

Purpose

This bulletin is intended to provide representatives of Halogen Valve Systems with summary information about the Risk Management Planning (RMP) program established by the U.S. Environmental Protection Agency. Facility management should obtain the detailed guidelines from the EPA before deciding on a course of action or preparing a plan.

The EPA's Chemical Emergency Preparedness and Prevention Office (CEPPO) has prepared a variety of documents to assist the regulated community in complying with RMP implementation. A listing of chemicals and threshold quantities is available at www.epa.gov/swercepp/rules/listrule.html. Rules may be downloaded at www.epa.gov/swercepp/, select "RMP". Printed documents are available at 1 800-490-9198.

Administration

The EPA has issued regulations that call for the publishing of Risk Management Plans for facilities that store or handle toxic chemicals such as chlorine, sulfur dioxide and ammonia. The threshold quantity for chlorine is 2,500 lb. Thus, any facility that employs more than one ton container is required to submit an RMP to the EPA. EPA also requires that the RMP be made available to the public via the Internet. The deadline for filing is June 21, 1999. The EPA has stated that there will be no extensions and fines may be applied for noncompliance.

Some states, such as California and New Jersey, have more stringent reporting requirements and lower threshold levels. These states have had their own Risk Management Planning requirements for several years. Some California fire chiefs have demanded that RMPs be submitted for sites with as little as one 150lb. cylinder. Fire officials have also demanded that scrubbers be installed on these small facilities. This despite the fact engineers at the International Fire Code Institute have stated that up four cylinders in one storage area may be exempt from Fire Code controls.

Risk Assessment

Planning consists of three primary elements: Risk Assessment, Risk Management or mitigation and Emergency Response. The plan is to include the modeling or forecasting of release scenarios, and the proposed devices, systems or procedures to be employed to mitigate the impact of these scenarios on the surroundings and the community.

Worst Case Scenario

A specific requirement of the risk assessment is evaluation of the "worst case scenario". Worst case scenario is defined as the release and vaporization of the entire contents of a container within ten minutes. For almost any facility, this scenario will result in the forecast of a severe impact on the surroundings.

Alternate Scenario

The EPA guidelines allow for the modeling of "Alternate Scenarios". These may be more realistic than the "worst case scenario" and may even be an actual event that has occurred at the facility in question. (A five-year accident history is a required part of the RMP.) The alternate scenario should consist of a scenario that is more likely than the "worst case". This might be an incident such as a broken pipe or pigtail, a venting regulator or valve. Care should be taken to insure that the alternate release scenario is at least as large, or severe, as the worst incident in the five-year history. Otherwise the incident is not credible to either the EPA or the community.

Risk Management

The guidelines require that the RMP describe the means used to reduce the risk to the surrounding community and environment. Selection of the methods, equipment procedures and techniques, is entirely up to the facility management. Do not ask the EPA, Fire Official or any other regulator what process equipment or technique might ultimately be "approved". There are no pre-approved strategies or techniques in the legislation or rules promulgated by the EPA. Generally, the facility managers and technicians are far more knowledgeable and experienced with safety devices and systems than are the regulators. The RMP should reflect that expertise in the process safety devices, personnel procedures and emergency response plan.



Risk Management Planning (RMP)

Technical Bulletin 350.00

Mitigating or Control Devices:

Virtually all releases that have actually occurred in the chlorine industry, would be stopped by simply shutting off the ton or cylinder valve. The five-year accident history (if any events have occurred), or the alternate scenario may reflect this type of an event. Automatic valve operators such as those manufactured by Halogen Valve Systems may be used, in conjunction with gas detectors, to promptly terminate this type of event before it can have a measurable impact on the surroundings.

In some cases, the facility management may determine that the liability and risk associated with a release is so great that a tertiary safety system, such as an absorption scrubber, may be warranted. Scrubbers offer the capability to absorb a leak in progress to minimize the escape of chlorine vapor to the surroundings. Scrubbers can do nothing to stop an event underway. If automatic shut-off systems are not available, shut off must await the arrival of properly equipped technicians. Absorption scrubbers are expensive, require a thorough maintenance program to remain reliable and introduce another hazardous material (caustic soda) to the facility.

Nevertheless, some managers have elected to install both a scrubber and emergency shutoff systems for several reasons: 1) The obvious redundancy. 2) Notification of local agencies may not be required if the release is limited to a few grams by a fast

acting shutoff system (as opposed to a release underway that must be reported and responded to by local agencies). 3) Emergency Responders may be able to terminate a leak, without entering the zone of toxic gas by means of a remote key or switch (this may be particularly important if the responders are other than plant personnel versed in the containment of releases). 4) For remote locations, a reported release may be shut off via SCADA systems or other remote means, thus minimizing the task of absorption devices and allowing time for responders to reach the site. 5) In some cases, scrubber size and thus the total quantity of caustic soda on hand may be reduced.

Other Agencies

Other agencies may become involved in the RMP review process. Certainly one can expect the local fire department to review and comment on the plan. Since some Fire Codes have specific requirements for the storage of toxic materials, such as exhausted enclosures and treatment systems (i.e. scrubbers), it might be expected that these agencies will demand that a facility revise the RMP to comply with their latest interpretation of the Fire Code.

Revised building and fire codes are not applicable retroactively to facilities that met code at the time of construction. However, as a practical matter it may be difficult to respond to this argument, particularly in a public forum, unless some kind of secondary or tertiary safety device is offered as part of the RMP. Emergency shut-

off systems such as those offered by Halogen Valve Systems, Inc. provide a practical and economic secondary safety system.

Summary

Selection of control devices, containment schemes and Emergency Response Plans are the election of the facility management. The RMP should reflect a reasoned, well-planned, method of dealing with the events that might occur. In most cases, RMP requirements can be fulfilled by simply restating existing normal and emergency, operating procedures. There is no EPA requirement for scrubbers, emergency shut off devices or any other specific piece of equipment. However, since the Risk Management Plan is to be published, management must be prepared to explain the plan in a public forum.

Endnotes

For assistance in interpreting the Western Fire Code contact Mr. Sergio Barrueto, P.E. at the International Fire Code Institute: (562) 699-0124.

For assistance with RMP Compliance issues contact Mr. James Belke of the EPA at (202) 260-7314.