RETA 2011 National Conference Technical Topics at a Glance

Lecture Sessions

Technical papers will be presented

Ammonia Safety

Calculating Refrigeration Loads and Inventory

Refrigeration 101

Who's On First

Ammonia Detection Methods

Choosing the Right Type of Starter

Contractor Qualification Measures

Energy Saving Opportunities with Refrigeration Evaporators

Insulation Materials

Insulation Techniques to Minimize (or avoid) Corrosion

Low- and No-Cost Ways to Save Energy

Mechanical Integrity

Mollier Diagrams

Properties of Ammonia

Safety Considerations When Using Plate & Frame and S & T Heat Exchangers in Ammonia Service

Screw Compressor Operations

Setting Liquid Feed Rates

Stainless Steel Piping Application

The Process Refrigeration System Design

Thermosyphon Piping

Understanding Your Power Bill

Vessel Revalidation

Water Treatment Best Practices

Hands-On Workshops

Bobtail Truck Ammonia Delivery

Control Valves

Non-seal Pump Teardown

Relief Valve & Piping Basics

The Ins and Outs of Purgers

Troubleshooting Motor Starters

PSM/RMP Compliance

PSM Compliance - Hot Work Permits Too Hot to Handle?

— Marjorie Buyson, SCS Tracer Environmental

Adding piping or other equipment to your system? If so, do you have a hot work procedure? Facilities are required to develop and implement a written procedure for issuing hot work permits per:

- OSHA 29 CFR 1910.119(k), Process Safety Management (PSM); and
- EPA 40 CFR Part 68.85, Risk Management Program.

The purpose of developing a procedure is to ensure that employees, contractors and property are protected against fire, explosion and other dangers resulting from hot work operations. The procedure should have the following major steps based on the IIAR PSM Guidelines for Ammonia Refrigeration document:

Initiating a Hot Work Permit

The first step is to determine the need for a permit. A permit is required for any hot work operation. According to the IIAR PSM Guidelines for Ammonia Refrigeration, a hot work operation is any operation that could cause a source of ignition (flame, tool spark, static electric charge or electric spark that would cause a fire or explosion). Some examples include:

- Welding, burning, brazing, soldering, or any use of an open flame.
- Metal removing i.e., drilling, chipping, abrasive cutting, milling, grinding, etc.
- Operating non-explosion-proof equipment and tools in an explosion-proof area.
- Operating any cleaning device utilizing a metal or any other material contract that can produce sparks.
- Working on live electrical circuits of any voltage in hazardous locations.

If unsure if a permit is required, it is recommended to issue one. Permits should be requested either verbally or in writing.

Issuing a Hot Work Permit

The qualified person conducting hot work should inspect the area where the operation will take place. After the inspection, the qualified person begins completing the permit. The permit should indicate the date and time when work will be performed; location, description of the hot work; name of the cutter/welder; and if required, the name of the fire watch. A fire watch is required in locations where a minor fire might develop, where there are wall or floor openings within 35 feet or where there is a presence of combustibles within 35 feet of the hot work.

The next step is to review the hot work precautions that have been taken to prevent a fire or explosion. Minimum precautions include:

- Sprinkler system in service.
- Cutting and welding equipment in good repair.

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RETA 2011 EXHIBITORS

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H.A. Phillips & Co.

Hansen Technologies Corporation

HCR Inc. - a Division of Jamison Door Company

Hench Control, Inc.

Henry Technologies, Inc. Chil-Con

Hermetic Pumps Inc.

HOERBIGER Compression Technology

Honeywell Analytics

Howden Compressors, Inc.

Industrial Consultants

Industrial Refrigeration Technical College

Innovative Refrigeration Systems

Insul-Therm International LLC

Integrated Circuit Systems, Inc.

International Institute of Ammonia Refrigeration (IIAR)

Isotherm, Inc.

JAX Refrigeration

K-Flex USA

KeepRite Refrigeration

Krack Corporation

LAKOS Separators and Filtration Systems

Lamb Group LLC

Lanier Technical College

Logic Technologies, Inc.

Logix Controls

Ludeca, Inc.

M&M Refrigeration

Marking Services Inc.

MIRO Industries, Inc.

Morris & Associates, Inc.

MTH Pumps

Multi-Wing America, Inc.

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HOT WORK PERMITS TOO HOT TO HANDLE?

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- Floors swept clean of combustibles.
- Combustible floors wet down, covered with damp sand, metal or other shields.
- No combustibles or flammable liquids within 35 feet of work area.
- Combustible and flammable liquids protected with covers, guards or metal shields.
- All wall and floor openings covered.
- Covers suspended beneath work to collect sparks.
- Equipment to be worked on cleaned of all combustibles.
- Lockout/tagout and line opening practices followed.
- Containers purged of flammable liquid and vapors.

After assuring that the precautions have been met, the cutter/welder, fire watch and yourself should sign the permit, indicating that you have all reviewed the precautions and understand your responsibilities. Maintain a signed copy of the permit.

Performing Hot Work

The cutter/welder is responsible for conducting the hot work within the parameters and time limit set by the permit. Hot work may continue as long as conditions remain safe and no new hazards are introduced.

In addition to the above, take the following precautions during hot work operations:

- Perform hot work in the maintenance shop except when the job cannot be moved to the shop.
- Check the atmosphere for combustible gases or vapors using combustible gas detection equipment.
- Ensure a fire extinguisher, small hose and/or bucket of sand are readily available.
- Do not perform hot work until a fire watch has been assigned.
- Secure gas cutting and welding cylinders, close supply valves and replace protective caps on cylinders not in use.
- Carefully and securely connect the ground clamp as close to the work as possible when using electrical arc welding equipment.
- Use portable stands to elevate welding hose or cable off floor areas.
- Maintain adequate ventilation.
- Remove electrodes from holders, carefully locate them so that accidental contact cannot occur and disconnect the welding machine from the power source if hot work is to be suspended for any substantial period (e.g., lunch or overnight).

During hot work, the fire watch should constantly watch for sparks, ignition sources or other fire hazards. This individual should be trained in the use of a fire extinguisher, small hose and/or bucket of sand. It is their responsibility to try to extinguish fires within the capacity of the equipment available, or sound the fire alarm.

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Industry News

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valve or replacing a section of insulation.

The new simple calculators were developed for MIDG by the Mechanical Insulation Education and Awareness Program, part of efforts by the Department of Energy's (DOE) Industrial Technologies Program's Save Energy Now initiative to improve the energy efficiency of the U.S. industrial and commercial sectors.

Polyguard Products appoints new Vice President of Engineering

Polyguard recently appointed **Frank Bartolic** to Vice President of Engineering. His focus will be on improving Polyguard's product quality and productivity.

Bartolic holds an engineering degree from Youngstown State University and has more than 30 years of manufacturing experience in fiberglass manufacturing and building materials manufacturing, as well as extensive experience in strategic manufacturing sourcing. He also has certifications from the American Society of Quality, Six Sigma and the Institute for Industrial Engineers.

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HOT WORK PERMITS TOO HOT TO HANDLE?

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As the supervisor/manager, inspect the area during the hot work to ensure the conditions of the permit are satisfied.

Completing the Hot Work Permit Procedure

When hot work is completed, the cutter/welder and fire watch should remain for at least another 30 minutes to inspect the work area and adjacent areas for possible smoldering fires. The cutter/welder can then sign the permit, indicate the completion time and return the permit to you.

Be sure to return to the area where the hot work operation took place to inspect for possible smoldering fires. After this final inspection, sign the permit, indicate the time and retain in the maintenance files.

Note that other PSM/RMP elements may require implementation if conducting hot work. For example, if making system modifications, implement your Management of Change and Pre-Startup Safety Review programs. If using a contractor, implement your Contractor Safety program. Obtain their welding certifications. Train them on your hot work procedure and maintain training documentation. If the contractor is using his own procedure, review to ensure it meets the requirements of your own procedure.

If your hot work procedure is implemented properly, hot work may not be too hot to handle after all!

References

29 CFR 1910.119 Process Safety Management of Highly Hazardous Chemicals; Explosives and Blasting Agents. IIAR Process Safety Management (PSM) Guidelines for Ammonia Refrigeration

PRESIDENT'S MESSAGE — THEN AND NOW

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opportunities available. There are certainly a number of training schools. But RETA also offers a lot of opportunities to stay in tune with the movement of the industry. The *Breeze* is a good source; the monthly Chapter meetings are another; and the annual Conference offers a lot. For me, the Chapter meetings are among the richest environment for learning on an ongoing basis. It is a group of local folks who come with a lot of knowledge and experience. It is an excellent opportunity for operators to network, to solve problems and discuss issues with which they all must deal. Manufacturers and service providers are always anxious to present and provide information at Chapter meetings.

I'm encouraged that our Chapter network is continuing to grow as likeminded members recognize the value of an organized Chapter. It is my hope that in the coming months, Chapters will begin sharing their meetings online; not only through login and look at, but through interactive web-based meetings. If you will, we may be moving into the era of the virtual Chapter for those who are not in organized areas. It's time that we take advantage of the evolving technology to expand the reach of RETA and provide the Chapter experience to even those in at-large areas.

Stay tuned, we may be coming to you soon!