

# Frank Montagna: Making Decisions in Utility Emergencies and Fires

**BY FRANK MONTAGNA**

In these situations, you are not the expert. You won't know all of the answers to all of the problems you may face at a utility incident. Unfortunately, however, you will still have to make decisions, sometimes life-and-death decisions, at these incidents.

Some may disagree with my previous statement or think that it is unnecessarily dramatic, even alarmist. But, is it? What is your utility's response time? The response time dictates how long you will be on the scene before they arrive with their expert help. Are they going to arrive in five or 10 minutes? If so, you are lucky. I typically had to wait 30 minutes or more in some instances, and during that time, things were happening that required decisions. I had to decide what actions to take to ensure the safety of the people we were sworn to protect as well as the safety of the firefighters I supervised. The decisions were mine to make, without the expert help of utility responders.

Some will say that all that is needed is to block off the area and await the response of the experts. In some instances, that may be true, but certainly not in all instances. Inaction on the part of responders could result in death or injury to civilians; on the other hand, the wrong action could result in death or injury to civilians and firefighters. Inaction can also result in unnecessary property damage. Will you make the right decisions? As incident commander, can you confidently assign duties to your firefighters at these incidents and be reasonably assured that you will be able to bring them all home at the end of the day? As a firefighter or company officer, do you know what you can safely do and what you should not attempt?

Utility companies around the nation deliver natural gas; electricity; and, in some localities, high-pressure steam to their customers. Each of these commodities has inherent hazards. When used as intended, with properly maintained delivery and end-use equipment, they are relatively safe. Unfortunately, gas blows buildings up, people are electrocuted, and high-pressure steam has killed people on city streets and inside buildings. Considering how many people use these things, there are relatively few mishaps, but that is small consolation to the people injured or killed at these incidents.

OK, so I have pointed out the problem: Firefighters respond to potentially deadly incidents, they will have to make decisions, and they are not experts in the hazards faced. That is useless information unless I offer you a solution to the problem. What follows is my solution.

## **THE SOLUTION**

Let me first start with what is not the solution. Waiting for the utility is usually not the solution. Just like at fires, you must make decisions on arrival, but first you must make your size-up. We have all heard of the 14-point size-up. I suggest a different size-up for utility incidents, as follows:

1. Determine what type of incident you are facing. Is it gas, electric, steam, or a combination of these? Is it indoors or outdoors?
2. Identify the hazards immediately faced and the ones that could develop. For instance, a gas main leaking in the street might result in gas migrating into nearby buildings, or leaking gas might ignite and create an exposure problem.
3. Identify who is at risk as a result of the incident; don't forget the firefighters.
4. Request the assistance needed to mitigate what the incident might develop into. This includes the appropriate utility personnel, enough firefighters to perform needed tasks with the appropriate equipment, and emergency medical and police personnel as needed.

5. Decide what should be done and what should not be done. Should you ventilate the building or just evacuate and step back? Should you try to stop the flow of gas from a leaking gas service line or await the assistance of the utility?

We can shorten these concepts to

1. What do I have?
2. Where is it going?
3. Who is at risk?
4. What do I need?
5. What can I do?

Once you answer these five questions, you can decide to act or to withdraw and await the experts.

### SIZE-UP QUESTIONS FOR A GAS LEAK

Let's look at the size-up questions for a gas leak. You are called to respond to a reported excavation collapse that might have involved the gas service line. You arrive and see a back hoe running beside an excavation that is 10 feet from a four-story nursing home. Dirt and debris are blowing up out of the excavation. You hear a loud rushing sound of pressurized gas being released, and you notice a heavy odor of gas.

**What do I have?** You have an obvious natural gas leak. You know it is high pressure by the sound. The excavation is in the parking lot, close to the building, and you think it is the service line that has been damaged.

**Where is it going?**— You can see the dirt being blown up and out of the hole, so obviously, gas is escaping into the air and being blown in the direction of the wind. Because you have attended classes on natural gas response, you know that if the gas line moved as a result of the collapse, it could have pulled a pipe out of its fitting and be leaking underground and out of sight as well as at the obvious location. If that is the case, you would also know that this gas leaking underground could migrate into the building only 10 feet away.

**Who is at risk?** The back hoe engine is running and is a source of ignition, so the gas could ignite at any time. The piping in the excavation could be plastic. A static charge could build up on it, resulting in an arc that could ignite the gas. Anyone near the excavation could be in danger if the gas ignites. Additionally, the migrating gas could put the occupants of the nursing home at risk as well as any firefighters you send into the building. The migrating gas could have its odorant scrubbed out and not be detectable without a gas meter. People in the building might not know that they are at risk.

**What do I need?** You need the gas utility to shut the gas and enough firefighters to perform the needed tasks. You need a pumper and a water source for precautionary lines and gas meters to check the nursing home and other nearby exposures for natural gas infiltration. You may also need enough firefighters and apparatus to react to ignition of the leaking gas and explosion in one of the exposures. If it does explode, you will need emergency medical services to treat and transport the victims. In any case, you may need the police to provide traffic and crowd control and scene security.

**What do I do?** Exclude both civilians and firefighters from the danger area around the leaking gas pipe. Do not attempt to shut the backhoe's ignition. Instead, set up precautionary lines to protect it and the building exposures in case the gas ignites. Send gas meter-equipped firefighters into the nursing home and other exposed buildings to check for the presence of gas. Evacuate occupants to a safe location if need be. Ventilate the building if it is safe to do so. Keep in mind your risk-benefit analysis. Before risking firefighters lives to ventilate an empty building, do a hazard evaluation.

### YOUR TASK

This new size-up procedure is different from the 14-point procedure, but it does essentially the same thing. How does this help you? Well, it doesn't help much unless you know a few things. You need to know the properties of each commodity the utility delivers and how they will affect your mitigation attempt. You need to know the hazards of gas, electric, and high-pressure steam. You also need to know the various mitigation options as well as your department's capabilities and limitations.

Where do you get the needed information? You have to do some work. Attend classes on mitigating utility emergencies. Your utility can provide them. Did you know that any company maintaining a gas pipeline is mandated to provide you with training? Does your utility train you? Is it the type of training you need? If not, tell it what you need. Do the same with the electric and steam utilities. They won't turn you down. The better you are at mitigating these emergencies, the better it is for them.

Do some reading. You can find a wealth of information on utility hazards and properties on line. Look for it on the Occupational Safety and Health Administration and the utilities' Web sites. Various firefighting textbooks contain the information you need to know. All you have to do is read it. Finally, attend classes on the subject when they are offered. Everyone wants to take the structural fire courses; that is a good thing for firefighters to do, but consider for a moment which type of responses you go on most frequently. It is not the fire calls; it is more likely the utility emergencies.

As a chief, I was more comfortable at a major fire than at a major utility incident. It was usually just easier because everyone knew what to do, and they had done it numerous times before. This is not so at major utility incidents. They often gave me more trouble than a fire.

The message to take from this article is that you cannot always wait for the utility. You may have to make life-and-death decisions before utility representatives arrive. The solution is to put some time into learning about utilities. You will make better and safer decisions at these incidents, large or small.

BIO

**FRANK MONTAGNA** retired from the Fire Department of New York after 43 years of service; he was a battalion chief for 26 of those years. His articles frequently appear in *Fire Engineering* and *WNYF* magazines. He has taught several courses for John Jay College, one based on his book *Responding to "Routine" Emergencies*, and another as a co-teacher of the "Strategy and Tactics for Fires and Emergencies" course with Chief Vincent Dunn. He lectures on a number of fire-related topics around the country.