



News & Views

CHEMICAL HYGIENE PLANS

Federal OSHA established the concept of a "Chemical Hygiene Plan" (CHP) when the Agency issued the "Laboratory Standard" (29 CFR 1910.1450). OSHA believed that the CHP would form the central focus to which laboratory workers would turn to determine safe work practices for their specific laboratory. As has been observed before, OSHA regulations often do not perform as the Agency expected [*Chemical Health & Safety*, 1995, 2(6)]. At worst, CHPs sit untouched after they are written. This commentator recently reviewed the published CHPs for several campuses of a major university system. The results were disheartening. A specific question was being examined, namely "What guidelines are contained in a CHP for purchasing a concentrated, reactive chemical such as 70% Nitric acid?"

First, it was difficult to find any specific recommendations. General statements were found. Based on this review, it was possible to purchase 20 L carboys of 70% Nitric acid without being out of compliance with these CHPs.

Because of this disheartening result, another question was asked. This was "What guidelines are contained in a CHP for storage and handling of a concentrated, reactive chemical such as 70% Nitric acid?" Here some statements were found that were applicable to chemicals in general. These included statements such as:

Store all chemicals in secondary containment.

Move chemicals in a manner such that all contents will be contained in the event of breakage.

Store chemicals by compatibility.

It is fair to ask what might be expected. At a minimum, concentrated, reactive chemicals pose a significant risk for handling, transport and storage. Thus, the CHPs should provide guidance to minimize and control these risks. For example, a guidance to purchase the smallest container possible is important. All of these chemicals can be purchased in plastic coated bottles which are a proven spill control and prevention tool. At a minimum, a CHP should insist that these chemicals be purchased in plastic-coated bottles.

One CHP recognized that moving chemicals is a high-risk activity. For this particular class of

chemicals, the CHP should require that a detailed chemical movement procedure be developed, not necessarily written, and followed. For example, a prohibition against moving these chemicals on occupied elevators, with methods to insure that the elevators do not stop on intervening floors and load passengers should be part of the movement plan. The CHP should require that movement of these chemicals not occur if the plan cannot be followed.

Based on this review, it is clear that the CHPs do not provide adequate guidance for handling this class of chemicals.

The CHPs did a good job on emergency response. However, review of many chemical incidents, both incidental and emergencies, has indicated that even experienced chemists do not always respond correctly in the event of a spill. This suggests that the CHPs are not reviewed.

A correct response to ANY CHEMICAL SPILL is to first insure that no one is in danger. Get people back a safe distance. If in doubt, make certain that at least one closed door is between the spill and people. Call for help. Activate your facility emergency plan.

What can be done? At a minimum, EH&S staffs must work to make their CHPs useful documents. Identify high-risk activity and use the CHP as the focus for risk reduction. Some EH&S staffs are unwilling to place specific requirements on laboratories. The reasons are manifold. However, a CHP must be a useful guide. As such, when specific risk-reduction methods are proven effective, the EH&S staff though the CHP must implement those risk reductions. Failure to do so seems to be an abrogation of the duty of the EH&S staff.

RESPONSIBLE CARE

"Responsible Care" is the name applied to a body of specific guidances produced by the chemical production industry to insure that its products are handled safely and properly from production through transportation, use and disposal. The concept is simple: The chemical producer has a vested interest in the safety of its products at all points in the life cycle. All of the details of Responsible Care can be found on the American Chemistry Council website: <http://www.americanchemistry.com>. The program has been effective, but has lost some of its relevance and drive in recent years.



Neal Langerman compiles this column, which features items of interest to laboratory, pilot plant, and production area chemical safety. He is the owner of *Advanced Chemical Safety*, a consulting firm specializing in the prevention of injury, illness, and environmental insult. Contributions are encouraged and can be sent to his attention at neal@chemical-safety.com or (858) 874-8239 (fax).

ACC has responded by developing a "new" Responsible Care program.

The new program will begin to be implemented in January 2003. Those in the chemical use industry will see new requirements on customer identification. There will be increased steps taken by all parties in the supply chain for chemicals. It is the intent of the chemical industry to improve the perception of the industry by the public through improving its own chemical management.

A new element of Responsible Care is "Security." The chemical industry is taking aggressive steps to prevent chemicals from getting into the hands of persons or groups intending to use them for harm. The chemical industry is taking steps to protect its own infrastructure from outside interference. These steps, which of necessity must have some level of security on them, are designed to reduce the threat to people and the environment from criminal acts.

One of the key elements of the "new" program is enforceable performance metrics. ACC member companies are expected to use independent third party auditors to validate performance. This requirement is modeled on the successful audit program under the International Standards Organization (ISO) quality program (ISO 9000). It is expected that the auditors who have become skilled with ISO 9000, and who are learning to audit the developing environmental standard (ISO 14000) will be the auditors who take responsibility for these new programs. Based on past performance, this will be a very positive step. The Responsible Care program is for the members of the ACC. The elements of the program, however, are a powerful tool for any facility to develop a proactive safety, health and environmental protection program with a strong emphasis on product life-cycle management. These elements provide

a set of exemplary goals for every facility.

OSHA Certifies Newest "SHARP" Companies

OSHA certified 12 companies last month as Safety and Health Achievement Recognition Program (SHARP) sites. Developed for smaller, high-hazard worksites, SHARP recognizes employers who have demonstrated exemplary achievements in workplace safety and health by receiving a safety and health consultation visit, correcting all workplace safety and health hazards, and adopting and implementing effective safety and health management systems. The newest sites are: Aurora Cooperative, Aurora, NE; Cape Resources Co., an Energy Answers Company, Marston Mills, MA; eco/Pittsfield, Inc., an Energy Answers Company, Pittsfield, MA; eco/Springfield, an Energy Answers Company, Agawam, MA; Fred Netterville Lumber Company, Woodville, MS; Hutchinson Company, Inc., Whitinsville, MA; MOCAP, Incorporated, Farmington, MO; Precision Foods, Inc., Tupelo, MS; The Schular Company, Sidney, NE; U.S. Magnegas, Inc., Largo, FL; Vita-Foam, Inc., Tupelo, MS; and V.H. Blackinton & Co., Inc., Attleboro Falls, MA. OSHA also renewed the SHARP status of 12 other certified participants in August. (Note: These numbers reflect August data reported as of the date of this publication.)

These recognition programs are an important incentive to improvement. The debate regarding the value of "safety awards" has never been settled. Recognition such as the OSHA SHARP program or the VPP program achieve the objective of improved workplace safety, without the problem of rewarding under reporting. Visit the OSHA website (<http://www.osha.gov>) and see if your company can begin to work for this type of recognition.

SUPER CRITICAL CARBON DIOXIDE

Dry cleaning of clothes traditionally uses Perchloroethylene. Technology improvements in the past decade have reduced employee exposures and releases to the environment. However, the technology still causes concern to everyone interested in reducing overall exposures to all chemicals considered toxic. The commercial introduction by Linde AG, in cooperation with ICI and Raytheon of a "liquid" CO₂ dry cleaning technology offers a cost-effective method to eliminate Perchloroethylene use, while still dry cleaning fabrics at a reasonable cost.

DryWash is a technology for dry cleaning in liquid CO₂. The technology originates from the American company Raytheon and is now being introduced to the dry cleaning market worldwide. Linde Gas is one of the licensees to the technology.

CO₂ cleaning provides considerably faster cleaning than traditional dry cleaning and eliminates Perchloroethylene. Linde Gas' new Washpoint solution is liquid CO₂ with a new developed cleaning booster to enhance the cleaning performance, developed in cooperation with Uniqema, a subsidiary of ICI. Washpoint CO₂-cleaning rests on three pillars, the Washpoint Detergent, the Washpoint System and the Washpoint CO₂ Supply. Note: the illustration of the technology was taken from the Washpoint website: <http://www.washpoint.com>. If this technology proves acceptable, a fundamental chemical-use industry could improve its performance significantly. If this technology meets its claims, then the U.S. government, via the EPA should develop a financial support and incentive program to help the local dry cleaner replace their current equipment. Such a program would be a major government leadership contribution to improving our environment.