



Training Emergency Responders Should Be Facility Owner Priority

By **Walt Kelly**

A small piece of crud has been gently bouncing along the high pressure gas main. In the middle of the night, it happens to land on the seat of a regulator valve just as gas demand is dropping. The valve cannot close off the gas flow, so pressure starts to build. When it reaches the set point of the relief valve, the valve trips and gas blows into the air with a very loud shriek. The noise wakens a resident

who calls 911, then the gas company. Both mobilize crews. The fire department gets there in less than 10 minutes, but the gas company responder is still en route. The fire department tries to call the gas company for instructions, but other people calling in have tied up the one emergency line.

One of the responders remembers hearing something about the need for shutting off blowing gas. The crew looks at the regulator site and sees that the gas is blowing from a vent above the

pressure relief valve. Just below the relief valve is a shut-off locked open with a padlock. That padlock is no match for a good set of bolt cutters. Within a minute they have closed the shut-off and stopped the "leaking" gas.

Expecting praise from the arriving gas man, they instead learned what they have done. The gas pressure in the neighborhood was normally about 40 psi. The relief opened when the pressure hit about 60 psi. But when they closed the shut-off valve, the pressure rose to the pressure in the main – 175 psi. Considering that the regulator valve cases at each home were rated at 125 psi and distribution lines were tested at only 100 psi, they were lucky the manufacturers had built in a margin of safety!

In the past few years there has been a push to teach people to call 911 to report leaks of hazardous materials and other dangers due to excavation damage, but who has been training emergency responders how to respond?

Of the major utility types, only pipeline companies are covered by federal regulations

dealing with emergency responders. These require pipelines to establish and maintain liaisons with fire, police and other appropriate public officials so all can learn what is expected of each other, how to communicate with each other, the response capabilities each has, what kind of emergencies might be encountered, how to recognize them and what to do when they occur. These regulations are written in "Performance Language" that tells what is to be accomplished, but does not say how it is to be done. The result is a wide variety of approaches among pipelines and an even wider range among other utilities.

The scenario described above happened several times in one year in several areas of Minnesota some years ago. It likely has happened with slight variations in other states. It offers several good lessons.

Excavators will be glad to have it pointed out that not all gas emergencies are caused by dig-ins! Sometimes crud happens and it is nobody's fault.

It is very realistic that emergency response will be faster than utility response especially at night and away from the utility's office. Several experts offer suggestions.

Charles Kenow, Administrator of the Minnesota Office of Pipeline Safety (MnOPS), says that an important point in this emergency response process is the communication link between the responding utility and the Incident Commander on the site of a break. The Incident Commander needs to know as soon as possible how long it will be before a repair crew can arrive on the site to shut the gas off so he can inform the fire department and/or police who would have the role of securing and evacuating the site if necessary.

Leonard Steiner, formerly with the pipeline safety division of the Nebraska Fire Marshal's office and now with the Federal Office of Pipeline Safety, says responders "Should stabilize the scene, evacuate according to drift of gas and let experts tell you which valves to turn off or open up."

Several programs for training emergency responders are good examples for others to follow. According to coordinator Khryssanne Kerr, the Ohio Utility Protection Service (OUPS) has been conducting a program called the "Emergency Response Awareness

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Program” for six years. OUPS gathers information on all gas and liquid pipelines in a particular area. Then they make a list of all responders such as fire and police departments, highway patrol and Red Cross in that area and invite them to a meeting. The program includes a presentation on emergency response in the Incident Command structure, emphasizing what to look for, what to do and whom to contact. Then each pipeline company takes several minutes to describe its line locations, products carried and pressures.

Attendance records are made available to all pipeline companies to assist the documentation needed for OPS. Responders who do not attend are noted so the pipelines can follow up as needed. Copies of the presentation material are included in the handouts so the emergency response entities can do more training on their own.

Prior to the training season, an updated PowerPoint presentation is sent to all pipelines for their review and comment. More details are available on the OUPS website at www.oups.org/pipeline.htm.

In Minnesota, pipeline operators were in search of a more efficient method for meeting the federal regulations. Some fire departments with six pipelines in their area were being invited to six different meetings and simply did not have the time for that many. Some pipelines tried a consultant, but did not get the results they wanted, so they asked MnOPS for help putting a program together. Brian Pierzina was the lead staff engineer on this initiative for MnOPS. The office provided staff support on planning committees and curriculum development. It continues to give presentations at meetings on the office’s role in enforcement and damage prevention. Over 50 meetings of the Community Awareness and Emergency Response program (C.A.E.R.) have been held in the past two years. Today the program is co-chaired by industry representatives.

Pierzina says that a big challenge is getting people to take more time out of their lives for another meeting. A solution is to conduct more of the training as part of the programs for regional and state Fire Service meetings and Emergency Management meetings. It helps that MnOPS Director, Tom Brace, is also the State Fire Marshal and that Emergency Management is a sister agency in the Minnesota Department of Public Safety.

Law enforcement personnel are more inclined to attend because they receive Continuing Education credits for license renewal. More details on the program are available on the MnOPS website at www.dps.state.mn.us/pipeline/index.html by clicking on the C.A.E.R. button.

Both the Ohio and Minnesota groups say utility response time is a big issue. “It takes them a while to get there,” says Pierzina. “Fire departments are driven to stop the blowing gas. Someday someone is going to get hurt trying to squeeze off the blowing gas line.” Ohio’s Kerr says they stress more tips and guidelines than “how-tos.” They teach responders to evaluate by the sight, sound and smell, then communicate with the utility company.

The amount of technical gas pipeline details to teach is extensive. Responders are often amazed to find out how many pipelines are in their area when they see the maps. They

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want to know what and where the controls are so they can accurately follow directions if instructed to do so. On the other hand, pipeline operators are very concerned that armed with some knowledge, responders will take it on themselves to operate controls and cause a bigger problem. Shutting off the overpressure protection to stop a leak is not a good thing! Electric utilities have no federal or state regulatory requirements to coordinate with responders. They are pretty much on their own. Robin Doege, Manager of Joint Utility Services & Safety for Connexus Energy in Minnesota, says his company saw this problem some time ago and conducts a lot of outreach training for responders in their service area.

High turnover in the ranks of responders, especially volunteers, means “Pipelines need active management to do in-service and refresher training,” says John Turley. Studies done when he was Senior Field Program Coordinator for the National Fire Academy showed an 80 percent turnover in a 5-year

period among responders. He adds, “That number is probably higher today due to increased training demands.”

Responders interviewed for this article said they would like to see more initiative from utilities for training. They say that while they will accept some repetition of basic material, they want new—and pertinent—information. Case studies with lots of pictures would be good!

Ed Krall, Fire Chief of Winona, MN says he is pleased that the local gas and electric supplier, Xcel Energy, provides emergency contact numbers that are not available to the general public so responders can reach the utility without waiting on hold.

Pierzina points out the need for discussion to reconcile the goals of responders and utilities. For example, when the gas is blowing from a nicked, but not severed, gas line, the fire department would be more comfortable if the line was squeezed to stop the leak. On the other hand, when the gas company has determined that the gas is leaking safely into the air and the line is still carrying gas to customers, it would rather allow gas to vent while it constructs a bypass around the leak to keep the customers on line, then stop the leak.

Responders also need to know enough about gas leaks to recognize the difference between a clean cut where gas is venting safely into the air and when the leak is venting underground – perhaps into buildings. In the first case, keeping sources of ignition away may be sufficient till the gas company arrives, but in the second case, evacuation is necessary because the danger of explosion is very high. Responders need to know when standing by is all that is needed and when to be in full turnout gear and have their hoses charged and even how much water in which kind of spray is appropriate.

Even more judgment will be required to comply with the new OPS regulations on mapping. On one hand, maps should be helpful to responders dealing with pipeline emergencies, but on the other hand, those maps should not be available to terrorists who would like to create a pipeline emergency.

Communication and training is the key. As Pierzina put it, “The whole focus is emergency preparedness, not learning on the job.”

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