

How to Deal With a Fast-Breaking Crisis in Your Plant

Ray White, Vice President and General Manager, Global Solutions, International



What defines a fast-breaking emergency?

A fast-breaking emergency is one where circumstances change both quickly and dramatically, oftentimes in as little as a few seconds or even less. One second everything is normal, but in the next the immediate hazard to people and property becomes significant.

Explosions, hazardous gas leaks, chemical spills and rapidly spreading fires are obvious examples of fast-breaking crises. Earthquakes and tsunamis, such as what occurred in Japan in 2011, also qualify as fast-breaking crises. Others include terrorist attacks, workplace violence and facility security breaches.

How to Deal With a Fast-Breaking Crisis in Your Plant

Published on Food Manufacturing (<http://www.foodmanufacturing.com>)

Two characteristics generally distinguish a fast-breaking emergency from one requiring a less urgent response. First is the nature of the event. Hurricanes and isolated or contained fires call for a less urgent level of response than an explosion at a chemical plant that demands immediate action.

Secondly comes the amount of warning preceding a possible hazard to people and property. A poisonous leak at a chemical plant, for instance, will most likely demand a more immediate response than storm flooding. Most weather-related emergencies (i.e., hurricanes, flooding, etc.) are accompanied by some degree of official warning, but that is not always the case, as evidenced by recent Midwest tornadoes that still took many forecasters by surprise.

What types of industrial facilities are most vulnerable to a fast-breaking emergency?

Due to the nature of the materials they are dealing with, oil refineries, chemical and petrochemical plants, and facilities that deal with volatile or unstable gases such as propane, or LNG are candidates for a potential fast-breaking crisis resulting from industrial accidents, weather events or terrorist acts.

However, there are other issues that extend beyond the hazardous potential of the materials being processed or handled, most notably the location of the facility, and the types of hazardous situation that it may be exposed to. A facility located near a geological fault line should be prepared for the highly unpredictable possibility of an earthquake; while one in the Midwest should be prepared to respond to seasonal tornadoes; and facilities along the coastline should be ready for potential tsunamis and storm surges.

What are some of the more noteworthy examples of fast-breaking emergencies that have affected industrial facilities?

- The 1988 disaster on the Piper Alpha natural gas production platform in the North Sea offers a prime example of a fast-breaking crisis scenario. The explosion and subsequent fires resulted in the deaths of 167 workers. The failure of the rig's automatic fire-containment systems pointed to the need for greater system redundancy, and was among the many changes initiated for future offshore drilling platforms.
- The 2005 Texas City refinery accident was responsible for the deaths of 15 employees. Among the fatalities were a number of the facility's senior-level managers who were engaged in a staff meeting at a location nearby the initial explosion. This disaster demonstrated the need for greater redundancy and automation across all areas of emergency communications and response, while also identifying the importance of a clearly defined chain of command.
- The 2010 explosion at the Deepwater Horizon offshore oil production

How to Deal With a Fast-Breaking Crisis in Your Plant

Published on Food Manufacturing (<http://www.foodmanufacturing.com>)

platform in the Gulf of Mexico, which resulted in the death of 11 employees, is generally considered today to be the largest accidental oil spill in history.

What role is technology playing in addressing the unique issues that accompany rapidly unfolding emergency situations?

Remote high-tech sensing devices are having a positive impact on early warning capabilities. These sensors commonly warn of incidents such as chemical spills and gas leaks, while remote fire-alarm inputs detect heat and combustion. Additionally, remote video is increasingly being used to identify security breaches to deter acts of terrorism and vandalism.

These sensors also indicate precisely what employees and management are contending with, thereby automating both early warning capabilities and the required response. Beyond merely detecting a hazardous situation, and issuing an alert, these devices provide specific, helpful and otherwise invaluable information on immediate steps to take in the event of a rapidly developing crisis. This includes areas of the facility to avoid, and special precautions to take in the event of a chemical spill or poisonous gas leak, for instance.

How else is technology being deployed at facilities vulnerable to the effects of a fast-breaking emergency?

Advanced automated messaging and signaling systems are crucial to triggering emergency action plans, oftentimes accelerating response to a matter of milliseconds. This includes establishing effective lines of communication with employees, managers, first responders, and government agencies. Automating initial alerts also expedite the "can't wait" or "no-brainer" steps to be taken immediately, while also eliminating the adverse effects of mixed messaging.

In addition to providing redundancy throughout the overall warning process, desktop communication has a specific impact on a facility's ability to respond quickly. Interoperable software platforms such as those employed by Federal Signal substantially enhance communication capabilities, providing instant access to general alarm and PA systems, outdoor warning devices, and cell and landline telephones, while taking advantage of today's smartphone technology. Desktop communications provide another avenue to bypass the clutter of the individual's workplace environment via the use of instant messaging for alerts and notifications when time is at a minimum.

Today's sophisticated, network-based communication platforms support a variety of innovative software applications, including apps that provide managers with remote yet secure access to all modes of communications, and automated scenario-management tools to speed the crisis decision-making process.

What steps can be taken to limit the effects of panic and confusion in the event of a sudden and unexpected emergency?

Most critical is to designate a command post for centralized control of the response

How to Deal With a Fast-Breaking Crisis in Your Plant

Published on Food Manufacturing (<http://www.foodmanufacturing.com>)

process in order to establish effective coordination of emergency procedures. Much like automating the initial warning alerts, providing a single source for accurate information limits the effects of misinformation and rumors that could promote panic and confusion.

An emergency preparedness strategy must also establish a clearly defined chain of command to effectively implement response procedures. During a crisis there is little time to determine who has decision-making authority, so any delay could conceivably cost lives and cause unnecessary damage to property.

Summarizing, what are the most important elements necessary to deal with a fast-breaking emergency scenario?

Increased automation is now critical to any emergency preparedness strategy. In addition to streamlining response, automation also feeds directly into the crucial need for failsafe redundancy across all communications and emergency procedures.

Adequate preparation begins with developing an action plan that addresses all the possible emergency scenarios--from explosions, fires, chemical spills and gas leaks, to weather-related disasters and terrorist events. The plan must assess what type of hazardous event a facility is susceptible to, and then ensure that all necessary safety procedures, resources and employee training are in place for each of those possibilities.

Equally critical is developing awareness among employees and management as to the potential emergencies, and the corresponding need for preparedness and vigilance.

Finally, regular testing of response procedures must be incorporated as essential to any emergency preparedness strategy.

Ray White, Director of Federal Signal Corporation's Integrated Systems Group (ISG), answers questions concerning the communications and preparedness issues associated with fast-breaking emergency scenarios. White directs worldwide efforts of Federal Signal's state of the art integrated safety and security solutions for industrial facilities including the offshore oil and petrochemical industries.

Source URL (retrieved on 02/01/2015 - 1:55pm):

<http://www.foodmanufacturing.com/articles/2014/06/how-deal-fast-breaking-crisis-your-plant>