consulting
- ♦ OSHA Compliance Audits and Mock OSHA Inspection
- ♦ OSHA Required Safety Training
- ♦ Safety Policies, Procedures and Programs